Trade Finance during the Great Trade Collapse

Editors
Jean-Pierre Chauffour • Mariem Malouche

TRADE FINANCE DURING THE GREAT TRADE COLLAPSE

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Jean-Pierre Chauffour and Mariem Malouche
Editors

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FOREWORD

The bursting of the subprime mortgage market in the United States in 2008 and the ensuing global financial crisis were associated with a rapid decline in global trade. The extent of the trade collapse was unprecedented: trade flows fell at a faster rate than had been observed even in the early years of the Great Depression.

G-20 leaders held their first crisis-related summit in November 2008. The goal was to understand the root causes of the global crisis and to reach consensus on actions to address its immediate effects. In the case of trade, a key question concerned the extent to which a drying up of trade finance caused the observed decline in trade flows.

There are different types of trade finance. Banks offer a number of trade finance instruments that vary in terms of risk. A large share of global trade finance is also provided on an interfirm basis—that is, involving contracts between buyers and suppliers. It rapidly became obvious that the data on global trade finance flows (by type of products, providers, or markets) were incomplete. This dearth of data complicated the estimation of a possible trade finance "market gap" and of whether trade finance was indeed a major factor driving the fall in global trade. An implication for policy was whether governmental intervention in favor of a specific segment of the financial system—the trade finance market—was necessary and, if so, what form such support should take.

The G-20 quickly reached broad agreement that the international community needed more information and knowledge about trade finance markets and also needed to consider expanding trade finance liquidity. International agencies, the financial industry, and analysts cooperated to act on three fronts: (a) collecting data to better inform decision makers on the prevalence of trade finance market constraints; (b) helping design a quick and effective institutional and governmental response to restore confidence and liquidity in the trade credit market; and (c) better understanding the effects of the changes in the international regulatory framework for the banking sector on the supply of trade finance.

In response to the crisis, the International Finance Corporation—the private sector arm of the World Bank—doubled the capacity of its Global Trade Finance Program in late 2008 and, in collaboration with other development finance institutions, set up a Global Trade Liquidity Program in July 2009 to channel additional liquidity to finance trade transactions. In addition, the World Bank undertook a series of bank- and firm-level surveys in developing countries to gauge the impact of the crisis, complementing other institutional surveys conducted in advanced and emerging economies.

This book brings together a range of projects and studies undertaken by development institutions, export credit agencies, private bankers, and academics to shed light on the role of trade finance in the 2008–09 great trade collapse. It provides policy makers, analysts, and other interested parties with analyses and assessments of the role of governments and institutions in restoring trade finance markets. A deeper understanding of the complexity of trade finance remains critical as the world economy recovers and the supply of trade finance improves. The international community continues to know too little about the fragility of low-income economies in response to trade finance developments and shocks, as well as about the ability and conditions of access to trade finance by small and medium enterprises and small banks in developing countries. Similarly, there is uncertainty regarding the impact on trade finance of recent changes in the Basel III regulatory framework.

We hope that the contributions to this volume are just the start of a broader effort to undertake more research and analysis on an important, and neglected, segment of the financial market. Such analysis is conditional on the availability of timely and comprehensive data on the cost and volume of trade finance as well as the probability of default trade finance products. As discussed in a number of chapters in this book, generating such data requires a collective effort, which we hope will be put in place and sustained in the coming years.

Bernard Hoekman
Director, International Trade Department
Poverty Reduction and Economic Management
World Bank

Georgina Baker
Director, Short Term Finance
International Finance Corporation
World Bank Group

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The editors

ABOUT THE EDITORS AND CONTRIBUTORS

Jean-Pierre Chauffour is a lead economist in the International Trade Department of the World Bank, in the Poverty Reduction and Economic Management Network, where he works on regionalism, competitiveness, and trade policy issues. Prior to joining the Bank in 2007, he spent 15 years at the International Monetary Fund, where he held various positions, including mission chief in the African department and representative to the World Trade Organization and United Nations in Geneva. Mr. Chauffour has extensive economic policy experience and has worked in many areas of the developing world, most extensively in Africa, the Middle East, and Eastern Europe. He holds master's degrees in Economics and in Money, Banking, and Finance from the Panthéon-Sorbonne University in Paris. He is the author of *The Power of Freedom: Uniting Human Rights and Development* (Cato Institute, 2009).

Mariem Malouche is an economist in the International Trade Department of the World Bank, in the Poverty Reduction and Economic Management Network. She joined the Bank in the Middle East and North Africa Region in 2004. Before joining, Ms. Malouche obtained her Ph.D. in International Economics from University Paris-Dauphine. Her areas of interest are trade policy, nontariff measures, regional integration, and export diversification.

Contributors

Hyung Ahn, International Finance Corporation, World Bank Group

Donna K. Alexander, Bankers' Association for Finance and Trade–International Financial Services Association

Irena Asmundson, International Monetary Fund

Marc Auboin, World Trade Organization

Steven Beck, Asian Development Bank

Ghazi Ben Ahmed, African Development Bank

Nicolas Berman, Graduate Institute of International and Development Studies

Cosimo Beverelli, World Trade Organization

Daniela Carrera, Inter-American Development Bank

Thomas Dorsey, International Monetary Fund

Tore Ellingsen, Stockholm School of Economics, Stockholm University

Daniela Fabbri, University of Amsterdam

Thomas Farole, World Bank

Bonnie Galat, International Finance Corporation, World Bank Group

Adnan Ghani, Royal Bank of Scotland

Jean-Jacques Hallaert, OECD and Groupe d'Économie Mondiale (GEM), Institut d'Études Politiques de Paris

John Humphrey, Institute of Development Studies

Tan Kah Chye, Standard Chartered Bank

Armine Khachatryan, International Monetary Fund

Leora Klapper, World Bank

Madina Kukenova, World Trade Organization

Jean-François Lambert, HSBC

Andrei A. Levchenko, University of Michigan and National Bureau of Economic Research

Logan T. Lewis, University of Michigan and National Bureau of Economic Research

Inessa Love, World Bank

Philippe Martin, Institut d'Études Politiques de Paris

Anna Maria C. Menichini, University of Salerno and Centre for Studies in Economics and Finance

Jesse Mora, U.S. International Trade Commission

Fabrice Morel, Berne Union

Ioana Niculcea, International Monetary Fund

William Powers, U.S. International Trade Commission

Rudolf Putz, European Bank for Reconstruction and Development

Douglas Randall, World Bank

Nadia Rocha, World Trade Organization

Christian Saborowski, World Bank

Mika Saito, International Monetary Fund

Thierry J. Senechal, International Chamber of Commerce

Ahmet I. Soylemezoglu, World Bank

Linda L. Tesar, University of Michigan

Koen J. M. van der Veer, De Nederlandsche Bank

Jonas Vlachos, Stockholm University

ABBREVIATIONS

$	All references to "dollars" or dollar amounts ($) are U.S. dollars (US$) unless indicated otherwise.
AfDB	African Development Bank
ADB	Asian Development Bank
AGOA	African Growth and Opportunity Act
ALADI	Latin American Integration Association
ATL	Agro Traders Ltd.
AVC	asset value correlation
BAFT-IFSA	Bankers' Association for Finance and Trade–International Financial Services Association (merged association)
BANCOLDEX	Banco de Comercio Exterior de Colombia
BCBS	Basel Committee on Banking Supervision
BIS	Bank for International Settlements
BPLR	Benchmark Prime Lending Rate
BU	Berne Union
CCF	credit conversion factor
CEPII	Centre d'Etudes Prospectives et d' Informations Internationales (Centre for Research on the International Economy)
CIS	Commonwealth of Independent States
DFI	development finance institution
EBRD	European Bank for Reconstruction and Development
ECA	export credit agency
ECGD	Export Credits Guarantee Department
EFD	external financial dependence
EFIL	Export Finance Insurance Corporation (Australia)
EMIB	emerging-market issuing bank
ES	Enterprise Survey (World Bank)
EU	European Union

FCS	Financial Crisis Survey (World Bank)
FI	financial intermediary
FY	fiscal year
G-20	Group of 20 (countries') Finance Ministers and Central Bank Governors
GDP	gross domestic product
GTFP	Global Trade Finance Program (IFC)
GTLP	Global Trade Liquidity Program (IFC)
ICC	International Chamber of Commerce
IDA	International Development Association
IDB	Inter-American Development Bank
IDS	Institute of Development Studies
IFC	International Finance Corporation (World Bank Group)
IFI	international financial institution
IMF	International Monetary Fund
IMF-BAFT	International Monetary Fund–Bankers' Association for Finance and Trade
ISIC	International Standard Industrial Classification
IT	information technology
KYC	know-your-customer
LIBOR	London interbank offered rate
LC	letter of credit
LOC	line of credit
MFA	Multifibre Arrangement
MLT	medium/long-term (export credit insurance)
NAICS	North American Industry Classification System
NFIB	National Federation of Independent Business
OECD	Organisation for Economic Co-operation and Development
RBI	Reserve Bank of India
RBS	Royal Bank of Scotland
SBSA	Standard Bank of South Africa
SCF	supply chain finance
SMEs	small and medium enterprises
ST	short-term (export credit insurance)
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TCD	trade credit dependence
TFI	Trade Finance Initiative (AfDB)
TFP	Trade Facilitation Program (EBRD)
TFP	Trade Finance Program (ADB)

TFFP	Trade Finance Facilitation Program (IDB)
TFRP	Trade Finance Reactivation Program (IDB)
TWCC	trade-weighted credit contraction
UB	utilization bank
WTO	World Trade Organization

OVERVIEW

Introduction

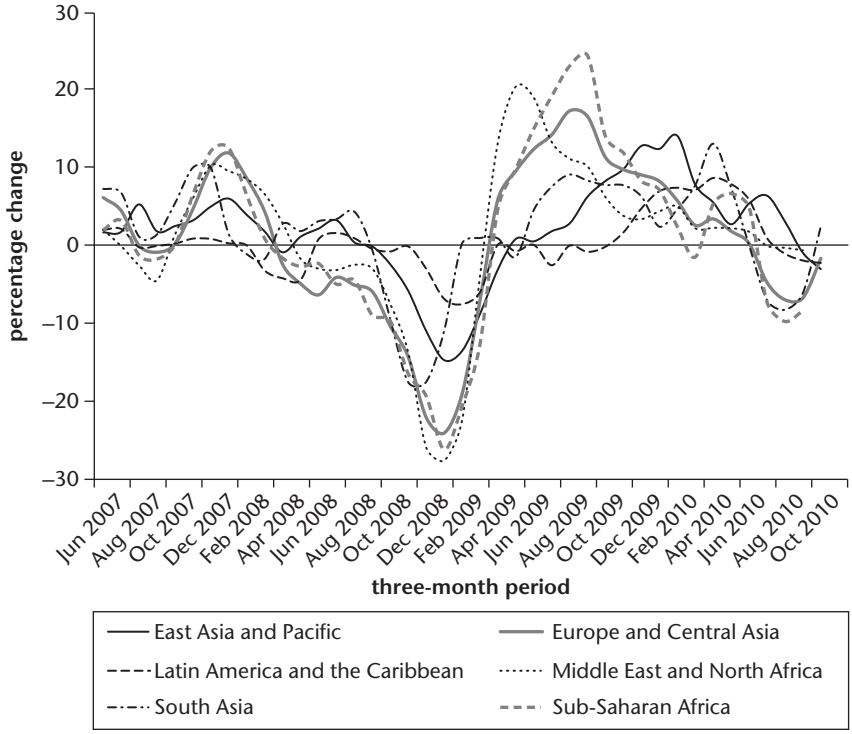
On September 15, 2008, Lehman Brothers, the fourth-largest U.S. investment bank, filed for bankruptcy, marking the largest bankruptcy in U.S. history and the burst of the U.S. subprime mortgage crisis. Concerns about the soundness of U.S. credit and financial markets led to tightened global credit markets around the world. Spreads skyrocketed. International trade plummeted by double digits, as figure O.1 illustrates. Banks reportedly could not meet customer demand to finance international trade operations, leaving a trade finance "gap" estimated at around $25 billion. The liquidity problem spread from the United States and the European Union (EU) to developing countries' markets. As the secondary market dried up in late 2008, the trade finance gap reportedly increased to up to $300 billion.

In the midst of the crisis, these alarming developments were at the epicenter of world leaders' attention. When the G-20 leaders held their first crisis-related summit in Washington, D.C., in November 2008, their primary objective was to reach a common understanding of the root causes of the global crisis and agree on actions to address its immediate effects, including providing liquidity to help unfreeze credit markets.

The purpose of this book is to provide policy makers, analysts, and other interested parties with a comprehensive assessment of the role of trade finance in the 2008–09 "great trade collapse" (Baldwin 2009) and the subsequent role of governments and institutions to help restore trade finance markets.

The 1997–98 Asian crisis had already illustrated the critical role that trade finance plays during a financial crisis—especially its effects on trade—but that crisis remained regionally confined, and international institutions and regulators largely blamed the opaque financial sector in the affected economies for the crisis. In contrast, the 2008–09 crisis originated in the United States, one of the most

Figure O.1. Trade Fluctuations by Region, 2007–10
export volume, three-month moving average (seasonally adjusted)



Sources: Authors' calculations and data from Datastream.

transparent and sophisticated financial markets, and quickly spilled over to the EU and the rest of the world.

Policy makers, central bankers, and finance ministers from around the world found themselves in largely uncharted territories. They had to contemplate policy actions to channel liquidity into the real economy in support of trade transactions. However, because of the dearth of data on trade finance, they had no gauge to estimate the magnitude of the market gap or even to know whether trade finance was indeed a main factor behind the drop in trade. It was also not clear whether governments' intervention in favor of a specific segment of the financial system—the trade finance market—was justified and warranted.

Trade finance covers a wide spectrum of payment arrangements between importers and exporters—from open accounts to cash-in-advance, interfirm trade credit, and bank-intermediated trade finance. Moreover, assessment of trade finance conditions is notoriously difficult in the absence of organized markets for

bank-intermediated trade finance and given the proprietary nature of bank information about customer relationships. With these considerations in mind, estimation of the effect of a potential trade finance shortfall on the decline in trade volumes during the crisis was even more convoluted. Against this background, the World Bank commissioned firm and bank surveys in developing countries to assess the impact of the financial crisis on trade and trade finance developments. The International Monetary Fund (IMF), in association with the Bankers' Association for Finance and Trade (BAFT)—now merged with International Financial Services Association (BAFT-IFSA)—and others, conducted additional surveys of commercial banks in developed and emerging countries to collect information on commercial bank trade finance conditions.

Governments and international institutions were encouraged to intervene on the basis of information that some 80–90 percent of world trade relies on some form of trade finance and that trade credit markets were tight.[1] To help overturn the trade collapse and a possible further deepening of the global economic recession, the G-20 called on international institutions at its Washington, D.C., summit to provide trade financing to assist developing countries affected by the crisis. At a second summit in London in April 2009, the G-20 adopted a broad package to provide at least $250 billion in support of trade finance over two years.

This book assembles 23 contributions to tell the story of trade finance during the 2008–09 global economic crisis and to answer four main questions:

1. What do we know about the specifics and determinants of trade finance during financial crises, especially the role of interfirm trade credit versus bank-intermediated trade finance?
2. Was the availability and cost of trade finance a major constraint on trade during the crisis?
3. What are the underpinnings and limits of national and international public interventions in support of trade finance markets in times of crisis?
4. How effective was the institutional support for trade finance put in place during the crisis, and to what extent (if any) did the new banking regulations under Basel II and Basel III exacerbate the trade finance shortfall during the crisis and in the postcrisis environment?

What Is Trade Finance, and Why Does It Matter?

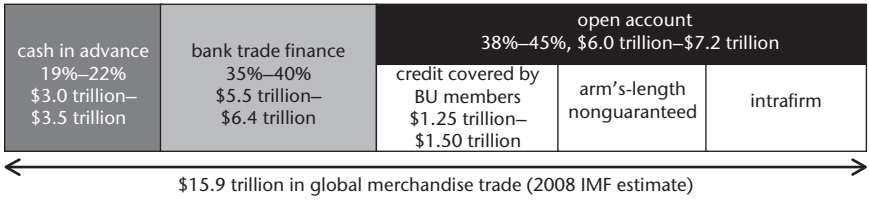
The global financial crisis demonstrated that trade finance is a broad concept that encompasses various products, mechanisms, and players. When trade collapsed in the fall of 2008, trade finance rapidly became the focus of attention. Foremost, the crisis illuminated the dearth of data and information on trade finance.

Trade finance differs from other forms of credit (for example, investment finance and working capital) in ways that have important economic consequences during periods of financial crisis. Perhaps its most distinguishing characteristic is that it is offered and obtained not only through third-party financial institutions, but also through interfirm transactions. Table O.1 lists the major trade finance products.

The vast majority of trade finance involves credit extended bilaterally between firms in a supply chain or between different units of individual firms.[2] According to messaging data from the Society for Worldwide Interbank Financial Telecommunication (SWIFT), a large share of trade finance occurs through interfirm, open-account exchange. Banks also play a central role in facilitating trade, both through the provision of finance and bonding facilities and through the establishment and management of payment mechanisms such as telegraphic transfers and documentary letters of credit (LCs). Among the intermediated trade finance products, the most commonly used for financing transactions are LCs, whereby the importer and exporter entrust the exchange process to their respective banks to mitigate counterparty risk. The IMF/BAFT-IFSA bank surveys during the crisis helped gather information on the market shares of financing products and suggested that about one-third of trade finance is bank intermediated, as figure O.2 shows.

Relative to a standard credit line or working-capital loan, trade finance—whether offered through banks or within the supply chain—is relatively illiquid, which means that it cannot easily be diverted for another purpose. It is also highly collateralized; credit and insurance are provided directly against the sale of specific products or services whose value can, by and large, be calculated and secured.[3] This suggests that the risk of strategic default on trade finance should be relatively low, as should be the scale of loss in the event of default.

Figure O.2. Trade Finance Arrangements, by Market Share



Sources: IMF staff estimates from IMF/BAFT-IFSA surveys of commercial banks (IMF-BAFT 2009; IMF and BAFT-IFSA 2010) and Berne Union database.
Note: BU = Berne Union. IMF = International Monetary Fund. BAFT-IFSA = Bankers' Association for Finance and Trade–International Financial Services Association.

Table O.1. Overview of Trade Finance Products

Category	Product	Description
Interfirm or supply-chain financing	Open account	• Contract settled between importer and exporter without third-party security or risk management arrangements, either directly or (most commonly) through transfers between their banks; extension of credit by one party (normally the exporter) by way of accepting payment after a certain delay (usually 30–90 days)
"Traditional" bank financing	Investment capital	• Medium-term finance for investment in the means of production (for example, machinery)
	Working capital	• Short-term finance to cover ongoing costs (addressing mismatch in timing between cash receipts and costs incurred), including payment of suppliers, production, and transport; also used to cover risks of (or real) delays in payments, effects of currency fluctuations, and so on
	Preexport finance	• Similar to working capital, but bank takes a security interest in the goods being shipped and a right to receive payment for those goods directly from the importer; typically used for commodity production
Payment mechanisms and liquidity	Letter of credit (LC)	• Provided by importer's bank to exporter's bank; when exporter fulfills LC conditions, the relevant documents of proof submitted to exporter's bank, which submits them to importer's bank, which remits funds to exporter's bank, which then pays exporter (importer subsequently remits funds to importer's bank) • Designed to mitigate the counterparty risk inherent in open-account transactions • Could be issued under various modalities (for example, confirmed, standby, deferred, revocable, transferable, usance, or back-to-back)
	Supplier credit	• Extended or deferred payment terms offered by the supplier to the buyer but typically linked with bank financing to enable exporter to receive cash on delivery (for example, factoring)
	Buyer credit	• Term financing provided to finance cash payments due to supplier
	Countertrade	• Addresses liquidity (particularly access to foreign exchange, thus especially relevant in emerging economies) by promoting two-way trade of equivalent-value merchandise (for example, barter, buy-back, or counterpurchase)
	Factoring and forfaiting	• Factoring as a financial service that purchases an exporter's invoices or accounts receivable at a discount and assumes the risk of nonpayment; addresses both liquidity and risk mitigation • Forfaiting similar to factoring but typically involves medium-term accounts receivables for exporters of capital goods or commodities with long credit periods

(*continued next page*)

Table 0.1. (*continued*)

Category	Product	Description
Risk management	Advance payment guarantees	• Security provided to importer when exporter requires mobilization payment; usually a matching amount callable on demand
	Performance bonds	• Security provided to importer (normally in case of capital goods export); callable if exporter fails to perform (compensates for costs of finance, rebidding, and so on)
	Refund guarantees	• Security provided to importer when importer is required to make stage payments during manufacturing by exporter (normally in case of large capital-goods export); callable if goods are not delivered
	Hedging	• Security (for example, through a financial instrument issued by a bank) to offset market (rather than counterparty) risks, including fluctuations in exchange rates, interest rates, and commodity prices
Export credit insurance and guarantees	Export credit insurance	• Exporters insured against a range of risks, including nonpayment, exchange rate fluctuations, and political risk; can be used to securitize other forms of trade and nontrade finance from banks
	Export credit guarantees	• Instruments to protect banks providing trade finance; facilitates the degree to which banks can offer trade finance products (for example, to SMEs without sufficient export track records)

Source: Chauffour and Farole 2009.
Note: SMEs = small and medium enterprises.

The remainder of this overview offers a brief review of the content of this book and its 23 chapters and concludes with a number of key takeaways.

Section 1: Interfirm Trade Credit and Trade Finance during Crises

With the collapse of major financial institutions, the global financial crisis first took the form of a major global liquidity crisis, including a trade finance crisis. Many banks reported major difficulties in supplying trade finance.

The conditions of access to interfirm trade credit also worsened in the aftermath of the crisis. Interfirm trade credit refers to finance provided to importers from exporters to buy the goods from overseas and to exporters to help them produce the goods to export as well as to allow them to finance their extensions of credit to importers. Interfirm trade credit is a particularly important source of short-term financing for firms around the world (Petersen and Rajan 1997), and it tends to be relatively more prevalent for firms in developing countries (Demirgüç-Kunt and Maksimovic 2001; Beck, Demirgüç-Kunt, and Maksimovic 2008). Although bank-intermediated trade finance and interfirm trade credit should be perfect substitutes in a world free of information asymmetries and the like, the two sources offer firms alternatives to deal with the frictions and market imperfections of the real world.

Chapter 1: Trade Credit versus Bank Credit

Inessa Love reviews the main rationale for the provision of trade credit by suppliers and highlights four main considerations that may lead firms to prefer interfirm trade credit when possible:

1. Trade credit suppliers have a cost advantage over banks in acquisition of information about the financial health of the buyers.
2. In the event of nonpayment, trade credit providers are better able than specialized financial institutions to liquidate the goods they repossess.
3. Trade credit serves as a guarantee for product quality.
4. Potential moral hazard problems on the borrower's side are reduced when trade credit is extended to suppliers because in-kind credit is difficult to divert to other uses.

Better understanding the determinants of interfirm trade credit is particularly important during financial crises, when the cost of trade finance increases and banks become more risk averse. Interfirm trade credit could play an important

role and substitute for lack of liquidity in the financial system. Its use tends to increase in times of crisis (Calomiris, Himmelberg, and Wachtel 1995; Love, Preve, and Sarria-Allende 2007). Yet Inessa Love also points to evidence from the Asian financial crisis that interfirm trade credit and bank trade finance are imperfect substitutes and could complement each other (Love, Preve, and Sarria-Allende 2007). The findings suggest that trade credit cannot fully compensate for long-term contraction in bank finance that stems from a financial crisis. A contraction in trade credit may even exacerbate a contraction in bank finance, which in turn may lead to a collapse in trade credit.

Chapter 2: Firms' Trade-Financing Decisions

Assuming that firms' suppliers are better able than banks or other financial institutions to extract value from the liquidation of assets in default and have an information advantage over other creditors, Daniela Fabbri and Anna Maria C. Menichini then investigate the determinants of trade credit and its interactions with borrowing constraints.

They find that rationed and unrationed firms alike use trade credit to exploit the supplier's liquidation advantage. Moreover, they find that the use of trade credit goes together with the transfer of physical inputs within the supply chain and that the bias toward more physical inputs increases as financial constraints tighten and creditor protection weakens.

Chapter 3: Interfirm Trade Finance: Pain or Blessing?

Anna Maria C. Menichini identifies a number of theoretical economic rationales that could underpin policy actions in favor of trade credit financing in times of crisis, with a focus on constraints faced by developing countries. She looks at whether interfirm credit has features that can shield it from a general credit squeeze or whether, instead, it constitutes an additional element of tension.

She finds two main and opposing effects: Interfirm finance may be a way to overcome informational problems associated with standard lender-borrower relations due to information asymmetries and principal-agent problems. However, interfirm finance may also contribute to propagation of shocks among firms along the supply chain, especially for firms operating in developing countries with little access to alternative finance.

Menichini proposes a few policy schemes to help reduce contagion by focusing on the breaking points in the supply chain—mainly firms more exposed to the risk of insolvency and more likely to start the chain of defaults.

Chapter 4: Financial Crisis and Supply-Chain Financing

The analysis of the link between interfirm trade credit and bank trade finance during the 2008–09 global crisis has been blurred by the fact that the financial crisis swiftly spilled over to the real economy and constrained firms' cash reserves and revenues, putting additional pressure on their capacity to extend trade credit. As such, both interfirm trade credit and bank trade finance dropped in the midst of the crisis.

To document the financial behavior of firms under competitive pressure, Leora Klapper and Douglas Randall use data from the World Bank's Financial Crisis Surveys of 1,686 firms in Bulgaria, Hungary, Latvia, Lithuania, Romania, and Turkey in 2007 and 2009. They find that in countries hit hardest by the crisis, firms under competitive pressure were relatively more likely to extend trade credit, suggesting an additional financial burden for some firms.

Section 2: The Role of Trade Finance in the 2008–09 Trade Collapse

The 2008 financial crisis and the ensuing trade collapse immediately prompted policy makers and analysts to link the two events: Trade dropped in part because of a lack of supply of trade finance. Given the lack of data and the relative secure nature of trade finance, however, some analysts raised doubts about the prominent role of trade finance. A review of financial crises over the past three decades found that trade elasticity to gross domestic product has increased significantly over time, which in turn may explain why trade dipped so much (Freund 2009).

Survey data also suggest that the trade finance market tightened during the crisis but may not have played the alleged dominant role in the drop in trade. Lack of data spurred the IMF and BAFT-IFSA and the International Chamber of Commerce (ICC) to launch a series of commercial- and investment-bank surveys to gauge the impact of the financial crisis on trade finance availability and constraints.

The ICC surveys indicate that it became more difficult to raise money to finance trade in the aftermath of the Lehman Brothers collapse and that both the availability and the price of trade finance severed in late 2008. The surveys indicate that the supply of trade finance remained constrained both in value and in volume in 2008–09. They also find considerable evidence that the weaker emerging economies were hit first (for example, Bangladesh, Pakistan, and Vietnam), but fast-growing developing economies also suffered from the contraction in trade finance (ICC 2009, 2010).

Chapter 5: Evidence from Commercial Bank Surveys

Analyzing the IMF/BAFT-IFSA surveys of commercial banks, Irena Asmundson, Thomas Dorsey, Armine Khachatryan, Ioana Niculcea, and Mika Saito find evidence that credit limits on trade finance tightened during the crisis. However, they also find that increases in the price of trade finance products did not stand out from those for other commercial bank products.

Their results suggest that factors other than trade finance—chiefly the collapse of global demand and the decline in commodity prices—played a more important role in the 2008–09 trade collapse. Nevertheless, increased pricing and tightened credit conditions undoubtedly discouraged some trade transactions that might have taken place otherwise. These results have been corroborated by the World Bank's surveys of firms, which chapter 10 covers in greater detail.

Chapter 6: Global Perspectives on Trade Finance Decline

Jesse Mora and William Powers examine broad measures of financing—including domestic lending in major developed economies and cross-border lending among more than 40 countries—and review eight survey-based results.

Their findings suggest that a decline in global trade finance had a moderate role, at most, in reducing global trade. Furthermore, in most cases, trade finance declined much less sharply than exports and broader measures of financing. Empirical firm-based data analyses confirm the importance of the demand side effect. They also observed a compositional shift in trade financing as heightened uncertainty and increased counterparty risk led exporters to move away from risky open accounts and toward lower-risk letters of credit and export credit insurance.

Chapter 7: A Skeptic's View of the Trade Finance Role

Using highly disaggregated international trade data for the United States, Andrei A. Levchenko, Logan T. Lewis, and Linda L. Tesar examine whether financial variables can explain the cross-sectoral variation in how much U.S. imports or exports fell during the crisis. Overall, they find little evidence that financial factors played a role in the collapse of U.S. trade at the aggregate level, in sharp contrast to other measures that were found to matter significantly in earlier studies, such as vertical production linkages and the role of durables. Their results might point out that when aggregating across partner countries up to the sector level, the effect disappears.

Moreover, the authors recognize that although the United States is widely seen as the epicenter of the financial crisis, its financial system is nonetheless one of the deepest and most resilient in the world. Thus, even if their analysis finds no effect

of financial factors for U.S. trade, these factors may be much more important in other countries with weaker financial systems.

Chapter 8: Trade Finance in Africa

Although trade finance constraints may not have constrained advanced economies' exporters and importers, developing-country policy makers were concerned about the impact of exports from low-income countries—particularly from African countries. John Humphrey, through firm interviews, looks at the impact of the financial crisis on African exporters.

He reports that most interviewed firms in Africa did not experience direct difficulties with trade finance. Yet, indirectly, the financial crisis—through its effects on global demand and price volatility—led to deterioration of firms' creditworthiness and a decline in their access to trade finance. Moreover, the survey underscores the differentiated impact the crisis may have had by firm type: Scarce bank finance reportedly was channeled mainly to firms with established exporting records and regular customer relations, leaving small and medium enterprises (SMEs) and new entrants that lacked relationships with banks and customers in a dire situation.

Chapter 9: Financial Crises and African Trade

Nicolas Berman and Philippe Martin also focus their analysis on the impact of the crisis on Sub-Saharan Africa. The authors find that African exporters are more vulnerable to a financial crisis in importing countries given the concentration of African exports in primary goods as well as the high dependence of African exports on trade finance.

Nonetheless, they also find that the direct effects of the crisis may have been weaker because of the relative insulation and underdevelopment of the financial system in most Sub-Saharan African countries, and that the indirect effect through trade may be stronger. During a financial crisis—when uncertainty and risk are high, and trust and liquidity are low—banks and firms in importing countries tend to first cut exposure and credit to countries that they perceive as financially riskier.

Chapter 10: The World Bank's Firm and Bank Surveys in Developing Countries

Mariem Malouche reaches similar conclusions in her report on a larger-scale firm survey commissioned by the World Bank in 14 developing countries. As of

April 2009, the low-income African countries where the survey was conducted (Ghana, Kenya, and Sierra Leone) seem to have been relatively insulated from the financial crisis. Yet the crisis did add strains on their underdeveloped domestic financial systems and adversely affected SMEs and new export firms that are seeking to diversify away from commodity exports. The firm surveys also indicated that the crisis generally affected SMEs more than large firms across regions and income levels because of a weaker capital base and bargaining power in relation to global buyers as well as banks.

SMEs also have been subject to relatively higher increases in the cost of trade finance instruments. Many SMEs operating in global supply chains or in the sectors most affected by the global recession (such as the auto industry) have been constrained through both the banking system and the drop in export revenues and buyers' liquidity. Moreover, SMEs have been more likely constrained to purchase guarantees and insurance to access trade finance. However, echoing previous survey results, most SMEs declared that, overall, their exports were severely or moderately constrained by the financial crisis, mainly because of lack of orders and directly related lack of finance on buyers' part (trade credit). Lack of finance from banks seems to have played a lesser constraining role.

Chapter 11: Private Trade Credit Insurers: The Invisible Banks

Koen J. M. van der Veer examines the role of trade finance guarantees and insurance during the crisis and estimates to what extent the reduction in the availability of trade credit insurance has affected trade.

Using a unique bilateral data set that covers the value of insured exports, premium income, and paid claims of one of the world's leading private credit insurers during 1992–2006, he finds that, on average, every euro of insured exports generates 2.3 euros of total exports. Van der Veer further estimates that, during the 2008–09 crisis, up to 9 percent of the drop in world exports and up to 20 percent of the drop in European exports could be explained by a combination of decreases in private trade-credit insurance limits and increases in insurance premiums.

Chapter 12: Trade Finance in Postcrisis Recovery of Trade Relations

Looking forward, Cosimo Beverelli, Madina Kukenova, and Nadia Rocha discuss the speed of trade recovery after a banking crisis. Using an annual data set of product-level exports to the United States from 157 countries from 1996 through 2009, they estimate the duration of each export relationship and find that, on average, 23 percent of trade relationships were interrupted by a banking crisis between 1996 and 2008.

The authors also find that trade is likely to recover faster with "experience," defined as the number of years an export relationship had been active before a banking crisis hit. Moreover, trade finance, measured by firms' financial dependence, does not appear to affect the recovery of trade relations after a banking crisis. These findings corroborate earlier results that small and relatively inexperienced firms are likely to be the most vulnerable to banking crises, and they also indicate that these firms will have more difficulty surviving crises and recovering.

Section 3: Government Trade Finance Intervention during Crises

Notwithstanding uncertainty about the size of the trade finance gap and its potential role in the drop in trade, governments around the world were compelled in the fall of 2008 to intervene to mitigate the impact of the crisis on their domestic economies. The exceptional character of the crisis called for immediate actions:

- U.S. and European governments with fiscal capacity instituted bailout programs for their financial sectors.
- Governments in developing countries and emerging economies instituted expansionary fiscal and monetary policies.
- International institutions rapidly scaled up their trade finance programs and lending to budget-constrained countries.

As is often the case when governments intervene to correct supposed market distortions, some policy analysts wondered how to make such interventions the most effective and the least distortionary.

Chapter 13: The Theoretical Case for Trade Finance Intervention

On a theoretical level, Tore Ellingsen and Jonas Vlachos argue in favor of trade finance intervention during a liquidity crisis because it mitigates the problems that arise—particularly for international finance—when firms hoard cash. Because international loan enforcement is weaker than domestic enforcement, sellers are less willing to keep international loans on their books, and it is the seller's insistence on immediate payment that creates the demand for liquidity in the first place.

The authors also contend that multilateral organizations should support trade finance specifically, rather than providing funding more broadly, because domestic policy initiatives are likely to place a relatively low weight on foreigners' gains.

Because the support of trade finance typically involves supplying funds to the buyer's bank, while primarily benefiting the seller, it is easy to see how these transactions will suffer under purely domestic policies.

Chapter 14: Risks in Boosting the Availability of Trade Finance

In contrast, Jean-Jacques Hallaert argues against boosting the availability of trade finance. First, like other analysts, he argues that trade finance is unlikely to have contributed significantly to the plunge in international trade in the 2008–09 crisis. The cost of trade finance was a greater problem than its availability. Rather than trying to increase the supply of trade finance per se, policy makers should help credit flows in general to return to normal.

Second, Hallaert contends that boosting the supply of trade finance is risky and probably not the best use of scarce public resources. Moreover, encouraging export credit agencies (ECAs) to take more risks could result in fiscal contingent liabilities.

Chapter 15: Trade Finance during Crises—Market Adjustment or Market Failure?

For Jean-Pierre Chauffour and Thomas Farole, a critical question is therefore whether the supply of trade finance declined because of market or government failures, and, hence, whether there is a rationale for public intervention to address such failures. Two broad cases that would create a real trade finance gap would be (a) insufficient supply ("missing markets") or (b) supply at prices temporarily too high to meet demand ("overshooting markets")—both of which may have had temporary relevance in fall 2008.

Drawing upon the lessons from past crises, Chauffour and Farole devise a set of 10 principles for effective public actions in support of trade finance:

1. Targeting interventions to address specific failures
2. Ensuring a holistic response that addresses the wider liquidity issues of banks
3. Channeling the response through existing mechanisms and institutions
4. Ensuring collective action in the response across countries and regions
5. Addressing both risk and liquidity issues
6. Recognizing the importance of banks in developed countries to free up trade finance for emerging-market exporters
7. Promoting greater use of interfirm credit and products such as factoring
8. Maintaining a level playing field in terms of risk weight

9. Improving transparency in the trade finance market
10. Avoiding moral hazard and crowding out commercial banks by setting clear time limits and exit strategies for intervention programs and by sharing rather than fully underwriting risk.

Chapter 16: Export Credit Agencies in Developing Countries

Jean-Pierre Chauffour, Christian Saborowski, and Ahmet I. Soylemezoglu assess the case for policy makers to support setting up ECAs in response to financial crises—focusing in particular on low-income economies, which often suffer from sovereign debt problems, weak institutional capacity, poor governance practices, and difficulties in applying the rule of law.

Although expansion of ECA operations can mitigate credit risk and keep trade finance markets from drying up, they argue that a developing country should establish an ECA only after careful evaluation of its potential impact on both the financial and the real sectors of the economy. The authors advise extreme caution in setting up ECAs in low-income contexts and highlight the factors that policy makers should consider.

Section 4: Institutional and Regulatory Support for Trade Finance

In response to the financial crisis, many governments put in place programs that either injected liquidity in banks or provided fiscal and monetary stimulus to the economy, sometimes directly in support of affected exporting firms. Central banks with large foreign exchange reserves could supply foreign currency to local banks and importers, generally through repurchase agreements. And government intervention was not reserved to developed countries. The central banks of Argentina, Brazil, India, Indonesia, the Republic of Korea, and South Africa, to name a few, also massively supported their local banks.

The measures helped mitigate the global decline in output and trade flows and directly and indirectly supported the provision of trade finance—stimulating more confidence in the outlook of individual countries, reducing risk premiums, and providing more direct financing to financial institutions. However, many developing countries were not in a position to extend credit or expand existing trade finance facilities and therefore needed support.

While economists and other experts argued about the suitability of intervening or not intervening, policy makers and development institutions were facing a historic trade collapse and felt the pressure to act swiftly. A look back at their actions indicates that the 10 principles described above were largely followed. The response

of international financial institutions was immediate and of a magnitude unseen in recent history. In particular, multinational and regional development banks mostly scaled up existing instruments and acted in cooperation with other trade finance institutions. Capacities in certain activities were enhanced significantly as early as fall 2008. As soon as the world economy and trade flows showed signs of picking up, governments began to withdraw the support measures put in place at the peak of the crisis.

The expansion of trade finance programs notwithstanding, another important concern has been the possible adverse effect of the new banking regulations under Basel II and Basel III on the provision of trade finance. In the immediate aftermath of the crisis, the World Trade Organization (WTO), the ICC, BAFT-IFSA, a number of private banks, and others sought to draw attention to (a) the preferential regulatory treatment of trade finance under the Basel I framework, in recognition of its safe, mostly short-term, and self-liquidating character, and (b) their concerns that the implementation of some Basel II provisions had proved difficult for trade. At the 2009 G-20 summit in London, flexibility in the application of these provisions was explicitly requested. Moreover, the WTO and the banking sector argue that Basel II and proposed Basel III rules, as they apply to trade finance, may significantly affect banks' ability to provide trade finance at affordable prices to businesses, to increase trade pricing, and to reduce trade finance capacity and world trade, especially in the direction of poor countries.

Chapter 17: World Trade Organization Response

Marc Auboin rationalizes the government actions in support of trade finance because of the potential damage to the real economy from shrinking trade finance. International supply-chain arrangements globalized not only production, but also trade finance. Sophisticated supply-chain financing operations—including those for SMEs—rely on a high level of trust and confidence in global suppliers that they will deliver their share of the value added and have the necessary financial means to produce and export it in a timely manner. Any disruption in the financial sector's ability to provide working capital or preshipment export finance, to issue or endorse letters of credit, or to deliver export credit insurance could create a gap in complex, outward-processing assembly operations and lead by itself to a contraction in trade and output.

As such, Auboin underlines the institutional and economic case for the WTO to be concerned and involved in trade finance. He also stresses the importance of cooperation, arguing that one clear lesson from the Asian financial crisis is that—in periods prone to lack of trust and transparency as well as to herd behavior—all actors, including private banks, ECAs, and regional development banks, should

pool their resources to the extent practicable. Cooperation among players is particularly important in the absence of a comprehensive and continuous data set on trade finance flows.

Chapter 18: World Bank Group's Response

As Bonnie Galat and Hyung Ahn recount, the World Bank Group, through the International Finance Corporation (IFC), was quick to act—strengthening its trade facilitation programs between November 2008 and April 2009. The IFC Global Trade Finance Program (GTFP) doubled its revolving ceiling to $3 billion in late 2008 in support of emerging markets' trade finance.

Leveraging the experience gained from the GTFP, the IFC launched the Global Trade Liquidity Program (GTLP) in July 2009 to rapidly mobilize and channel funding to support underserved developing-country markets by providing trade credit lines and refinancing portfolios of trade assets held by selected banks. Additionally, the new program was premised on leveraging the IFC funding by creating a historic collaboration with other international financial institutions, which also contributed their financial resources to the GTLP. Both programs have successfully facilitated trade during the crisis period. As the world economy recovers from the crisis, the IFC will bring the GTLP to an end, starting in 2012.

Chapter 19: Regional Development Banks' Response

Rudolf Putz, Ghazi Ben Ahmed, Steven Beck, and Daniela Carrera describe the impact of the financial crisis on regional trade and trade finance as well as the way four regional development banks quickly responded by scaling up their trade finance facilities.

The European Bank for Reconstruction and Development increased the overall program limit of its Trade Facilitation Program from €800 million to €1.5 billion. The Asian Development Bank ramped up the activities of its Trade Finance Program to support $2 billion in trade in 2009, an increase of more than 300 percent over 2008. Further enhancements of these programs were agreed on at the G-20 summits, in particular the already-noted IFC's establishment of a liquidity pool allowing cofinancing operations with banks in developing countries. From this perspective, the African Development Bank established a $1 billion Trade Finance Initiative in January 2009 as part of its broader package of crisis response initiatives.

For its part, the Inter-American Development Bank (IDB) had already put in place its Trade Finance Reactivation Program (TFRP) when the crisis hit. The TFRP supported the IDB's fast response in Latin America and the Caribbean, strengthening supply-side capacity and trade-related infrastructure. In addition,

the Trade Finance Facilitation Program (TFFP), implemented in 2005, proved an effective fast-delivery vehicle for not only mitigating the effects of the liquidity crisis, but also expanding trade finance for financial intermediaries and their clients.

Chapter 20: Berne Union Response

The Berne Union (BU)—the leading global association for export credit and investment insurance—counts the major private credit insurers as well as most ECAs worldwide among its members. As Fabrice Morel explains, ECAs stepped in during the 2008–09 financial crisis to provide programs for short-term lending of working capital and credit guarantees aimed at SMEs.

For certain countries, the BU commitment was substantial (for example, in Germany and Japan). In some countries, large lines of credit were granted to secure supplies with key trading partners (for example, in the U.S. relationships with China and Korea), while in some other countries, cooperation centered on support for regional trade (in particular, supply-chain operations).

Chapter 21: International Chamber of Commerce Response

Over the past three years, the ICC developed intelligence gathering initiatives in trade finance to promote a banking model that would continue to finance a sustained expansion of international trade, even in difficult times. Thierry J. Senechal illustrates how the ICC addressed the lack of reliable information in trade finance.

He reviews measures undertaken by ICC in the midst of the financial crisis, then discusses the market intelligence projects developed by the ICC Banking Commission—in particular, the Global Surveys on Trade and Finance designed to gain an accurate snapshot of the prevailing market trends and to gauge future expectations for global trade and traditional trade finance. Senechal also discusses key findings of the ICC research contained in the Trade Finance Register, including the initial finding from a first set of data that trade finance is a relatively low-risk asset class (ICC 2011), and concludes by discussing future patterns of international cooperation and the need to establish a new set of regulations to supervise banks.

Chapter 22: Private Bankers' Response

Donna K. Alexander of BAFT-IFSA and representatives of three global banks—Tan Kah Chye (Standard Chartered Bank), Adnan Ghani (Royal Bank of Scotland), and Jean-François Lambert (HSBC)—describe their experience from the ground

at the climax of the crisis and the bankers' efforts to maintain their trade finance credit lines throughout the crisis.

Although the trade finance market has largely recovered from its trough in late 2008, the authors are also adamant that implementation of the Basel III recommendations by the Basel Committee on Banking Supervision (BCBS) could result in decreased trade flows for trade-focused banks at a time when those flows are essential to supporting global economic recovery. They argue that the new prudential liquidity and capital requirements may result in an increase in the cost of lending across the board but would disproportionately affect trade finance. In their view, trade finance exposures are small in size, self-liquidating, and transactional in nature. They also tend to be short term (often 180 days or less) and more geographically diversified. Finally, they note that trade exposures historically have had low default rates and, even in default scenarios, have had better and quicker recoveries than other asset classes because clients tend to repay working capital first to keep their cash-flow engines running.

In the view of bank regulators and others, the changes in the Basel rules aim to achieve a sounder banking sector and to establish more risk-sensitive means for calculating risk weights for various obligors. In response to these concerns, the BCBS conducted a comprehensive quantitative impact study to assess the impact of capital adequacy standards announced in July 2009 and the Basel III capital and liquidity proposals published in December 2009. As a result, the BCBS maintained the proposed capital and liquidity standards, which it claims will help strengthen the regulatory environment by gradually raising the level of high-quality capital in the banking system, increasing liquidity buffers, and reducing unstable funding structures. Although under Basel III the risk-based capital required to be held against all credit exposures will be higher—because of both the higher capital ratios and the increased emphasis on equity capital—the increase in capital for trade finance exposures is not any greater than for other exposures. In December 2010, the BCBS issued the Basel III rules text previously endorsed by the G-20 at its November 2010 summit in Seoul.

Chapter 23: Trade Finance Issues under the Current Basel Regulatory Framework

Marc Auboin expresses hope that the regulatory debate will remain open and will lead to a better understanding of both bankers' and regulators' views, ultimately resulting in a set of regulations perceived as right and fair. Data collection and further analysis of the impact of the new rules are necessary.

The ICC has contributed to this debate by focusing its efforts on addressing the lack of reliable information in trade finance and mobilizing resources to engage in

a constructive dialogue with regulators to bridge the information gap. This kind of coordination would assist in developing user-friendly intelligence for both the public and the private sectors.

The WTO and the World Bank have recommended that the G-20 examine the potential impact of the Basel II and III provisions on the availability of trade finance—with a particular focus on developing-countries' trade—and take stock of such examination at the 2011 G-20 summit in Cannes, France.

Main Takeaways from the Crisis

1. *Lack of trade finance data is impeding the formulation of policies.* The absence of data capturing all kinds of trade finance (bank-intermediated and interfirm) has proven a major constraint to measuring the extent of the trade finance shortfall and its effect on trade flows during the financial crisis. The ICC's buildup of the Trade Finance Register is a significant step forward because it will create a living database of the trade finance market and may help demonstrate the resilience of the trade finance business.
2. *Trade finance matters for trade.* Results from bank and firm surveys undertaken during the crisis to overcome the lack of trade finance data, as well as postcrisis empirical analyses, all indicate tighter trade finance conditions during the crisis and significant adverse effects on trade flows.
3. *Not all forms of trade finance are equal.* Although the crisis constrained both bank-intermediated trade finance and interfirm trade credit, empirical findings suggest that interfirm trade credit may be more resilient than bank-intermediated trade finance in times of crisis. Trade credit offers features that make it safer, given the better information that buyers and suppliers have on creditworthiness of clients and the liquidating feature of trade credit. Although trade credit (in particular, among supply chains) could be a factor of contagion leading to sharp drops in trade during crises, it also contributes to a quicker rebound when economies recover—a pattern observed in Southeast Asia during the crisis.
4. *Trade finance was not the main driver behind the 2008 trade collapse.* The shortfall in trade finance seems to have been a moderate factor in the sharp 2008–09 drop in trade flows. Trade finance and trade volumes dropped mostly as a result of the spillover of the financial crisis to the real economy, including through lower activity and destocking. The demand effect was further amplified for firms operating in global supply chains or in sectors that were most affected by the slow global economy, such as the auto industry.
5. *SMEs have been particularly vulnerable to the tightening of trade finance conditions.* The lack of access to affordable trade finance has been particularly

detrimental for certain firms (for example, SMEs and new exporters), especially in developing countries with underdeveloped financial systems and weak contractual enforcement systems. SMEs have been more affected than large firms because of a weaker capital base and bargaining power in relation to global buyers and banks. Also, SMEs have been more subject to high increases in the cost of trade finance instruments, with banks being more risk averse and preferring to work with sounder large, multinational firms.

6. *New Basel regulations may have unnecessarily constrained trade finance supply during the crisis and in the postcrisis environment.* Bankers and some international institutions consider Basel II regulations to have further constrained the supply of trade finance during the crisis, especially for banks based in low-income countries (as well as second- and third-tier banks in middle-income countries). They have called on regulators to carefully study the potential unforeseen impact of proposed Basel III changes on trade finance. In particular, banks argue that the increase in the new liquidity and capital prudential requirements and the nonrecognition of trade assets as highly liquid and safe would lead to a significant increase in the cost of banks providing trade finance, which in turn will lead to a lower supply, higher prices, or both. Conversely, regulators have maintained the view that, under Basel II and III, the increase in capital for trade finance exposures is not any greater than for other exposures. The new leverage ratio and the new liquidity rules will not have any systematic impact on trade finance, though they may affect a few large, complex, or wholesale-funded banks, albeit for reasons unrelated to their trade finance activities. Even in those cases, the impact on trade finance is not expected to be greater than on any other class of asset. Given the diverging views, the BCBS has established a working group to study impacts of regulation on trade finance, and—at the request of the World Bank and the WTO—the G-20 will take stock of the situation at its 2011 meeting.
7. *The international community responded swiftly to the trade finance crisis.* The G-20 orchestrated quick and collective actions from governments and the international financial community. This led to a set of cofinancing arrangements among development banks, export credit agencies, foreign commercial banks, private insurance underwriters, and investment funds. While part of the G-20 support was directed mostly at a handful of large banks and international banking groups, the support of the IFC and regional development banks—in terms of both insurance and liquidity—has targeted mainly smaller banks and banks in developing countries.
8. *A timely exit from trade finance support programs is key.* As the global economy recovers and demand rises, some governments appropriately cut back their trade finance programs to avoid displacing legitimate private sector activity.

Similarly, the IFC will wind up the GTLP, set up in response to the crisis, beginning in 2012. Setting clear time limits and exit strategies for intervention programs and sharing, rather than fully underwriting, risk are important considerations to limit moral hazard and the crowding out of commercial banks in times of financial crises.

9. *Maintaining specific programs in support of vulnerable segments of the trade finance market is also key.* Continued uncertainty in some markets (for example, low-income countries with underdeveloped financial systems and weak contractual enforcement) or among some firms (for example, SMEs and new exporters) calls for vigilance on the suitability and timing of the retrenchment of international organizations' trade finance programs. Although lack of liquidity does not seem to be the most prominent constraint anymore, the director-general of the WTO and the president of the World Bank, with the support of the heads of regional development banks, have flagged the risk that a substantial number of countries could be increasingly left out of trade finance markets and thereby unable to benefit fully from the recovery of global trade. At the Seoul G-20 meeting of November 2010, the international community expressed particular concern about low-income countries that may still be facing severe difficulties in accessing trade finance at affordable cost, particularly in import finance.
10. Finally, *an important knowledge gap remains* on the effect of trade finance on trade and the role of trade finance during crises, as well as on the appropriate banking regulations and supervisory standards for banks' trade finance portfolio exposure. This calls for a continuing analysis of the issues by academics, practitioners, and other interested stakeholders.

Notes

1. Although this range of 80–90 percent was widely reported, the source and evidence for the claim remain unclear.

2. Estimates from FImetrix (IMF-BAFT 2009) suggest that 10–20 percent of trade finance is composed of cash-in-advance payments (these mainly involve small and medium enterprise [SME] buyers, inordinately in developing countries); 45–80 percent is on open account (of which 30–40 percent is intrafirm); and 10–35 percent is bank-intermediated.

3. This is, of course, not true in all cases. Specific problems occur with products that are perishable (whose value erodes quickly or immediately) or extremely differentiated (where there is little or no market value outside the intended buyer) as well as with services (which generally cannot be collateralized).

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SECTION I

SPECIFICITY OF TRADE CREDIT AND TRADE FINANCE DURING CRISES

1

TRADE CREDIT VERSUS BANK CREDIT DURING FINANCIAL CRISES

Inessa Love

The 2008–09 global financial crisis is one of historic dimensions. Few would dispute its rank as one of the broadest, deepest, and most complex crises since the Great Depression. Its origins were in the U.S. subprime housing finance market, which showed signs of trouble in the first half of 2007. After Wall Street investment firm Lehman Brothers collapsed in September 2008, the crisis spread rapidly across institutions, markets, and borders. Both developed and developing countries faced massive failures of financial institutions and a staggering collapse in asset values.

This financial crisis was characterized by a severe credit crunch as the banks became reluctant to lend to even the highest-quality firms. Financing constraints tightened for many firms, leading them to cut investments in capital as well as research and development (R&D) and to bypass attractive investment projects (Campello, Graham, and Harvey 2009). Trade credit is an alternative source of finance provided by suppliers of raw materials and other inputs. It potentially serves as an important source of finance to financially constrained firms because suppliers might be better able than financial institutions to overcome informational asymmetries and enforcement problems. This advantage may enable suppliers to lend more liberally than banks, especially during downturns.

This chapter explores the role of trade credit and its relationship to bank credit during financial crises, including the following discussions:

- Theories of trade credit
- The relationship between trade credit and bank credit, with a focus on financial crises
- Empirical evidence from two related papers—(1) a study of the effect of the 1997 Asian financial crisis on large, publicly listed firms using data from the Worldscope database (Love, Preve, and Sarria-Allende 2007); and (2) a study of the same crisis using data on small and medium enterprises (SMEs) from World Bank enterprise surveys (Love and Zaidi 2010)—with a comparison of results from the two studies and explanations for the differences
- Findings based on the comparative analysis of the two studies.

Theories of Trade Credit

Numerous theories seek to explain the provision of trade credit by suppliers. These theories often pertain to particular aspects of market structure and product characteristics and suggest that certain industries or firms may have a greater ability to use trade credit than others. Most theories of trade credit provision fall into one of the following categories, each of which is briefly reviewed below:

- Comparative advantage in information acquisition
- Comparative advantage in liquidation
- Warranty for product quality
- Price discrimination by suppliers
- Sunk costs and customized products
- Moral hazard.

Comparative Advantage in Information Acquisition

One common explanation for existence of trade credit is based on the premise that *suppliers have a cost advantage over banks in acquisition of information* about the financial health of the buyers. For example, Mian and Smith (1992) argue that monitoring of credit quality can occur as a by-product of selling if a manufacturer's sales representatives regularly visit the borrower. Similarly, suppliers often offer a two-part trade credit, which includes a substantial discount for relatively early repayment such as a 2 percent discount for payments made within 10 days. The failure of a buyer to take this discount could serve as a strong early signal of financial distress.

Biais and Gollier (1997) assume that suppliers receive different signals than banks do about the customer's probability of default and, furthermore, that the bank will extend more credit if it observes that the supplier has offered trade credit. Similarly, Smith (1987) argues that the choice of trade credit terms can be used as a screening device to elicit information about buyers' creditworthiness.

Comparative Advantage in Liquidation

Another hypothesis about the availability of trade credit concerns *suppliers' relative advantage in liquidating repossessed goods.* Trade credit providers can liquidate the goods they repossess in the event of nonpayment much easier than specialized financial institutions can. Therefore, several authors have suggested that credit provision becomes more likely when resale of the product is easier because the credit extension allows the seller to seize and resell its product if default occurs (Mian and Smith 1992; Frank and Maksimovic 1998).

Warranty for Product Quality

Some argue that *trade credit serves as a guarantee for product quality*, under the theory that the supplier willingly extends credit to allow the customer sufficient time to test the product (Long, Malitz, and Ravid 1993). Similarly, the choice of trade credit terms offered by the supplier can signal product quality (Lee and Stowe 1993; Emery and Nayar 1998).

Price Discrimination by Suppliers

Another theory involves *price discrimination as a motive for trade credit provision by suppliers.* Low competition among suppliers in an input market may create incentives to discriminate between cash and credit customers (Brennan, Maksimovic, and Zechner 1988). This price discrimination would happen if, first, the demand elasticity (or the reservation price) of credit customers is lower than that of cash customers, and second, if there is adverse selection in the credit market.

In addition, trade credit could be used as a strategic instrument in the oligopolistic supplier market. Recent empirical evidence confirms that firms with less market power do indeed extend more credit (Fabbri and Klapper 2009) and that a customer that generates a large share of its supplier's profits tends to be offered more credit (Giannetti, Burkart, and Ellingsen 2008).

Sunk Costs and Customized Products

Repeated interactions between suppliers and customers can also result in *sunk costs, which can drive trade credit provision.* Cuñat (2007) offers a model in which supplier-customer relationships that involve tailor-made products, learning by doing, or other sources of sunk costs, generate a surplus that increases with the length of the relationship. This surplus increases the amount of credit that suppliers are willing to provide because it ties firms to particular suppliers, thereby increasing the scope for punishment of nonpayment.

One theory includes product quality guarantees, market power, and sunk costs to generate a model of trade credit terms that are uniform within industries and differ across industries (Smith 1987). Ng, Smith, and Smith (1999) present empirical support for this model by documenting wide variation in credit terms *across* industries but little variation *within* industries.

Moral Hazard

Burkart and Ellingsen (2004) argue that *moral hazard is the key reason for existence of trade credit.* Firms with access to funding to buy illiquid assets are less tempted to engage in activities that are undesirable from the investors' point of view. Because in-kind credit is too difficult to divert to other uses, potential moral hazard problems on the borrower's side are reduced when trade credit is extended.

Relationship between Bank Credit and Trade Credit

So far, this chapter has discussed the reasons for the existence of trade credit. Because trade credit is, in some ways, similar to short-term bank credit (especially working capital finance offered by the banks), it is important to examine the relationship between trade credit and bank credit. This relationship has important implications for trade finance policy.

There is no clear-cut evidence concerning whether trade credit and bank credit are complements or substitutes. Some researchers posit that trade credit is complementary to bank credit. For example, Biais and Gollier (1997) hypothesize that the extension of trade credit reveals favorable information to other lenders, thereby increasing their willingness to lend. Giannetti, Burkart, and Ellingsen (2008) find empirical support for this argument, specifically that firms that use trade credit tend to borrow from a larger number of banks, use more distant banks, and have shorter relationships with their banks. Additionally, these firms receive better deals from banks—in particular, lower fees for their credit lines. This analysis suggests that trade credit and bank credit are complements rather than substitutes.

Other literature has argued that trade credit could compensate for unavailable bank credit, serving as a substitute. For example, Fisman and Love (2003) find that firms in industries with greater reliance on trade credit exhibit faster growth in countries with low levels of financial development. They argue that trade credit provides an alternative source of funds, which allows higher growth rates in industries that can be characterized as intense trade credit users.

In addition, trade creditors may have more incentives than banks to support firms that experience temporary liquidity shocks. For example, because trade credit is predominantly based on long-term relationships and likely to involve sunk costs, suppliers have an interest in keeping their customers in business (Cuñat 2007). To maintain a product-market relationship, trade creditors that are more dependent on their customers' business grant more credit to financially distressed customers than banks do (Wilner 2000). During monetary contractions, small firms are more likely to rely on supplier credit (Nilsen 2002). In addition, credit-constrained firms extend less trade credit to their customers and take more trade credit from their suppliers (Petersen and Rajan 1997).

Whether they are complements or substitutes, trade credit and bank credit have an important relationship during financial crises, which are characterized by the sharp contraction of bank lending. During financial crises, the banks become more reluctant to lend, thus exacerbating the financing constraints. In turn, firms cut investments in capital and R&D and are more likely to bypass attractive investment projects (Campello, Graham, and Harvey 2009). A priori, it is not clear whether trade finance can serve as a substitute for bank finance during the crisis, or whether, because of their complementarity, the collapse in one may exacerbate the collapse in the other.

In a systemic financial crisis, liquidity shocks experienced by some firms might be transmitted to other firms through supply credit chains. The existing theoretical models (for example, Cuñat 2007 and Wilner 2000) deal only with a single customer's distress event rather than a systemic shock that might affect all suppliers and customers alike. During such periods, the supply chains might instead propagate and amplify the liquidity shocks (Raddatz 2010).

The intuition behind the propagation mechanism is straightforward: a firm that faces a default by its customers may run into liquidity problems that force it to default on its own suppliers. Therefore, in a network of firms that borrow from each other, a temporary shock to the liquidity of some firms may cause a chain reaction in which other firms also suffer financial difficulties, resulting in a large and persistent decline in aggregate activity. Liquidity shocks are passed down the supply chain from defaulting customers to a firm's suppliers, while firms with access to outside liquidity absorb these shocks with their "deep pockets" (Boissay and Gropp 2007).

During a financial crisis, such "liquidity shock chains" can operate in reverse. Firms that face tightening financing constraints as a result of bank credit contraction may withdraw credit from their customers. Thus, they pass the liquidity shock up the supply chain; that is, their customers might cut the credit to their customers, and so on. The firms that are privileged enough to have access to outside finance—that is, the "deep pockets" (Boissay and Gropp 2007)—might be the ones most severely affected by the crisis. After all, if a firm does not have bank finance to start with, the banking crisis will have little direct effect on its financial condition. The suppliers to financially constrained firms may also reduce the trade credit they extend, either because they are financially constrained (if the liquidity shocks are highly correlated) or because they choose to withdraw credit from their less-creditworthy customers. Thus, the supply chains might propagate the liquidity shocks and exacerbate the impact of the financial crisis.

Impact of Financial Crisis on Trade Credit: Empirical Evidence

Two recent studies examined trade credit behavior during the 1997 Asian financial crisis. This section summarizes the empirical results from each paper, and the next section discusses the papers' commonalities and differences.

Trade Credit in Large, Publicly Traded Firms

Love, Preve, and Sarria-Allende (2007) studied two of the four major financial crises during the 1990s: the Mexican devaluation of late 1994 and the Southeast Asia currency crisis of mid-1997, which affected Indonesia, Malaysia, the Philippines, the Republic of Korea, and Thailand. The authors used data from the Worldscope database, which contains observations on publicly traded firms representing about 95 percent of the world's market value.[1] Because this database focuses largely on those firms in which there is significant international investor interest, the sample represents the largest firms in each country.

The nature of this dataset, which comes from audited financial statements, dictated the trade credit measures used in the analysis. The two main variables of interest are accounts payable and accounts receivable, which show the amount of trade credit that firms obtain from suppliers and provide to customers, respectively. These trade credit variables are scaled using sales (for receivables) and cost of goods sold (for payables). These ratios capture the importance of trade credit in the financing of economic activity. Using ratios scaled by flow variables controls for declines in economic activity (such as sales) that are commonly associated with crises.

The study presents two types of results: the aggregate behavior of trade credit (the average for all firms) and an analysis of the heterogeneous responses of firms of varying financial health preceding the crisis.

Aggregate behavior of trade credit

Love, Preve, and Sarria-Allende (2007) found two main aggregate results: (a) a short-lived *increase* in the amount of trade credit provided and received immediately after a crisis and (b) a pronounced *decline* in the amount of credit provided (as opposed to credit received) in the aftermath of the crisis, an amount that continued to contract for several years.

The first result has a straightforward plausible explanation: after a crisis hits, buyers stop paying suppliers, and credit accumulates until either the suppliers take the write-downs or the buyers resume repayment. In other words, in the chaos of a crisis, everybody stops paying back their trade credit debt, at least temporarily. Indeed, Cuñat (2007) argues that the ability to delay repayment on trade credit in the case of temporary illiquidity is among the likely reasons for the high costs of trade credit.

However, the second result—the prolonged decline in trade credit provided—is harder to disentangle because there are two alternative explanations: on the one hand, a decline in the provision of trade credit could be the result of a supply effect; that is, firms that lack access to bank financing reduce the supply of credit they are willing to extend to their customers. On the other hand, this same pattern could be consistent with a demand-side story—that customers of these firms become less willing to accept more credit.

Analysis of heterogeneous firm responses

To disentangle the reason for decline in trade credit after the crisis, Love, Preve, and Sarria-Allende (2007) analyze the heterogeneous responses of firms, allowing a unique identification strategy that relies on precrisis indicators of a firm's vulnerability to financial crises. Firms in more vulnerable financial positions are more likely to be negatively affected by crisis-related events and are thus more likely to reduce their supply of credit to customers while increasing their own use of credit from suppliers. The authors used a firm's reliance on short-term debt as the main indicator of financial vulnerability to a crisis. Firms with a high proportion of short-term debt are more likely to be disadvantaged by a crisis because they would need to roll over their debt at a time when it is either impossible or extremely costly to do so (because interest rates increase sharply during the crisis).

The main findings of the heterogeneous analysis is that firms with high short-term debt reduce their provision of trade credit relatively more in response to an aggregate contraction in bank credit, which is consistent with a reduction in the supply of trade credit caused by the crisis. The authors also find similar results using alternative indicators of a firm's financial health, such as foreign currency-denominated debt, cash stocks, and cash flows.

These results are consistent with the redistribution view advanced by Meltzer (1960), Petersen and Rajan (1997), and Nilsen (2002), among others. This view

posits that firms with better access to capital will redistribute the credit they receive to less-advantaged firms through trade credit. However, for redistribution to take place, some firms first need to raise external finance to pass on to less-privileged firms. For example, during monetary contractions in the United States, large firms have increased the issuance of commercial paper (Calomiris, Himmelberg, and Wachtel 1995) and accelerated bank credit growth, while small firms have reduced these instruments (Gertler and Gilchrist 1994). Such access to alternative sources of finance in the United States likely explains the aggregate increase in trade credit during monetary contractions (Nilsen 2002). However, during a financial crisis, alternative sources of financing become scarce as stock markets crash and foreign lenders and investors pull out their money. That is, as all the potential sources of funds dry up, there may be nothing left to redistribute through trade credit.

Love, Preve, and Sarria-Allende (2007) argue that their findings expand the traditional "redistribution view" because redistribution shuts down when all sources of finance dry up, such as during a financial crisis. The credit crunch that affects financial lenders also affects nonfinancial lenders of trade credit. Consistent with this argument, the authors also find that countries that experience a sharper decline in bank credit also experience a sharper decline in trade credit.

Trade Credit in SMEs

Love and Zaidi (2010) extend the work of Love, Preve, and Sarria-Allende (2007) along two dimensions. First, they study trade credit behavior of SMEs, which commonly have less access than large public firms to bank finance. Small firms also differ in their trade credit behavior (Nilsen 2002; Boissay and Gropp 2007). Second, the authors use detailed data on trade credit terms—the length of payables and receivables and early payment discounts—while Love, Preve, and Sarria-Allende (2007) use only data on the amount of credit from firms' balance sheets.

Love and Zaidi (2010) use a unique dataset based on a World Bank survey after the 1997 financial crisis in four East Asian countries: Indonesia, Korea, the Philippines, and Thailand. About 3,000 firms were surveyed about the impact of crisis, access to sources of finance before and after the crisis, and their prospects for recovery.

As in the earlier study, Love and Zaidi obtained two types of results: aggregate average trade-credit behavior after the crisis and the heterogeneous results for firms with various financial positions.

Aggregate behavior of trade credit

The aggregate results show that, on average, the use of trade credit declines after the crisis—shown in the decline in the percentage of inputs the sample firms buy

on credit from their suppliers (accounts payable) and the percentage of sales they extend on credit to their customers (accounts receivable). In addition, the length of payables declines in three out of four countries, but there is mixed evidence on the length of receivables.

Notably, the cost of credit increases because firms offer higher discounts on cash repayments after the crisis. Thus, trade credit use becomes more expensive and more restrictive during the crisis than it was before the crisis.

Analysis of heterogeneous firm responses

In studying the heterogeneous responses of financially constrained firms, the authors use two key indicators. The first is an objective measure that separates firms that applied for a bank loan but were declined the loan before or after the crisis. Firms that submitted a loan application have revealed their demand for more bank finance, and the rejection indicates financing constraints. The second measure is a subjective perception measure based on survey responses that access to domestic bank finance became more restrictive during the crisis.

Love and Zaidi (2010) find two main results from the heterogeneous responses. First, financially constrained firms extend less credit to their customers (in terms of both percentage of output sold on credit and length of time they allow their customers for payment), and they charge more for the trade credit they do offer. Second, financially constrained firms buy a smaller percentage of inputs on credit, have a shorter length of time to repay the credit to their suppliers, and have to pay a higher cost for trade credit.

The first finding has an easy interpretation: firms that face financial constraints have to cut the credit they provide to their customers. Thus, they pass on their liquidity shock upstream to their customers, who in turn may cut trade credit to their own customers. In this way, the liquidity shock travels along the supply chain, consistent with the previous evidence in Boissay and Gropp (2007) and Raddatz (2010).

The second finding is more difficult to disentangle because the dataset does not contain any information on the financial position of the firm's suppliers. Two possible cases might affect the interpretation of this finding. First, the suppliers of the financially constrained firms might themselves be financially constrained. Note that, on average, all firms are expected to become more constrained during the crisis because of the systematic nature of financial crisis. However, some firms are likely to be more constrained than others, and the suppliers of more severely constrained firms might also be more severely constrained than an average firm. In other words, this case implies a high correlation between suppliers' and customers' financing constraints, which is consistent with Raddatz (2010). If this is the case, the second result has the same interpretation as the first: that suppliers simply pass their liquidity shock up the supply chain to their customers.

However, an alternative interpretation is possible if suppliers' financing constraints are not highly correlated with their customer's financing constraints. In other words, suppliers of firms identified as financially constrained might, on average, be no different (at least in the degree of financing constraint) from suppliers of firms identified as unconstrained. In this case, the second result suggests that suppliers of financially constrained firms are not willing to lend them a "helping hand," and they withdraw credit from less-creditworthy firms.

Although Love and Zaidi (2010) cannot disentangle which of the two possibilities is indeed the case, their results unambiguously show that negative shocks to the supply of bank credit cannot be mitigated by an increase of trade credit—and this finding has clear policy implications.

Comparison of the Two Studies

The aggregate results of both studies appear to tell the same story—of a prolonged decline in trade credit provision after financial crises. Thus, one of the main results is the same in both studies.

The ancillary aggregate result of Love, Preve, and Sarria-Allende (2007)—that of a temporary increase in trade credit during the initial stage of the crisis—is not borne out in the second study (Love and Zaidi 2010). The differences in the datasets can easily explain this difference. Love, Preve, and Sarria-Allende (2007) used a panel of annual observations that allowed the authors to track responses of firms over time—that is, in Year 0 (the year of the crisis) and several subsequent years. However, Love and Zaidi (2010) used data containing only two observations—one before crisis and another after the crisis. Thus, no time series patterns can be observed. It is plausible that SMEs also experienced a short-lived increase in trade credit before the prolonged decline; this finding would still be consistent with the observed patterns.

The two studies show both differences and similarities among the heterogeneous results. Both find that firms in more difficult financial positions cut trade credit to their customers. This is an important finding, which is robust to different samples (large firms versus SMEs) and different definitions of financial position (short-term debt in one case and subjective or objective measures of financial constraints in another case). Thus, on the receivable side, both papers' findings are similar.

The differences, however, exist on the payable side—that is, the credit that sample firms obtained from their suppliers. Love and Zaidi (2010) find that financially constrained firms received less trade credit from their suppliers during the crisis, either because suppliers themselves were constrained or because they were unwilling to offer assistance to their distressed customers. However,

Love, Preve, and Sarria-Allende (2007) find that more-constrained firms (firms with higher proportions of short-term debt) increased their reliance on trade credit during the crisis.

This difference may arise because of the differences in the sample composition. In Love, Preve, and Sarria-Allende (2007), the sample consisted of large, publicly traded firms, while the Love and Zaidi (2010) sample consisted mainly of private SMEs. Large, publicly traded firms have more market power, which increases their suppliers' willingness to extend them extra trade credit (Brennan, Maksimovic, and Zechner 1988; Giannetti, Burkart, and Ellingsen 2008). Consistent with this hypothesis, Love and Zaidi (2010) look separately at the largest firms in their sample (dominated by SMEs) and find that larger firms increased their reliance on trade credit during the crisis (in terms of increasing the percentage of inputs bought on credit).

Despite the differences in the datasets, sample firms, and study design, the two studies appear to have more similarities than differences. The aggregate results of both papers suggest a prolonged decline in trade credit after the crisis. The heterogeneous results suggest that this decline is due to the supply effect because firms that are more constrained in their access to bank finance cut their trade credit provision more than firms that are less constrained. Both studies are consistent with the view that liquidity shocks propagate along the supply chain (Raddatz 2010).

Conclusions

The studies discussed above show that trade credit cannot fully compensate for the long-term contraction in bank credit that stems from a financial crisis. These findings also suggest a complementarity of bank credit and trade credit, which can operate in both directions. In other words, a contraction in trade credit may exacerbate a contraction in bank credit, or a contraction in bank credit may lead to a collapse in trade credit.

These findings have a clear implication for trade finance policy during financial crises. Specifically, they suggest that there is sufficient rationale for supporting trade finance during a crisis. Such support may come in the form of liquidity injection, risk mitigation, addressing specific market failures, providing information, and mitigating externalities that exist in supply credit chains.

Note

1. The Worldscope database, a Thomson Reuters product, is accessible online at http://thomsonreuters.com/products_services/financial/financial_products/a-z/worldscope_fundamentals/.

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2

FIRMS' TRADE-FINANCING DECISIONS DURING CRISES

Daniela Fabbri and Anna Maria C. Menichini

Firms procure funds not only from specialized financial intermediaries, but also from suppliers, generally by delaying payments. The empirical evidence on trade credit raises questions that are hard to reconcile with existing theories:

- What justifies the widespread use of trade credit by financially unconstrained firms that have access to seemingly cheaper alternative sources?
- Why is the reliance on trade credit not always increasing in the degree of credit rationing?
- Does input lending affect the borrower's choice of inputs?
- Does the degree of creditor protection affect financing and input choices?

This chapter addresses these questions in a unified framework.

A consensus exists that trade credit is most common among firms that face borrowing constraints. This follows from the assumption that trade credit is more expensive than bank loans. According to this view, reliance on trade credit should increase in credit rationing, but the empirical evidence is not generally consistent with this common belief. Large U.S. firms (presumably less likely to be credit-constrained) rely more heavily than small firms on trade credit, with accounts payable averaging 11.6 percent and 4.4 percent of sales for large and small firms, respectively (Petersen and Rajan 1997). Similarly, in the Italian manufacturing sector, trade credit finances, on average, 38.1 percent of the

input purchases of nonrationed firms and 37.5 percent of rationed ones (Marotta 2005).

A common feature in the use of trade credit, which is independent of the degree of credit rationing, is that the supplier's lending is tied closely to the value of the input. Given that not all inputs can be purchased on account, trade credit is likely to go together with some bias in the input combination. This relation seems to be confirmed by scattered evidence on financing and technological choices. Some papers find greater use of trade credit in countries with less creditor protection, such as developing countries (Rajan and Zingales 1995; La Porta et al. 1998; Demirgüç-Kunt and Maksimovic 2001; Fisman and Love 2003). Further evidence shows that firms in developing countries have a higher proportion of fixed assets and fewer intangibles than firms in developed countries (Demirgüç-Kunt and Maksimovic 1999). Although fragmented, these findings suggest a cross-country correlation between financing and input choices and identify the degree of creditor protection as a possible explanation.

To account for the foregoing stylized facts, we propose a model with collateralized bank and trade credit. Firms face uncertain demand and choose between two inputs with different degrees of observability and collateral value: tangibles and intangibles. Firms are opportunistic in that they can divert borrowed resources for private uses, but they get a lower return when diverting inputs instead of cash. Borrowers' opportunism might generate credit constraints.

Firms choose between two types of financier: banks and suppliers. Banks are specialized intermediaries and have a cost advantage in providing finance. Suppliers have both information and liquidation advantages in providing finance. The information advantage derives from suppliers' ability to observe costlessly that an input transaction has taken place. Coupled with the lower profitability of input diversion, this advantage mitigates borrowers' opportunism and relaxes firms' financial constraints. The liquidation advantage derives from the suppliers' ability to extract a greater liquidation value from the inputs collateralized in case of default. Uncertainty and multiple inputs in a model with moral hazard are the key notions used to address the open questions above.

An original feature of the model presented here is the explanation of why firms with unused lines of bank credit could demand trade credit: even they could benefit from the liquidation advantage of their suppliers. This advantage makes trade credit cheaper than bank loans, offsetting the banks' lower cost of funds.

The liquidation advantage is sufficient by itself to explain the demand for trade credit by financially unconstrained firms. The interaction between the liquidation and the information advantages helps show why reliance on trade credit does not always increase with the stringency of financing constraints. Financially constrained firms could take trade credit for both reasons. If it is for the incentive

(to relax financial constraints), credit-rationed firms finance a larger share of their inputs by trade credit than do nonrationed firms, as theoretical literature holds. Conversely, when the liquidation motive dominates, the share of inputs purchased on account remains constant across firms with different degrees of credit rationing.

Regardless of the motives underlying the use of trade credit, suppliers always finance the inputs they sell but they never lend cash. The absence of cash lending by suppliers implies that trade credit can be used to finance only specific inputs, which in this setting are tangibles. It follows that whenever trade credit is used to relax financial constraints, a credit-rationed business can benefit from it only by distorting its input combination. This introduces a link between financing and input decisions, which the authors explore here to derive new predictions. More intensive use of trade credit goes together with a technology biased toward tangible assets, and the bias increases as the legal protection of creditors weakens. These predictions reconcile the scattered international evidence.

The chapter is related to the literature on trade credit that has sought to explain why agents should want to borrow from firms rather than from financial intermediaries. The traditional explanation is that trade credit facilitates the transaction (Ferris 1981; Brennan, Maksimovic, and Zechner 1988; Long, Malitz, and Ravid 1993; Summers and Wilson 2002) and relaxes borrowing constraints (Biais and Gollier 1997; Burkart and Ellingsen 2004), thus playing both nonfinancial and financial roles. What these theories fail to explain is why trade credit is also used by financially unconstrained firms and why resorting to trade credit does not necessarily increase with the severity of financial constraints, as the empirical literature shows.

This chapter proposes a new rationale for trade credit use in the liquidation advantage that suppliers have over other creditors, and it claims that when that advantage exceeds the bank's intermediation advantage, trade credit is used by rationed and unrationed firms alike.

Finally, the literature has disregarded the relationship between financing and input decisions and offered no explanation of why firms lend only inputs. The use of a multi-input technology allows us to fill these gaps.

The Model

A risk-neutral entrepreneur has an investment project that uses a tangible and an intangible input. The tangible input can be interpreted as raw material and physical capital, and intangibles as skilled labor. Inputs can be purchased q and then invested in the production process I. The amount of input purchased is observed only by the suppliers, while the amount invested is totally unobservable and is

converted into a verifiable output whose value depends on the demand conditions. At times of high demand, with probability p, invested inputs produce output according to an increasing and concave production function $f(I_t, I_{nt})$. At times of low demand, there is no output, and the firm's worth is only the scrap value of unused inputs.

The entrepreneur is a price taker in both the input and output markets. The output price is normalized to 1, and so are the prices of tangible and intangible inputs.

To carry out the project, the entrepreneur uses observable internal wealth A as well as external funding from competitive banks L_B or suppliers L_S or both. Banks lend cash. The supplier of intangibles provides the input, which is fully paid for in cash. The supplier of tangibles sells the input but can also act as a financier, lending both inputs and cash.

Moral Hazard

Unobservability of investment to all parties, and of input purchases to parties other than the supplier, raise a problem of moral hazard. The entrepreneur might not invest the funds raised, either in cash or in-kind, in the venture but divert them to private uses. This problem limits the amount of credit the entrepreneur can obtain from financiers. However, the supplier can observe whether inputs have been purchased. This advantage, together with the lesser liquidity of inputs than cash, implies that moral hazard is less severe when funding comes from the supplier and not the bank.

In particular, one unit of cash gives the entrepreneur a return $\phi < 1$ if diverted, where ϕ can be interpreted as the degree of vulnerability of creditor rights; one unit of the tangible input q_t gives a return $\phi\beta_t$ if diverted, where $\beta_t < 1$ denotes the tangible input liquidity. When β_t is close to 1, the input can be resold at near the purchase price and converted into a monetary benefit. Last, diverting the intangible input gives a zero return.

Collateral Value

Tangible inputs have value when repossessed in default, while intangibles have zero collateral value. Hence, the total value of pledgeable collateral is I_t. However, different financiers have different liquidation abilities. We define $\beta_i I_t$ as the liquidation value extracted by a given financier in case of default, with $i = B$, and S referring to the bank or supplier. The supplier has a better knowledge of the resale market, so we assume $\beta_S > \beta_B = 0$, for simplicity. This makes it always efficient to pledge the collateral to the supplier in case of default.

Finally, the cost of raising one unit of funds on the market is assumed to be higher for the supplier than for the bank ($r_B < r_S$). This is consistent with the special role of banks.

Contracts

The entrepreneur-bank contract specifies the credit granted by the bank L_B and the entrepreneur's repayment obligation in case of high-demand R_B. The contract between the entrepreneur and the supplier of the tangible input specifies the credit granted by the supplier L_S, the input provision q_t, and the entrepreneur's repayment obligation R_S in case of high demand. Unlike the bank, the supplier can condition the contract also on the input purchase q_t. Last, given that the intangible input is fully paid for when purchased, the contract between entrepreneur and supplier specifies the amount of the input purchased, q_{nt}. All parties have limited liability protection.

The sequence of events is as follows:

1. Banks and suppliers make contract offers specifying the size of the loan, the repayment obligations, and the amount of inputs purchased, q_t, q_{nt}.
2. The entrepreneur chooses among contract offers.
3. The investment or diversion decisions are taken, I_t, I_{nt}; uncertainty resolves.
4. Repayments are made.

The Optimization Problem

Firms carry out production, which is financed with internal funds, with the cash provided by banks or with the cash or in-kind resources lent by suppliers of the tangible input. Because banks have a comparative advantage in raising funds ($r_B < r_S$), entrepreneurs would prefer bank financing to trade credit. However, trade credit has two advantages relative to bank's financing: First, the supplier is better at liquidating the inputs if repossessed from a defaulting firm. Second, lending inputs rather than cash reduces the scope for diversion due to their lower liquidity and thus mitigates the entrepreneur's moral hazard problem.

So trade credit arises from two motives: a liquidation motive (to exploit the supplier liquidation technology) and an incentive motive (to relax financial constraints created by moral hazard problems). In this section, we discuss the conditions under which each of the two motives becomes relevant and the way they interact.

Firms maximize profits, which can be split into two components: the returns from production (EP) and from diversion (D). The expected return from production is

$$EP = p\{f(I_t, I_{nt}) - R_B - R_S\}. \tag{2.1}$$

The return from diversion is

$$D = \phi\{\beta_t(q_t - I_t) + (A + L_B + L_S - q_t)\}$$

where the term in round brackets denotes the return from tangible input diversion, net of the amount invested in production, and that in square brackets denotes the return from residual cash diversion (the amount of cash not spent on the input purchase).

Because intangibles have zero liquidity, an opportunistic entrepreneur purchases only tangibles ($q_t \geq I_t \geq 0$) and never intangibles for diversion ($q_{nt} = I_{nt} = 0$). Moreover, because the diversion technology is inefficient ($\phi < 1$), partial diversion is never optimal. Thus, either all funds (and inputs) are used for investment ($D = 0$) or they are diverted, in which case none of the purchased inputs is invested: $I_t = 0$.

To prevent the entrepreneur from diverting all resources in equilibrium, the return from investment must exceed the maximum return from cash and input diversion, that is

$$EP \geq \phi(A + L_B), \tag{2.2}$$

$$EP \geq \phi[\beta_t q_t + A + L_B - (q_t - L_S)], \tag{2.3}$$

where (2.2) is the incentive constraint in relation to the bank, which prevents the entrepreneur from diverting internal funds as well as the credit raised from the bank, while (2.3) is the incentive constraint in relation to the supplier, preventing the entrepreneur from diverting inputs, plus any spare cash left after the input purchase. If the above constraints hold, there is no diversion in equilibrium, so that $D = 0$ and $q_t = I_t$.

Banks and suppliers participate in the venture if their expected returns cover at least the opportunity cost of funds:

$$pR_B = L_B r_B \tag{2.4}$$

$$pR_S + (1 - p)\beta_S C = L_S r_S. \tag{2.5}$$

To make the problem interesting, we assume that creditor protection is sufficiently poor (ϕ high) to constrain the investment of a zero-wealth entrepreneur.

The rest of this section derives two types of demand for trade credit: (a) a demand for liquidation, arising from the supplier's liquidation advantage and

depending on the collateral value of the firm's assets, and (b) a demand for incentive, arising from the informational advantage and depending on the firm's borrowing constraints and input liquidity.

The Liquidation Motive

Assume that conditions (2.2) and (2.3) are slack; (2.4), (2.5), and (2.6) identify the liquidation motive *LM* for trade credit demand. Because $\beta_S > \beta_B$, pledging the collateral to the supplier relaxes its participation constraint more than the bank's. As a consequence, the total repayment due from the entrepreneur in the good state decreases, and total surplus increases. However, $r_B < r_S$ implies that the entrepreneur prefers bank credit to trade credit, that is, $L_S = 0$. Having the supplier acting as a liquidator without taking trade credit implies, using equation (2.5), that $R_S < 0$. Because the interest is in the supplier's role as financier, such contracts are not allowed for and repayment is required to be nonnegative (equation [2.6] holds):

$$R_S = \beta_S C. \tag{2.6}$$

Solving equation (2.5) for R_S, condition (2.6) implies a lower bound on trade credit demand equal to the collateral value of the inputs pledged to the supplier:

$$L_S = (\beta_S / r_S) I_t. \tag{2.7}$$

Condition (2.7) sets the trade credit demand for liquidation motives $\boldsymbol{L_{S,LM}}$ equal to the discounted value of the collateral to the supplier.

The Incentive Motive

In addition to extracting more value from assets, trade credit can relax the entrepreneur's financial constraints. Because diverting inputs is less profitable than diverting cash, the supplier is less vulnerable than banks to borrowers' opportunism and could thus be willing to provide credit when the bank is not (condition [2.2] is binding). In this case, the demand for trade credit is above the level defined by condition (2.7), and trade credit is taken for incentive motives. However, suppliers are not willing to meet all possible requests because supplying too many inputs on credit could induce the entrepreneur to divert them all. The maximum trade credit extended for incentive motives *IM* is

$$L_{SIMmax} = (1 - \beta_t)\, I_t, \tag{2.8}$$

which obtains when both incentive constraints (conditions [2.2] and [2.3]) are binding. $(1 - \beta_t)$ measures the extent to which the supplier's informational advantage reduces moral hazard. If inputs are as liquid as cash ($\beta_t = 1$), this advantage is ineffective. The supplier cannot offer any trade credit when banks ration cash. Conversely, if inputs are illiquid, the informational advantage becomes important. The maximum line of trade credit is positive, and the less liquid the inputs, the greater the line of credit.

From the foregoing, it follows that two regimes could arise, depending on whether the demand for liquidation motives *LM* (2.7) exceeds the maximum credit line extended for incentive motives *IM* (2.8). This condition can be redefined exclusively in terms of the parameters of the model as follows:

$$\beta_S / r_S - (1 - \beta_S) \underset{>}{\overset{<}{}} 0. \tag{2.9}$$

When inputs are illiquid (β_t low) or have low salvage value (β_S low), the incentive motive outweighs the liquidation motive ($IM > LM$) and condition (2.9) is strictly negative. Vice versa, when inputs are liquid (β_t high) or have high collateral value (β_S high), the liquidation motive outweighs the incentive motive ($LM \geq IM$) and condition (2.9) is weakly positive.

Results

Our results are presented in three parts. The first subsection identifies two regimes and examines how trade credit varies with the entrepreneur's wealth between regimes. The second focuses on the trade credit demand of financially unconstrained firms. The third investigates the relation between financing, technology, and borrowing constraints.

Trade Credit and Two Alternative Regimes

As shown in the previous section, trade credit could be taken for liquidation or for incentive reasons. The way these two motives interact across different levels of wealth depends on inequality (2.9). When strictly negative, wealthy entrepreneurs take trade credit for liquidation motives, and the less-wealthy take trade credit for incentive motives. The share of inputs purchased on credit is nonincreasing in wealth and larger for entrepreneurs that are credit-rationed. We define this regime as the *dominant incentive motive*. When inequality (2.9) is positive or zero, all entrepreneurs, regardless of wealth, take trade credit for liquidation reasons, and the share of inputs purchased on credit is

the same for rationed and nonrationed firms. We define this regime as the *dominant liquidation motive*.

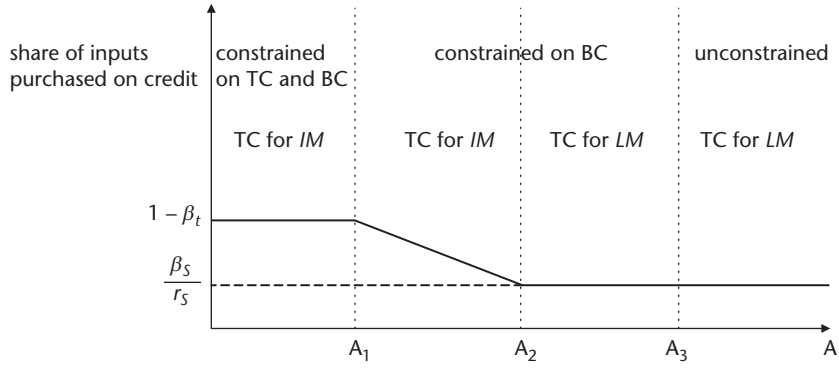
Our theoretical results reconcile an apparent conflict between the theoretical literature and the empirical evidence. On the one hand, in arguing that trade credit mitigates credit rationing by banks, the theoretical literature has highlighted a positive relationship between trade credit and borrowing constraints (Biais and Gollier 1997; Burkart and Ellingsen 2004). On the other hand, some empirical literature finds that reliance on trade credit is practically unaffected by the degree of credit rationing (Petersen and Rajan 1997; Marotta 2005). This section accounts for both these cases.

Dominant incentive motive

The dominant incentive motive regime is illustrated in figure 2.1. The population of entrepreneurs is distributed into four wealth areas with different degrees of credit rationing. For each area, the figure shows the motive for trade credit demand (liquidation or incentive) and the share of inputs purchased on account.

Sufficiently rich entrepreneurs ($A \geq A_3$) finance the first-best investment by taking a constant amount of trade credit, equal to the discounted value of collateralized assets, and a variable amount of bank credit.[1] Each unit of trade credit below this amount costs less than bank credit because the supplier exploits the

Figure 2.1 Regime where the Incentive Motive Dominates



Source: Authors.
Note: The figure shows the degree of credit rationing and the motive for trade credit demand for different levels of wealth (A). Entrepreneurs can be constrained on trade credit (TC), or bank credit (BC), or be unconstrained. TC can be demanded for an incentive motive (*IM*) or a liquidation motive (*LM*). The solid line shows the share of inputs purchased on credit for different levels of wealth. $1 - \beta_t$ is the proportion of inputs that cannot be diverted, and β_S/r_S is the scrap value of collateral inputs.

greater liquidation revenues accruing in the bad state to decrease the repayment required in the good state.

The price of one unit of trade credit and bank credit is given by r_S and r_B/p, respectively. An extra unit of trade credit above the level set in equation (2.7) costs more than bank credit because there is no more collateral to pledge. This is the amount of trade credit for liquidation motives. As wealth comes down toward A_3, trade credit stays constant while bank credit increases to compensate for the lack of internal wealth, as follows:

- For $A < A_3$, the loan needed to finance the first-best investment implies a large repayment obligation that leaves the entrepreneur with a return lower than the return from diversion. Banks must therefore ration the entrepreneur to prevent opportunistic behavior, hence credit rationing. Suppliers are still willing to sell inputs on credit because they face a less severe incentive problem.
- For $A_2 \leq A < A_3$, however, firms do not yet increase trade credit demand because the cost of an extra unit is still higher than the cost of bank credit. Thus, they are forced to reduce the investment below the first-best, and also trade credit and bank finance, but they keep the share of inputs purchased on account constant.
- For $A < A_2$, the shadow cost of bank credit exceeds the marginal cost of trade credit. Firms start demanding trade credit also for incentive motives, that is, to relax financial constraints. Thus, bank credit stays constant, but both trade credit and the share of tangible inputs purchased on account rise to their maximum. This is reached at $A = A_1$, when the incentive constraint in relation to the supplier also binds.
- For $A < A_1$, the entrepreneur is constrained on both credit lines and forced to reduce investment further. Both trade and bank credit decrease, but the share of inputs purchased on credit stays constant at its maximum $(1 - \beta_t)$.

In summary, across the wealth areas described in figure 2.1, the share of inputs purchased on account is nondecreasing in credit rationing.

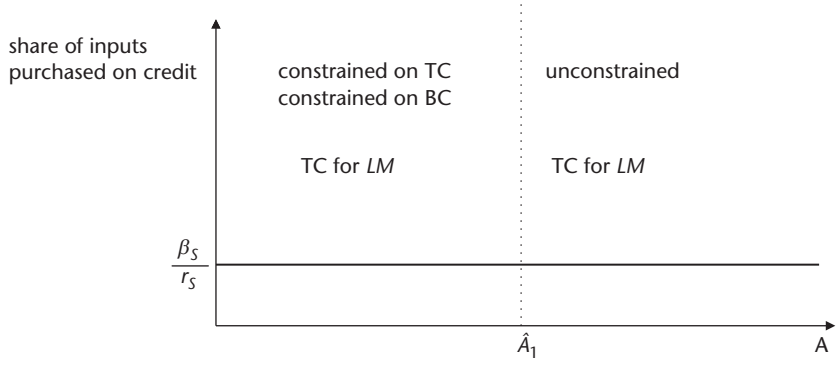
Dominant liquidation motive

Figure 2.2 illustrates the dominant liquidation motive regime and has the same interpretation as figure 2.1.

In this regime, there are only two wealth areas:

- For $A \geq \hat{A}_1$, firms are wealthy enough to finance the first-best investment without exhausting their credit lines. They use a constant amount of trade

Figure 2.2 Regime where the Liquidation Motive Dominates



Source: Authors.
Note: The figure shows the degree of credit rationing and the motive for trade credit demand for different levels of wealth (A). Entrepreneurs can be constrained on trade credit (TC), or bank credit (BC), or be unconstrained. Trade credit is demanded for a liquidation motive (*LM*). The solid line shows the share of inputs purchased on credit for different levels of wealth. β_S/r_S is the scrap value of collateral inputs.

credit, equal to the scrap value of collateral assets and, as wealth decreases, an increasing amount of bank credit. The funding from banks ceases when $A = \hat{A}_1$. Because the amount of inputs financed on credit is large, the total funding obtained is so great that an extra amount of it induces the entrepreneur to divert all resources.

- Thus, for $A < \hat{A}_1$, being financially constrained on both credit lines, entrepreneurs are forced to reduce both sources of external financing as well as the investment level. In contrast with the previous regime (the dominant incentive motive), they keep financing a constant share of input by trade credit equal to β_S/r_S for any level of wealth. They have no incentive to alter it because this would increase the total cost of financing. Each unit of trade credit above the scrap value is more expensive than bank loans. Similarly, each unit below this amount can be replaced only by more costly bank credit.

Thus, in contrast with earlier financial theories, trade credit use is independent of financial constraints: both rationed and nonrationed firms purchase the same share of inputs on account, as the empirical evidence to date indicates. In this second regime, trade credit is never demanded to mitigate borrowing constraints but only for liquidation motives.

Trade Credit Demand of Financially Unconstrained Firms

The right sides of figures 2.1 and 2.2 describe the use of trade credit by unconstrained firms and deliver a common prediction: financially unconstrained firms take trade credit to exploit their suppliers' liquidation advantage. The amount of trade credit used equals the collateral value of tangible inputs pledged to the supplier.

This result also posits that the use of trade credit is bound to the value of the inputs as collateral, in line with Mian and Smith (1992) and Petersen and Rajan (1997), because the supplier's liquidation advantage makes trade credit cheaper than bank loans only up to this collateral value. Therefore, this liquidation story requires that the input has a positive collateral value; it is worth suffciently more to the supplier than to the bank in case of default, which implies the supplier's contractual seniority; and the bankruptcy law does not alter the contractually agreed-on claims held by creditors. It follows that whether the liquidation motive arises depends on traded goods characteristics—in that not all goods have a liquidation value in case of default—as well as the characteristics of the legal system.[2]

This result also implies that, even though the opportunity cost of funds is higher for input suppliers than for banks, trade credit can be cheaper than bank loans. This finding contrasts with the rather high interest rates implied by standard buyer-seller agreements generally cited in the related literature. In line with this prediction, several recent papers show that trade credit can be cheaper than bank loans (for example, Fabbri and Klapper 2009).

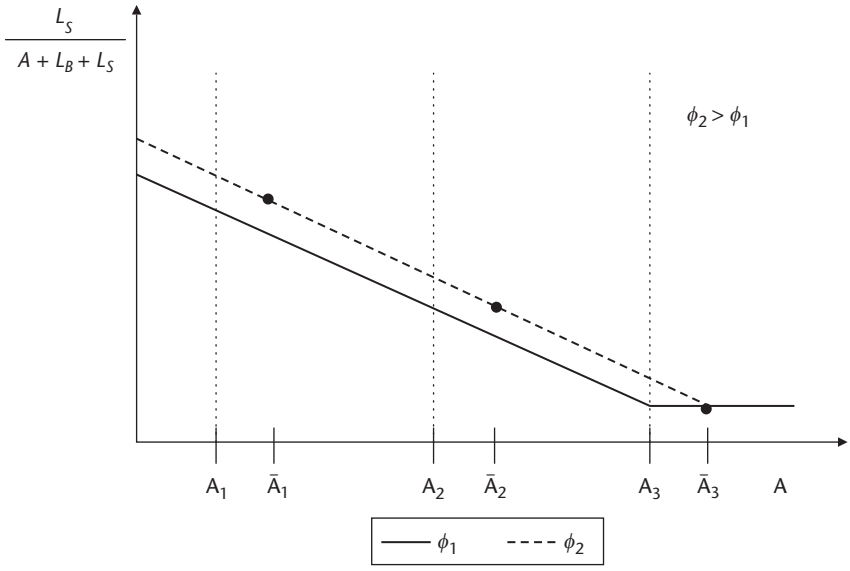
Input Tangibility, Financial Decisions, and Creditor Protection

Regardless of the motives underlying the use of trade credit, suppliers always finance the inputs they sell, but they never lend cash. It follows that when a constrained entrepreneur uses trade credit to relax a borrowing constraint, he also distorts the input mix toward tangibles. This implies a link between financing and input choices across different levels of wealth and borrowing constraints.

In particular, greater use of trade credit goes together with an input bias toward tangible assets, and the bias becomes stronger when creditor vulnerability increases. The intuition is that because bank credit is more sensitive than trade credit to moral hazard, weaker creditor protection raises the relative cost of bank financing. Rationed entrepreneurs consequently rely more on trade credit and tangible inputs.

Figures 2.3 and 2.4 display trade credit intensity and input tangibility, respectively, for different wealth levels.

Figure 2.3 Trade Credit Intensity, Wealth, and Creditor Protection



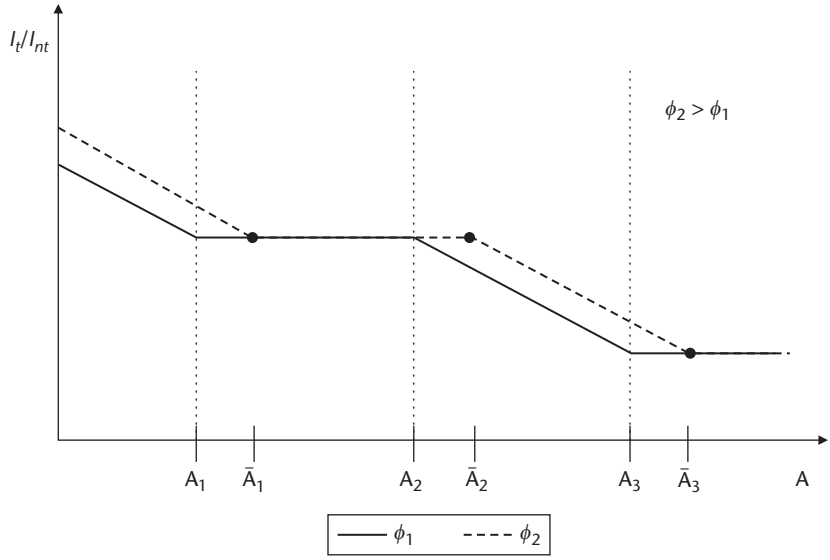
Source: Authors.
Note: The figure shows trade credit intensity [$L_S / (A + L_B + L_S)$] for different levels of wealth (A) and for high and low degrees of creditor rights protection, ϕ_1 and ϕ_2, respectively.

Firms with $A \geq A_3$ are unconstrained on both credit lines, so both the price ratios between trade and bank credit and those between inputs are invariant in wealth. Both trade credit intensity and input tangibility hold constant for levels of wealth above A_3. For $A < A_3$, the moral hazard problem in relation to the bank becomes binding.

Reductions in wealth within the interval $A_2 \leq A < A_3$ increase the shadow cost of bank credit and thus decrease the price ratio between the two sources of funding. Firms give up more bank credit than trade credit, increasing trade credit intensity (in figure 2.3, the solid line in the interval $A_2 \leq A < A_3$). The higher price of bank credit also affects the input prices but by a different amount. It is translated fully into a higher price of intangibles because they are totally financed by bank credit and only partially into a higher price of tangibles, given that only a share $(1 - \beta_S / r_S)$ is financed by bank credit. The input price ratio thus falls for decreasing levels of wealth, inducing entrepreneurs to increase input tangibility (in figure 2.4, the solid line in the interval $A_2 \leq A < A_3$).

When wealth falls below A_2, the shadow cost of bank credit equals the cost of trade credit. For $A_1 \leq A < A_2$, firms are indifferent between financing sources.

Figure 2.4 Input Tangibility, Wealth, and Creditor Protection



Source: Authors.
Note: The figure shows input tangibility, that is, the ratio between tangible and intangible assets (I_t/I_{nt}), for different levels of wealth (A) and for high and low degree of creditor rights protection, ϕ_1 and ϕ_2, respectively.

Although constrained by banks, they are still unconstrained by suppliers and can take trade credit at a constant price to compensate for their lesser wealth. Thus, trade credit intensity increases (in figure 2.3, the solid line in the interval $A_1 \leq A < A_2$). This extra credit is used to finance the purchase of tangibles, freeing resources to intangibles and leaving the input combination unchanged (in figure 2.4, the solid line in the interval $A_1 \leq A < A_2$).

Finally, when $A < A_1$, entrepreneurs are financially constrained on both credit lines. The prices of both sources rise, but more for bank credit, given its greater exposure to moral hazard. Because the tangible input is financed partly by trade credit, while the intangible is financed entirely by bank credit, the input price ratio decreases, increasing input tangibility (in figure 2.4, the solid line in the area $A < A_1$).

The dotted lines in figures 2.3 and 2.4 show how trade credit intensity and input tangibility, respectively, respond to an increase in creditor vulnerability. Any increase in ϕ moves all the thresholds of wealth rightward, given that all incentive constraints bind at higher wealth. Firms with $A \geq \bar{A}_3$ are unconstrained on both credit lines, and neither trade credit intensity nor asset tangibility varies. When

wealth decreases ($\bar{A}_2 \leq A < \bar{A}_3$), the incentive constraint on the bank becomes stringent, and the shadow cost of bank credit rises. When $\bar{A}_1 \leq A < \bar{A}_2$, the two sources of finance cost the same, but firms are not constrained by suppliers and can use trade credit to keep investment and input combination constant (the dotted line does not shift upward in figure 2.4) and increase trade credit intensity (the dotted line shifts upward in figure 2.3). When $A < \bar{A}_1$, the change in ϕ makes the entrepreneur's moral hazard more severe in relation to both bank and supplier. Thus, both trade credit intensity and asset tangibility increase, as shown by the upward shift of the dotted lines in both figures.

The preceding analysis allows the authors to obtain the following predictions:

- *Prediction 1.* Credit-constrained firms have higher trade credit intensity and use technologies more intensive in tangible assets than unconstrained ones. Moreover, assuming that countries differ only in the degree of creditor protection, that leads to prediction 2.
- *Prediction 2.* In countries with weaker creditor protection, credit-constrained firms have higher trade credit intensity and a technological bias toward tangibles. Unconstrained firms have the same trade credit intensity and input tangibility across countries with different degrees of creditor protection.

If one takes into account that credit-constrained firms are more widespread in countries with weaker creditor protection, prediction 2 is consistent with two distinct sets of empirical evidence. First, there is a greater use of trade credit in countries with less creditor protection, including developing countries (for example, Rajan and Zingales 1995). Second, firms in developing countries have a higher proportion of fixed to total assets and fewer intangible assets than those in developed countries (for example, Demirgüç-Kunt and Maksimovic 1999). This chapter thus offers a theory that reconciles these distinct findings.

Conclusions

The chapter has investigated the determinants of trade credit and its interactions with borrowing constraints, input combination, and creditor protection. By interacting two motivations for trade credit use (liquidation and incentive motive), which the literature had so far dealt with separately, the paper has derived a set of new predictions, presented here as answers to the questions posed in the introduction.

1. *What justifies the widespread use of trade credit by financially unconstrained firms that have access to seemingly cheaper alternative sources?*

An important result presented in this chapter is that financially unconstrained firms (with unused bank credit lines) take trade credit to exploit the supplier's liquidation advantage.

2. *Why is the reliance on trade credit not always increasing in the degree of credit rationing?*
   If inputs purchased on account are sufficiently liquid, the reliance on trade credit does not depend on credit rationing, but on the liquidation advantage.

3. *Does input lending have an impact on the borrower's choice of inputs?*
   The second major contribution presented in this chapter is the analysis of the link between financing and input decisions. Specifically, more intensive use of trade credit goes together with a technology biased toward tangibles, and the bias increases as financial constraints tighten and creditor protection weakens. In short, greater reliance on trade credit is associated with more intensive use of tangible inputs.

4. *Does the degree of creditor protection affect financing and input choices?*
   Better creditor protection decreases both the use of trade credit and the input tangibility.

Notes

1. The model implicitly assumes the entrepreneur's wealth is never so high as to finance entirely the first-best investment.
2. For a discussion of this issue, see Fabbri and Menichini 2010.

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3

INTERFIRM TRADE FINANCE: PAIN OR BLESSING DURING FINANCIAL CRISES?

Anna Maria C. Menichini

The severe recession that hit the global economy in 2008–09, causing low or even negative growth rates, caused widespread contractions in international trade in both developed and developing countries. The World Trade Organization reported that global trade volume contracted by 12.2 percent in 2009 because of the collapse in global demand brought on by the biggest economic downturn in decades (WTO 2010).

The contraction in international trade has been accompanied by a sharp decline in the availability of trade finance and an increase in its cost. The decline is only partly explained by the contraction in demand; a joint qualitative survey by the International Monetary Fund and the Banker's Association for Trade and Finance—now merged with International Financial Services Association (BAFT-IFSA)—found that trade finance has been constrained and its cost has increased, particularly in some developing countries, suggesting that part of the reduction in trade transactions reflects a disruption of financial intermediation (IMF-BAFT 2009). Although recent survey updates report signs of timid improvement in credit availability, the recovery prospects of trade finance markets remain weak (IMF-BAFT 2009; Malouche 2009).

The situation has raised concern, especially for firms operating in developing countries that trade in low-margin products in long manufacturing supply chains and rely heavily on trade finance to support both their exports and imports. With restricted access to financing and increased cost, these firms may have difficulties maintaining their production and trade cycle. Fear that these difficulties could

further slow world trade has triggered government initiatives to support trade finance (Chauffour and Farole 2009).

This chapter focuses on interfirm trade finance—the finance that exporters provide to importers to buy goods from overseas and that exporters also receive to help them produce the goods to export and finance their extensions of credit to importers.[1]

Three stylized facts are striking and suggest that a closer look should be devoted to this specific form of financing:

- Interfirm trade finance is one of the most important sources of short-term financing for firms around the world (Petersen and Rajan 1997).[2]
- It tends to be relatively more prevalent for firms in developing countries (Demirgüç-Kunt and Maksimovic 2001; Beck, Demirgüç-Kunt, and Maksimovic 2008).
- Its use tends to increase in times of crisis (Calomiris, Himmelberg, and Wachtel 1995; Love, Preve, and Sarria-Allende 2007).

Given these facts, this chapter aims to convey an understanding of whether interfirm finance presents features that can shield it from a general credit squeeze or, rather, constitutes an extra element of tension (especially from the viewpoint of developing and low-income countries) that justifies specific, differential treatment by policy makers.

According to these features, the chapter identifies measures to increase access to this form of finance—measures that go in the direction, on one side, of creating the conditions to fully exploit its potential advantages, and, on the other, of identifying market participants that are more likely to be exposed to market failures. These measures include

- creating or improving information sharing mechanisms;
- promoting institutional reforms to increase the efficiency of the legal and judicial system; and
- creating the conditions for exploiting the benefits of structured financing schemes, especially in developing countries.

The rest of the chapter explores the main features that distinguish interfirm international trade finance from alternative sources of financing; evaluates the potential effects of a financial crisis on reliance on this form of financing among firms in developing countries; and discusses measures to increase access to this financing in times of crisis.

Features of Interfirm Trade Finance

Firms simultaneously take credit from their suppliers and provide credit to their customers. Thus, their balance sheets present both financial assets (receivables from the customer) and liabilities (payables to the supplier). Although it may seem puzzling that, in the presence of specialized financial intermediaries, firms both receive and extend trade credit, the dual practice can be rationalized in various ways.

Offering trade credit may be profitable because accounts receivable can be collateralized and used to obtain additional financing against them (Burkart and Ellingsen 2004). Alternatively, demanding trade credit may allow firms to hedge their receivables risk (Fabbri and Klapper 2009). Or it may result from firms having trouble collecting from their own customers and being forced to delay paying their suppliers (Boissay and Gropp 2007).

Alternative rationales stress the advantages that interfirm credit presents over other forms of credit. The problem of borrower opportunism that plagues any lender-borrower relationship is less severe with interfirm trade finance than with other sources of financing for various reasons. First, the supplier might have private information regarding the customer's creditworthiness that other financial intermediaries do not have (Biais and Gollier 1997)—because, for example, their repeated business relations facilitate the establishment of a relational contract, which is especially valuable when contract incompleteness renders contract enforcement difficult and costly. In such cases, agreements must be enforced informally or be self-enforcing; through repeated relations, parties abide by the agreements because they know that compliance will be rewarded with future business gains. Reputation, therefore, becomes sufficiently valuable that neither party wishes to renege on the deal.

Another factor behind the ameliorated incentive problem of interfirm financing has to do with the nature of the supplier-customer lending relationship, which, unlike other credit relationships, involves an exchange of goods rather than cash. Because goods are not as liquid as cash, defaulting on the supplier may provide limited benefits to the customer (Burkart and Ellingsen 2004). Moreover, because some tradable goods are less liquid than others, the benefits of defaulting may be further reduced. Thus, the less-severe incentive problem implied by goods lending is strictly related to the characteristics of traded goods.

Besides providing low benefits, defaulting on the supplier may also be costly. When the client cannot easily and rapidly secure the same goods elsewhere or when the goods supplied are tailored to the needs of a single customer, the supplier has considerable market power; it can threaten to stop deliveries if clients fail to pay and, thus, can enforce debt repayment better than financial intermediaries

can (Cuñat 2007). As a result of the reduced buyer opportunism in all the above cases suppliers are willing to lend more liberally.

Another possible determinant of trade credit use lies in the supplier's better ability to liquidate the goods supplied in case of the customer's default (Frank and Maksimovic 2004; Fabbri and Menichini 2010). The viability of this solution depends again on traded-goods characteristics (in that not all goods have a liquidation value in case of default) as well as on the characteristics of the legal system. Although these advantages may be significantly diluted when firms trade internationally, some of them may still be relevant. In particular, it is still true that when traded goods are highly specific, there is little scope for the customer to behave opportunistically, even in an international context, or that strong supplier-customer relationships can develop among firms that trade internationally because of either long-term business interaction or difficulties in replacing the supplier. The next section elaborates further on some of the aspects that seem most relevant, both theoretically and empirically, in a crisis scenario.

The Role of Traded-Goods Characteristics

Some of the theories briefly surveyed imply that the willingness to extend trade credit may be related to the characteristics of the goods traded. Three factors related to those characteristics could facilitate interfirm credit relationships: (a) the possibility of diverting the goods traded; (b) the ease of switching to alternative suppliers; and (c) the traded goods' collateral value. To highlight the relevance of these factors, the goods are classified into three broad categories:

- *Standardized goods* can be used by many different customers and thus have a high resale value. Consequently, it is easy for the buyer to divert them. Moreover, because of their widespread use, any agent can easily sell them, which implies that their suppliers are easily replaceable. Last, they may have high liquidation value in case of the buyer's default if they have not been transformed into finished goods.
- *Differentiated goods* are more specific and often tailored to the needs of particular customers, making it more difficult for customers to switch to alternative suppliers. Because of their specificity, differentiated goods are particularly valuable in the hands of the original customer—and, because there are fewer alternative users, they are worth more in the hands of the original supplier and more difficult to divert.
- *Services* have no collateral value and are almost impossible to divert. Moreover, when the service provided is highly specific, it may be hard to find alternative suppliers.

The above analysis suggests that, because buyer opportunism is less severe for firms in sectors offering differentiated goods and services, these firms should extend more trade credit to their customers than firms selling standardized goods (moral hazard hypothesis). Similarly, because differentiated goods are worth more in the hands of the original supplier if the buyer defaults, firms selling (respectively buying) differentiated goods should offer (respectively receive) more trade credit (liquidation hypothesis).

Using a sample of small U.S. firms, Giannetti, Burkart, and Ellingsen (2008) show that service firms as well as firms producing differentiated products grant more trade credit, while firms offering standardized goods offer less trade credit. This evidence seems to support the moral hazard hypothesis but does not clearly disentangle whether the driver of the results is the different diversion value of the goods or the different cost in switching to alternative suppliers. McMillan and Woodruff (1999) provide a direct investigation into the relevance of this last motivation. Using survey data collected on a sample of Vietnamese firms, they show that customers lacking alternative suppliers receive more trade credit.[3]

Regarding the collateral hypothesis, Giannetti, Burkart, and Ellingsen (2008) provide some limited supporting evidence because firms offering differentiated goods offer more trade credit, and firms buying a larger proportion of differentiated goods receive more trade credit. Petersen and Rajan (1997) also provide evidence in support of this hypothesis, using as a proxy for the liquidation advantage the fraction of the firm's inventory not consisting of finished goods.

The Role of Credit Chains

One distinguishing feature of trade credit is that it appears on both sides of the firms' balance sheets. In addition, because firms' customers tend to belong to specific sectors, trade credit is not well diversified at the firm level. Debtors' lending and lack of diversification may constitute an element of great risk in times of crisis, particularly in light of the increasing organization of production in global supply chains—that is, in a network of different types of companies that participate in the production of goods and services and ultimately deliver them to the final consumer.

Aside from the aspects concerning technology improvements and efficiency increasing methods of production, a key element in determining the competitiveness of each company along the chain, and ultimately of the whole chain of production, is related to financing. To guarantee themselves production orders, suppliers have to offer their customers attractive payment options. However, to finance their credit extensions, they themselves need financing, which may be extended by upstream suppliers or by financial intermediaries. When firms are

perceived as potentially risky, or the financial sector is poorly developed—often the case for firms in developing countries—access to credit for weak firms in the chain may be difficult and costly.

All of this implies that, besides the supplying relationship, there may be strong financial links among the various parties that interact along a supply chain. It is no surprise, therefore, that interfirm trade finance becomes a particular issue of concern in times of crisis, especially for developing countries, for a number of reasons:

- Large international companies in developed countries have increasingly outsourced their production to low-cost sourcing markets. Disruptions in production may then arise if these suppliers have insufficient credit to finance the shipment of their production to the next stage of the chain or even to carry out production.
- Exports from emerging markets may highly depend on imports from developed-country firms along the chain. A collapse in import financing may further depress emerging countries' exports, thus causing further disruptions in production.
- Shocks to the liquidity of some firms, caused by the default of customers in a depressed sector, may in turn cause default or postponement of debt repayments on their suppliers and propagate through the supply chain. With a large proportion of their debts financed with trade credit (Demirgüç-Kunt and Maksimovic 2001; Beck, Demirgüç-Kunt, and Maksimovic 2008), firms in emerging countries might face stronger risks of propagation of shocks. The scale of the damage depends on the length of the supply chain between constrained agents. In a recession, such chains are longer because more firms suffer negative shocks to their flow of funds. However, the presence of firms with sufficient access to outside finance to absorb defaults without transmitting them along the supply chain (deep-pockets firms) can weaken the credit-chain propagation mechanism (Kiyotaki and Moore 1997).

The latter theory has received some empirical support. Raddatz (2010) provides evidence of the presence and relevance of credit chains for the transmission and amplification of shocks. Boissay and Gropp (2007) find evidence in favor of the existence of trade credit default chains. In particular, firms that face default are themselves more likely to default. Liquidity shocks are transmitted along the trade credit chain until they reach deep-pockets firms, which ultimately absorb the shock. This theory suggests that external effects may be associated with supply-chain productions that might amplify the downsides of a credit crunch.

However, if it is true that interfirm trade finance may be a mechanism of propagation of shocks, it is also true that the repeated business interactions among these firms may provide relevant benefits, especially during a financial crisis. The typical fear that lack of trust in times of extreme uncertainty may squeeze intermediated trade finance, exacerbating the effects of the crisis, may be less of a problem for firms operating along supply chains. These firms are often involved in long-term relationships and, thus, are less likely to experience an uncertainty-driven contraction in financing.[4]

This might also explain why trade credit is often countercyclical.[5] In times of recession, banks are more concerned about credit risk and less willing to extend credit. Firms that rely more on relational contracts can increase their reliance on trade credit; the relationship of trust with the supplier makes up for the higher credit risk. Conversely, firms that rely on intermediated finance (formal contracts) are likely to be squeezed by the credit contraction because the higher credit risk and the lack of a credit history will discourage suppliers from extending them credit.

The Role of Institutions

One factor of crucial importance in determining the availability of international trade finance is the legal system in which trading countries operate. Inefficiency of the judicial system or of the legal system in general—in the form of inadequate contract law or bankruptcy law—increases enforcement costs and thus commercial risk. This inefficiency affects the cost and the availability of financing, thus hampering international trade.

How does the legal system affect interfirm credit? A number of papers find evidence that trade credit is relatively more prevalent in countries with worse legal institutions and lower investor protection (Demirgüç-Kunt and Maksimovic 2001; Beck, Demirgüç-Kunt, and Maksimovic 2008). This seems puzzling because one may expect that better legal institutions facilitate all types of borrowing, including trade credit. This finding can nevertheless be explained by noting that, unlike financial intermediaries, trade creditors may be able to more effectively enforce contracts without resorting to the legal system by stopping future supplies. This intuition seems to be confirmed by a study, based on 1997 survey data from small and medium-size manufacturers in transition countries, concluding that ongoing relationships are more likely to be preserved when goods are complex, assets are specific, and it is difficult for customers to resort to alternative suppliers (Johnson, McMillan, and Woodruff 2002).

According to other studies, the varying efficiency of countries' legal systems might be related to their varying legal origins (La Porta et al. 1998). More precisely, countries belonging to the common law tradition are found to have more efficient

judicial systems, and thus lower enforcement costs, than those belonging to the civil law tradition. This variation results in an ample variety of codes and procedures across countries (as shown by, among others, Djankov et al. 2002, 2008) that may introduce extra elements of uncertainty in the buyer-seller relationship and that parties certainly take into account when choosing trading partners and deciding whether to extend them credit.

Given the documented greater prevalence of trade credit in countries with worse legal institutions and lower investor protection, how does uncertainty in enforcement affect the provision of credit to suppliers? Johnson, McMillan, and Woodruff (2003) find that although interfirm credit does occur even under a poor enforcement of contracts, thanks to relational contracts, efficient courts are nevertheless important at the start of a trading relationship, encouraging firms to take on new partners and thus promote future long-lasting relationships. Thus, workable courts have positive external effects because, by facilitating new trading relationships, they improve on relational contracting and boost overall productivity. This role is even more important in times of crisis because increased uncertainty may increase the perception of the risk underlying a trading relationship and induce suppliers to refrain from extending credit. The institutional framework, therefore, plays a direct role in favoring interfirm trade finance.

However, legal institutions also may affect interfirm trade finance through alternative channels. For example, a low-quality legal system may jeopardize both the effective use of structured financing schemes—whereby the lender extends a loan to the borrower by securitizing its assets—and the possibility of exploiting the supplier's better ability to liquidate the goods supplied and not yet transformed in case of default.

Policy Implications

The analysis so far has highlighted some factors that may affect the provision of interfirm finance, stressing those raising greater concern in times of crisis. This section focuses on policy instruments that could address those concerns.

Improved Information Sharing

Some literature—both theoretical (Biais and Gollier 1997) and empirical (McMillan and Woodruff 1999; Johnson, McMillan, and Woodruff 2002)—has rationalized the use of trade credit based on the informational advantage the supplier has over other creditors regarding the buyer's creditworthiness. This advantage may descend from existing business relationships or from prior investigations of the customer's reliability—for example, through information sharing mechanisms.

Acquiring information about the customer's repayment history across a range of suppliers can be valuable in making credit extension decisions. Kallberg and Udell (2003) provide evidence of this, showing that trade credit history in Dun & Bradstreet reports improves default predictions relative to financial statements alone. In a crisis scenario in which banks are more concerned about credit risk and less willing to extend credit, these factors may be crucial in limiting the potential damages of a trade finance shortage and preventing such a shortage from adding to the downturn in demand.

In particular, relevant benefits may be gained from improving cross-country information sharing mechanisms—for example, by extending public credit registries and voluntary exchange mechanisms to developing countries (where these systems are often still being designed) and by promoting the sharing of this information across trading countries.

Exploitation of Traded-Goods Characteristics

The previous discussion confirmed that interfirm trade financing presents some advantages over other lending relationships, related to the characteristics of traded goods. In particular, the moral hazard hypothesis, which predicts that firms selling (or buying) standardized goods should offer (or receive) less trade credit, has found some empirical support (Giannetti, Burkart, and Ellingsen, 2008).

One may then expect the problems brought about by the financial crisis to be particularly exacerbated for firms more exposed to moral hazard, which may find it harder to raise credit, especially during a financial crisis. By implication, different firms operating along a supply chain may "suffer" the effects of a credit crunch differently. Commodities, for instance, are sold to manufacturers that process them into intermediate inputs or directly into finished goods. Having a high resale value, these goods can be classified as standardized. In times of crisis, suppliers of commodities may be reluctant to extend credit against them to downstream firms. Intermediate inputs, instead, tend to be much more customized to their intended buyers than commodities or even final goods and hence have a low resale value that mitigates moral hazard problems. A similar argument can be made for suppliers of offshore services. The consequences of a credit crunch may thus be different for firms along the chain, and this analysis may provide some useful indications regarding the candidate "weak links." Possible ways of dealing with them are discussed in the next section.

Regarding the liquidation advantage, although the literature has provided some evidence in support of it (Petersen and Rajan 1997; Giannetti, Burkart, and Ellingsen, 2008), it is generally true that trade credit is a junior claim and that, in

an international trade scenario, the chances for the supplier to repossess the goods supplied are extremely low, especially when the trading countries operate in different legal environments. Absent the ability to repossess goods, suppliers may not be willing to supply goods on credit and thus may require cash payments, with a subsequent efficiency loss.

One way to preserve the liquidation advantage would be for the supplier to secure the goods. By doing so, in the event of default, the supplier might reclaim any goods not yet transformed into output. Of course, not all types of goods can be secured because some of them can be easily hidden or diverted and therefore subtracted from the bankrupt party's estate. Other goods, such as equipment or heavy machineries, may be less easily diverted and, thus, may become the object of a secured claim. The willingness to extend credit may therefore be boosted by encouraging the creation of liens on the goods supplied to avoid actions from other creditors in case of default. The viability of this option depends, of course, on the specific provisions of the trading countries' bankruptcy codes and on their efficiency in enforcing creditor's rights (again, depending on institutional factors).[6]

Rejoining the "Broken Chains"

A downside of interfirm finance is that it may be a mechanism that propagates and amplifies shocks. However, the evidence in support of the existence of trade credit default chains that stop when they reach large, liquid firms with access to financial markets (Boissay and Gropp 2007) suggests that there is some room for intervention.

In these circumstances, it is important to identify breaks in the chain (firms more exposed to the risk of insolvency and more likely to start the chain of defaults discussed previously, such as sellers of commodities or of final goods) and devise interventions to prevent disruptions in the chain. However, depending on the type of intervention, many new issues arise. First, it may be difficult to discriminate between a firm that is facing a temporary liquidity shock and one that is insolvent (for which a targeted intervention only postpones the decision to shut down). Moreover, moral hazard problems may arise in adopting schemes of financial support for vulnerable firms because these might divert the financing obtained to alternative uses.

One way to overcome these problems might be to design schemes aimed at extending the maturity period of trade credit while not challenging the financial health and ongoing viability of other firms along the supply chain—that is, ensuring that suppliers can collect payments as soon as possible. For example, receivables-backed finance programs are normally used to finance exports, allowing

firms to get the receivables off their books and promote a greater extension of trade credit.[7]

A similar scheme, used largely to finance imports, is payables-backed supplier finance, also known as reverse factoring, by which the buyer delegates to a bank or to other financial intermediaries the handling of its payables. It allows buyers to extend payment terms and allows suppliers to receive early payment or payment at maturity, according to their actual working capital needs. It can be particularly important to finance the working capital of risky exporting firms in emerging countries with little access to credit and to reduce the processing costs of the buyer, which can make fewer payments to a single creditor (the factor) rather than various payments to multiple suppliers. The extension of the maturity period of trade credit that this arrangement permits would, at least temporarily, relax buyers' financial constraints and may make it possible to screen for viable firms facing occasional liquidity shocks as opposed to the distressed ones. More important, the possibility for the supplier to receive early payment, rather than payment at maturity, would inject fresh liquidity into the chain and possibly absorb negative shocks.

Some of these schemes are already effectively in use in many supply-chain finance programs (GBI 2007),[8] but in times of uncertainty and lack of confidence and with their own access to finance drying up, many financiers may be more reluctant to provide them. In these circumstances, the response of public-backed institutions may prove important to mitigate risk and encourage the implementation of such measures.[9]

Institutional Reforms to Increase Access to Trade Finance

The above discussions have highlighted the importance of institutional factors to interfirm finance. By increasing uncertainty for traders, heterogeneous or inefficient institutional structures give rise to legal or administrative barriers that can strongly hamper cross-border transactions. In particular, poor or uncertain creditor protection may limit the willingness to extend credit, worsen the conditions under which credit is granted, and jeopardize future potentially profitable trading relationships. These consequences are especially likely in newly established relationships—in which it is not possible to base the credit extension decision on previous credit histories or trust—and may prove especially harmful for developing countries needing export financing or seeking to finance their imports.

A harmonization of the rules and more efficient judicial systems are therefore imperative to keep international trade finance going, and possibly growing, and to level the playing field for firms in developing countries seeking to export to developed countries.[10] This issue is clearly important because an efficient judicial system maximizes the total value available to be divided between debtor and creditors and

reduces the ex ante cost of credit. However, institutional reforms are also important to address the possible implications of the crisis for corporate failure rates. Based on the discussion in the previous section, especially for firms along supply chains, distress may have self-reinforcing effects and cause systemic defaults. A question therefore arises about whether existing bankruptcy regimes can adequately deal with situations of this type or whether reforms are needed to alleviate the effects of the crisis.

The issue is taken up by Djankov (2009), who discusses a menu of possible reforms designed to deal with situations of distress following a crisis: the "super-priority" of fresh capital, prepackaged bankruptcy, and "super-bankruptcy." The super-priority of fresh capital is particularly interesting in the light of the discussion on interfirm finance as a mechanism of propagation of shocks. As argued previously, in times of crisis it is important that financing be available along the chain to absorb negative shocks and prevent inefficient liquidation. One possible solution is to reform bankruptcy codes in the direction of allowing new capital to take priority over all old creditors, including secured ones. This reform gives an extra incentive to lend to distressed businesses, thereby allowing an injection of fresh capital in the chain.

Conclusions

The chapter has focused on interfirm international trade finance, identifying theoretical economic rationales that could underpin policy actions in favor of this form of financing in times of crisis, with a focus on constraints faced by developing countries. To this aim, it has identified some distinguishing features shown to influence firms' reliance on, and provision of, trade credit to understand under which circumstances these features constitute either an issue of concern in times of crisis or a "shield" for financially squeezed firms.

Two main and opposing aspects have emerged from the analysis. On one side, interfirm finance may be a way to overcome informational problems associated with standard lender-borrower relations because of the lower incentive problem its use involves. On the other side, due to firms' interconnection along supply chains, interfirm finance may be a mechanism that propagates shocks, especially for firms operating in developing countries.

Although the advantages of interfirm trade finance could remain largely unexploited because of developing countries' poor legal institutions, the disadvantages could be exacerbated because of their greater exposure to a default chain. Based on these arguments, the chapter has identified choices for policy makers to boost firms' access to interfirm trade finance in times of crisis.

Notes

1. The study does not address issues related to trade finance intermediated by banks per se, although the bank-intermediated segment does represent a conspicuous share of trade finance.

2. According to Global Business Intelligence, a consulting firm specializing in supply-chain matters, accounts payable and receivable represent 78 percent of international trade (GBI 2007).

3. A distinctive feature of the Vietnamese economy is the absence of legal enforcement of contracts. The authors interpret the existence of interfirm credit in this environment as evidence of relational mechanisms in place.

4. Anecdotal evidence shows that the increase in the perception of risk induced by the crisis has promoted supply-chain solutions and that supply-chain finance is being increasingly used to mitigate risk and increase firms' capital needs.

5. Calomiris, Himmelberg, and Wachtel (1995) and Love, Preve, and Sarria-Allende (2007), for example, show that in the United States and emerging markets, respectively, the extension of trade credit increases during financial crises.

6. Several business laws do allow trade creditors to include specific liquidation rights in the sale contract, but the degree of legal protection guaranteed to secured creditors differs across countries. In some bankruptcy codes, secured creditors can enforce their contractual rights and recover the collateral outside the ongoing insolvency proceedings. In others, they are included in the bankruptcy process, generally for a specified period of time, during which the administrator can either sell the firm as a going concern or sell assets piecemeal. In this second case, secured creditors are first in the order of priority.

7. Being off the balance sheet, this instrument would not reduce the exporter's existing credit limits. Moreover, it would overcome the problems created by banks' reluctance to lend against receivables, especially in emerging markets, when a large percentage of these receivables are international.

8. The reverse factoring, for instance, is used in various countries by large international retailers with supermarket chains to support their suppliers' cash flows while optimizing their own working capital management. Finance is structured so that trade payables on the retailers' balance sheets are classified as trade credit rather than bank debt, thereby avoiding a reduction in their credit limits. Similarly, being structured as receivables purchased from the supplier, which is without recourse, this finance is off the balance sheet for the supplier as well. Therefore, it has positive effects for both the retailers and their suppliers.

9. Along these lines, the supply-chain finance group at the International Finance Corporation (of the World Bank Group) has recently attempted to boost short-term trade finance by creating a temporary secondary market for receivables. Export credit agencies are also implementing programs for short-term lending of working capital and credit guarantees aimed at small and medium enterprises.

10. Letters of credit were originally introduced to deal with this problem and ensure enforceable contracts.

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4

FINANCIAL CRISIS AND SUPPLY-CHAIN FINANCING

Leora Klapper and Douglas Randall

Supply-chain financing is an important source of funds for both small and large firms around the world. The 2008–09 financial crisis, however, brought significant firm- and market-level disruptions that were likely to affect interfirm financing decisions.

This chapter explores the use of trade credit during the financial crisis of 2008–09 and therefore contributes to the related literature exploring why buyers depend more on trade credit for short-term financing during periods of contraction in bank credit (Calomiris, Himmelberg, and Wachtel 1995; Nilsen 2002; Love, Preve, and Sarria-Allende 2007). One hypothesis is that customers in financial distress can more easily extract credit concessions from their suppliers, who are interested in maintaining a long-term relationship, than they could from lenders in a competitive credit market (Evans 1998; Wilner 2000). Alternatively, it has been observed that the higher interest rates charged by suppliers, compared with the banking sector, serve as a premium for an arrangement in which the supplier provides extra liquidity to the customer in the event of a shock (Cuñat 2007).

The authors used data from the World Bank's Financial Crisis Survey (FCS), which extended the Enterprise Survey (ES) database to create a panel of 1,686 firms in Bulgaria, Hungary, Latvia, Lithuania, Romania, and Turkey[1] in 2007 and 2009. The data provide novel evidence that the degree to which market competition and liquidity affected a firm's decision to extend trade credit in 2009 varied with the country-level severity of the crisis. The chapter focuses on two key measures of

supply-chain financing: first, whether the firm extended trade credit to its customers; and second, a unique and timely variable of whether the firm increased, maintained, or decreased the volume of goods sold on trade credit during the crisis.

Rationales for Trade Finance

Previous literature on the extension of trade credit by suppliers to their customers confirms that it is an essential component of external firm financing. The diversity of firms and industries that use supplier credit suggests that no single reason drives its popularity. Rather, its use is motivated by several rationales (Petersen and Rajan 1997; Fabbri and Klapper 2008).

First, trade credit extensions may be linked to market power and used as a form of price discrimination, enabling customers to demand better terms from suppliers if they make up a large share of the supplier's business (Brennan, Maksimovic, and Zechner 1988). Indeed, Klapper, Laeven, and Rajan (2010) show that the largest and most creditworthy buyers receive contracts with the longest maturities from smaller, investment-grade suppliers. Similarly, suppliers in competitive markets are at the mercy of their customers' market power and may offer attractive trade credit terms to attract new customers and maintain the loyalty of existing ones (Fisman and Raturi 2004; Giannetti, Burkart, and Ellingsen 2008).

The extension of trade credit may also serve as a risk management mechanism to reduce informational asymmetries between buyers and sellers, allowing buyers to ensure the quality of the products and sellers to reduce payment risks through two-part payment terms (Ng, Smith, and Smith 1999).

In addition, trade credit extensions serve as a substitute for bank credit. Customers are likely to demand trade credit extensions if they face obstacles in obtaining affordable bank credit or believe that their suppliers have cheaper access to financing and a comparative advantage in passing it on (Ng, Smith, and Smith 1999). Empirical research has shown that firms with access to credit from banks or their own suppliers extend a greater amount of credit to their customers (Petersen and Rajan 1997; McMillan and Woodruff 1999; Fabbri and Klapper 2008). The substitution of trade credit for bank credit is particularly relevant in economies with poorly developed financial markets, although empirical evidence on the relationship between trade credit and growth is mixed (Demirgüç-Kunt and Maksimovic 1999; Fisman and Love 2003; Cull, Xu, and Zhu 2009).

Data and Summary Statistics

The FCS provides unique insight into the use of trade credit during the financial crisis in a representative cross-section of firms in six Eastern European countries.

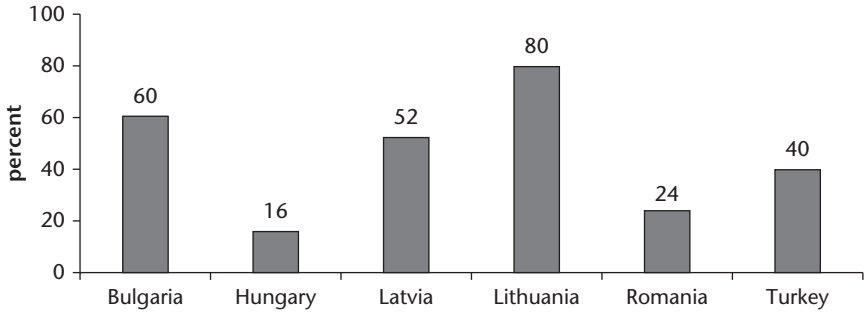
The firms included in the FCS are a subsample of firms drawn from the set of firms previously interviewed in the ES. Because the last ES round refers to the fiscal year 2007, the ES data allow an examination of the precrisis behavior and structure of firms and also facilitate the isolation of cause and effect in the econometric analysis.

In 2009, FCS participants were asked, "In the last completed month, did this establishment sell goods or services on credit?" Forty-three percent of the firms reported extending trade credit to their customers, with an econometrically significant variation across countries. In Lithuania, 80 percent of firms reported extending trade credit, while the figure was only 16 percent among Hungarian firms, as figure 4.1 shows.

To examine how the extension of trade credit changed as a result of the 2008–09 financial crisis, the FCS asked the subsample of firms that had sold goods on credit in the previous month, "Comparing last month's sales on credit with the month before, did they increase, decrease, or remain the same?" Across countries, almost half the firms that extended trade credit maintained a steady extension of credit during the crisis, while an almost even percentage reported a decrease or increase in the volume of goods sold on credit (29 percent versus 23 percent, respectively).

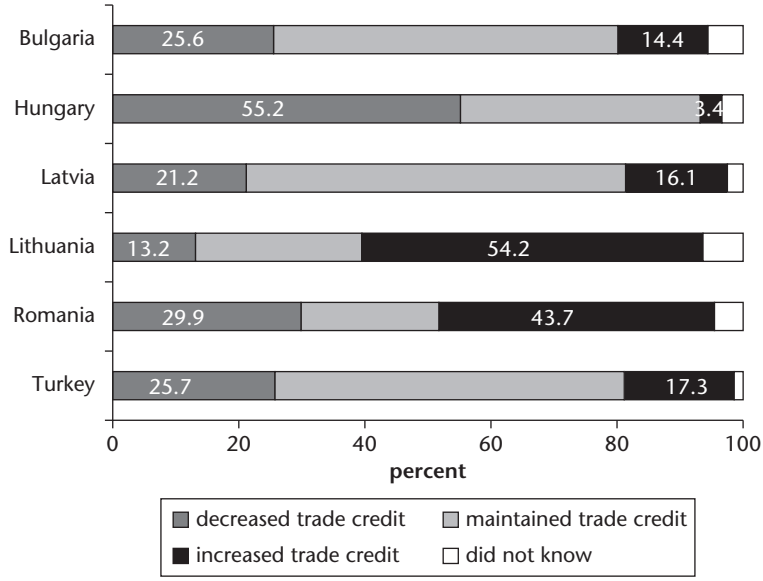
Hungarian firms experienced a comparatively large contraction in trade credit offerings; only 3 percent reported an increase in the volume of goods offered on trade credit. The situation was notably different in Lithuania and Romania, where more than 40 percent of firms reported increases in the volume of goods sold on trade credit, as shown in figure 4.2.

Figure 4.1 Extension of Trade Credit, by Country
share of firms offering trade credit



Source: World Bank 2009.

Figure 4.2 Changes in the Extension of Trade Credit, by Country
share of surveyed firms



Source: World Bank 2009.

Sample Description

Of the firms in the sample, 33 percent are small (fewer than 20 employees), 35 percent are medium-size (20–99) employees, and 32 percent are large (100 or more employees). Firms in the manufacturing sector constitute 55 percent of the sample, while the retail and other services sectors represent 21 percent and 24 percent, respectively. Twenty-three percent of all firms are located in their countries' capital cities, 41 percent export either directly or indirectly, and 9 percent are foreign-owned.

Measures of Market Competition

Among the variables that might explain a firm's decision to offer trade credit to its customers is the use of trade credit as a competitive gesture—that is, to help firms distinguish themselves from their competitors (Fisman and Raturi 2004; Giannetti, Burkart, and Ellingsen 2008). In 2007, before the crisis, firms were asked to rate the importance of domestic competitors to the firm's production cost decisions. They were also asked to rate the importance of domestic competitors to their new

Table 4.1 Description of FCS Sample

	Bulgaria	Hungary	Latvia	Lithuania	Romania	Turkey
Observations (no.)	150	187	226	239	370	514
Composition by size (%)						
Small (< 20 employees)	47	34	36	39	31	28
Medium (20–99 employees)	35	30	31	34	35	38
Large (100+ employees)	18	36	33	27	34	34
Composition by sector (%)						
Manufacturing	36	40	35	38	38	95
Retail	28	25	32	29	31	1
Other services	36	35	33	33	31	4
Composition by characteristic (%)						
Capital city	29	35	50	22	16	10
Exporter	25	33	36	39	17	75
Foreign-owned	9	19	15	8	11	2

Source: World Bank 2007.
Note: FCS = Financial Crisis Survey.

product development decisions. Finally, the firms were asked both questions about foreign competitors. If the firm responded "very important" (highest on a scale of four) to any of the four questions, the firm was considered to be operating in a competitive market. Across the sample, approximately 41 percent of firms operated in competitive markets.

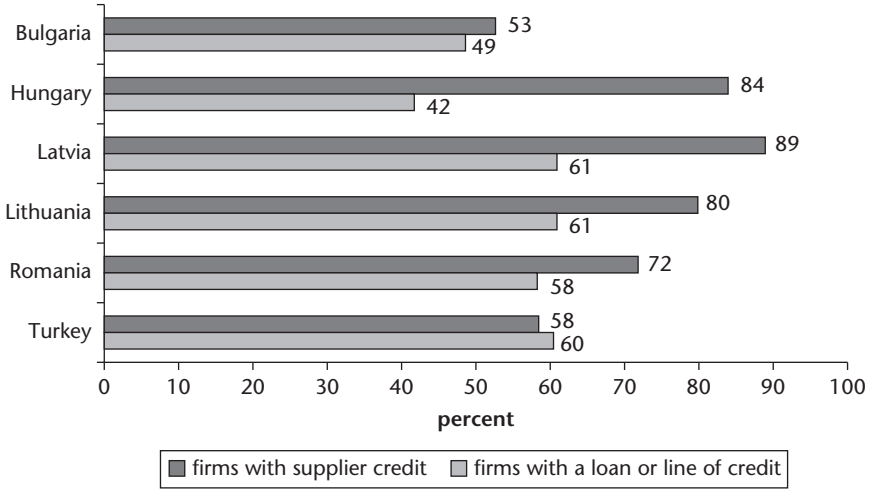
Similarly, innovative firms looking to expand into new markets may also regard trade credit as a useful device for luring new customers away from their existing suppliers. Innovative firms, defined as those who introduced a new product or service in the 2005–07 period, accounted for 52 percent of the sample.

Measures of Financial Access

Given that the extension of trade credit implies a delay in output payments with nontrivial consequences on a firm's liquidity, it follows that financial constraints affect a firm's decision to extend trade credit (Petersen and Rajan 1997; McMillan and Woodruff 1999; Fabbri and Klapper 2008). In 2007, 57 percent of the surveyed firms reported having a loan or line of credit from a financial institution, with significant variations across countries, as figure 4.3 illustrates.

Just as they offer trade credit to their customers, firms may also turn to their own suppliers for extensions of trade credit to provide liquidity, establishing a system of supply-chain financing. Approximately 71 percent of the firms reported using supplier credit in 2007—a figure that, again, varied among the countries in the sample, as figure 4.3 also shows. Although Hungary has the lowest rate of

Figure 4.3 Access to Bank and Supplier Financing, by Country
share of surveyed firms



Source: World Bank 2007.

formal credit users, it has the second-highest rate of firms using supplier credit, which might support prior evidence that firms turn to supplier credit when formal credit (which is generally cheaper) is not available.

Measure of Crisis Severity

A measure from Didier and Calderon (2009) is used to gauge the country-level severity of the financial crisis. The Index of Economic Turbulence is based on a factor analysis summarizing six financial and real indicators of crisis severity, including growth in exports, growth in real gross domestic product, and variation in industrial production between the first quarters of fiscal 2008 and fiscal 2009. The more negative the value, the greater the crisis severity. Notably, except for Turkey, all of the surveyed countries were among the 10 hardest-hit economies, listed in table 4.2, among 65 countries for which the measure was calculated.

Empirical Results

The main results are shown in Table 4.3.[2] All independent variables are lagged, using data from the ES that corresponds to fiscal year 2007, which allows for the isolation of cause and effect.

Table 4.2 Countries Hardest Hit by the 2008–09 Crisis

Rank	Country	Index of Economic Turbulence
1	Ukraine	–2.39
2	Iceland	–2.36
3	**Latvia**	**–2.05**
4	**Lithuania**	**–2.03**
5	Estonia	–1.65
6	**Bulgaria**	**–0.82**
7	**Romania**	**–0.77**
8	Russian Federation	–0.70
9	Ireland	–0.69
10	**Hungary**	**–0.66**
26	**Turkey**	**–0.15**

Source: Didier and Calderon 2009.

The base regressors include age (log years since the firm's foundation); size (binary variables equal to 1 if the firm is small or medium, with large being the excluded category); ownership (binary variables equal to 1 if more than 50 percent of the firm is foreign or state owned); location (binary variable equal to 1 if the firm is located in the capital city); export orientation (binary variable equal to 1 if the firm exports directly or indirectly); and country and sector fixed effects.

Simple univariate tests suggest that several firm characteristics are associated with the extension of trade credit:

- *Size.* Among small firms, 41 percent extend trade credit, compared with 44 percent of large and medium-size firms.
- *Exporters.* In addition, 49 percent of exporters offer trade credit, compared with 40 percent of nonexporting firms.
- *Age.* Older firms were also more likely to extend trade credit.
- *Location.* Among firms in capital cities, 49 percent reported extending trade credit to their customers, contrasted with 41 percent in the subsample of firms that are not in capital cities.
- *Sector.* In the wholesale sector, 55 percent of firms offer trade credit, compared with 43 percent of firms in other sectors. In particular, firms in the information technology and garments sectors made comparatively little use of trade credit.

Regression analyses largely confirm these findings: older firms, firms that export directly or indirectly, wholesalers, and firms in capital cities were more

Table 4.3 Regression Results

	Extends trade credit							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Competitive		0.26**		0.27**			–0.05	
		[0.030]		[0.025]			[0.804]	
Innovative			0.45***		0.44***			0.19
			[0.000]		[0.000]			[0.300]
Loan or line of credit		0.41***	0.40***					
		[0.001]	[0.001]					
Use supplier credit				0.29**	0.24*			
				[0.035]	[0.090]			
Competitive × crisis severity							–0.27*	
							[0.083]	
Innovative × crisis severity								–0.31**
								[0.046]
Crisis severity						–0.96***	–0.83***	–0.73***
						[0.000]	[0.000]	[0.000]
Log age	0.19*	0.20*	0.23**	0.20*	0.23**	0.21**	0.21**	0.23**
	[0.069]	[0.052]	[0.031]	[0.050]	[0.029]	[0.030]	[0.032]	[0.018]
Foreign–owned	–0.07	–0.01	–0.01	–0.07	–0.07	–0.37*	–0.37*	–0.39**
	[0.734]	[0.962]	[0.964]	[0.753]	[0.753]	[0.059]	[0.060]	[0.045]
State–owned	–0.91	–1.07	–0.99	–0.99	–0.9	–1.12	–1.17	–1.16
	[0.372]	[0.292]	[0.311]	[0.301]	[0.330]	[0.147]	[0.117]	[0.113]

Firm size: small	–0.28*	–0.23	–0.18	–0.29*	–0.24	–0.08	–0.08	–0.04
	[0.072]	[0.149]	[0.275]	[0.070]	[0.138]	[0.590]	[0.578]	[0.806]
Firm size: medium	–0.01	0.01	0.04	0	0.02	0.09	0.08	0.11
	[0.934]	[0.925]	[0.763]	[0.982]	[0.867]	[0.505]	[0.560]	[0.425]
Capital city	0.24	0.29**	0.31**	0.25*	0.28*	0.11	0.11	0.12
	[0.105]	[0.049]	[0.036]	[0.084]	[0.060]	[0.423]	[0.448]	[0.403]
Exporter	0.30**	0.24	0.17	0.27*	0.21	0.49***	0.48***	0.43***
	[0.035]	[0.106]	[0.242]	[0.057]	[0.150]	[0.000]	[0.000]	[0.001]
Constant	–0.80*	–1.19***	–1.34***	–1.15***	–1.25***	–1.85***	–1.81***	–1.95***
	[0.060]	[0.007]	[0.003]	[0.009]	[0.005]	[0.000]	[0.000]	[0.000]
Observations (number)	1,546	1,537	1,534	1,536	1,533	1,546	1,546	1,542
Adjusted R-squared	0.15	0.16	0.164	0.157	0.161	0.0858	0.089	0.0968
Country fixed effects	yes	yes	yes	yes	yes	no	no	no
Sector fixed effects	yes	yes	yes	yes	yes	yes	yes	yes

Source: World Bank 2009 and authors' analysis.
Note: Dataset comprises 1,546 firms. The dependent variable is a binary variable equal to 1 if the firm reported extending trade credit to its customers in 2009, 0 otherwise. All independent variables are lagged, using data from the Enterprise Surveys that correspond to fiscal 2007. All variables are defined in the text of the "Data and Summary Statistics" and "Empirical Results" sections. More negative values for the crisis severity variable indicate greater severity. P-values are displayed in brackets below the coefficients. Columns (1)–(5) include country and sector fixed effects. Columns (6)–(8) include sector fixed effects, but do not include country fixed effects because the crisis severity measure is on the country level. All findings are robust to replacing country fixed effects with gross domestic product per capita and controlling for a financial crisis turbulence measure and clustering the standard errors by country.
*$p = 0.1$.
**$p = 0.05$.
***$p = 0.01$.

likely to offer trade credit, even when accounting for basic firm-, sector-, and country-level differences in the multivariate analysis (table 4.3, column [1]).

A significant relationship between the competitive structure of the output market and the extension of trade credit was found in the sample during the crisis period, similar to the findings in other literature during noncrisis periods. Innovative firms and firms that reported operating in competitive markets in 2007 were significantly more likely to offer trade credit to their customers in 2009 than were firms that did not innovate or firms that did not face stiff competition from their competitors. In summary, 48 percent of competitive firms offered trade credit during the crisis, while only 40 percent of noncompetitive firms offered trade credit. The contrast is even starker for innovative firms: 51 percent of innovative firms extended trade credit, while only 34 percent of noninnovative firms extended trade credit.

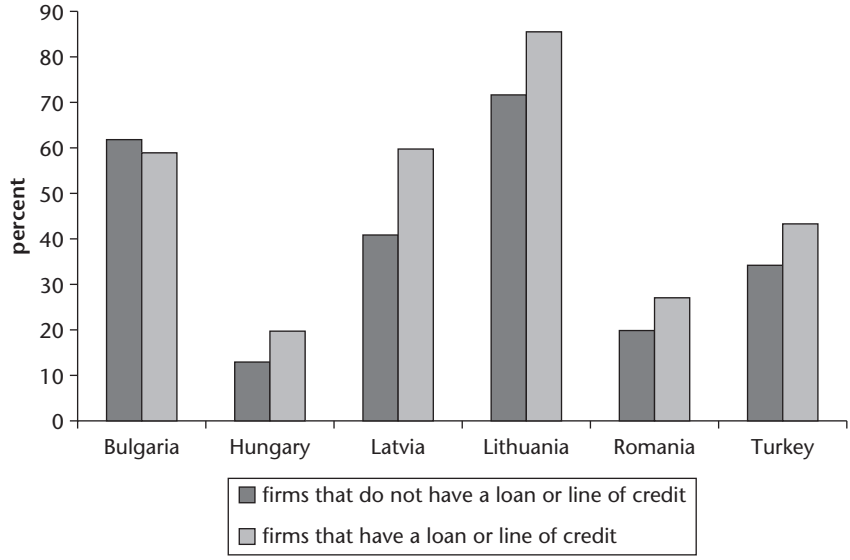
The data confirm that a supplier's liquidity is an important determinant of the extension of trade credit. Firms in the sample that had loans or lines of credit from financial institutions in 2007 were significantly more likely to extend trade credit in 2009, as figure 4.4 illustrates. Among firms that had loans or lines of credit in 2007, 48 percent offered trade credit, compared with 37 percent of those that did not have loans or lines of credit.

There is also strong evidence that the use of supplier credit affects a firm's decision to offer trade credit to its own customers. On average, in the subsample of firms that reported receiving supplier credit in 2007, 45 percent extended trade credit to their customers in 2009, compared with 38 percent in the subsample of firms that had not reported receiving supplier credit.

Columns (2)–(5) in table 4.3 confirm the results of the univariate tests summarized above. Even when one accounts for differences in basic firm, sector, and country characteristics, competitive and innovative firms are significantly more likely to extend trade credit. Additionally, firms with access to bank and supplier financing are significantly more likely to offer trade credit to their customers.

An examination of recent changes in trade credit extensions among firms that reported extending trade credit shows that firms that operate in a competitive market were also more likely to report increasing the volume of goods sold on trade credit during the crisis. This is based on a multivariate Ologit regression with the controls from the previous model plus controls for recent sales trends (not shown). The dependent variable, changes in trade credit extensions, has a value of 0 for "decreasing trade credit," a value of 1 for "maintained trade credit," and a value of 2 for "increased trade credit." The relationship between competition and the increase of trade credit is significant at the 5 percent level.

Figure 4.4 Trade Credit and Liquidity
share of surveyed firms extending trade credit



Source: World Bank 2007, 2009.

Interestingly, foreign-owned firms in competitive markets were especially likely to increase the amount of trade credit offered during the crisis, possibly because they have better access to financing that allows them to finance increased amounts of trade credit, which might offer a comparative advantage during periods of lower customer demand (Perotti and Vesnaver 2004). The relationship between increasing trade credit and the interaction term between competition and foreign ownership is significant at the 10 percent level.

Impact of the Financial Crisis on Trade Credit Decisions

According to this analysis, the degree to which a competitive market is associated with the extension of trade credit varies with the relative severity of the crisis in a given country. Using a country-level indicator of the severity of the financial crisis, there is strong evidence that a firm operating in a relatively more competitive environment is more likely to extend trade credit, and this is especially so in countries more severely affected by the crisis. The same applies for innovative firms: relative to noninnovating firms, an innovating firm is more likely to extend trade credit, and this is especially so in countries hit harder by the crisis (table 4.3, columns [6]–[8]).

At first blush, this result seems counterintuitive: if liquidity is an important determinant in whether a firm offers trade credit, why would a firm that has been hit hard by the crisis and is operating in a competitive environment with low profit margins want to suffer the additional financial constraints that come with extending trade credit? These results support the theory that due to the firm's lack of market power and because its customers have also likely been hit by the crisis, the firm has no choice but to extend trade credit as a matter of survival, consistent with the market-power theory outlined in the earlier section, "Rationales for Trade Finance." It is clear that the crisis exerted additional financial pressure on suppliers that had become credit-constrained themselves.

Hungary: A Special Case

In many respects, Hungary is an outlier when it comes to trade credit. It has, by far, the lowest percentage of firms that reported extending trade credit (16 percent, compared with an average of 51 percent among the other five countries) and the largest percentage of firms that reported decreasing the amount of goods they sell on trade credit (55 percent, compared with 23 percent among the other five countries).

This deviance from the other country-level results might be explained by a related finding that Hungary also has the lowest percentage of firms that reported having a loan or line of credit from a financial institution—which our model shows is the most significant predictor of financial intermediation among firms in our sample (table 4.3).

Conclusions

Supplier financing is a critical source of financing for firms in emerging markets, yet the determinants of the extension of trade credit are not well understood. First, the firm and market characteristics associated with the extension of supplier financing are identified. An analysis finds that the firms that operated in a competitive market or recently innovated are significantly more likely to offer trade credit to their customers, suggesting that supplier financing is often used as a competitive gesture. In addition, firms with greater liquidity to finance the extension of credit, measured as access to a line of credit or credit from their own suppliers, are more likely to extend credit.

Second, upon examination of the impact of the financial crisis on supply-chain financing decisions, the analysis finds that firms that operated in a competitive market are also more likely to increase the volume of goods sold during the crisis.

Third, a study of the heterogeneous effects of trade credit finds that, in countries hit harder by the crisis, firms in competitive markets are more likely to extend credit than firms in less-competitive markets.

Overall, these results suggest that firms in competitive markets faced an additional burden during the crisis, one that might have increased their financial vulnerability.

Notes

1. The sample of firms from Turkey covers only the manufacturing sector.
2. Compete results are available upon request.

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SECTION II

TRADE FINANCE DURING THE 2008–09 CRISIS: INNOCENT OR GUILTY?

5

TRADE FINANCE IN THE 2008–09 FINANCIAL CRISIS: EVIDENCE FROM IMF AND BAFT–IFSA SURVEYS OF BANKS

Irena Asmundson, Thomas Dorsey, Armine Khachatryan, Ioana Niculcea, and Mika Saito

The banking system provides short-term trade finance arrangements such as lending, insurance against nonpayment, or both in support of international trade. Trade finance covers a spectrum of payment arrangements between importers and exporters:

Open-account financing, the largest share of global merchandise trade, allows importers to repay exporters directly after receipt of goods, without either insurance or lending from third parties. In this context, exporters both supply working capital to importers and take on the risk of nonpayment.

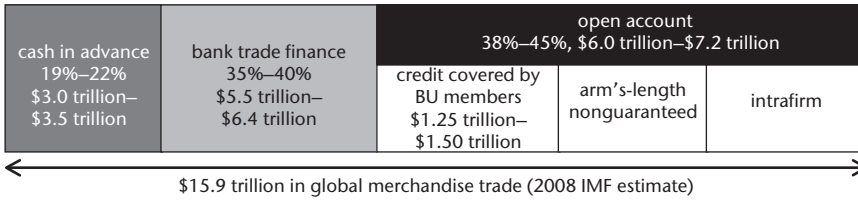
Cash-in-advance arrangements, at the opposite end of the spectrum from open-account financing, allows importers pay for goods before they are shipped, placing both nonperformance risk and the burden on working capital on the importer.

Bank-intermediated trade finance allows importers or exporters to shift some of the nonpayment or nonperformance risk to banks or to obtain bank financing to allow the exporter to receive payment before the importer is required to make it.

This chapter is an excerpt from a previously published paper by I. Asmundson, T. Dorsey, A. Khachatryan, I. Niculcea, and M. Saito, "Trade and Trade Finance in the 2008–09 Financial Crisis" (Working Paper 11/16, International Monetary Fund, Washington, DC).

The views expressed herein are those of the authors and should not be attributed to the International Monetary Fund, its executive board, or its management.

Figure 5.1 Trade Finance Arrangements, by Market Share



Sources: IMF staff estimates from IMF/BAFT-IFSA surveys of commercial banks (IMF-BAFT 2009; IMF and BAFT-IFSA 2010) and Berne Union database.
Note: BU = Berne Union. IMF = International Monetary Fund. BAFT-IFSA = Bankers' Association for Finance and Trade–International Financial Services Association.

Public sector entities such as export credit agencies (ECAs) and multilateral development bank programs also play a role that overlaps with that of commercial banks.

Figure 5.1 summarizes the market shares of each of these arrangements within the worldwide trade finance market.

Assessment of trade finance conditions is complicated by the absence of organized markets for bank-intermediated trade finance and the proprietary nature of bank information about customer relationships. To fill this gap during the current crisis, the International Monetary Fund (IMF) staff and the Bankers' Association for Finance and Trade (BAFT)—now merged with International Financial Services Association (BAFT-IFSA)—conducted four surveys of banks about trade finance between December 2008 and March 2010 that covered developments from the fourth quarter of 2007 through the fourth quarter of 2009 and the banks' outlook for 2010.[1] In addition, the authors discussed trade finance with many representatives of commercial banks, ECAs, and other market participants in the context of outreach, conferences, and bilateral discussions.

Trade and Financial Market Developments in 2008–09

Global trade entered the financial crisis already unsettled by other developments. The sharp drop in trade in late 2008 came after a period of turmoil in global commodities trade. In 2007 and early 2008, prices of both food and fuel increased sharply, with wheat prices doubling and rice prices almost tripling. Following difficult harvests in Australia and India (among other places), several countries banned exports to maintain lower food prices for staples internally. Fuel prices in 2007 rose by around 50 percent, mostly from increased demand, which also affected fertilizer prices (some of which is produced from natural gas), in turn lowering potential agricultural output.

Against this backdrop, futures contracts reportedly were being broken because the high prices on the spot market more than compensated for having to pay penalties. This development led to fears that more widespread market breakdowns would occur, and buyers became more worried about counterparty risk.

The disruption to trade finance in late 2008 and early 2009 did not occur in isolation; it occurred against a backdrop of sharply falling international trade and a broader disruption to global financial markets. The bankruptcy of Lehman Brothers in September 2008, coming on the heels of lesser financial market failures, exacerbated concerns over counterparty risk in the financial sector, caused short-term funding costs to spike, and the turmoil in financial markets spilled over into goods markets. Emerging markets, which had been assumed to have decoupled from developed country growth, were shown to remain dependent on exports. The magnitude and timing of developments in international trade and broader financial markets provides some context for assessing developments in trade finance and the influence of these markets on trade finance and vice versa.

International Trade

International trade had a sharp and globally synchronized fall in the second half of 2008 and early 2009. Exports of advanced, emerging, and developing economies were all growing robustly through mid-2008 before dropping sharply in the second half of 2008 and early 2009, as figure 5.2 illustrates.

The reversal was most pronounced for developing economies, where a commodity price boom and decline reinforced the roughly simultaneous effects of rising partner-country demand for commodities until mid-2008 and the subsequent sharp fall in demand. Although exports of advanced, emerging, and developing economies stabilized in early and mid-2009 and recovered sharply in late 2009–early 2010 in most major economies, trade was still much lower in early 2010 than at the mid-2008 peak.

Financial Markets

The financial crisis touched off by the September 2008 collapse of Lehman Brothers manifested in sharply tightened credit conditions in September and October of 2008. Borrowing costs for even the strongest banks rose immediately as London interbank offered rates (LIBOR) rose by roughly one full percentage point, as figure 5.3 illustrates. However, policy rates of major central banks responded quickly and brought LIBOR rates down to pre-Lehman levels within a few weeks and by more than three percentage points from pre-Lehman levels by the second quarter of 2009.

Figure 5.2 Merchandise Trade Index, 2007 to mid-2010

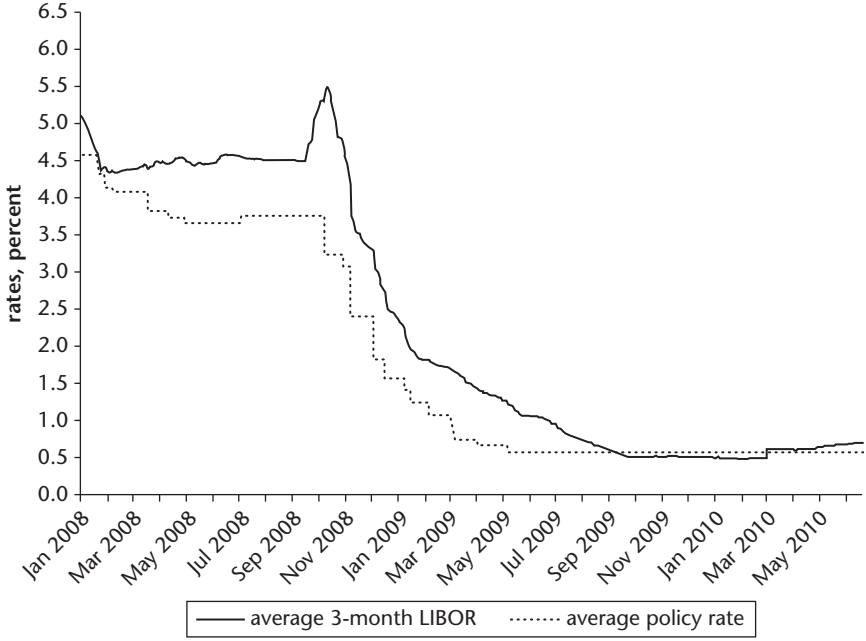
Sources: IMF staff estimates based on Haver Analytics data and WTO 2010.
Note: January 2008 = 100, in U.S. dollars. Trade data on industrial, emerging, and developing countries are based on Haver Analytics reporting of 31, 32, and 20 countries, respectively.

The impact of the increased cost of funds was spread unevenly across the markets, banks, and nonbank financial institutions of advanced and emerging economies. The interest-rate spreads above policy rates rose and fell rapidly in the advanced economies, as shown in figure 5.4, coming close to precrisis levels by January 2009 and dropping below precrisis levels by mid-2009.

As for the emerging markets, debt market spreads rose by much larger margins, fell much more gradually, and remained above pre-Lehman levels in the first quarter of 2010, as figure 5.5 illustrates.

The disruption to lending correlated with the distance between the borrower and the ultimate holder of the debt. Lending volumes quickly reflected the declining economic activity and the financial shock of the crisis. Loans to nonfinancial firms dropped in the Euro Area and the United States by 1 percent and 14 percent, respectively, between the fourth quarter of 2008 and the third quarter of 2009, as shown in figure 5.6.

Figure 5.3 Global Funding Pressure, 2008 to mid-2010
average of Euro Area, U.K., and U.S. rates, by percent



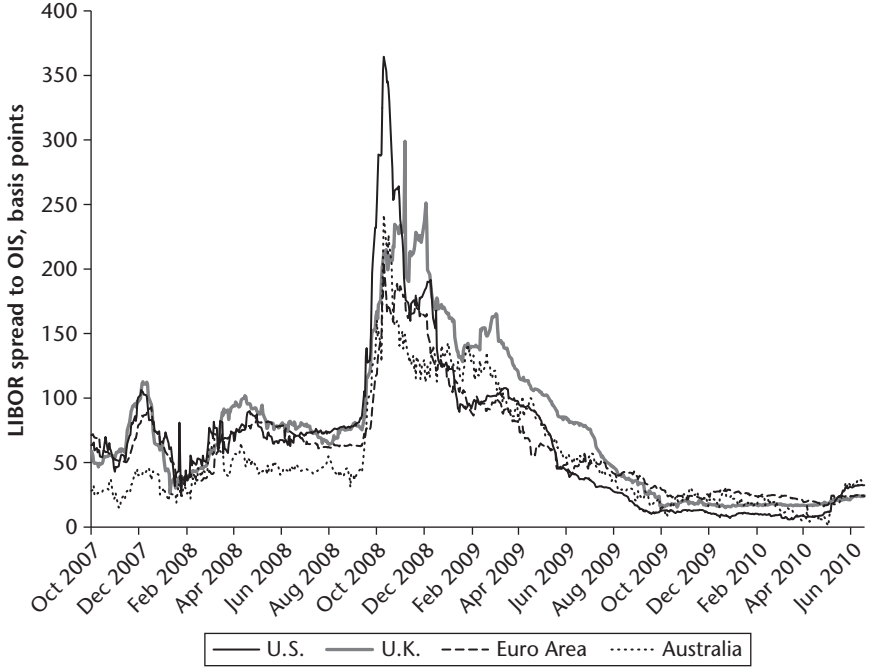
Source: Bloomberg database.
Note: LIBOR = London interbank offered rate.

However, over the same period, the decline in commercial paper volumes was much more pronounced, falling by 22 percent and 40 percent for U.S. financial and nonfinancial issuers, respectively, as figure 5.7 shows. The much sharper decline in traded commercial paper may have reflected the widely reported lack of trust in all securitized debt following the onset of the crisis, even though commercial paper is a direct obligation of the underlying borrower.

Evidence on Bank-Intermediated Trade Finance

The crisis affected both bank trade finance and other financial markets. However, bank-intermediated trade finance largely held up during the crisis. Banks were increasingly cautious with real-sector customers and counterparty banks, and pricing margins often increased. However, these factors were more than offset by an increase in risk aversion on the part of exporters seeking protection from risk. As a result, the share of world trade supported by bank-intermediated trade

Figure 5.4 Three-Month LIBOR Spreads in Advanced Markets
overnight index swap, in basis points

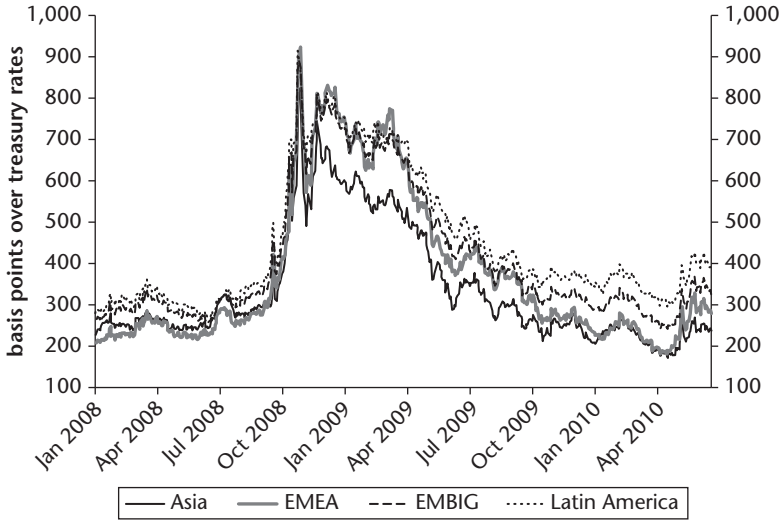


Source: Bloomberg database.
Note: LIBOR = London interbank offered rate. OIS = overnight indexed swap.

finance appears to have *increased* during the crisis. The causes of the increased price and decreased value of trade finance appear to be mostly spillovers from broader financial markets and the recession-induced decline in the value of international trade rather than specific problems in the trade finance markets themselves.

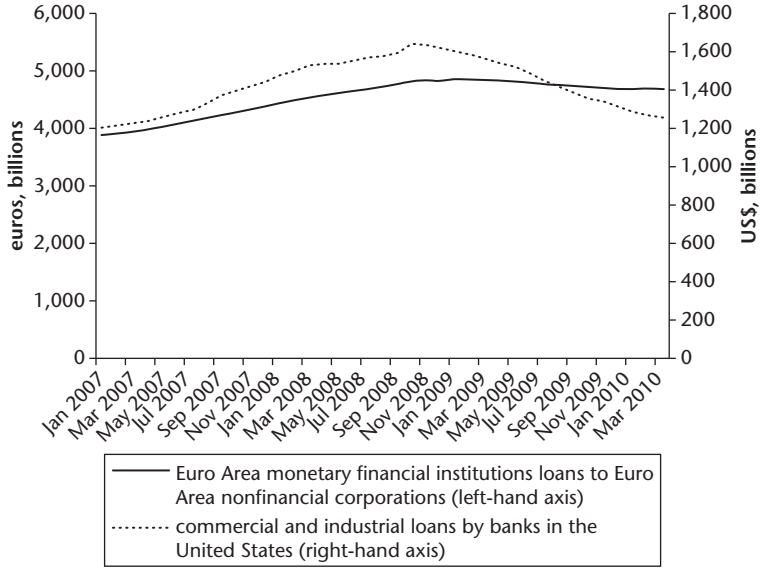
IMF staff, with BAFT-IFSA and the assistance of many other organizations, conducted four surveys of commercial banks to fill gaps in information about commercial-bank trade finance since December 2008, as box 5.1 further describes. The survey responses came from banks of widely varying sizes in countries representing all income groups and major geographic regions. Table 5.1 shows summary data on the characteristics of banks responding to the fourth survey. The average bank responding to the survey is active in trade finance in three major regions and has branches in two regions. Except in Sub-Saharan Africa, one-fifth or more of the banks were active in each region, with coverage of emerging Asia, industrial countries, and Latin America being particularly high.[2]

Figure 5.5 External Debt Market Spreads in Emerging Markets, 2008 to mid-2010
basis points over treasury rates



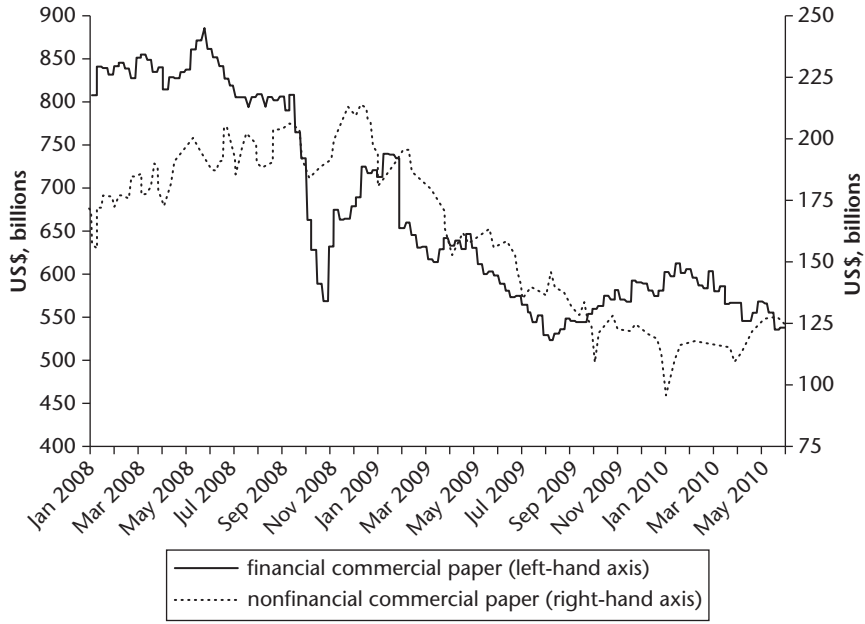
Source: Bloomberg database.
Note: EMEA = Europe, Middle East, and Africa. EMBIG = Emerging Markets Bond Index Global.

Figure 5.6 Loans to Nonfinancial Firms in the Euro Area and U.S., 2007 to mid-2010



Source: DDP database (U.S. Federal Reserve) and Statistical Data Warehouse (European Central Bank).

Figure 5.7 U.S. Commercial Paper: Outstanding Accounts, 2008 to mid-2010



Source: Bloomberg database.

Value of Trade Finance

The value of trade covered by bank-intermediated trade finance held roughly stable and even rose during the first phase of the crisis (fourth quarter of 2008 versus fourth quarter of 2007), even as the value of trade fell sharply, as table 5.2 and figure 5.8 show. During the most intense period of the crisis (from October 2008 to January 2009), trade finance did decline in value by amounts on the order of 10 percent, but the value of merchandise trade fell much more sharply during the same period.

In almost all regions and periods through the second quarter of 2009, the value of trade finance activities declined less than merchandise trade, or trade finance value rose even while exports were falling. The smaller decline in trade finance presumably reflected a sharply heightened risk aversion of the part of real sector trade participants and their attempt to address this risk aversion by shifting some of the transaction risk to the banks. Trade also showed signs of recovery—and a more widespread recovery—by the fourth quarter of 2009 as the recovery in

Box 5.1 The IMF/BAFT-IFSA and Other Bank Surveys

Market conditions for trade finance are difficult to assess because of the absence of data. Bank trade finance is generally based on relationship banking with individual clients. Pricing and availability of bank-intermediated trade finance depends on a complex web of relationships between client, counterparty, and counterparty banks. As such, data are intermingled with proprietary information about bank-client relationships and are difficult to come by. Data on open-account and cash-in-advance transactions are similarly tied into individual customer relationships, but data are even harder to come by in the absence of the information clearinghouse role provided with transactions channeled through banks.

The IMF and BAFT-IFSA conducted four surveys of commercial banks since late 2008 to fill these informational gaps. All four surveys were designed mostly by IMF staff with the participation of BAFT-IFSA and member banks and direct input from the European Bank for Reconstruction and Development (EBRD) and HSBC. The surveys were distributed primarily by BAFT (BAFT-IFSA for the fourth survey) with the assistance of many cooperating public and private sector organizations. In particular, valuable assistance in further distribution was provided by FELABAN (Federación Latinoamericana de Bancos). Data were compiled and summarized by FImetrix for the second through fourth surveys. The third and fourth surveys also benefited from collaboration on survey design with the Banking Commission of the International Chamber of Commerce (ICC) and from the assistance of the Asian Development Bank (ADB) and EBRD in promoting responses in their regions of operations. The ICC has also conducted its own surveys and published the results (ICC 2009, 2010). Although the IMF/BAFT-IFSA and ICC surveys have different focuses and different sets of respondents, the results tended to be broadly similar where the survey questions overlapped.[3]

the value of merchandise trade outstripped the growth in the value of trade finance in most regions, as figure 5.9 illustrates.

The relatively resilient value of trade finance is also reflected in an increased share of global trade moving from open-account to bank-intermediated trade finance as the crisis progressed. Banks estimate that open-account transactions fell below the level of bank-supported trade finance in the second quarter of 2009, as figure 5.10 shows. These trends appear to reflect increased risk aversion on the part of both banks (increased margins) and nonfinancial corporations (decline in the open-account share). The slight decline in bank-intermediated trade finance in the most recent period presumably reflected a return toward the long-term trend of a shift to open-account transactions as the crisis abated.

Why the Value of Trade Finance Changed

Banks attributed both the declines and the increases in the value of trade finance mostly to demand factors. Of these factors, the change in the value of trade was by

Table 5.1 Summary of Bank Survey Respondent Characteristics
percentage of 100 respondents

	Industrial countries	Sub-Saharan Africa	Emerging Europe	Southeast Europe and Central Asia	Emerging Asia including China and India	Developing Asia	Middle East and the Maghreb	Latin America
Primary location of trade finance activities	69	9	31	28	75	24	26	42
Location of trade finance branch	50	6	21	22	29	17	15	41
Location of global headquarters	45	1	6	9	5	6	4	24
			small banks (< $5 billion)		medium-size banks		large banks (> $100 billion)	
Most recent total assets			33		33		34	

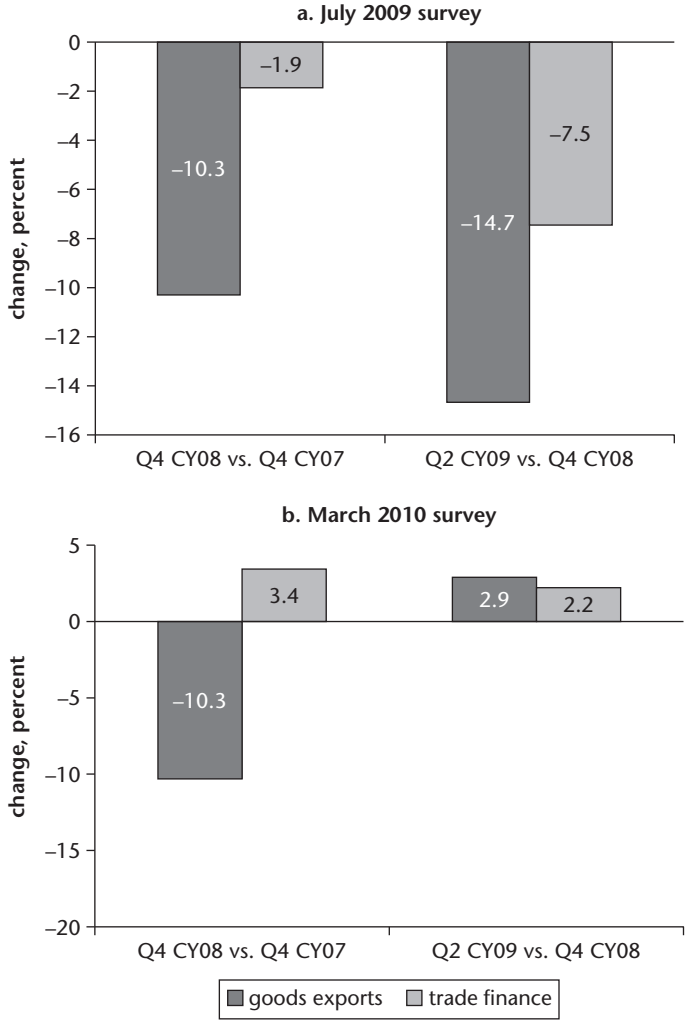
Source: IMF and BAFT-IFSA 2010.

Table 5.2 Changes in Merchandise Exports and Trade Finance, by Country Group
percentage of growth

	Q4 CY08 vs. Q4 CY07		Q1 CY09 vs. Q4 CY08[a]		Q2 CY09 vs. Q4 CY08[b]		Q4 CY09 vs. Q4 CY08	
	Goods exports	Trade finance	Goods exports	Trade finance	Goods exports	Trade finance	Goods exports	Trade finance
Industrial countries	–12.4	2.4	–31.0	–9.2	–13.5	–9.1	2.6	0.4
Sub-Saharan Africa	–11.2	1.4	–43.2	–8.1	–13.2	–3.0	4.9	6.5
Emerging Europe	–14.9	4.3	–33.0	–11.1	–11.8	–10.4	9.2	0.7
Southeast Europe and Central Asia	–8.1	–4.3	–54.5	–13.2	–30.6	–7.8	–3.4	0.2
Emerging Asia including China and India	–0.4	9.1	–29.0	–9.7	–18.0	0.0	3.8	6.1
Developing Asia	0.4	4.2	–8.8	–9.1	0.8	–3.8	10.1	1.8
Middle East and the Maghreb	1.0	2.2	–20.4	–5.3	1.4	–5.3	11.1	4.4
Latin America	–10.4	4.8	–37.4	–9.5	–10.4	–13.7	1.9	2.2
Overall	–10.3	3.4[c]	–32.2	–9.6[d]	–14.7	–7.5	2.9	2.2[c]

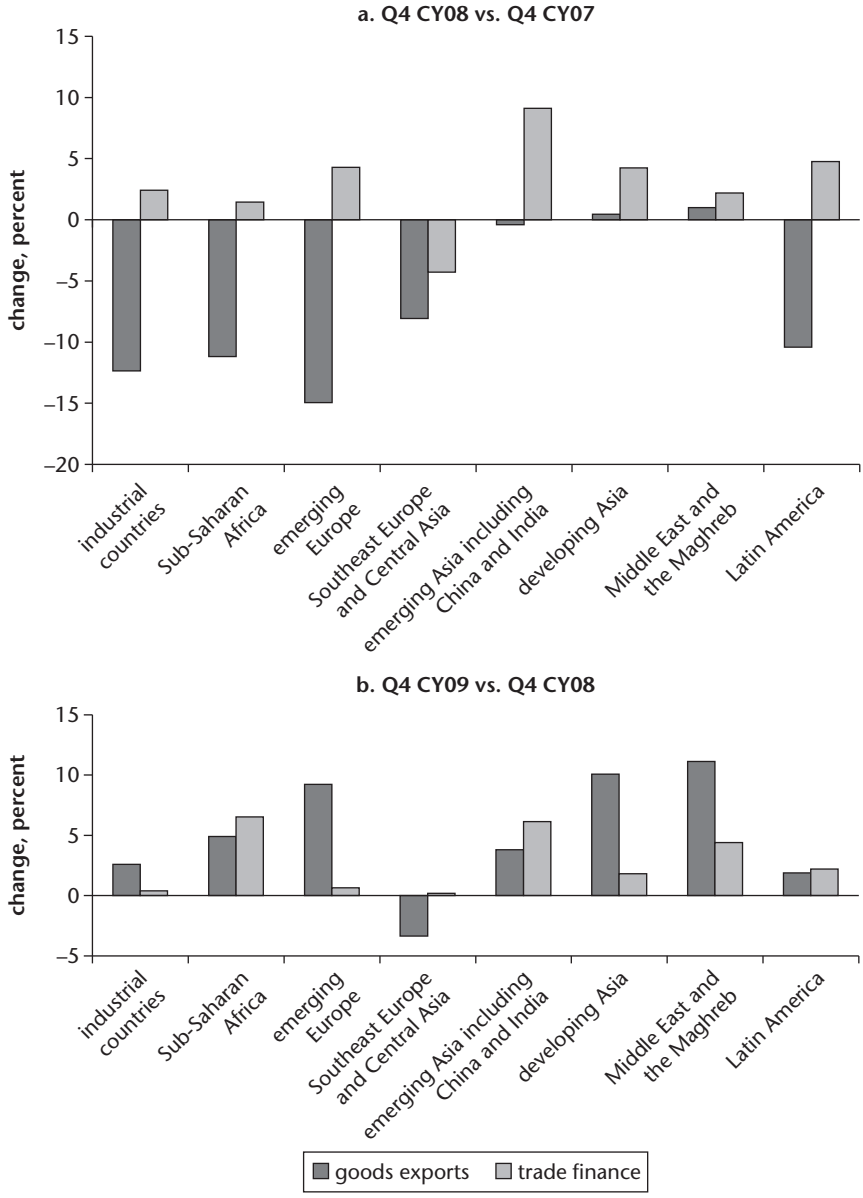
Sources: IMF-BAFT 2009; IMF and BAFT-IFSA 2010; Haver Analytics; International Financial Statistics (IMF); WTO 2010.
Note: CY = calendar year. The respondents' samples differ across surveys.
a. Based on March 2009 IMF-BAFT survey. Country categories in this survey are broadly consistent, though not identical, to the categories in the July 2009 and March 2010 surveys.
b. Based on July 2009 IMF-BAFT survey.
c. Weighted average of regional changes by activity level in respective region.
d. Overall figure computed using weights in July 2009 IMF–BAFT survey.

Figure 5.8 Overall Changes in Merchandise Exports and Trade Finance



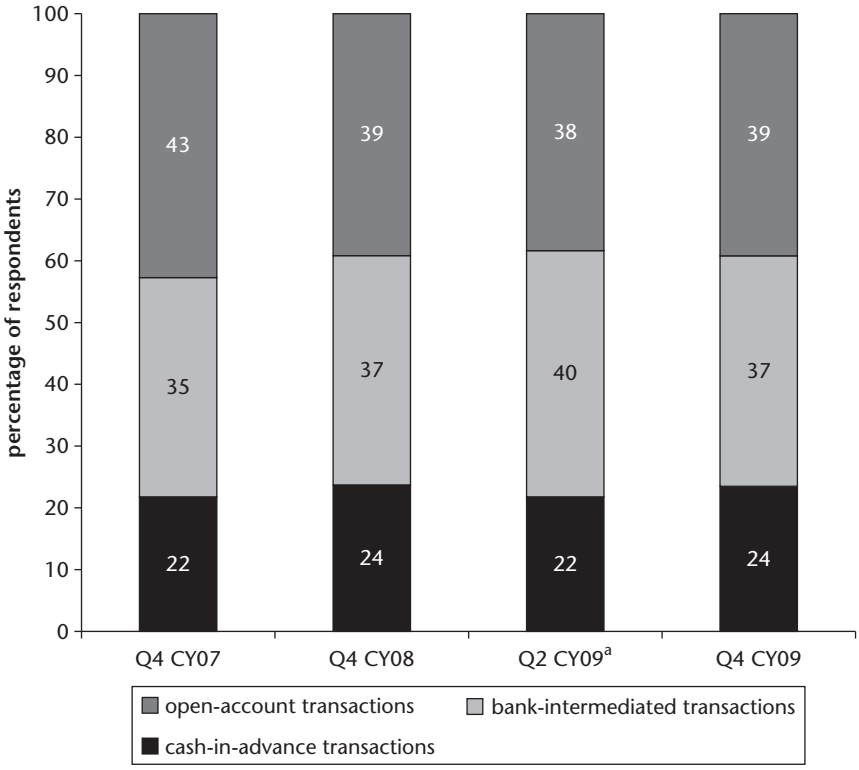
Sources: IMF-BAFT 2009; IMF and BAFT-IFSA 2010; Haver Analytics; International Financial Statistics (IMF); WTO 2010.
Note: CY = calendar year. The respondents' samples differ across surveys. The overall change in trade finance is computed as the weighted average of regional changes by activity level in respective region.

Figure 5.9 Changes in Merchandise Exports and Trade Finance, by Country Group



Sources: IMF and BAFT-IFSA 2010; Haver Analytics; International Financial Statistics (IMF); WTO 2010.
Note: CY = calendar year.

Figure 5.10 Estimated Composition of the Trade Finance Industry



Sources: IMF-BAFT 2009; IMF and BAFT-IFSA 2010.
Note: CY = calendar year. The data show respondents' answers to this survey question: "What is your 'best' estimate for the composition of the trade finance industry as a whole?" The respondents' samples differ across surveys.
a. Figures for Q2 CY09 are from the July 2009 survey, which did not have the same set of respondents as the 2010 survey and therefore may not be fully comparable to the figures in other columns. However, the survey results for equivalent periods between the July 2009 and March 2010 surveys line up closely, suggesting a broad consistency in results across both surveys.

far the most important, with the rise or fall in commodity prices a distant second, as table 5.3 shows. Significant minorities of institutions cited supply-side factors (such as credit availability at either their own institution or counterparties) and shifts to or from open-account or cash-in-advance transactions. Looking across different size classes of banks, credit availability factors seemed to be relatively more important at large banks, presumably reflecting the greater need for deleveraging at some of the largest institutions.

Table 5.3 Reasons for Decline in Value of Trade Finance
percentage of respondents

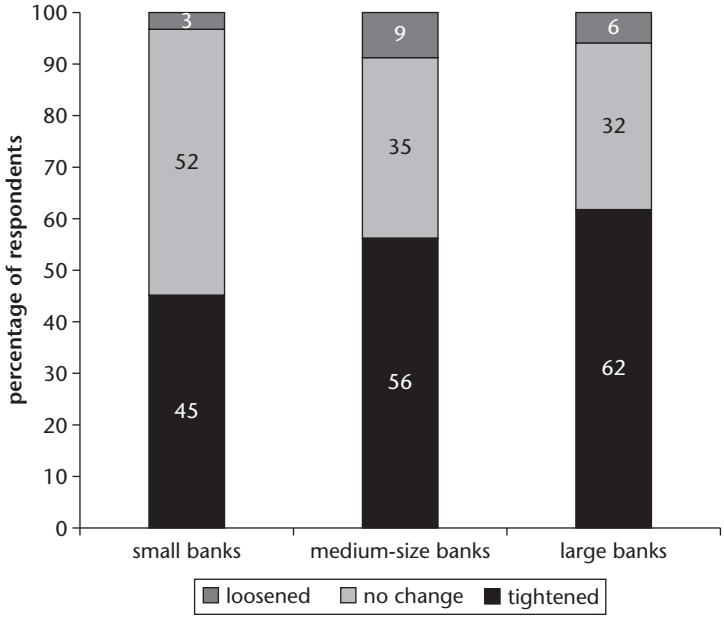
	All banks	Small banks	Medium-size banks	Large banks
Fall in the demand for trade activities	85	81	90	80
Fall in the price of transactions (e.g., commodity prices)	38	25	24	56
Less credit availability at your own institution	30	19	24	40
Less credit availability at your counterparty banks	30	6	24	48
Shift toward open-account transactions	23	19	33	16
Shift toward cash-in-advance transactions	21	31	14	20
Decline in support from export credit agencies	8	0	5	16
Decline in credit from multilateral institutions	0	0	0	0
Other reasons	18	31	10	16

Source: IMF and BAFT-IFSA 2010.
Note: Small banks = < $5 billion in assets; medium-size banks = $5 billion–$100 billion in assets; large banks = > $100 billion in assets. Data reflect only the views of the 61 respondents that reported a decline in value of trade finance in at least one geographic region presented and that subsequently marked at least one option for the question.

Banks adopted stricter risk management practices in response to higher risks, as figure 5.11 and tables 5.4 and 5.5 illustrate. They differentiated more, depending on the individual client, the business segment (trading, retail, commodities, and so on), and home country. Banks have also limited their own risk through expanded insurance, shorter loan maturities, and stronger covenants and by requiring higher cash deposits or other collateral from clients. Large banks were more cautious than small and medium-size banks relative to countries seen as posing high financial risks, and they were also more likely to request confirmations or export credit insurance. On the other end of the size spectrum, small and medium-size banks were more likely than large banks to manage risk by requiring greater collateral or stronger covenants. The 2010 ICC survey also examined Society for Worldwide Interbank Financial Telecommunication (SWIFT) message data and found evidence of increased risk aversion by banks and customers, including refusals to honor letters of credit (LCs) because of discrepancies in documents (ICC 2010).[4]

Most banks of all sizes indicated in the March 2010 survey that they could satisfy customer demands for trade finance, although a substantial minority of large

Figure 5.11 Overall Change in Trade-Related Lending Guidelines, Q4 CY09 vs. Q4 CY08



Source: IMF and BAFT-IFSA 2010.
Note: CY = calendar year. Small banks = < $5 billion in assets; medium-size banks = $5 billion–$100 billion in assets; large banks = > $100 billion in assets.

banks indicated that they could not, as figure 5.12 shows. This result was consistent with the greater emphasis on credit availability concerns at large banks and also with the perception that large banks had been more heavily affected by the need for deleveraging.

Bank Pricing and Credit Conditions for Trade Finance

The survey evidence on pricing is also consistent with a demand-driven story in which the decline in trade finance plays no more than a modest role in the decline in merchandise trade. The survey results indicate some increased pricing for trade finance, at least relative to banks' cost of funds. Other things being equal, the increased pricing should have reduced the use of bank-intermediated trade finance as a share of trade. The increased share of bank-intermediated trade finance in spite of increased pricing also suggests that demand factors such as exporter risk aversion dominated.

Table 5.4 Change in Trade-Related Lending Guidelines: Tightening
percentage of respondents

	All banks	Small banks	Medium-size banks	Large banks
Became more cautious with certain sectors	74	71	78	71
Became more cautious with certain countries	77	57	67	100
Requested more collateral (including equity contributions and cash deposits)	62	64	83	43
Requested shorter tenors	58	57	56	62
Requested stronger covenants	47	64	56	29
Faced more regulatory controls	43	57	33	43
Requested more DC or LC (including standby and confirmed LC)	42	21	44	52
Requested more export credit insurance	28	21	11	48
Other	2	0	0	5

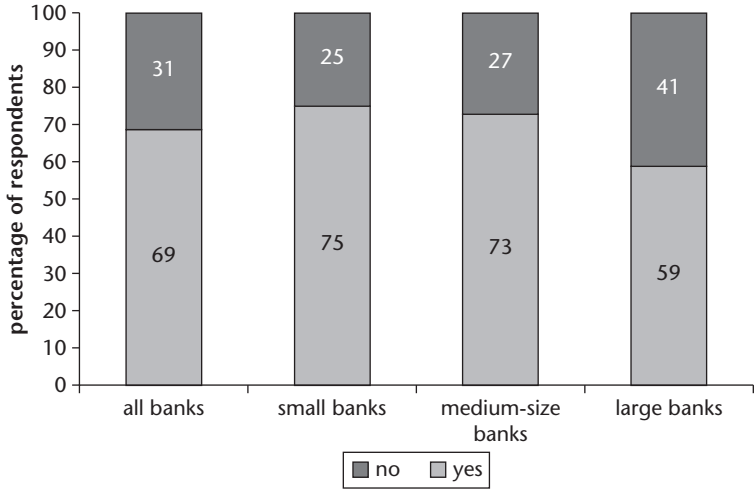
Source: IMF and BAFT-IFSA 2010.
Note: DC = documentary credit. LC = letter of credit. Small banks = < $5 billion in assets; medium-size banks = $5 billion–$100 billion in assets; large banks = > $100 billion in assets. Data reflect only the views of the 53 respondents that reported a tightening in trade-related lending guidelines from Q4 CY08 to Q4 CY09 and that subsequently answered this question.

Table 5.5 Change in Trade-Related Lending Guidelines: Loosening
percentage of respondents

	All banks	Small banks	Medium-size banks	Large banks
Became less cautious with certain sectors	83	100	67	100
Became less cautious with certain countries	50	0	33	100
Requested less collateral (including equity contributions and cash deposits)	67	100	67	50
Requested longer tenors	50	100	33	50
Requested weaker covenants	50	100	67	0
Faced fewer regulatory controls	17	0	33	0
Requested fewer DC or LC (including standby and confirmed LC)	33	0	33	50
Requested less export credit insurance	33	0	0	100
Other	0	0	0	0

Source: IMF and BAFT-IFSA 2010.
Note: DC = documentary credit. LC = letter of credit. Small banks = < $5 billion in assets; medium-size banks = $5 billion–$100 billion in assets; large banks = > $100 billion in assets. Data reflect only the views of the six respondents that reported a loosening in trade-related lending guidelines from Q4 CY08 to Q4 CY09 and that subsequently answered this question.

Figure 5.12 Ability to Satisfy "All Customer Needs"



Sources: IMF and BAFT-IFSA 2010.
Note: Small banks = < $5 billion in assets; medium-size banks = $5 billion–$100 billion in assets; large banks = > $100 billion in assets.

Average pricing margins for trade finance rose during the crisis, but fewer than half of the banks increased pricing in any single period. More banks increased pricing than decreased pricing relative to their costs of funds. However, most banks either held pricing steady or reduced pricing during the following periods:

- Fourth quarter of 2007 to fourth quarter of 2008 (table 5.6)
- Fourth quarter of 2008 to second quarter of 2009 (table 5.7)
- Fourth quarter of 2008 to fourth quarter of 2009 (table 5.8).

However, because the large banks account for a substantial majority of trade finance, average pricing margins for trade finance as a whole almost certainly increased. The largest banks were much more likely to increase pricing, and by larger average amounts, than the unweighted averages for all banks shown in the tables. These data suggest that pricing pressures eased in 2009 as the shares of banks reporting pricing increases, as opposed to decreases, fell sharply, as figure 5.13 illustrates.

The average increases in pricing were moderate for most of those banks reporting increases, particularly in 2009, as shown in figure 5.14.

There is some differentiation, according to bank size, in the factors that banks see as affecting the pricing of trade finance. Roughly similar shares of large,

Table 5.6 Pricing Changes by Bank Size, Q4 CY08 vs. Q4 CY07
percentage of respondents

	All banks	Small banks	Medium-size banks	Large banks
Letters of credit				
Increased	38	23	19	70
No change	52	63	71	24
Decreased	10	13	10	6
Mean change	31	17	26	50
Median change	0	0	0	50
Export credit insurance				
Increased	29	22	4	57
No change	62	61	88	39
Decreased	9	17	8	4
Mean change	14	23	0	21
Median change	0	0	0	0
Trade-related lending				
Increased	48	41	31	69
No change	40	44	48	28
Decreased	13	15	21	3
Mean change	48	64	29	53
Median change	0	0	0	20
Average across products				
Increased	38	29	18	65
No change	51	56	69	31
Decreased	10	15	13	4
Mean change	31	35	18	41
Median change	0	0	0	23

Source: IMF and BAFT-IFSA 2010.
Note: CY = calendar year. Small banks = < $5 billion in assets; medium-size banks = $5 billion–$100 billion in assets; large banks = > $100 billion in assets. Mean figures are percentage changes in the pricing margin above bank cost of funds. Mean and median figures do not include responses for which detailed pricing data were not provided.

medium-size, and small banks reported that they increased pricing margins because of the increased bank cost of funds; the share of banks citing this factor fell from about two-thirds in late 2008 to just under half in the first half of 2009. However, the increased risk of trade finance lending relative to other bank lines of business was a greater concern for small and medium-size banks in the latter period, as table 5.9 shows. Conversely, increased capital requirements were cited more often by large banks.

Large banks diverged widely from other banks in their views about the impact of Basel II capital requirements.[5] For example, large banks were more concerned

Table 5.7 Pricing Changes by Bank Size, Q2 CY09 vs. Q4 CY08
percentage of respondents

	All banks	Small banks	Medium-size banks	Large banks
Letters of credit				
Increased	46	38	48	54
No change	36	41	33	33
Decreased	18	21	19	13
Mean change	23	16	25	31
Median change	0	0	0	0
Export credit insurance				
Increased	41	32	48	45
No change	50	60	43	45
Decreased	9	8	9	10
Mean change	19	1	36	18
Median change	0	0	0	0
Trade-related lending				
Increased	45	33	44	61
No change	35	45	30	26
Decreased	20	21	26	13
Mean change	28	24	14	57
Median change	0	0	0	22
Average across products				
Increased	44	35	47	53
No change	40	49	35	35
Decreased	16	17	18	12
Mean change	23	14	25	35
Median change	0	0	0	7

Source: IMF-BAFT 2009.
Note: CY = calendar year. Small banks = < $5 billion in assets; medium-size banks = $5 billion–$100 billion in assets; large banks = > $100 billion in assets. Mean figures are percentage changes in the pricing margin above bank cost of funds. Mean and median figures do not include responses for which detailed pricing data were not provided.

about the impact of Basel II on their ability to provide trade finance, as table 5.10 shows. This finding is consistent with the more frequent citation of increased capital requirements as a factor behind increased pricing margins.

Consistent with the survey results on the factors driving increased pricing, no small banks and only a minority of medium-size banks cited Basel II as having a negative impact on their ability to provide trade finance. Interestingly, a minority of banks of varying size cited Basel II as having a positive impact on their ability to provide trade finance. As with the banks' divergent responses about pricing, this finding may reflect that differing initial capital and risk requirements have

Table 5.8 Pricing Changes by Bank Size, Q4 CY09 vs. Q4 CY08
percentage of respondents

	All banks	Small banks	Medium-size banks	Large banks
Letters of credit				
Increased	40	47	35	39
No change	36	33	55	21
Decreased	23	20	10	39
Mean change	6	9	–5	15
Median change	0	0	0	0
Export credit insurance				
Increased	32	39	24	32
No change	49	43	64	39
Decreased	20	17	12	29
Mean change	3	–13	5	11
Median change	0	0	0	0
Trade-related lending				
Increased	47	56	41	44
No change	23	15	38	16
Decreased	31	30	21	41
Mean change	11	25	–11	23
Median change	0	0	0	0
Average across products				
Increased	40	47	34	38
No change	36	31	52	25
Decreased	25	22	14	36
Mean change	6	7	–4	16
Median change	0	0	0	0

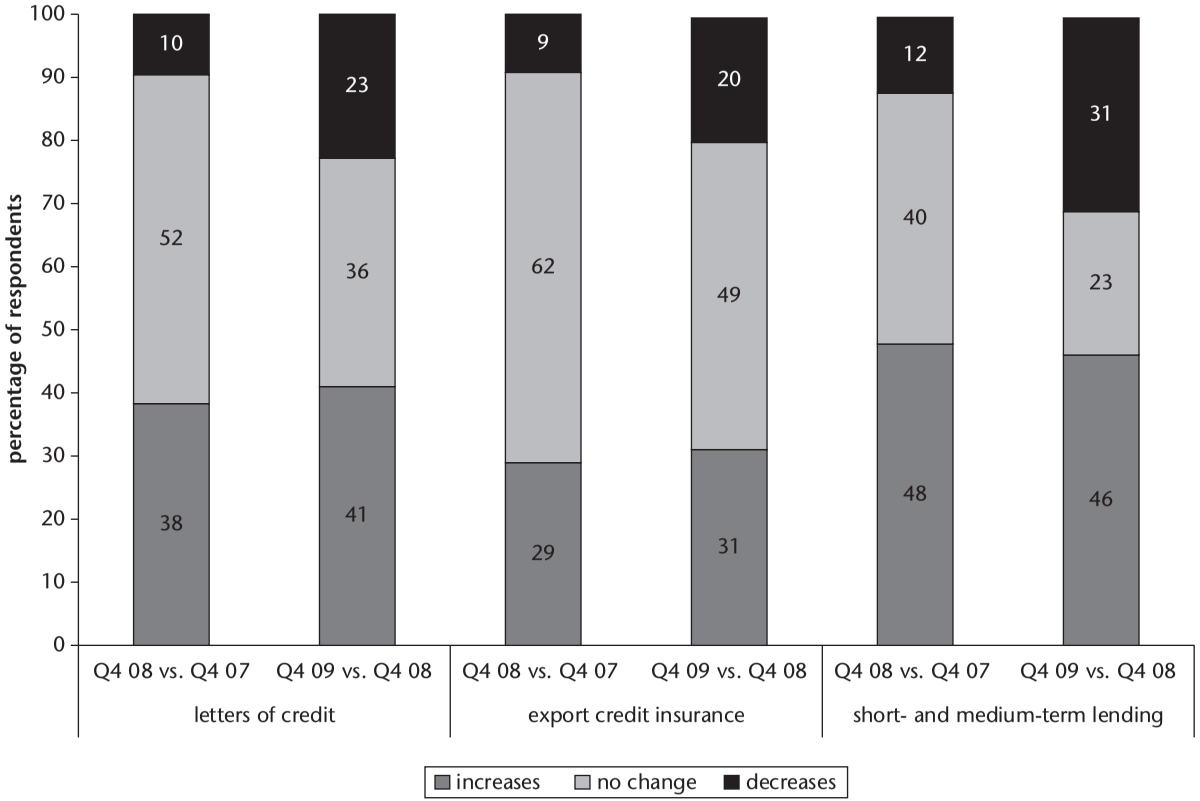
Source: IMF and BAFT-IFSA 2010.
Note: CY = calendar year. Small banks = < $5 billion in assets; medium-size banks = $5 billion–$100 billion in assets; large banks = > $100 billion in assets. Mean figures are percentage changes in the pricing margin above bank cost of funds. Mean and median figures do not include responses for which detailed pricing data were not provided.

increased the relative competitiveness of the more conservative banks once Basel II requirements are in effect.

In addition to capital requirements and banks' costs of funds, the probability of default decreased over the course of 2009, as shown in figure 5.15.

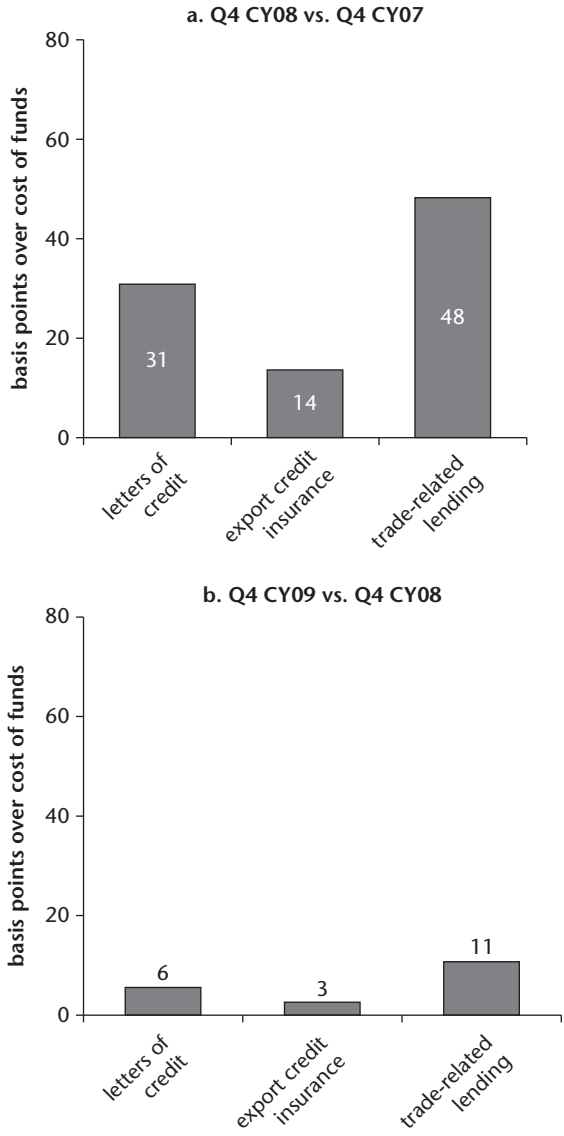
Most of the respondents indicated that there was no change in defaults. A net of only 13 percent (the difference between the percentage reporting an increase and the percentage reporting a decrease) reported an increase in default risk in 2009, against a net of 30 percent between the fourth quarter of 2007 and the fourth quarter of 2008.

Figure 5.13 Effect of "Recent Developments" on Pricing of Trade Instruments



Sources: IMF and BAFT-IFSA 2010.

Figure 5.14 Change in Trade Instrument Pricing



Sources: IMF and BAFT-IFSA 2010.
Note: CY = calendar year.

Table 5.9 Reasons for Trade Finance Price Increases
percentage of respondents

	Q4 CY08 vs. Q4 CY07				Q4 CY09 vs. Q4 CY08			
	All banks	Small banks	Medium-size banks	Large banks	All banks	Small banks	Medium-size banks	Large banks
Own institution's increased cost of funds	57	45	44	72	41	47	24	48
Increased risk of trade finance products relative to other working capital lending to the same nonfinancial corporate borrowers	36	30	28	45	42	42	47	39
Increased capital requirements	34	20	28	48	42	21	35	65
Other	18	25	17	14	25	37	18	22

Source: IMF and BAFT-IFSA 2010.
Note: CY = calendar year. Small banks = < $5 billion in assets; medium-size banks = $5 billion–$100 billion in assets; large banks = > $100 billion in assets. Data reflect only the views of respondents that reported an increase in pricing and that subsequently answered this question.

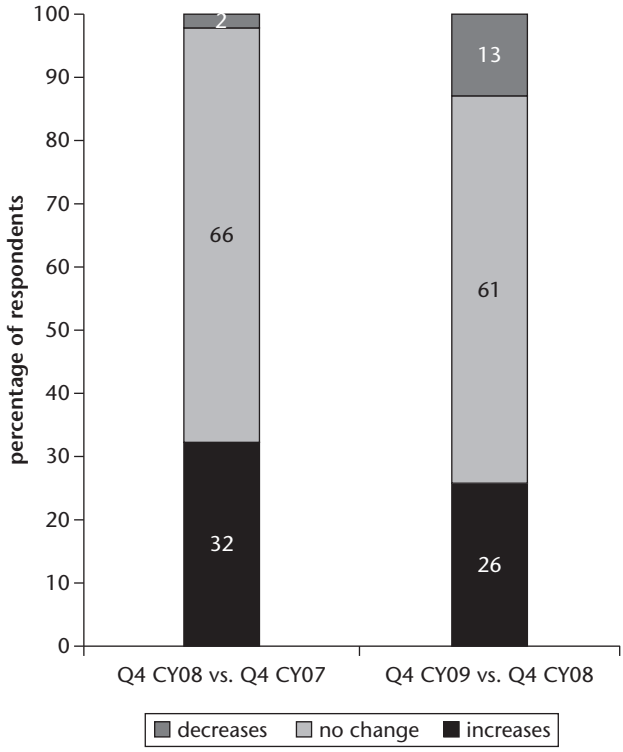
Table 5.10 Impact of Basel II on Trade Finance Availability
percentage of respondents

	Q4 CY08 vs. Q4 CY07				Q4 CY09 vs. Q4 CY08			
	All banks	Small banks	Medium-size banks	Large banks	All banks	Small banks	Medium-size banks	Large banks
Not applicable (including Basel II has not been implemented)	17	50	0	14	12	25	0	13
No impact	52	50	80	43	42	75	71	20
Positive impact	9	0	0	14	12	0	14	13
Negative impact	22	0	20	29	35	0	14	53
Other	0	0	0	0	0	0	0	0

Source: IMF and BAFT-IFSA 2010.
Note: CY = calendar year. Small banks = < $5 billion in assets; medium-size banks = $5 billion–$100 billion in assets; large banks = > $100 billion in assets. Includes only respondents reporting price increases due to increased capital requirements and that subsequently marked at least one option for the question.

However, perceptions of higher default risks continue to increase the price of credit. Among the July 2009 survey respondents that indicated they had increased prices, 47 percent identified default risk as a significant force in higher margins, and 52 percent cited the increased cost of funds as a leading reason for higher margins.

Figure 5.15 Change in Probability of Default, 2007–09



Sources: IMF and BAFT-IFSA 2010.
Note: CY = calendar year.

The increased pricing margins that came with the crisis may persist regardless of developments in defaults and Basel II (or Basel III) requirements. Although the surveys did not address this persistence, market participants widely believe that markets are unlikely to return to precrisis conditions because trade finance pricing margins were artificially low before the crisis (as was also the case with other types of short-term financing). This belief is consistent with the banks' view that trade finance was often a "loss leader" service provided to maintain client relationships and that banks were putting insufficient capital behind risk in general. In equilibrium, prices may have to remain higher than they were before the crisis, but it is unclear at what level they should settle.

Summary of Survey Results

Bank-intermediated trade finance largely held up during the 2008–09 financial crisis even as it came under several sources of strain. The value of trade finance fell

Box 5.2 Key Findings and Observations from the Fifth Trade Finance Survey

In fall 2010, IMF and BAFT-IFSA initiated the fifth survey administered by the market-research firm FImetrix. The fifth survey gathered responses from 118 banks in 34 advanced, emerging-market, and developing countries.

The survey results demonstrate that the trade finance industry has steadily recovered from the crisis. The value of trade finance activities has increased, especially in industrial countries, emerging Asia, and Latin America. Improvement in trade finance activities has also been observed across all trade finance instruments. The most frequently cited factors contributing to the increase seem to be recovery in global demand and easing of constraints on availability of financial resources. (The latter appears to be a principal reason among banks with less than $100 billion in assets.)

The developments in pricing are broadly in line with the story of improvement in trade finance activities; more banks reported a pricing decrease than an increase, particularly for letters of credit (LCs). The decline in pricing for LCs is most evident among banks in Latin America and emerging Europe. The large banks ($100 billion or more in assets) are the primary drivers of the shift in pricing.

The decline in defaults and increase in the use of secondary markets for risk mitigation purposes is also consistent with the signs of recovery and returning market confidence.

Nevertheless, the banks continue to revisit trade-related exposure and lending guidelines. More than half of the survey participants reported changes in trade-related guidelines, with about 40 percent noting tightening in guidelines.

The outlook for trade finance activities continues to improve, especially in emerging Asia and Latin America. Two-thirds of the banks responding to this survey expect market conditions to improve in emerging Asia in the coming year, while half expect improvement in Latin America.

The fifth survey added a question to explore banks' perceptions and assessment of the impact of Basel III on trade finance activities. Banks seem to remain concerned about the potential impact of Basel III on trade finance activities—a concern that is particularly strong regarding LCs and among larger banks. However, due to the lack of quantitative analysis of the impact of Basel III on trade finance, the opinions varied: more than half of all respondents were either unsure or neutral regarding the impact that Basel III will have on trade finance activities.

Finally, the official sector response continues to be viewed positively. The larger the bank in terms of asset size, the more likely it is to view the response of the official sector positively.

at the peak of the crisis, but it fell by consistently smaller percentages across regions than did the export declines in the same regions. As a result, the share of bank-intermediated trade finance in world trade increased during the crisis. This larger share developed in spite of considerable headwinds.

Banks supplying trade finance shared the general increase in risk aversion observed in broader financial markets, and they restricted their supply of trade finance to certain countries or sectors and otherwise tightened credit conditions.

Banks also increased pricing margins, driven by both increased perceptions of default risk and higher capital requirements, the latter in part due to Basel II requirements.

However, the impact of increased default risk and higher capital requirements seems to have been more than offset by a parallel increase in risk aversion by real-sector customers because these customers had become increasingly willing to pay banks to absorb risk, even at an increased cost.

Moreover, the lower total cost of credit may also have supported the value of trade finance because the decline in banks' costs of funds (for example, LIBOR) more than offset the increased pricing margins for many banks.

Notes

1. Main findings of a fifth survey, conducted in late 2010, are summarized in box 5.2.
2. The classification of country groups in the survey is the same classification used in the winter 2009 IMF *World Economic Outlook* except to place China and India in emerging Asia rather than developing Asia.
3. The IMF and BAFT-IFSA surveys are designed mostly to support economic analysis of changes in bank trade finance. The ICC surveys, on the other hand, have focused more on banks' experience with the functioning of legal and procedural aspects of trade finance transactions.
4. SWIFT provides financial messaging services that distinguish, inter alia, between issuance, modification, and refusal of letters of credit. The ICC report analyzed the number of messages in different categories to draw conclusions about trends in bank and real-sector client risk aversion. As the ICC report notes, because SWIFT data provide a count of messages but no information on the size of transactions, they cannot be used to measure the value of different types of trade finance transactions.
5. The four surveys, conducted from 2008 to early 2010, covered issues related to the impact of Basel II on trade finance. With acceleration of the Basel III measures (tentatively set for implementation by the end of 2012), the latest survey covers questions related to the impact of Basel III on trade finance industry, as box 5.2 further describes. Some suggest that the application of credit conversion factor proposed under the Basel III may negatively affect the trade finance industry (Auboin 2010).

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6

GLOBAL PERSPECTIVES IN THE DECLINE OF TRADE FINANCE

Jesse Mora and William Powers

The collapse of Lehman Brothers in September 2008 is widely viewed as the spark that triggered the global economic crisis—what has become known as the "Great Recession." Global credit markets froze, which may have affected the specialized financial instruments—letters of credit and the like—that help grease the gears of international trade. Some analysts view the credit market freeze as contributing to the 31 percent drop in global trade between the second quarter of 2008 and the same quarter in 2009 (Auboin 2009).

Evidence presented in this chapter suggests that declines in global trade finance had, at most, a moderate role in reducing global trade. The chapter also examines broad measures of financing, including domestic lending in major developed economies and cross-border lending among more than 40 countries. Supplementing the data are the results of eight recent surveys to provide a more thorough examination and greater confidence in the role of trade finance during the crisis. This investigation highlights several aspects of trade finance during the crisis:

- Trade finance is dependent on both domestic and cross-border funding. While both fell substantially in 2008, neither the timing nor the magnitude of

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domestic declines matched the drop in trade finance. Cross-border funding declines presented more troubling trends, however, with supply falling earlier and exceeding the drop in demand for funds.

- Trade finance began to recover in the second quarter of 2009 for most developed and developing countries. Latin America and Africa showed the least progress but have recently stabilized. Among all regions, Asia has had the strongest recovery.
- Reduced trade finance played a moderate role in the trade decline at the peak of the crisis. Banks and suppliers judged reduced trade finance as the second greatest contributor to the decline in global exports, behind falling global demand.
- The crisis has led to a compositional shift in trade finance. Because of heightened uncertainty and increased counterparty risk, exporters shifted away from risky open-account transactions and toward lower-risk letters of credit and export credit insurance.
- Financing has been a larger problem for exports than for domestic sales.

Effect of Crisis on Corporate Finance

The crisis negatively affected every type of financing that companies use to fund their domestic production and international trade. Companies get financing in many ways, such as by issuing bonds or equity, obtaining bank loans, or self-financing through retained earnings. The crisis negatively affected all of these channels: Interest rates on bonds and loans rose, while equity prices and profits fell—and, hence, retained earnings (Guichard, Haugh, and Turner 2009). Indexes of financial conditions based on all types of financing began falling in 2007 (or earlier) in Japan, the European Union, the United Kingdom, and the United States. U.S. financial conditions did not return to normal until the end of 2009 or the beginning of 2010 (Hatzius et al. 2010).

Although strains had appeared in domestic banking markets before the trade collapse, there is no evidence that large declines in domestic lending preceded the decline in trade. (Box 6.1 describes the mechanics of how trade is exposed to financing shocks.) Strains in domestic financial markets became apparent in developed countries long before the global downturn. One early indicator of banking sector constraints was credit standards for commercial loans. In most developed countries, these standards became progressively tighter after the third quarter of 2007, as figure 6.1 illustrates.

Despite the tighter standards, commercial lending actually expanded until the end of 2008, although the declines that began in 2009 generally continued into 2010, as figure 6.2 shows.

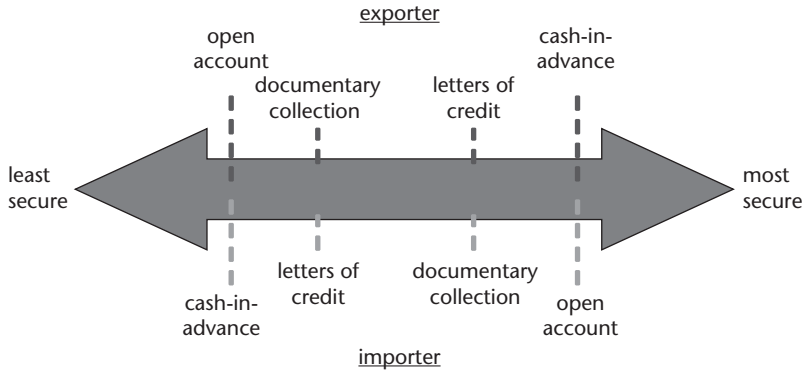
Box 6.1 Common Types of Trade Finance and the Risk for Exporters

Worldwide, firms exported about $16 trillion of goods in 2008. Firms finance most exports through open accounts—that is, the importer pays for goods after they are delivered—just as is the usual practice for sales among firms in the same nation. This is the riskiest form of financing for an exporter, as figure B6.1 illustrates. Estimates vary, but sources report that open accounts are used for between 47 percent (Scotiabank 2007) and 80 percent (ICC 2009b, 2010) of world trade. Cash-in-advance arrangements, the least risky form of financing for exporters, account for a small share of total financing.

Banks finance the remaining portion of global trade. Most bank financing involves a letter of credit, a transaction in which a bank assumes the nonpayment risk by committing to pay the exporter after goods have been shipped or delivered. This method provides greater security to the exporter and is particularly popular with small firms and in developing countries. Regardless of the type of financing, exporters can also buy export insurance to reduce risk; about 11 percent of world trade was insured in 2009.

The role of bank financing is increased if one includes working capital loans, which are short-term loans to buy the inputs necessary to produce goods. Working capital loans are more important for financing export shipments than for domestic shipments because of the increased time between production and payment for exports (Amiti and Weinstein 2009).

Figure B6.1 Payment Risk

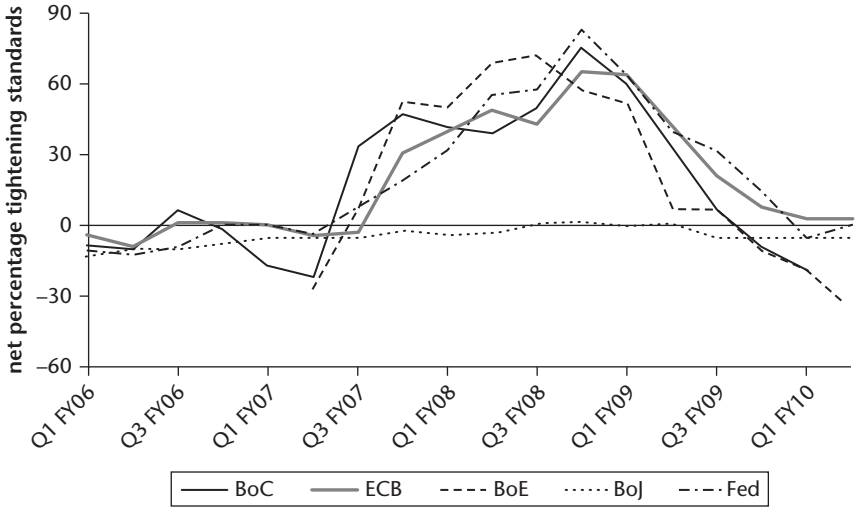


Source: U.S. Department of Commerce 2007.

The declines averaged about 2.3 percent per quarter—far below the decline in global merchandise exports, as figure 6.3 shows.

As this chapter will also show, the domestic financing drop was similar in magnitude to declines in other short-term, cross-border financing. In developing

Figure 6.1 Tightening Domestic Loan Standards

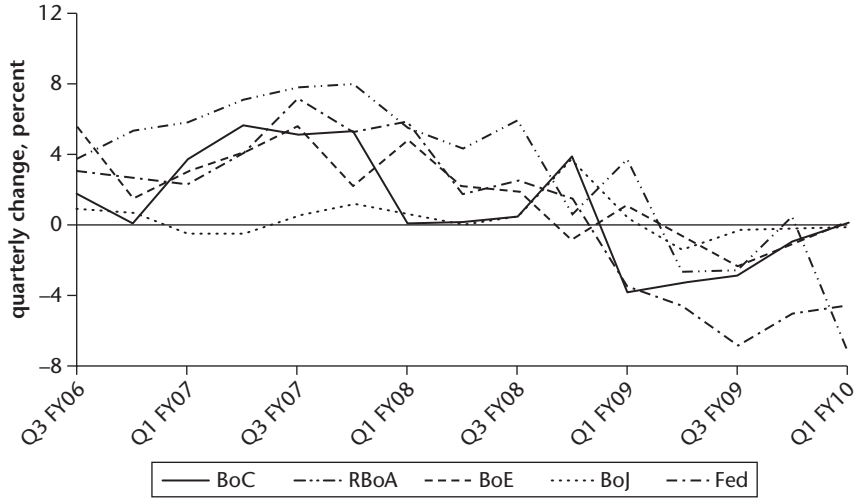


Sources: Bank of Canada 2010; Bank of England 2010; Bank of Japan 2010; ECB 2010; U.S. Federal Reserve 2010.
Note: Data show credit standards reported by central banks for large firms, except for Canada, which reports an overall measure. The Bank of England does not report a single measure of credit tightening, but separate measures for fees, spreads, loan covenants, and collateral requirements all behaved similarly; fees to large firms are included here. BoC = Bank of Canada, BoE = Bank of England, BoJ = Bank of Japan, ECB = European Central Bank, Fed = U.S. Federal Reserve.

countries, lending continued to grow in 2008 and 2009, even in Asia, which had the largest decline in exports.[1] Throughout the world, the lending declines that became evident later in the crisis were generally accompanied by a similarly large drop in demand for funds. For example, U.S. demand for commercial and industrial loans plunged at the beginning of 2009 (ECB 2009; U.S. Federal Reserve 2010). In emerging markets, particularly Asia, where trade decline was the largest, loan growth continued to grow throughout 2009. Thus reduced domestic financing seems an unlikely cause for the trade finance decline in most markets.

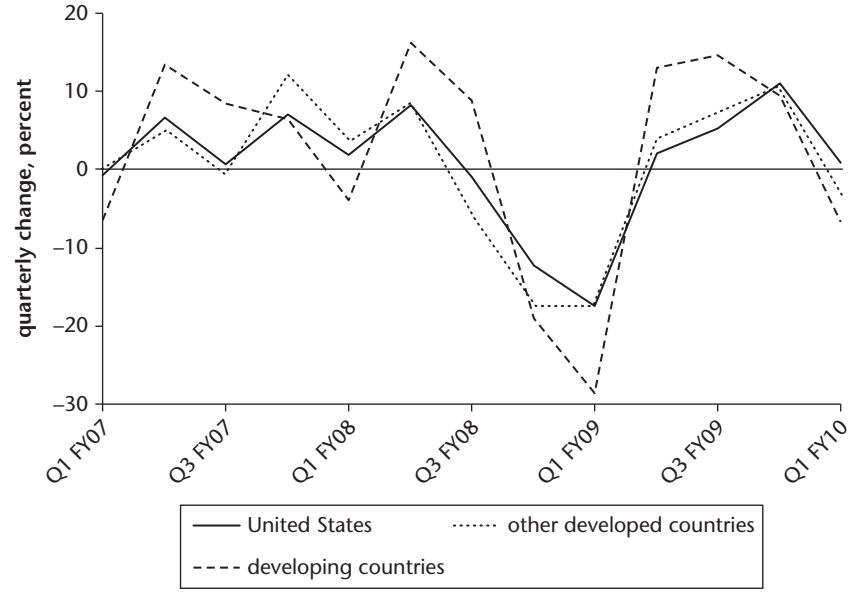
It is, of course, possible that trade financing from domestic banks fell even as overall lending rose. For example, several bank surveys report that the Basel II capital adequacy requirements overstate the risks of trade financing and divert funding away from exports. And Basel II has become quite widespread; 105 countries have implemented its standards, or plan to implement them, including many emerging economies in Africa, Asia, the Caribbean, and Latin America (BIS 2008). Countering this possible trade finance-specific decline, though, were numerous nonbank sources of domestic support targeted specifically to trade financing. Many central banks and government stimulus programs targeted domestic

Figure 6.2 Domestic Commercial Lending



Sources: Bank of Canada 2010; Reserve Bank of Australia 2010; Bank of England 2010; Bank of Japan 2010; U.S. Federal Reserve 2010.
Note: Bank of Japan data reflect total loans, not only commercial loans. BoC = Bank of Canada, BoE = Bank of England, BoJ = Bank of Japan, Fed = U.S. Federal Reserve, RBoA = Reserve Bank of Australia.

Figure 6.3 Global Merchandise Exports



Source: IMF 2010.

financing for exports (for example, Brazil, the Republic of Korea, and Singapore), in particular after the G-20 declaration in April 2009 (Mora and Powers 2009).

Cross-Border Banking Decline Preceded Other Flows

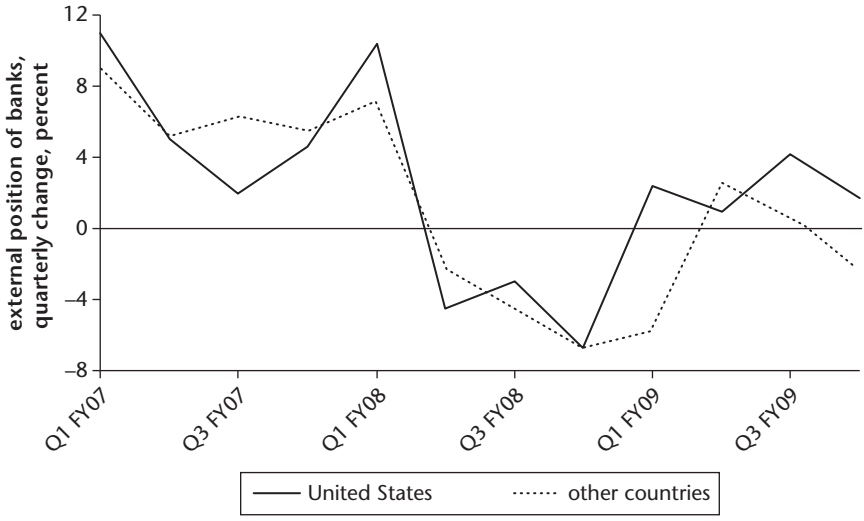
Although both domestic and international banks provide financing for trade, an examination of cross-border lending in the crisis is more instructive for several reasons:

- Cross-border data are more complete and detailed because of centralized reporting by the Bank for International Settlements (BIS), so the data present a more complete picture of changes.
- Cross-border data show more troubling trends; particularly, cross-border declines are earlier and larger than changes in domestic bank flows or local currency lending of bank subsidiaries (McCauley, McGuire, and von Peter 2010, among other sources).
- Firms relying on cross-border financing seemed more likely to experience shortfalls. Unlike the decline in domestic lending, in which demand plummeted with supply, supply factors largely drove the fall in cross-border bank lending during the crisis, at least to emerging markets (Takáts 2010).

The decline in the value of global cross-border banking preceded the failure of Lehman Brothers in September 2008 and thus preceded the merchandise trade decline, as shown in figure 6.4. The decline in global outflows, and the subsequent decline in domestic lending in most countries, directly reduced the availability of all types of financing. Perhaps because the United States was among the first to enter the downturn, U.S.-based financial outflows recovered earlier than those of other countries and have since grown a bit faster than in other regions. The strength of U.S. outflows indicates a return to interbank dollar-denominated lending and highlights the need for dollar funding even as real gross domestic product (GDP) around the world contracted (McGuire and von Peter 2009).

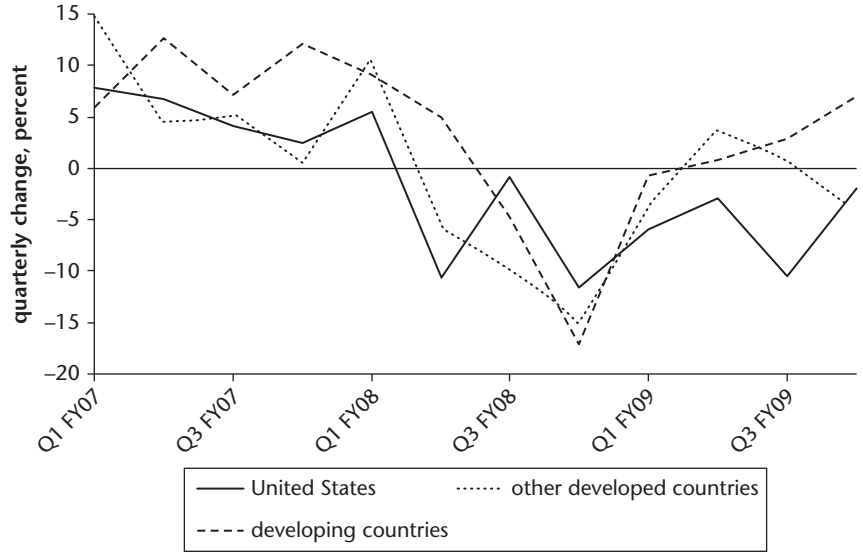
Because much of trade is dependent on short-term lending (either directly through bank-intermediated export financing, such as letters of credit, or indirectly through working-capital financing), the decline in short-term banking activity, illustrated in figure 6.5, is also an important indicator. Although short-term flows are generally quite volatile, the contraction of short-term funding has been shallower and more protracted than the decline in merchandise trade. The figure also shows that inflows into the United States, unlike outflows, continued to decline through the end of 2009.

Figure 6.4 Global Cross-Border Banking Activity
amounts outstanding, in all currencies, relative to all sectors



Source: BIS 2010.

Figure 6.5 Short-Term Financing Received



Source: BIS 2010.

Trade Finance More Resilient than Exports

In many ways, the changes in trade finance during the crisis reflected conditions in overall credit and banking markets during the period. The cost of trade finance, for example, briefly reached several hundred basis points in some markets, reflecting abnormally high financing costs throughout the financial system in the fourth quarter of 2008. Availability declined and credit standards tightened for all types of financing to firms worldwide during the period.

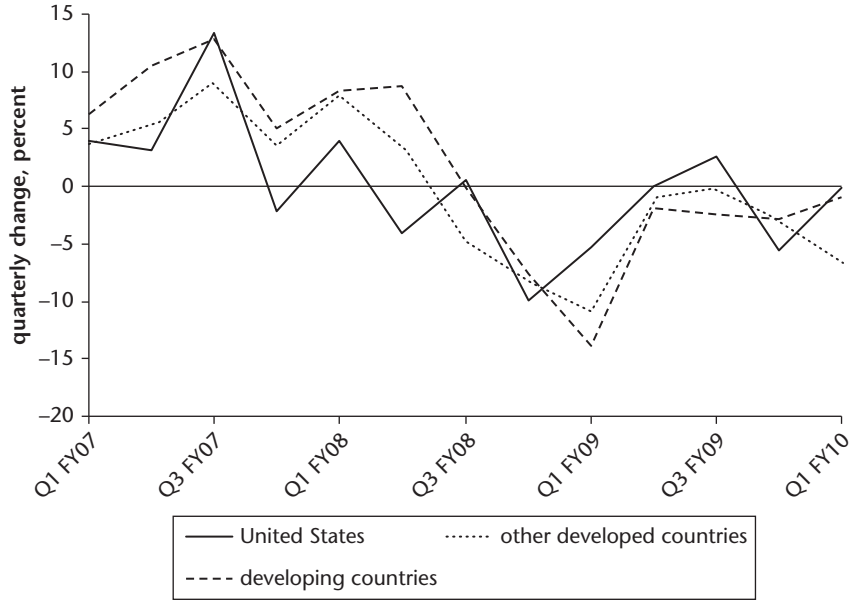
Trade finance does have some characteristics that differ from other types of financing. Trade finance is generally priced as a share of the value of goods shipped, so it is more directly tied to the level of exports than are other financial markets, and trade finance generally reflects the seasonality exhibited by a country's exports. Furthermore, as discussed in the survey section below, global demand for more secure types of trade finance increased during the crisis, in contrast to falling demand for other corporate financing (ECB 2009). Strong demand resulted in lower declines in trade finance than in global exports. Because all exports must be financed, at least by the exporter itself, a smaller decrease in bank financing than exports must be matched by a move away from exporter-financed open accounts.

These differences also affected the timing of the decline in trade financing. Although overall financial flows declined before the trade collapse, trade-specific financing moved together with trade. Short-term export credit insurance exposure is a measure of the amount of trade financing provided by private and public insurers.[2] Such insurance fell by 22 percent between the second quarter of 2008 and the same quarter of 2009. Trade financing debt incurred by countries is an imperfect proxy for the amount of financing that countries receive.[3] Such debt fell by 13 percent. Figures 6.6 and 6.7 show the quarterly changes for these measures of trade finance.

Data from the Society for Worldwide Interbank Financial Telecommunication (SWIFT) provide a count of trade messages sent through the SWIFT network (ICC 2010; SWIFT 2009, 2010). These transactions accounted for about $1.5 trillion in letters of credit, or about 12 percent of global trade value.[4] During the crisis, global traffic fell by more than 20 percent in 2008 and rose by about 10 percent in 2009.[5] As trade finance improved in 2009, letters of credit increased while less-secure methods such as documentary collections remained flat. This finding agrees with the survey results discussed below (such as ICC 2010), which report that exporters continue to move toward more secure forms of trade financing.

Comparing different regions, most of the improvement during 2009 occurred in the Asia and Pacific region, with other regions showing no change or only a slight rise in volume. In the first half of 2010 (January to May), volumes in all regions improved, though the Asia and Pacific region again showed the greatest growth (22 percent).[6]

Figure 6.6 Export Credit Insurance Exposure



Source: JEDH 2010.

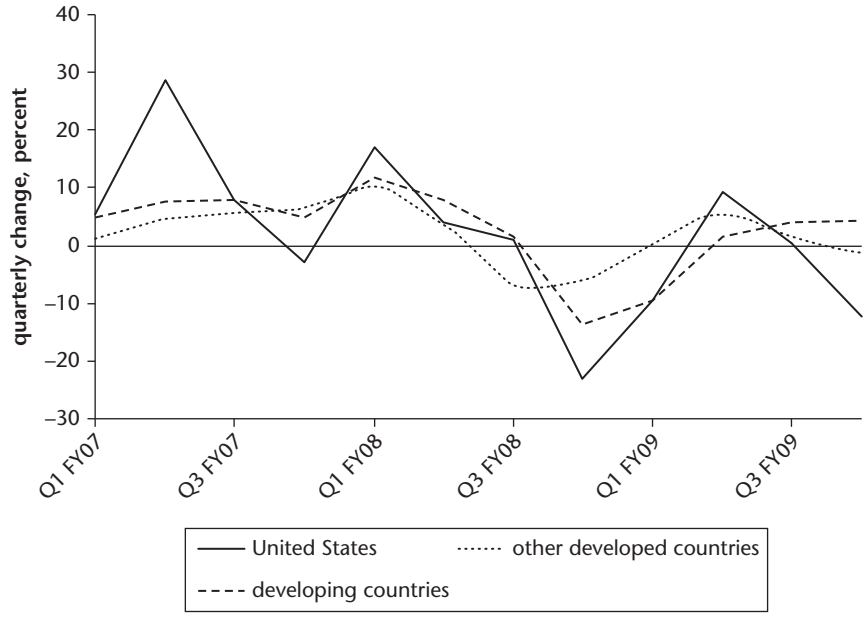
Both the value and volume data show that changes in trade finance have been more moderate than changes in trade, during both the downturn and the recovery, especially as follows:

- By nearly all measures, trade finance declined less than trade from mid-2008 to mid-2009. Figure 6.8 shows that this was true for individual regions as well, except in Latin America.
- As trade recovered in 2009 and early 2010, however, export credit insurance and trade finance debt remained largely flat, with only letters of credit showing any substantial increase during 2009. The Asia and Pacific region exhibited the largest growth in both transactions and value; Latin America has grown in value, making up for its losses in the downturn, while both volume and trade decreased in developed European countries.

Survey Results

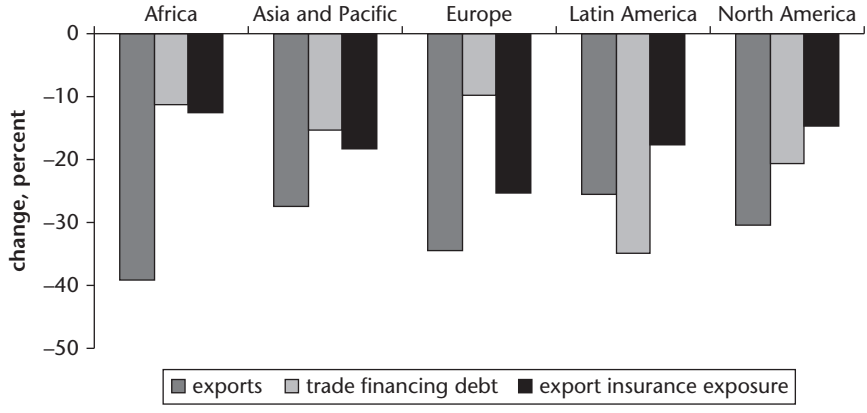
Because much of trade finance is not distinguishable in official statistics—for example, our data account for only about 23 percent of total global trade—data

Figure 6.7 Trade Financing Debt, by Country



Source: JEDH 2010.

Figure 6.8 Relative Declines in Exports, Export Insurance Exposure, and Trade Finance Debt, by Region, Q2 FY08 to Q2 FY09



Source: IMF 2010; JEDH 2010.

comparisons are intrinsically imperfect and incomplete.[7] To address the informational gap, the World Bank, International Monetary Fund, World Trade Organization, and International Chamber of Commerce have conducted surveys of global participants in the trade credit world.

Overall, the surveys confirm the trends discussed above about the timing and geographic differences in trade finance. They also provide otherwise unavailable information about the effects of financing on exports; distinguish the effects of reduced bank finance supply from increased exporter demand; and highlight the importance of multilateral support during the crisis.

Trade Finance the No. 2 Reason for Trade Decline at Crisis Peak

Surveys show that declines in trade finance contributed directly to the decline in global trade in the second half of 2008 and early 2009. At the peak of the crisis, banks and suppliers report, reduced trade finance was the second-greatest cause of the global trade slowdown, behind falling international demand.

Estimates of the relative contribution of trade finance fell in later surveys as other factors rose in prominence. In July 2009, only 40 percent of banks reported that lower credit availability contributed to declining trade, and this share decreased to less than one-third by April 2010. By the beginning of 2010, the banks reported that price declines were a larger drag on export values than trade finance limits.

Financing has been less of a concern for domestic shipments, at least in the United States. The National Federation of Independent Business (NFIB) monthly surveys of small businesses, whose sales are largely domestic, show that less than 5 percent of U.S. small businesses report that financing is their single most important problem (NFIB 2010). This share did not exceed 6 percent at any time during the crisis.[8] The share of NFIB members citing poor sales as the top problem doubled during the crisis and has held at about 30 percent since late 2008. A substantially higher share of exporters cited financing as a top problem in the survey results we examine below.

Collectively, these results support the argument that financing is more important for exports than for domestic shipments (Amiti and Weinstein 2009), though all surveys agree that poor demand was more important than reduced financing in limiting sales.

Surveys Help Distinguish Changes in Supply and Demand

Surveys provide the best evidence distinguishing changes in trade finance supply from changes in demand.[9] After September 2008, the risks of exporting and

financing rose substantially because of downgraded credit ratings of firms, banks, and countries. Macroeconomic difficulties also mattered—declining GDPs, fluctuating exchange rates, and falling prices. The rising uncertainty increased demand for more secure types of financing, such as insurance and letters of credit, to reduce the risk of nonpayment. Demand for export credit insurance rose, with the share of insured shipments rising to 11 percent of global exports in 2009 from 9 percent in 2008 (ICC 2010).[10] Exporters also demanded more trade financing from banks, and half of banks reported increased demand for products such as letters of credit.

As exporters tried to obtain less-risky financing, however, banks began to restrict financing to some customers to limit their own lending risk. Most surveyed banks (between 47 percent and 71 percent, depending on the survey) reduced the supply of trade financing in the last quarter of 2008. For example, the value of letters of credit fell by 11 percent in that quarter. Supply bottomed out in the first half of 2009. The value of all trade finance then rose gradually in the second half of 2009, making up for losses earlier in the year but still well below precrisis levels.

Prices of letters of credit rose early in the crisis, reflecting both increased risk and the banks' substantially higher cost of raising funds. As the crisis continued, increased demand and reduced supply drove trade finance prices even higher. In 2009, surveys report, prices for exporters continued to rise, even as banks were able to obtain funding more cheaply. The latest surveys report that demand remained high and was expected to increase further in 2010, while prices were not expected to fall in the short term.

Conclusions

This survey has included the most comprehensive measures of trade financing available, accounting for over one-fifth of global trade, and has supplemented the data with a number of trade finance surveys. This combination provides the best look to date at the changes in trade finance during the 2008–09 financial crisis.

The evidence does not support the view that declines in trade finance were exceptional during the crisis. Overall, the declines have not been large relative to changes in trade or other financial benchmarks. For example, measures of trade finance fell by about 20 percent from peak to trough, while global exports fell by over 30 percent. Relative to other types of financing, the decline in trade finance is about the same as the decline in overall cross-border, short-term lending.

Nor did trade finance have an outsize impact on trade during the crisis. Surveys show that trade finance played a moderate role at the peak of the crisis and that this role declined over time. Although prices remain high, companies no

longer report that financing costs are a major impediment to trade. Financing remains a larger problem for exporters than for domestic shippers, however, for two reasons: trade financing contracted substantially more than domestic financing, and exports require more financial support than domestic shipments.

Data and surveys agree that trade finance did rebound considerably in 2009, but 2010 data have been mostly flat and conflict with the rosier gains and predictions that surveys reported. The value of all trade finance rose in the second half of 2009, making up for losses earlier in the year, but it remains well below precrisis levels. Those regions that were lagging in earlier surveys (Latin America and Africa) have seen trade finance stabilize or have begun to make up ground. The latest surveys report that exporter demand remained high and was expected to increase further in 2010. The data also show, however, that only the safest forms of trade finance rose in 2010, with total value flat or even declining.

Overall, given the easing of access to credit, the trade finance situation is expected to improve. Still, as with improvement in macroeconomic conditions, the turnaround in bank attitudes and financing of all types will likely be gradual—and, to a large degree, further gains in trade finance will be tied to increases in global exports.

Notes

1. For loan growth in emerging Asia, see Monetary Authority of Singapore (2009).
2. France, Germany, Italy, and the United States are the top providers of this insurance, accounting for about 25 percent of the global total. Globally, firms and agencies had close to $900 billion of such exposure before the crisis. About 90 percent of the credit guarantees are provided by private companies (Berne Union 2009).
3. The figure includes only short-term nongovernmental trade financing debt, which had a global value of $572 billion before the crisis. Debt depends on trade financing received as well as repaid, so debt may underrepresent the decline in trade financing in countries that experienced fiscal difficulties during the downturn.
4. Value data were provided for the four quarters from the fourth quarter of 2008 to the third of 2009.
5. That is, the number of transactions was about 10 percent higher in December 2009 than in December 2008, although the yearly total in 2009 was lower than the total in 2008.
6. The value of trade financing also rose in most regions during 2009, with the exception of Europe and the Middle East. Because only four quarters of value data have been reported, we cannot calculate the change for the same quarter in two consecutive years.
7. It would be possible to increase this share slightly with the currently available data. Including medium-term trade financing data from the Berne Union and documentary collection data from SWIFT would increase the covered share of global trade by about 6 percentage points. BIS also reports guarantees extended by financial institutions, including letters of credit and credit insurance in addition to contingent liabilities of credit derivatives (for example, credit default swaps). This series would be a promising source of information on trade financing if a means were devised to remove the portion related to credit default swaps, which dominate the series for some developed countries such as the United States (BIS 2009).

8. Financing has not been a top concern of small U.S. businesses in any recession since the 1980s.

9. The surveys include ICC 2009a, 2009b, 2010; IMF-BAFT 2009a, 2009b; IMF and BAFT-IFSA 2010; and Malouche 2009.

10. The share reported in ICC (2010) includes medium-term financing. The share of exports covered by short-term financing, which this report focuses on, also rose, but by less than 1 percent.

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7

THE ROLE OF TRADE FINANCE IN THE U.S. TRADE COLLAPSE: A SKEPTIC'S VIEW

Andrei A. Levchenko, Logan T. Lewis, and Linda L. Tesar

The contraction in trade during the 2008–09 recession was global in scale and remarkably deep. From the second quarter of 2008 to the second quarter of 2009, U.S. real goods imports fell by 21.4 percent and exports by 18.9 percent. The drop in trade flows in the United States is even more dramatic considering that both import and export prices simultaneously fell relative to domestic prices, which normally would have resulted in an expansion of trade flows.

Several recent papers have suggested that credit constraints contributed significantly to the global decline in trade (for example, Auboin 2009; IMF 2009; Chor and Manova 2010). To be sure, financial intermediaries were at the epicenter of the global crisis, and it is clear that credit conditions facing firms and households tightened in fall 2008. These constraints could be particularly important for firms engaged in international trade because they must extend credit to their foreign counterparties before the shipment of goods. If these lines of credit are suspended, importing firms will cancel their orders for foreign goods, and foreign firms will reduce production.

As reasonable as this hypothesis sounds, it is a difficult empirical challenge to isolate the impact of tightening credit constraints on the collapse in trade flows, for the following reasons:

- It is hard to tell whether the credit extended to firms dropped because of a supply-side constraint (banks won't extend credit) or because of a drop in

demand (demand falls, so firms import fewer goods and require less credit).
- Although a firm's dependence on credit is observable, it is difficult, if not impossible, to obtain precise data on the cost of credit associated with the international shipment of goods.
- Given the importance of multinational firms in international trade, it is an open question whether multinationals require credit to acquire goods from their own affiliates or long-term trade partners. Moreover, to the extent they do require credit, how will such financial flows appear in the firms' balance sheets?

This chapter explores the role of financial factors in the collapse of U.S. imports and exports. Using data disaggregated at the six-digit North American Industry Classification System (NAICS) level (about 450 distinct sectors), the chapter examines the extent to which financial variables can explain the cross-sectoral variation in how much imports or exports fell during this episode. To do this, the authors employ a wide variety of possible indicators, such as standard measures of trade credit and external finance dependence, proxies for shipping lags at the sector level, and shares of intrafirm trade in each sector. In each case, the hypothesis is that if financial factors did play a role in the fall of U.S. trade, one should expect international trade flows to fall more in sectors with certain characteristics, a strategy reminiscent of Rajan and Zingales (1998).

Based on the analysis here, overall, there is at best weak evidence for the role of financial factors in the U.S. trade collapse. Imports or exports *did not* fall systematically more in (a) sectors that extend or receive more trade credit; (b) sectors that have a higher dependence on external finance or lower asset tangibility; (c) sectors in which U.S. trade is dominated by countries experiencing greater financial distress; or (d) sectors with lower intrafirm trade. All of these are reasonable sectoral characteristics to examine for evidence of financial factors in trade, as detailed in each case below.

For imports into the United States, some evidence does exist that shipping lags mattered. Sectors in which a high share of imports is shipped by ocean or land experienced larger reductions in trade, relative to sectors in which international shipments are primarily by air. In addition, sectors with longer ocean-shipping delays also experienced significantly larger falls in imports. This is indirect evidence for the role of trade finance during the recent trade collapse. Trade finance instruments, such as letters of credit, are typically used to cover goods that are in transit. Thus, trade finance is likely to matter more for sectors in which goods are in transit longer—either because they are mostly shipped by land or sea or because they tend to be shipped over greater distances. In turn,

the finding that these sectors experienced larger reductions in U.S. imports can be seen as supportive of the role of financial factors in the trade collapse. All in all, however, the bottom line of this exercise is that, in the sample of highly disaggregated U.S. imports and exports, evidence of financial factors has proven hard to find.

U.S. Trade Flows and Measures of Trade Finance

This analysis uses quarterly nominal data for U.S. imports from, and exports to, the rest of the world at the NAICS six-digit level of disaggregation from the U.S. International Trade Commission. This is the most finely disaggregated monthly NAICS trade data available, yielding about 450 distinct sectors. The empirical methodology follows Levchenko, Lewis, and Tesar (2010), which can also serve as the source for detailed data documentation. In each sector, the year-on-year percentage drop in quarterly trade flows is computed, from the second quarter of 2008 to the second quarter of 2009. This period corresponds quite closely to the peak-to-trough period of the aggregate U.S. imports and exports.

The working hypothesis is that if financial factors did matter in the fall in U.S. trade during this period, the financial contraction should have affected certain sectors more than others. Thus, the empirical analysis is based on the following specification:

$$\gamma_i^{trade} = \alpha + \beta CHAR_i + \delta \mathbf{X}_i + \varepsilon_i, \tag{7.1}$$

where i indexes sectors,

γ_i^{trade} = the percentage change in the trade flow (alternatively exports or imports),

$CHAR_i$ is a sectoral characteristic meant to proxy for the role of financial factors.

All of the specifications include a vector of controls $\mathbf{X}_i$. The baseline controls are (a) the share of the sector in overall U.S. imports and exports, a proxy for size; (b) elasticity of substitution among the varieties in the sector, sourced from Broda and Weinstein (2006); and (c) labor intensity of the sector, computed on the basis of the U.S. input-output matrix.

Levchenko, Lewis, and Tesar (2010) used a similar framework to test the relative importance of vertical production linkages, trade credit, compositional effects, and the distinction between durables and nondurables. Two sectoral characteristics were robustly correlated with declines in trade: the extent of downstream linkages and whether the sector was durable. Based on these findings, all specifications include Levchenko, Lewis, and Tesar's (2010) preferred measure of

downstream linkages (average use of a sector as an intermediate in other sectors) and a dummy for durability as controls in all specifications.

This chapter focuses on the hypothesis that financial variables played a role in—and tests whether a variety of proxies for financing costs can account for—the cross-sectoral variation in trade flows. The sectoral characteristics considered are trade credit, external finance dependence, tangible asset levels, partner country credit conditions, shipping lags, and intrafirm trade.

Trade Credit

The analysis evaluates the hypothesis that, because of the credit crunch, firms were no longer willing to extend trade credit to their suppliers. Under this view, international trade would fall, for instance, because U.S. buyers could no longer extend trade credit to foreign firms from which they normally purchase goods. To test this hypothesis, two measures of trade credit intensity are built. The first is accounts payable as a share of cost of goods sold, which records the amount of credit extended to the firm by suppliers, relative to the cost of production. The second is accounts receivable as a share of sales, which measures how much credit the firm extends to its customers.

Accounts payable relative to the cost of goods sold and accounts receivable relative to sales are the two most standard indices in the trade credit literature (for example, Love, Preve, and Sarria-Allende 2007) and are constructed using firm-level data from Compustat.[1] If importing and exporting firms are dependent on trade credit, these two measures of credit dependence should appear with a negative coefficient (sectors with more trade credit dependence should experience a larger reduction in trade flows).

External Finance Dependence

The second set of measures is inspired by the large literature on the role of financial constraints in sectoral production and trade. Following the seminal contribution of Rajan and Zingales (1998), external finance dependence is computed as the share of investment not financed out of current cash flow.

This measure is based on the assumption that in certain industries, investments by firms cannot be financed with internal cash flows, and these are the industries that are especially dependent on external finance. If financially dependent industries were in systematically greater distress during this crisis, the coefficient on this variable should be negative (greater dependence leads to larger falls in trade).

Tangible Assets

A related measure is the level of tangible assets (plant, property, and equipment) as a share of total assets by sector. Firms with greater tangible assets should have better collateral and therefore an easier time obtaining credit.

This variable should have a positive coefficient in the regressions (more pledgeable assets means it is easier to raise external finance, and thus a credit crunch will have less of an impact on production or cross-border trade). As with measures of trade credit, external finance dependence indicators were built using standard definitions and data from Compustat.

Partner Country Credit Conditions

The next hypothesis tested is that trade should fall disproportionately more to and from countries that experienced greater financial distress. This approach is inspired by the work of Chor and Manova (2010), who find a link between credit conditions in the trading partner and the volume of bilateral trade. To capture this effect, a trade-weighted credit contraction (*TWCC*) measure for imports and exports is created, as in Levchenko, Lewis, and Tesar (2010):

$$TWCC_i^{trade} = \sum_{c=1}^{N} \Delta IBRATE_c \times a_{ic}^{trade}, \tag{7.2}$$

where *c* indexes countries,

trade refers to either imports or exports,

$\Delta IBRATE_c$ = change in interbank lending rate over the crisis period in country *c*,

a_{ic} = precrisis share of total U.S. trade in sector *i* captured by country *c*.

For imports, a_{ic} is thus the share of total U.S. imports coming from country *c* in sector *i*. For exports, a_{ic} is the share of total U.S. exports in sector *i* going to country *c*.

In the case of imports, the value of *TWCC* will be high if, in sector *i*, a greater share of U.S. precrisis imports comes from countries that experienced a more severe credit crunch. Therefore, if the credit crunch hypothesis is correct, the coefficient on this variable will be negative (tighter partner-country credit conditions lead to a greater contraction in trade flows).[2]

Shipping Lags and Trade Finance

Auboin (2009) and Amiti and Weinstein (2009) emphasize the role of trade finance instruments in international trade. These instruments, such as letters of credit, are used by firms to cover costs and guarantee payment while goods are in transit. The authors are not aware of any sector-level measures of trade finance

used by U.S. firms engaged in international trade. However, if the needs for trade finance are positively related to the time it takes goods to reach their destination, one might expect trade finance costs to increase with distance and delivery lags. For ocean transit, shipping times can be as long as several weeks (Hummels and Schaur 2010), during which the exporting firm would typically be waiting for payment.

If these considerations matter, one should expect trade to fall more in sectors with longer shipping lags. To test for this possibility, bilateral trade data, disaggregated by mode of shipping, are used to compute several indicators of delays.[3] The first is simply the average distance traveled by a dollar's worth of imports or exports in each sector. The second is the share of imports and exports that traveled by air, ship, and over land. The hypothesis is that in sectors dominated by air shipping, trade finance would matter much less because air shipping time is almost never greater than one or two days (Hummels 2007). However, in sectors dominated by other forms of shipping, delays are substantially longer, and thus, a disruption in trade finance is potentially more damaging.

Finally, data on average ocean shipping times from each country to the United States are used to calculate a proxy for the average shipping time in each sector:

$$TIME_i = \left(\sum_{c=1}^{N} a_{ic,ocean}^{trade} \times ShipDays_c \right) \times a_{i,ocean}^{trade} + 2 \times \left(a_{i,air}^{trade} + a_{i,other}^{trade} \right), \qquad (7.3)$$

where c indexes countries,

trade can refer to either imports or exports,

$a_{ic,ocean}^{trade}$ = share of country c's ocean trade in total U.S. ocean trade in sector i,

$a_{i,ocean}^{trade}$ = share of U.S. trade in sector i that is shipped by ocean,

$ShipDays_c$ = the ocean shipping time from country c to the United States.

Shipping time measures for shipments by air and other means are not available. In calculating the measure, one assumes that shipment by air or other means (usually truck or pipeline) takes two days.

Thus, $TIME_i$ is the average shipping time, in days, for a dollar's worth of imports or exports in sector i. If firms must raise finance to cover the period that goods are in transit, one would expect a negative coefficient on the variables reflecting shipping delays (larger delays mean a greater role for trade finance, implying a larger fall in trade).[4]

Intrafirm Trade

Finally, it is hypothesized that trade finance used for insuring exporters against nonpayment for the shipment will matter less if trade is intrafirm. Thus, a contraction in trade finance will have less of an impact, if any, on the more than one-third

of U.S. trade that is intrafirm. To check for this possibility, the fall in trade in a sector is regressed on the share of intrafirm trade in total trade in the sector. This variable is computed by combining multinational affiliate sales data from the U.S. Bureau of Economic Analysis with standard international trade data and averaging over the 2002–06 period. Sectors with a greater share of intrafirm trade should experience smaller reductions in trade—a positive coefficient.

Table 7.1 reports summary statistics (mean, standard deviation, minimum and maximum across the sectors) for the variables used in the analysis.

The top panel shows statistics for the two dependent variables: the percentage change in imports and exports from the second quarter of 2008 to the

Table 7.1 Summary Statistics, Q2 2008–Q2 2009

	Mean	Standard deviation	Minimum	Maximum
Dependent variables				
Change in imports (%)	–25.3	22.7	–100.0	86.1
Change in exports (%)	–20.9	21.4	–96.9	74.4
Credit indicators				
Accounts payable/cost of goods sold	0.469	0.141	0.194	1.733
Accounts receivable/sales	0.532	0.131	0.156	0.817
External finance dependence	0.703	0.476	–2.977	1.852
Asset tangibility	0.735	0.669	0.096	6.619
TWCC (imports)	–2.691	0.493	–5.594	–1.178
TWCC (exports)	–2.721	0.392	–4.190	–0.411
Shipping delays indicators				
Average distance shipped (imports)	6650	2533	549	15201
Average distance shipped (exports)	5233	1869	781	11192
Share shipped by truck and pipeline (imports)	0.330	0.254	0.000	1.000
Share shipped by truck and pipeline (exports)	0.442	0.224	0.000	0.942
Share shipped by vessel (imports)	0.527	0.267	0.000	1.000
Share shipped by vessel (exports)	0.364	0.235	0.000	0.997
Average time to ship, in days (imports)	22	4	4	36
Average time to ship, in days (exports)	19	4	6	33
Control variables				
Share in total imports	0.002	0.007	0.000	0.088
Share in total exports	0.002	0.005	0.000	0.045
Elasticity of substitution	6.817	10.705	1.200	103
Labor intensity	0.633	0.229	0.049	0.998
Average downstream use	0.001	0.002	0.000	0.013
Durable dummy	0.587	0.493	0.000	1.000

Source: Authors' calculations.
Note: TWCC = trade-weighted credit contraction. This table presents the summary statistics for the variables used in estimation. Variable definitions and sources are described in detail in the text. See also Levchenko, Lewis, and Tesar (2010).

second quarter of 2009. The mean sectoral decline is 25.3 percent for imports and 20.9 percent for exports. There is considerable heterogeneity across sectors; some sectors even saw an expansion of trade, while others experienced a large contraction. Thus, a great deal of cross-sectoral variation could potentially be exploited.

Estimation Results

Regarding the results of the regression analysis, table 7.2 presents the results when the dependent variable is U.S. imports by sector, and table 7.3 presents the results when the dependent variable is U.S. exports.

Throughout, the tables report the standardized beta coefficients, obtained by first renormalizing each variable to have a mean of 0 and a standard deviation of 1. Thus, all the regression coefficients correspond to the number of standard deviations' change in the left-hand side variable that would be due to a 1 standard deviation change in the right-hand side variable. This also implies that the magnitudes of the coefficients are comparable across variables that may have very different scales when not normalized.

The controls for sector size in trade and labor intensity come in as strongly significant across the board. In addition, the main two variables found to be significant in Levchenko, Lewis, and Tesar (2010)—durability and vertical production linkages—remain strongly significant, with all *p*-values less than 1 percent in the case of U.S. imports.

The coefficients on the financial variables are less consistent. Columns (1) and (2) of each table report the results for the trade credit variables (accounts payable and accounts receivable). For imports, the coefficients are not significant, and the point estimates are close to zero. For exports, accounts payable is not significant with a near-zero point estimate, while the accounts receivable variable is significant at the 10 percent level, but with the "wrong" sign: exports in sectors that extend trade credit more intensively fell by *less*.

Columns (3) and (4) of tables 7.2 and 7.3 report the results for the measures of external finance dependence and asset tangibility. Although for both directions of trade flows, the Rajan and Zingales (1998) measure of external dependence is insignificant with a near-zero beta coefficient, asset tangibility is significant, but once again with the "wrong" sign: sectors with a greater share of tangible assets should have a relatively easier time getting credit during a crunch; those sectors also had *larger* falls in both imports and exports.

Column (5) reports the results for the trade-weighted credit contraction in the partner countries. Once again, while the coefficient is nearly zero for U.S. imports, for exports it is significant at 10 percent with the "wrong" sign: exports from the

Table 7.2 U.S. Imports and Financial Variables, Q2 2008–Q2 2009

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent variable change in imports (%)									
Accounts payable/cost of goods sold	0.076								
	(0.085)								
Accounts receivable/sales		0.056							
		(0.071)							
External finance dependence			0.035						
			(0.041)						
Asset tangibility				–0.185***					
				(0.071)					
TWCC					–0.008				
					(0.069)				
Average distance shipped						0.087			
						(0.063)			
Share shipped by truck and pipeline							–0.133**		
							(0.067)		
Share shipped by vessel							–0.148**		
							(0.063)		
Average time to ship								–0.123**	
								(0.058)	
Share of intrafirm imports[a]									0.022
									(0.049)
Durable dummy	–0.206***	–0.215***	–0.194***	–0.258***	–0.185***	–0.193***	–0.212***	–0.220***	–0.191***
	(0.059)	(0.054)	(0.048)	(0.046)	(0.050)	(0.047)	(0.047)	(0.046)	(0.049)

(continued next page)

Table 7.2 *continued*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Average downstream use[b]	–0.200***	–0.195***	–0.203***	–0.154***	–0.192***	–0.178***	–0.172***	–0.197***	–0.205***
	(0.042)	(0.044)	(0.043)	(0.047)	(0.040)	(0.045)	(0.043)	(0.041)	(0.046)
Share in total[c]	–0.092*	–0.073*	–0.069*	–0.027	–0.064*	–0.071**	–0.074**	–0.074**	–0.061
	(0.047)	(0.038)	(0.039)	(0.042)	(0.037)	(0.035)	(0.031)	(0.034)	(0.037)
Elasticity of substitution[d]	–0.076	–0.073	–0.08	–0.064	–0.078	–0.075	–0.07	–0.068	–0.078
	(0.061)	(0.061)	(0.062)	(0.058)	(0.061)	(0.059)	(0.061)	(0.062)	(0.060)
Labor intensity[e]	–0.113**	–0.129**	–0.126**	–0.135**	–0.122**	–0.121**	–0.114**	–0.124**	–0.110**
	(0.054)	(0.054)	(0.055)	(0.054)	(0.051)	(0.058)	(0.055)	(0.052)	(0.053)
Observations	415	415	423	432	435	436	436	434	437
R-squared	0.124	0.122	0.124	0.138	0.116	0.114	0.119	0.133	0.112

Source: Authors' calculations.
Note: Standardized beta coefficients reported throughout. Robust standard errors are in parentheses. The dependent variable is the percentage reduction in U.S. imports in a six-digit NAICS category from Q2 2008 to Q2 2009 (year-to-year). The financial variables are described in detail in the text.
a. "Share of intrafirm imports" is total U.S. imports, computed from U.S. Bureau of Economic Analysis multinationals data and averaged over the period 2002–06.
b. "Average downstream use" is the average use output in a sector as an intermediate input in other sectors.
c. "Share in total" is the share of a sector in total U.S. imports.
d. "Elasticity of substitution" between varieties in a sector is sourced from Broda and Weinstein (2006).
e. "Labor intensity" is the compensation of employees as a share of value added, from the U.S. 2002 Benchmark Input-Output Table (BEA 2002).
* significant at 10 percent.
** significant at 5 percent.
*** significant at 1 percent.

Table 7.3 U.S. Exports and Financial Variables, Q2 2008–Q2 2009

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent variable change in imports (%)									
Accounts payable/cost of goods sold	0.012								
	(0.068)								
Accounts receivable/sales		0.105*							
		(0.063)							
External finance dependence			0.01						
			(0.050)						
Asset tangibility				–0.156**					
				(0.062)					
TWCC					0.120*				
					(0.065)				
Average distance shipped						0.093			
						(0.064)			
Share shipped by truck and pipeline							–0.093		
							(0.062)		
Share shipped by vessel							–0.083		
							(0.070)		
Average time to ship								–0.042	
								(0.056)	
Share of intrafirm imports[a]									0.016
									(0.050)
Durable dummy	–0.094	–0.137**	–0.100**	–0.152***	–0.082	–0.111**	–0.125**	–0.104**	–0.106**
	(0.058)	(0.055)	(0.050)	(0.054)	(0.051)	(0.050)	(0.052)	(0.050)	(0.050)

(continued next page)

Table 7.3 *continued*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Average downstream use[b]	–0.098**	–0.090**	–0.100**	–0.054	–0.091**	–0.073*	–0.07	–0.095**	–0.098**
	(0.042)	(0.043)	(0.043)	(0.048)	(0.041)	(0.044)	(0.044)	(0.041)	(0.041)
Share in total[c]	–0.191***	–0.194***	–0.189***	–0.199***	–0.196***	–0.210***	–0.208***	–0.190***	–0.188***
	(0.067)	(0.064)	(0.067)	(0.062)	(0.064)	(0.068)	(0.061)	(0.065)	(0.064)
Elasticity of substitution[d]	–0.049	–0.042	–0.049	–0.036	–0.05	–0.062	–0.049	–0.045	–0.05
	(0.087)	(0.085)	(0.087)	(0.082)	(0.079)	(0.079)	(0.081)	(0.083)	(0.083)
Labor intensity[e]	–0.135**	–0.134***	–0.129**	–0.156***	–0.133***	–0.145***	–0.156***	–0.143***	–0.145***
	(0.054)	(0.050)	(0.050)	(0.052)	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)
Observations	415	415	423	432	437	436	436	436	437
R-squared	0.097	0.106	0.098	0.116	0.117	0.113	0.112	0.105	0.104

Source: Authors' calculations.

Notes: Standardized beta coefficients reported throughout. Robust standard errors are in parentheses. The dependent variable is the percentage reduction in U.S. exports in a six-digit NAICS category from Q2 2008 to Q2 2009 (year-to-year). The financial variables are described in detail in the text.

a. "Share of intrafirm imports" is total U.S. imports, computed from the U.S. Bureau of Economic Analysis multinationals data and averaged over the period 2002–06.

b. "Average downstream use" is the average use output in a sector as an intermediate input in other sectors.

c. "Share in total" is the share of a sector in total U.S. imports.

d. "Elasticity of substitution" between varieties in a sector is sourced from Broda and Weinstein (2006).

e. "Labor intensity" is the compensation of employees as a share of value added, from the U.S. 2002 Benchmark Input-Output Table (BEA 2002).

* significant at 10 percent.

** significant at 5 percent.

*** significant at 1 percent.

United States fell by *less* in sectors dominated by trading partners with greater credit contractions.

Columns (6), (7), and (8) report the results of using shipping lags measures (average distance shipped, share shipped by truck and pipeline, share shipped by vessel, and average time to ship). For U.S. exports, these do not seem to matter. For imports, there is some evidence for the role of shipping lags. Although the simple average distance shipped is not significant (column [6]), the mode of transportation is. Sectors with higher shares of imports shipped by ocean and other means (usually truck and pipeline) experienced larger falls than sectors with higher shares of air shipping (column [7]). Furthermore, sectors with longer shipping times (column [8]) had larger falls in imports. The magnitudes of the beta coefficients are also economically significant: a 1.0 standard deviation change in share shipped by ocean is associated with a 0.148 standard deviations' greater fall in imports. Similarly, a 1.0 standard deviation change in shipping time leads imports to fall by 0.123 standard deviations.

One difficulty in interpreting the shipment coefficients is that the mode of shipping could be an endogenous variable. For instance, firms choose the shipping mode optimally in response to demand volatility (Hummels and Schaur 2010). A second problem is that the mode of shipping is likely to be correlated with the type of goods (for example, automobiles account for a substantial fraction of the decline in trade and are never shipped by air). Although other industry characteristics that are explicitly controlled for may sweep out some of this variation, others could be missing from the analysis.

Finally, column (9) reports the results of regressing imports and exports on the share of intrafirm trade in the sector; although the coefficient has the "right" sign, it is very close to zero and insignificant.

Conclusions

It is widely recognized that the current global downturn was triggered by a large-scale financial crisis. At the same time, the world experienced a collapse in international trade of a magnitude unseen since World War II. If one puts the two events together, it is a reasonable hypothesis that financial factors contributed to the collapse in trade. However, hard evidence for this has proven elusive. This chapter tests a battery of hypotheses concerning how financial factors could have affected U.S. imports and exports at the sector level. Overall, the results show little evidence that financial factors contributed to the trade collapse. This finding is in sharp contrast to the other measures that were found, in earlier studies, to matter a great deal: vertical production linkages and the role of durables.

The remainder of this section highlights some boundaries of this empirical analysis. First, though there is hardly any effect of financial variables on overall U.S. import and export volumes in each sector, financial variables could have been partly responsible for collapses in bilateral trade from individual countries in particular sectors. This possibility is consistent with the results of Chor and Manova (2010), who found that countries experiencing greater credit contractions reduced their exports to the United States disproportionately in financially dependent sectors. These results point out that when one aggregates across partner countries up to sector level, the impact of financial factors on trade volumes disappears.

In light of historical experience, this finding is not surprising. Relative to the level of economic activity, the fall in U.S. trade during the 2001 recession was almost as large as in 2008–09 (Levchenko, Lewis, and Tesar 2010). However, the 2001 recession was not accompanied by a contraction in credit, suggesting that other mechanisms are probably responsible for falls in cross-border trade during economic downturns.

Second, although the United States is widely seen as the epicenter of the financial crisis, its financial system is nonetheless one of the deepest and most resilient in the world. Thus, even if financial factors had no effect on U.S. trade, these factors could have been much more important in other countries with weaker financial systems. Indeed, in a wide sample of countries, past banking crises did affect international trade flows (Iacovone and Zavacka 2009).

Third, even if financial characteristics were found to have a significant impact on international trade volumes, such a result would not necessarily be evidence of financial factors in international trade specifically because production may have fallen by just as much in each sector. Thus, a conclusive test of the role of financial variables in the trade collapse would have to find that financial factors were responsible for changes in trade *over and above the change in output.* This critique applies also to the other existing studies of finance and trade, though it is less of a problem for the negative results here because a robust effect is not found even on unadjusted trade volumes.

Notes

1. Data were obtained on all firms in Compustat from 2000 to 2008. These ratios were computed for each firm in each quarter, and the median value was taken for each firm (across all the quarters for which data are available). The median value across firms is then taken in each industry. Medians are taken to reduce the impact of outliers, which tend to be large in firm-level data. Taking means instead leaves the results unchanged. Because coverage is uneven across sectors, trade credit intensity is calculated over at least 10 firms. This implies that sometimes the level of variation is at the five-, four-, and even three-digit level, although the trade data are at the six-digit NAICS level of disaggregation. See Levchenko, Lewis, and Tesar (2010) for more details.

2. The authors are grateful to Davin Chor and Kalina Manova for sharing the interbank rate data used in Chor and Manova 2010.

3. The authors use 2007 data collected by the U.S. Census Bureau and made available by Peter Schott on his website: http://www.som.yale.edu/faculty/pks4/sub_international.htm.

4. The authors are grateful to David Hummels and Georg Schaur for computing these measures using their ocean shipping time data.

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8

TRADE FINANCE IN AFRICA: A SURVEY OF FIRMS

John Humphrey

Over the past two decades, development policy has encouraged producers in developing countries to export labor-intensive manufactures and nontraditional agricultural exports as an effective means of reducing poverty. How did these industries fare in the wake of the 2008–09 global crisis? Given the unprecedented financial nature of this crisis and its impact through the banking system, were exporters from low-income countries hit by cuts in the finance needed for trade?

Concern has been expressed about this issue by trade specialists and policy makers from a wide range of international organizations. The final communiqué of the April 2009 G-20 London Summit identified withdrawal of trade credit as a factor exacerbating trade declines, and the G-20 leaders committed $250 billion to support trade finance. Many commentators welcomed this announcement, but notes of skepticism have also been registered. For example, economist Richard Baldwin, policy director of the Centre for Economic Policy Research, has suggested that expanding trade finance is an easy option that encounters little political opposition (Baldwin 2009). In fact, whether trade finance has a discernible effect on levels of trade—and to what extent—is far from clear, as is whether

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exporters from the poorest countries are affected to the same extent as those in more-developed countries.

This chapter provides some evidence about whether export-oriented garment production and high-value export horticulture in Sub-Saharan Africa have experienced problems in obtaining trade finance. The findings are based on telephone interviews with companies in these two sectors of the African export market.

Trade Finance and How Firms Use it for Trade

Trade finance can take many forms. For simplification, this chapter focuses on three types, as shown in table 8.1: letters of credit (LCs), domestic bank lending, and trade credit.

LCs are specifically designed to facilitate trade by providing both finance and assurances about payment to the exporting company. LCs require confidence and liquidity to be maintained at various points along the chain of payment—from the importer to the issuing bank, to the advising or confirming bank, and ultimately to the exporter.

The other two forms of trade finance are extensions of credit facilities that operate in domestic economies. Companies may use domestic bank lending to finance both capital investment and working capital. Such lending can be used to facilitate trade. Similarly, firms extend credit to each other when payment takes place before or after receipt of goods. Such credit is widely used in domestic transactions. Firms that have well-developed trading relationships may adopt the same practice. To the extent that sophisticated global value chains linking firms in different countries often involve repeat transactions and long-term relationships, conducting trade on these terms is not uncommon.

Policy Makers' Concerns

The possible impact of the global financial crisis on trade finance and the capacity of developing-country exporters to finance their trade became a salient issue in the final few months of 2008. The International Chamber of Commerce argued that uncertainties in global markets were leading firms to be more risk-averse, shifting from open-account trading to LCs, while financial markets themselves were providing less trade finance (ICC 2008). These concerns were taken up by World Trade Organization (WTO) Director-General Pascal Lamy, who announced the formation of a WTO task force to monitor the issue. The Institute of International Finance suggested that private financial flows to emerging markets were falling dramatically (IIF 2009). Anecdotal evidence also emerged about trade credit drying up, international banks becoming less willing to lend, and the

Table 8.1 Potential Impacts of Financial Crises on Trade Finance, by Type

Trade finance type	Potential impacts of crisis
Letters of credit (LCs) Importers use LCs issued by their banks (the issuing banks) as a means of assuring exporters that they will be paid. Payment is made to the exporter upon production of required documentation (for example, invoices or bills of lading) to its (confirming) bank.	• The importer's creditworthiness is undermined, and the issuing bank will not assume the risk. • The issuing bank lacks sufficient funds to extend credit to the importer. • The confirming bank lacks confidence in the issuing bank. • Trade finance institutions reduce their overall exposure or exposure to particular countries during a financial crisis.
Domestic bank lending Domestic banks provide credit to exporters to cover preshipment or postshipment costs. Such funding is similar to provision of working capital in general.	• Financial outflows reduce liquidity in the domestic banking system. • International banks operating in the domestic market reduce credit to cut the exposure of parent banks. • Shortages of foreign currency prevent banks from lending the foreign exchange needed for import of inputs or export freight charges.
Trade credit Companies extend credit to each other when buyers delay or advance payments to suppliers. This is called trade credit, even within the domestic market. In open-account trade, importers pay invoices once goods are received. Equally, importers can extend credit to exporters if they pay for goods in advance.	• General shortages of credit in domestic markets prevent importers and exporters from extending credit to each other. • As credit becomes scarce, not only do banks reduce lending to their customers, but more-creditworthy firms also reduce lending to less-creditworthy ones as their own access to finance is reduced (Love, Preve, and Sarria-Allende 2007). • Firms reduce credit extended to suppliers or buyers because of the increased risk of nonrepayment by these firms.

Source: Compiled by the author.

cost of trade finance rising. Central banks and international financial institutions extended new lines of finance for trade.

However, problems were perhaps more anticipated than actual. Lamy noted, for example, that "he was not aware of any shipments being stopped as a result of the crisis. 'No member has come to me saying we got stranded in this harbour because of the credit crunch'" (Lynn 2008). Similarly, *Asia Today* quoted Angus Armour, managing director of Australia's Export Finance Insurance Corporation (EFIC), as saying "there are anecdotes of people having difficulties in obtaining trade finance, but EFIC 'is struggling' to find data to confirm these reports" (*Asia Today International* 2008).

Evidence from Past Crises

What do we learn from past crises about how shortages of trade finance developed during financial crises and how they affected trade and businesses? During a succession of crises affecting emerging economies in the 1990s, shortages of trade finance appeared to be a substantial and direct consequence of broader economic problems. In fact, commentators seem to agree that the collapse in short-term trade finance was more substantial than might have been expected—or possibly greater than during financial crises in the 1980s. "During the financial crises in the late 1990s and the early years of the new century, trade financing to the crisis countries fell dramatically. . . . Bank-financed trade credits declined by as much as 30 to 50 percent in Brazil and Argentina [in 2002], by about 50 percent in [the Republic of] Korea in 1997–98, and from $6 billion to $1 billion in Indonesia during the Asian crisis" (Wang and Tadesse 2005).

In some cases, such as in Indonesia, trade finance fell so much and so sharply during the 1997 Asian financial crisis that "'cross-border' international trade finance for imports became a particular problem at the peak of the crisis in Indonesia. . . . Indonesia's growth of exports was seriously affected by the difficulty of financing imported raw materials, spare parts, and capital equipment used in its export sectors" (Auboin and Meier-Ewert 2003).

When financial crises centered on particular countries or regions, foreign lenders responded by reducing lending across the board, including trade finance, to reduce their country risk exposure.

There is also evidence from emerging markets that intercompany lending (trade credit) fell during these crises, as analyzed by Love, Preve, and Sarria-Allende (2007). They argue that companies that are good credit risks obtain credit from the financial system and pass some of this credit on to other companies through expanding trade credit. If credit in the economy as a whole dries up, then—after a short period in which involuntary trade credit mounts up as debtors have difficulty repaying—trade credit falls.

In spite of these findings, some unknowns remain:

- *How relevant are these findings on emerging markets to the situation in Africa now?* It is frequently suggested that poorer countries in Africa still have small, relatively insulated banking sectors. Will the impact of the crisis on trade credit be correspondingly smaller?
- *Will the effects of the current crisis be similar to those of past banking crises?* In the 1990s, banking crises were focused on particular countries or regions, and the impact on these regions was immediate and large. It is not clear whether the 2008–09 crisis would play out in the same way.

- *Which firms are more vulnerable to the credit crunch?* Even when trade financing availability is drastically reduced, it is not eliminated altogether. As Auboin and Meier-Ewert (2003) note, "Small local suppliers, who sell specialised products to international importers on a one-off basis, are much less likely to be able to obtain company financing, since they do not have an established relationship with their buyers." Conversely, companies that do have established relationships may continue to trade on preexisting terms.

The link between trade finance and the capacity to export remains unclear. In previous financial crises, substantial declines in short-term capital availability in crisis countries were very weakly associated with declines in exports (Ronci 2005). There was a positive correlation, but "the elasticity of export volume with respect to trade financing is estimated at between 0.02 and 0.04" (Ronci 2005).

Trade Finance in the Crisis: Garment and Horticulture Firms

To find out more about the impact of the financial crisis on exporting firms in Africa, the Institute of Development Studies at the University of Sussex arranged a small telephone survey in the first two months of 2009. The focus was on two sectors: garments and horticulture. These two sectors have been at the forefront of Africa's drive to increase exports of high-value agricultural products and manufactures.

In the case of garments, the African Growth and Opportunity Act (AGOA, introduced by the United States in 2000) led to a substantial expansion of garment production in eastern and southern Africa. Factories produced garments for the U.S. market, predominantly using inputs imported from Asia and taking advantage of duty-free access and the absence of Multifibre Arrangement (MFA) quotas. Although the phase-out of the MFA had a substantial impact on this sector (Kaplinsky and Morris 2006), export activities still continued in 2008.

In the case of horticulture, export promotion activities have been extensive, with particular recent interest in ensuring that African producers and exporters meet increasingly stringent public and private standards in export markets (Humphrey 2008).

Researchers in the United Kingdom and Kenya telephoned 30 firms in Sub-Saharan Africa and asked them how they financed their exports and imports and whether the availability of trade finance—from domestic banks, through LCs, and from customers—had changed. Nineteen firms were interviewed in the garment industry in five countries in Sub-Saharan Africa. Nine firms were interviewed in the horticulture sector, spread across six countries. Contact was made with an additional three horticulture firms in Ghana and Uganda through

another source. The uniformity of responses from these firms led to a broadening of the research focus. Two horticulture firms, in Guatemala and Thailand, were interviewed to see whether their experiences were similar. This process was followed by contact with some U.K. importers and the International Trade Centre in Geneva. In addition, informants from two banks in Kenya provided a lender's perspective on trends in trade finance and the impact of the financial crisis.

The overall findings are clear: in both the garment and horticulture sectors, most of the African exporters interviewed had not (as of February–March 2009) experienced significant cutbacks in trade finance availability. The capacity of these firms to continue exporting was not being affected by credit cutbacks from either their customers, the international banking system (LCs), or domestic banks. The crisis had already had some negative impacts in both sectors, but these were not related to trade finance. The finding that trade credit issues were not undermining the capacity to trade, which applies to well-established exporting firms in Africa, cannot be extended to other regions or to all types of firms, as will be discussed further below. The reasons for this finding differ in the two sectors.

Impact on the Garments Sector

The garment exporters included subsidiaries of companies from Asia and the United States, domestic firms, and some firms with investors from the Middle East. The clear majority of these firms processed imported inputs for export to the United States under the AGOA regime. Finance was required both for imports of raw materials and intermediates and also for coverage of the time lag between exports of garments to customers and receipt of payment. For these firms, trade credit was, to some considerable extent, the responsibility of the parent companies, particularly for imported inputs.

Some of the firms interviewed indicated that finance for either imports or exports had been affected in 2008, but none suggested this had affected their capacity to export. These subsidiaries did rely to some extent on domestic bank credit for working capital. Even here, the availability of bank finance from within the host country had remained unchanged. Credit had generally been difficult to obtain and expensive, but that had always been the case. The domestic banking system was not used for trade finance.

For locally owned firms, too, trade finance did not appear to be a problem. Firms in Ethiopia, Kenya, and Tanzania either borrowed from banks to finance their imports and exports or relied on their own financial resources to bridge the gap between production and the receipt of payment from customers. These firms were still able to obtain credit from their locally based banks. As long as these

companies could show themselves to be good risks and to provide collateral where necessary, trade finance was still available. In Ethiopia, firms had difficulties in obtaining foreign exchange, but this was the consequence of government exchange-rate policy rather than trade finance issues.

There were two exceptions to this picture. First, a company linked to a Middle East investor reported that the company's head office in the Middle East had experienced a credit squeeze in the international financial market. This resulted in a fall in the supply of finance from the parent company. Second, a garment company in South Africa reported credit shortages as a result of the financial crisis. Garment firms are not considered good risks by the South African banking system, according to one of the respondents, and so they were affected by this problem.

Interviews with two banks in Kenya provided a complementary perspective on trade credit for garment firms. Both banks, one domestic and the other a subsidiary of an international bank, had garment companies on their loan books. Both confirmed that the financial crisis had not restricted their lending to companies. The domestic bank continued—in fact, increased—lending to companies. The financial crisis had had a marked impact on overseas remittances used to buy property in Kenya, but this had not undermined the bank's capacity to lend. The international bank provided loans to garment firms in the export processing zone, and it was continuing as before. The bank financed imports through LCs and provided credit to facilitate exports.

The main factors governing lending to these firms were the financial stability and creditworthiness of the borrower. In the case of garments, export receipts often went directly to the parent company, and this made the bank especially wary of bad debts.

Impact on the Horticulture Sector

In the case of horticulture, interviews were arranged with six African exporters to European markets. To analyze firms with potentially different access to trade (interfirm) credit, the sample included exporters supplying large retailers (supermarkets) as well as exporters supplying European wholesale markets, where business was more likely to be conducted through arm's-length trading relationships. The interviewees cited the following reasons for the absence of trade finance problems:

- *Local banks consider the horticulture sector in Sub-Saharan Africa to be a good risk.* Therefore, lending has continued. There was some risk that exports of high-value food would be more affected by the recession than exports of basic

commodities, but one key informant from the Kenyan export horticulture sector reported in early 2009 that export volumes for fresh vegetables had not fallen.

- *Firms are operating in well-established value chains.* Even firms supplying wholesale markets in Europe had well-established relationships with their importers and established lines of trade finance. These transactions often involved open-account trading. Unless the financial position of the creditor company in the relationship deteriorates, trade can be sustained. Where local banks did provide finance, they were continuing to lend, and the established patterns of trade finance had continued.

These findings are confirmed by broader findings relating to trade in horticulture and agriculture. A variety of exporters of agricultural products are sustaining trade. For example, one major European importer of coffee and cocoa from West Africa reported that there were no problems with trade finance. Most transactions are conducted between well-known parties who do not use LCs. Trust between the parties means that they rely on open-account trading (payment following delivery) or documentary collections. These require less external financing commitment, and although they place risk on the exporter, risk exposure is mitigated by well-established trade ties.

Affected Regions and Firms

That these particular types of exporters were not affected by availability of trade finance does not mean that substantial impacts cannot be found in other types of firms and in other countries. In at least one West African country, for example, there is a credit shortage in the domestic market; as a result, prefinancing of trade in cocoa is curtailed. This has an impact on local intermediaries that buy produce in rural areas and transport it to the docks.

The big local buyers working with transnational companies are not affected because their customers provide finance, but smaller buyers are finding it difficult to borrow the cash they need to buy supplies at the farm gate or from cooperatives. This disparity will have distribution and poverty consequences. Smaller producers and niche producers may find themselves marginalized because credit is available only for large buyers buying in large quantities. Given the uneven impact of the financial crisis, there is a clear need to target any public provision of trade finance and domestic credit.

On the regional level, there were also substantial problems with trade finance in Central America, the Caribbean, and parts of South America. This issue was emphasized by one large U.K. fruit importer that had well-established, long-term

relationships with fruit growers across this region. For some producers in Central America, the U.K. importer prefinanced production, paying up to half the purchase price in advance of shipping or at the point of shipment. In late 2008, its growers in Costa Rica faced a crisis when the domestic banking system withdrew credit, and the U.K. importer had to choose between extending further credit to its suppliers or risking the loss of the advances it had already made. Being cash-rich, the importer was able to provide further advances, but producers in a similar situation but without an established link with a cash-rich buyer would have been in much more serious difficulties.

The position of this particular exporter was not an isolated case. The banking industry in Central America and the Caribbean reportedly has had significant problems that appeared to create many problems for small and medium-size producers, shippers, and exporters of agricultural products. These problems not only reveal the potential impact of the global financial crisis on working capital but also suggest that the African banking system had, up to mid-2009, escaped some of the impact of the crisis being felt in other parts of the developing world.

There are two ways of interpreting these results. One is to suggest that Africa is generally more isolated from the global financial crisis; banks are still lending to companies, and they still have money available, particularly for good credit risks. The other interpretation is that the financial crisis is merely delayed in Africa; the impacts of the global financial crisis merely take time to work through. At this point, it is not possible to say which view is correct. However, the next section makes the case that African firms are feeling the effects of the crisis in different ways that might eventually affect trade finance.

Further Impacts: Exchange Volatility and Falling Demand

Having established that most of the Africa-based firms in the garment and horticulture sectors have not experienced difficulties with trade finance, it is important to recognize that the financial crisis is nonetheless having clear and substantial impacts. These impacts are not uniform, but various respondents have reported two in particular: exchange rate volatility and falling demand.

Exchange Rate Volatility

In the garment industry, contracts are priced in dollars, and companies have been largely insulated from exchange-rate fluctuations. For the horticulture sector, in contrast, exchange-rate fluctuations are a major issue.

In Kenya, the substantial devaluation of the U.K. pound against the dollar, amounting to a little more than 25 percent in the second half of 2008, created two

problems. Exporters to the United Kingdom, the biggest market, mostly had contracts priced in pounds, but many inputs were priced in dollars. For companies that export Cost, Insurance, and Freight (CIF), air freight (a substantial part of the landed price in the United Kingdom) is also priced in dollars. Furthermore, the appreciation of the Kenya shilling against the U.K. pound by 12 percent between March 2008 and February 2009 (average rates for both months) meant that domestic costs increased relative to export revenues.

Falling Demand

Garment producers were facing reduced orders. Lead times for African garment producers are long; in early 2009, they were completing orders negotiated in mid-2008. However, the companies reported that buyers were holding back new orders and pushing for much lower prices. Almost all the garment companies reported falls in demand and poor prospects for new orders. Fresh vegetable producers had not yet registered declines in demand for what is a premium product (fresh produce from Africa), but flower exporters did experience sharp falls in demand and pressure on prices, according to one well-placed local informant in Kenya.

Both of these effects could undermine company finances, leading to deterioration in their creditworthiness and a decline in their access to trade finance. More difficult trading conditions and increased uncertainty about sales and profit could undermine access to trade finance.

Public Policy Responses and Implications

The financial crisis has affected these companies in various ways. Therefore, public policies to address the immediate impacts of the crisis require targeting of measures to sustain trade finance to the firms that most need it.

Overall, the mechanisms to sustain trade finance are well-established. In past financial crises, national governments, international financial institutions, regional development banks, and parts of national banking systems stepped in to increase the supply of trade finance. There is ample evidence that the same bodies acted to improve the supply of trade finance in the current crisis, prompting trade finance-related announcements from the International Finance Corporation of the World Bank Group, various national governments, and regional development banks.

Trade finance support must be targeted to be effective. The impacts of the crisis on firms vary by region and by sector and also according to the nature of intercompany trading relations. Broadly targeted support to increase lending capacity in the banking system—in both importing and exporting countries—will not

necessarily reach the firms that are in greatest need. Scarce bank finance is likely to go to firms with established exporting records and regular customers. Difficulties in obtaining trade finance are more likely to affect small firms and new entrants that do not have established relationships with banks and customers. These firms will continue to be categorized as higher-risk. In particular, it was seen in West Africa that smaller exporters, producer groups, and cooperatives might be particularly vulnerable. The financial crisis might have more impact on new entrants to global markets that have been encouraged by recent development policy to venture into export markets. Therefore, programs should identify and target these companies.

In the longer term, there are further implications for development policy. Firms that have done well from linking into dynamic global value chains, such as producers of fresh vegetables for U.K. supermarkets, are particularly vulnerable to adverse global conditions. Export-oriented production has linked these firms to powerful customers. In the crisis, the powerful customers have the capacity to transfer the risks and consequences of turbulence and unpredictable markets to their suppliers. To the extent that exporters have investment in market- or customer-specific assets (such as sophisticated processing and packaging plants for supplying the U.K. market), customers can transfer the costs and risks of the crisis down the chain. U.K. supermarkets tried to maintain the pound sterling price of imports irrespective of exchange-rate fluctuations. They also vary purchase quantities according to short-term fluctuations in demand. As a result, most of the risks and uncertainties fall on the supply chain. Large and powerful customers can provide strong and stable demand in times of expansion, but they are more difficult to deal with in difficult times.

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9

FINANCIAL CRISES AND AFRICAN TRADE

Nicolas Berman and Philippe Martin

Early in the 2008–09 global financial crisis, a common view was that Africa's low level of financial integration may be a blessing in disguise, insulating the region from the direct impact of the crisis. Indeed, the direct wealth effect may have been less important in Africa than in other regions such as East Asia, Latin America, and Central and Eastern Europe, where countries have more-open financial flows than African countries. African banks may indeed have bought fewer "toxic" assets than did banks in other parts of the world, but this reduced exposure was not enough to mitigate the negative effects of the crisis in this region. African countries, although not involved in the origin of the crisis, have been hard-hit by its expansion. The potential explanations are many:

- Fluctuations in commodity prices may have particularly affected African countries; global slowdown of demand had no reason to spare African products.
- Because the crisis deeply affected migrants in developed countries, workers' remittances may have plummeted, diminishing an important source of revenue for most African countries.
- The same effect holds for aid flows, which developed countries have reduced during past downturns.

However, the main entry gate of the crisis into Africa has been international trade. U.S. trade statistics for 2008–09 provide one indication of how vulnerable African countries are on the trade side. Following the crisis, U.S. imports from Sub-Saharan African countries have fallen more dramatically than U.S.

imports from the rest of the world. This is especially true for African manufacturing exports, suggesting that the fall in African exports is not only a composition effect due to the importance of primary goods and the fall in primary goods prices.

What is behind this sharp fall of African exports to a country that, during this period, experienced an exceptional financial crisis by historical standards? What does the fall in exports reveal about the vulnerability of African exporters to financial crises in partner (importing) countries? And what are the mechanisms through which a financial crisis in a partner country affects African exports?

An earlier attempt to partially answer these questions analyzed the impact of past financial crises on bilateral trade flows (Berman and Martin 2010). According to a large sectoral database of bilateral trade and financial crises during the 1976–2002 period and a gravity equation approach, the deviation of exports from their "natural" level was quantified.

This chapter distinguishes two mechanisms through which a financial crisis in one country affects the exports of partner countries:

- *The first is an income effect* because financial crises are typically associated with sharp recessions (Reinhart and Rogoff 2008; Claessens, Kose, and Terrones 2009), which cause consumption and imports to fall. The elasticity of trade to income has increased in the past 40 years (Freund 2009).
- *Second, a disruption effect* may cause a financial crisis to adversely hit African exports. The disruption may take direct or more subtle forms.

The most direct disruption effect, one widely discussed in policy circles, is the fall in trade credit. Among the subtler disruption effects, although difficult to measure, is increased risk aversion among bankers and traders, which may more severely affect countries or groups of countries that are viewed as riskier.

As explained further in relation to figure 9.1 (in the section titled "Results"), the disruption effect on trade is more important (about 20 percent larger) for African countries than for exporting countries in other regions. Again, this disruption effect comes in addition to the fall of exports due to the fall of income and consumption. This sharp difference applies to both primary products and manufactured goods. In addition, for African countries, the largest disruption effect comes when the destination country hit by a financial crisis is industrialized.

Importance of Trade Finance to African Exporters

A banking crisis, by tightening financial constraints, may affect trade patterns in important ways. The difference between African and other countries may lie in

the type of financing used by exporters. While firms operating in countries with relatively developed financial markets can use the banking system to finance trading operations, African exporters rely on other sources, particularly trade finance provided by institutions in the destination countries.

Trade can be disrupted by a financial crisis that affects banks, heightens risk aversion, and reduces trust in both the importing and exporting countries. Letters of credit (LCs) are among the forms of trade finance most affected. Importers use LCs issued by their banks (the issuing banks) as a means of assuring exporters that they will be paid. If the exporter submits the required documentation (for example, invoices or bills of lading) to its bank (the advising or confirming bank), payment is made to the exporter. LCs require both confidence and liquidity to provide finance and assurance of payment to the exporter. If confidence or liquidity is missing at any point along the chain from importer to exporter, the mechanism will not function: the importer's creditworthiness may be undermined, the issuing bank may have insufficient funds to extend credit to the importer, and the confirming bank may also lack confidence in the issuing bank.

In addition, under Basel II rules, when market conditions tighten, capital requirements for trade finance instruments tend to increase more than proportionally to the risk when the counterpart is in a developing country (Auboin 2009). Interfirm trade credit may also be deficient during a financial crisis because of the perceived increase in nonpayment risk. Indeed, trade finance fell sharply during the most important emerging markets' financial crises of the 1990s (Ronci 2005).

In the aftermath of the 2008–09 financial crisis, a burgeoning literature has attempted to analyze the sources of the trade collapse. This chapter is clearly part of this literature, although it focuses on African countries and on the greater issue of the transmission of financial crises to the developing world.

Regarding the recent crisis, the respective roles of financial conditions and trade credit have been in dispute. The World Trade Organization has pushed the idea that the trade collapse was partly due to the collapse in trade credit. Auboin (2009) reports a 2008 increase in spreads on 90-day LCs—from 10–16 basis points in normal times to 250–500 basis points for letters issued by developing countries. The African Development Bank noted that "paradoxically, although African commercial banks are ready to provide financing for trade operations, they are unable to do so because the global credit crisis has caused many international confirming banks to be forced to temporarily withdraw their credit support from the market. This has led to a growing gap between supply and demand for trade financing" (AfDB 2009).

Another study that surveyed several banks in developed and emerging markets reported a sharp increase in the cost of trade finance: 70 percent of the banks

reported that the price for LCs had risen (IMF 2009). One possible explanation given by the International Monetary Fund (IMF) for the collapse of trade from emerging and developing countries is that rising trade finance costs and increased risk perception had a severe impact on low-margin products: the inability of importers to afford LCs. One issue is that these contrasting views are based on surveys rather than on comprehensive trade finance statistics. The series of trade finance statistics derived from balance of payments and Bank for International Settlements (BIS) banking statistics was discontinued in 2004 (Auboin 2009).

Recent papers find evidence that the credit conditions observed during the crisis affect export performance. For example, Chor and Manova (2009), who used data on the evolution of trade volumes during the crisis months, find that adverse credit conditions were an important channel through which the crisis affected trade flows. Iacovone and Zavacka (2009) and Amiti and Weinstein (2009) also find evidence on the negative effects of financial crises on exports. The latter argue that exporters typically turn to banks and other financial firms to handle payments because international trade is typically riskier than domestic trade. Collecting payments in foreign countries is more difficult than doing so domestically. Also, the added shipping times associated with international trade often mean that international transactions take two months longer than domestic transactions. The shipping lag imposes additional working capital requirements on exporters.

Using Japanese data, Amiti and Weinstein (2009) find that, of the 10.5 percent decline in Japanese exports following the 1997 banking crisis, the direct effect of declining negotiating bank health on exports caused about one-third of the decline. Another study, using French firm-level data, finds that firms in sectors structurally more dependent on external finance were the most affected by the crisis (Bricongne et al. 2009). Yet Levchenko, Lewis, and Tesar (2010), using U.S. data, find no support for the hypothesis that trade credit played a role in the trade collapse.

Methodology and Data

This section presents the empirical approach and the data used to assess the effect of financial crises on trade—and specifically on African exports.

Empirical Methodology

The econometric specification presented is based on the gravity equation. A large literature now addresses the difficulties of estimating a gravity equation (for example, Baldwin and Taglioni 2006). The aim here is to understand how a

financial crisis in year t and country i (the importer country) affects the exports of country j (the exporter country).

A financial crisis in the importer country potentially affects several standard determinants of the gravity equation that a monopolistic competition trade model would typically generate:

- *The income of the importer country* Y_{it}. This is the direct income effect. As the financial crisis hits the income of the importer country, it also leads to lower consumption and therefore lower imports.
- *The bilateral trade costs between countries i and j.* Broadly speaking, if a financial or banking crisis hits the importer country, this may affect its imports over and above the direct effect on income. In particular, if importers or exporters rely heavily on credit for their trading relationship, the effect may be more important than the income effect. We call this the trade disruption effect.
- *The price index of the importer country i*, P_{it}. If prices fall in the importer country, this has a negative impact on the country's imports. Although this price index is not observed, the empirical strategy controls for it.

It is also important to control for the other standard gravity determinants that may or may not be affected by a financial crisis in country i, such as the income of the exporter country Y_{jt}; a country pair × sector fixed effect to control for all time-independent determinants of the bilateral trade relation in the sector (η_{ijh}); and a year-fixed effect (ξ_t) that controls for all determinants of trade that are common to all countries during a year (for example, changes in commodity prices).

Following Martin, Mayer, and Thoenig (2008), the following equation links financial crises to trade from countries i and j (m_{ijht}), relative to trade between i and a benchmark country b (m_{ijbht}):

$$\log\frac{m_{ijht}}{m_{ibht}} = \alpha_1 \log\frac{Y_{jt}}{Y_{bt}} + \alpha_1 \log\frac{p_{jt}}{p_{bt}} + \sum_{k=a}^{K} \beta_k \Delta_b FC_{it-k} \times SSA_j + \Omega X_{ijt} + \eta \frac{i}{ij} + \xi_t + \varepsilon_{ijht} \tag{9.1}$$

where h denotes the industry,

p_{jt} is the producer price of country j,

FC_{it} is a binary variable, which equals 1 if country i had a financial crisis in year t,

SSA_j is a dummy, which equals 1 if country j is in Sub-Saharan Africa.

Finally, the shortcut Δ_b designates that all variables are in difference with respect to the base country b, and X_{ijt} is a vector including regional trade agreements and currency crises. The coefficients β represent the additional disruption effect of financial crises in Sub-Saharan African countries.

The main advantage of this methodology is that it controls for changes in the unobserved price index of the importer countries (or multilateral resistance index; see Anderson and Van Wincoop 2004), therefore solving the omitted variable bias.[1]

The following estimations use the United States as the benchmark country; robustness checks have been made using other benchmark countries. Finally, the specification includes two leads and seven lags of the FC_i variable; a modification of the number of lags leaves the results qualitatively unchanged.

Data Sources

A large sectoral database of bilateral trade is used that combines data from the United Nations Commodity Trade Statistics Database (Comtrade) and the CEPII Trade Production and Bilateral Protection Database (TradeProd) of the Centre d'Etudes Prospectives et d'Informations Internationales (Center for Research on the International Economy, or CEPII) for 26 International Standard Industrial Classification (ISIC) three-digit industries between 1976 and 2002.[2] For a study of the effect of financial crises on primary goods sectors as well, this database is completed using Comtrade for five different primary goods sectors.

The relative prices are captured by the price levels of gross domestic product (GDP); prices and GDP data come from the Penn World Tables v.6.1 (Heston, Summers, and Aten 2002). Sector-specific prices are not available for lack of data. Robustness checks included industry × year dummies to control for sector-specific price changes. Finally, the data on banking crises come from Caprio and Klingebiel (2003), primarily the systemic crises they define as events—possibly lasting several years—when much or all bank capital was exhausted.

Together, the database covers 76 countries and 27 three-digit ISIC manufacturing sectors and five primary sectors over the 1976–2002 period.

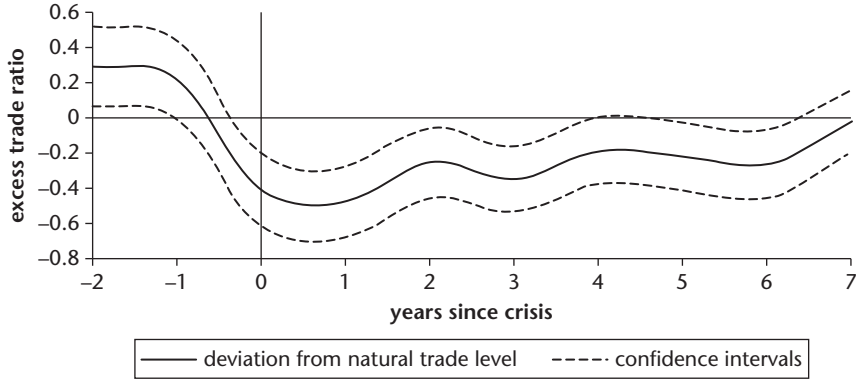
Results

In this section, we quantify the disruption effect of financial crises on trade and analyze the specific role of trade finance.

The Disruption Effect

The main result, shown in figure 9.1, is based on the estimated coefficients and confidence intervals of equation 9.1.[3]

Figure 9.1 African Exports after Financial Crisis in Partner Country



Source: Authors' computations.

More precisely, figure 9.1 shows the deviation of African exports before and after a financial crisis that takes place in year $t = 0$, with respect to the average disruption effect of other exporters. The x-axis represents the "natural trade" level as given by the gravity equation, and the figure can therefore be interpreted as the deviation from this level. The 5 percent confidence intervals are depicted by dotted lines around the estimated effect. The remaining figures in this chapter are constructed similarly, even though all of the associated regressions are not reported here.

Clearly, the disruption effect is stronger for African countries. The year the importer country is hit by a financial crisis, the additional effect for African exports is around 30 percent. Note again that this number measures the disruption of trade that comes from the financial crisis, not from the fall of income of the crisis-hit country, because this is controlled for. The fall is also long-lasting; it disappears only four years after the crisis in the partner country.

Again, remember that these regressions control for the common effect that the change in the income of the importer country has on all imports

- for all determinants of sectoral bilateral trade that are time-invariant (through the inclusion of country pair × sector fixed effects);
- for yearly changes in trade that are common to all countries (through the inclusion of year fixed effects); and
- for the effects of currency crises in the destination countries.

The robustness checks controlled for exporter × year or for sector × year dummies. This allows, in particular, controls for country- or sector-specific price changes, which the relative price variable does not properly capture. These controls are important because African exports are dependent on world prices in primary goods. Whatever the specification, African exports are found to be much more negatively affected than other countries by a crisis in the destination country.

What is the reason behind this sensitivity of African exports? The first possibility is that African countries are specialized in sectors that are particularly vulnerable to a financial crisis. However, when running separate regressions for (a) exports of primary goods and raw materials and (b) manufactured goods, we get similar results: whatever the sample, African exports are much more negatively affected than exports from other regions by a financial crisis in the partner countries.

The Role of Trade Finance

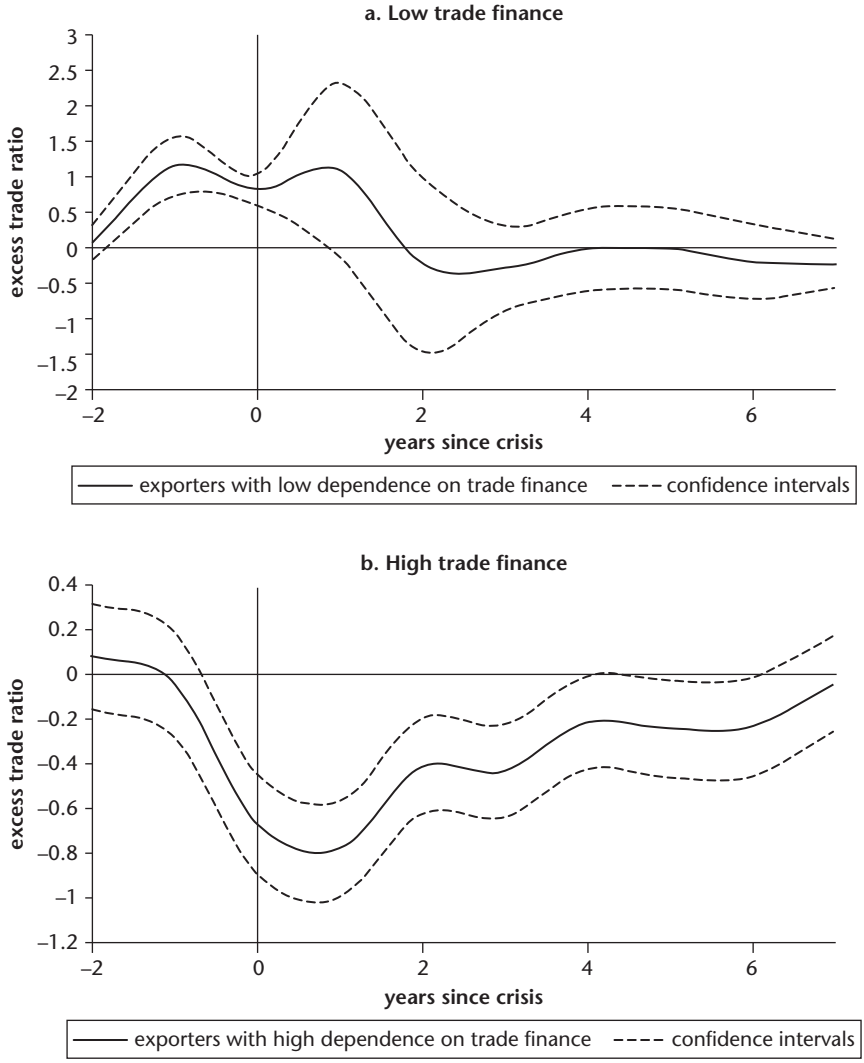
Another explanation for the drop in African exports when trading partners face financial crises relates to the disruption of trade finance. If low financial system development forces African firms to rely more heavily on trade finance from the importing country, and if financial crises hit this type of financing particularly hard (Ronci 2005), exports of African countries may also be hit harder, whatever the sector considered.

As a proxy for trade finance, following Ronci (2005), the estimate uses the level of outstanding short-term credit in U.S. dollars as reported in the World Bank's *Global Development Finance* dataset, which includes short-term credit for trade in dollars as reported by the Organisation for Economic Co-operation and Development and the international banks' short-term claims as reported by BIS. As Ronci (2005) points out, this variable has several limitations, in particular because it excludes trade finance associated with intrafirm trade by multinational corporations or trade related to foreign direct investment.

For each country, the average ratio of trade credit over total exports over the period is constructed. African countries clearly display greater dependence upon trade finance: the median (mean) of the ratio is 0.74 (0.95) for African countries and only 0.47 (0.60) for the rest of the sample.

Can dependence on trade finance explain the vulnerability of African trade to crises in partner countries? To answer this question, we compare the effect of the financial crisis on African exporters that are more dependent on trade finance with the effect on those that are less dependent. The results are represented in figure 9.2. African countries that display a higher level of trade finance clearly experience a larger drop of their exports to countries hit by a financial crisis in the first years.

Figure 9.2 African Exports after Financial Crisis



Source: Authors' computations.

Of course, these results should be interpreted with caution because only a proxy for trade finance has been used here. The results suggest, however, that this particular type of financing may play an important role in Africa in the aftermath of financial crises and, more generally, in the transmission of financial crises through international trade links.

Conclusions

The main conclusion is that, contrary to some arguments heard early in the 2008–09 financial crisis, the crisis may have hit Sub-Saharan African countries harder through its effect on the region's exports. Even though the direct effects of the crisis may be weaker due to the relative insulation and underdevelopment of the financial system in most Sub-Saharan African countries, the indirect effect through trade may be stronger. In the past, African exports have been hit harder by financial crises in the countries they export to. This is not only the result of the composition of African exports and the concentration on primary goods.

The higher dependence of African exports on trade finance may explain African exporters' particular fragility to financial crises in importer countries. One interpretation is that during a financial crisis, when uncertainty and risk are high and trust and liquidity are low, banks and firms in the importer country first cut exposure and credit to the particular countries they see as more risky. This response would, in particular, affect trade finance through LCs, by which the importer pays the exporting firm in advance.

It is also likely that during financial crises, financial institutions "renationalize" their operations and reduce their exposure to foreign banks and firms. Exporters in countries with strong financial systems may be able to better resist such retrenchment of foreign banks. Clearly, for African firms that are more dependent on foreign finance, this option may not be feasible. At this stage, these interpretations of the results are only tentative, and more research must be done to better understand the origin of the particular fragility of African exports to financial crises in industrialized countries.

Notes

1. For a more complete explanation of this methodology, see Martin, Mayer, and Thoenig (2008).
2. More information about Comtrade (the United Nations Commodity Trade Statistics Database) is available at http://comtrade.un.org/db. A more detailed description of the CEPII Trade, Production and Bilateral Protection Database (TradeProd) is available on the CEPII website at http://www.cepii.fr/anglaisgraph/bdd/TradeProd.htm.
3. Complete regression results can be found in Berman and Martin (2010).

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10

WORLD BANK FIRM AND BANK SURVEYS IN 14 DEVELOPING COUNTRIES, 2009 AND 2010

Mariem Malouche

This chapter updates the findings of the 2009 World Bank firm and bank survey to assess the impact of the 2008–09 financial crisis on trade and trade finance in 14 developing countries (Malouche 2009). The follow-up survey used the same sample of firms and banks as in 2009, in 12 out of the original 14 countries.[1]

The findings of these surveys are particularly informative because of the general lack of data on trade finance. To the author's knowledge, no other firm and bank surveys had been conducted across a number of developing countries to assess the impact of the 2008–09 financial crisis on trade finance.

The 2010 survey resulted in these main findings:

- *In all surveyed countries, trade growth picked up after bottoming out in spring 2009.* Firms' exports became less constrained after the economic recovery began. The crisis does not appear to have led to immediate market shifts, although some firms reported looking for new market opportunities to diversify away from the developed-countries' markets that were hit hardest by the financial crisis.
- *Trade finance value and volume—in particular, interfirm trade credit—also bounced back.* Firms' revenues picked up along with the economic recovery and, thus, also interfirm trade finance. However, banks remained relatively risk averse because they needed to deleverage and reassess underwriting risks. As a

result, prices of trade finance instruments and spreads, although narrowing, remained higher than precrisis levels. Small firms and financially weaker exporters have faced particular difficulties in accessing trade finance, as the first survey already suggested.

- *Lack of trade finance may not have proven as critical as initially thought.* However, the expansion of trade finance programs and liquidity injection by governments and multilateral institutions have helped to mitigate the impact of the crisis and restore confidence. With the economic recovery and adequate liquidity, many governments have been backing off from policy measures aimed at adding liquidity in the financial market.

The main sections of this chapter provide an update on trade developments in the surveyed countries; discuss the role of trade-finance constraints on trade flows; report on country-level trade finance data; and provide an update on the policy actions of governments and multilateral institutions.

Trade Recovery without Major Structural Changes

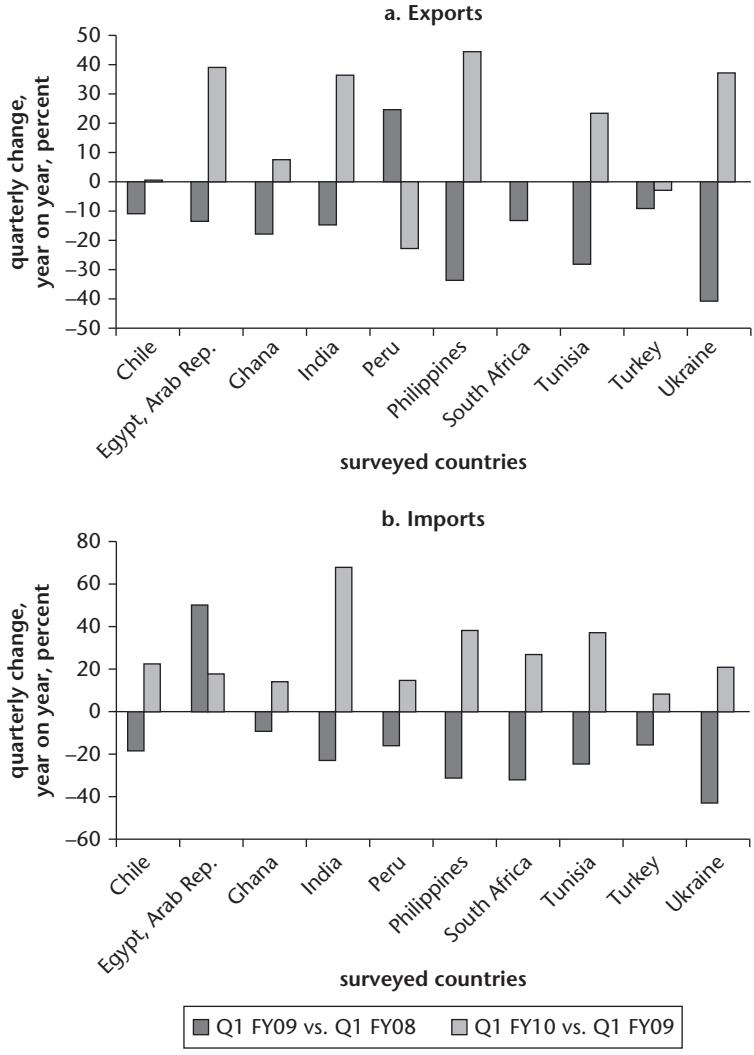
Trade flows followed a V-curve in middle-income countries that export mainly light manufacturing and consumer goods, reflecting changes in global demand. Among commodity exporters, the flows fluctuated in more of a seesaw in response to price changes.

Monthly data for most of the surveyed countries indicate a sharp decline in exports and imports in late 2008 to early 2009, followed by a strong recovery in the second half of 2009 and first half of 2010, as figure 10.1 shows.[2]

The year-on-year growth rate trends followed a V-shaped curve for most countries, particularly middle-income countries such as India, the Philippines, South Africa, Tunisia, and Ukraine. Trade bottomed out around April 2009 and started to recover in the second half of 2010, but most countries had not yet recovered their precrisis levels by the first quarter of 2010. These results confirm the demand side of the crisis because the surveyed middle-income economies are mostly intensive exporters of merchandise goods and integrated into global supply chains in sectors that have been the most affected by the crisis and the slow economy (such as textiles and clothing and electronics).

The monthly trade growth trend was a bit more mixed for low-income countries and commodity exporters, whose trade fluctuations were more frequent and followed various patterns. For instance, in Kenya, despite large fluctuations in import and export growth rates, seasonally adjusted monthly export volumes hovered around $300 million. In Chile and Peru, imports were directly affected by the economic turmoil and posted negative growth mostly in the first half of 2009.

Figure 10.1 Export and Import Growth in Surveyed Countries



Source: World Bank data and author's calculations.

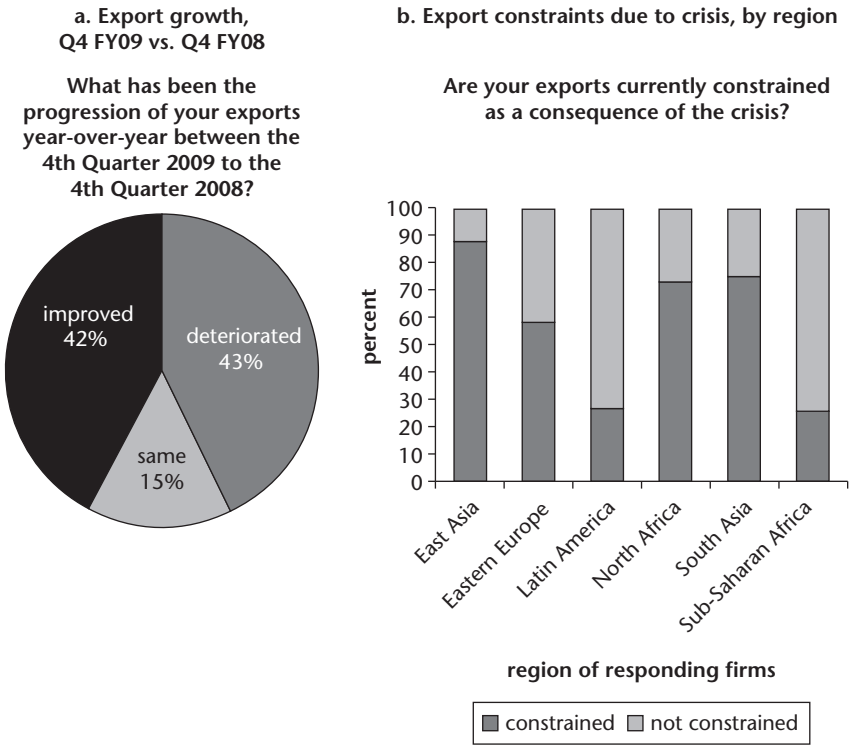
As of June 2010, import levels had returned to precrisis levels in Chile but not in Peru. Export growth was more directly affected by the trend in commodity prices than by the crisis.

The improvement in the country-level data was also reflected in surveyed firms' responses. Nearly 60 percent of the export firms claimed that their export

levels had either improved or remained about the same as in the last quarter of 2008, as figure 10.2, panel a, illustrates. The firms' perceptions of constraints varied across regions, as figure 10.2, panel b, shows.

Firms in East Asia (the Philippines) still felt constrained as a consequence of the crisis, as did firms in North Africa (the Arab Republic of Egypt and Tunisia), Eastern Europe, and South Asia (India). In contrast, exporters in Latin America (Chile and Peru) and Sub-Saharan Africa felt the least constrained directly by the crisis. These differences are driven mainly by the nature of the goods exported. As indicated above, manufacturers of light manufacturing and consumer goods and firms integrated in supply chains have suffered the most, while commodity exporters such as in Chile, Ghana, Kenya, Peru, and Sierra Leone have been less directly affected by the crisis, being more vulnerable to commodity prices.

Figure 10.2 Postcrisis Export Growth and Constraints among Surveyed Firms

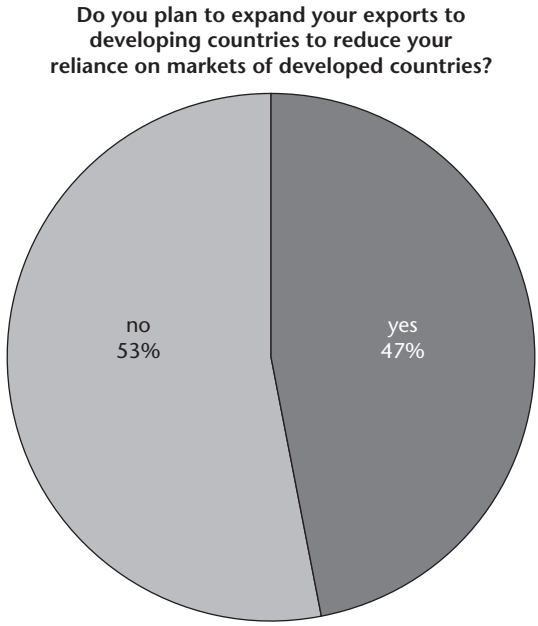


Source: Author's data from April 2010 firm survey.
Note: Total respondents = 221.

Most of the respondents claimed they had not changed their export destinations as a consequence of the crisis for two main reasons: (a) the firms valued their current business relationships, and (b) they were mainly adopting a wait-and-see attitude, hoping the economy and their business would pick up. This attitude also reflected the global dimension of the crisis, with no obvious alternative markets that were easy to tap into.

Interestingly, though, about half of the respondents declared they were exploring new markets to diversify from advanced economies' markets, as figure 10.3 shows. This was particularly the case for firms that have traditionally relied on the European Union (EU) and the United States and therefore suffered more from the crisis, such as firms in Egypt, Tunisia, Turkey, and South Africa. Firms considering market diversification mostly mentioned regional and neighboring countries. Turkish and Ukrainian firms mentioned markets in Europe, Central Asia, the Middle East, and North Africa; Tunisian firms cited African and Maghreb countries; Philippine firms mentioned Malaysia, Mexico, and Middle East and

Figure 10.3 New Market Exploration in Developing Countries



Source: Author's data from April 2010 firm survey.

North African countries; and Indian firms mentioned African markets. These results corroborate the overall belief that this crisis is likely to translate into the emergence of new growth poles in the South.

The results are also consistent with empirical analyses of the trade collapse. Evidence from U.S. and French firm-level data suggests that the crisis has mostly affected trade on the intensive margin (Bricongne et al. 2009; Haddad, Harrison, and Hausman 2010).[3] These findings suggest that a global or regional economic recovery could happen faster than expected because ramping quantities back up with existing partners for goods already exchanged would be less costly and easier. Although establishing new export relationships or reestablishing dropped relationships would take longer, such expansion would also help reduce countries' vulnerability to external shocks in the long term.

Trade Finance Constraints and Trade Collapse

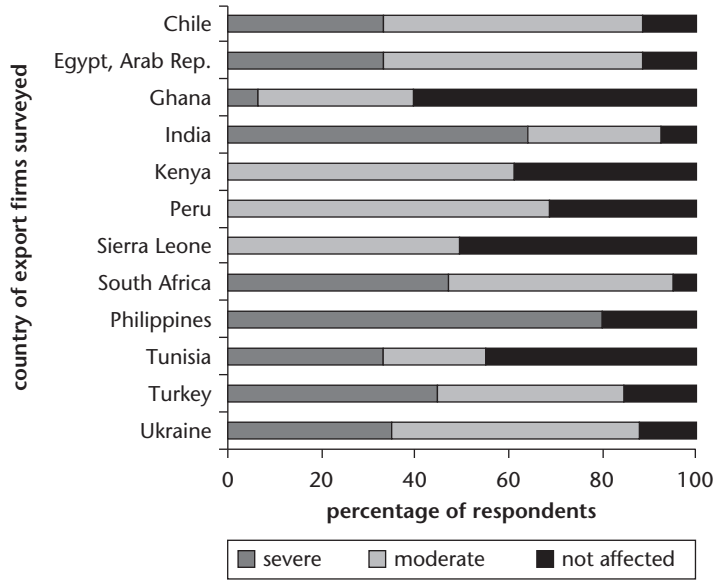
At the peak of the financial crisis, a number of articles and official statements from the heads of international organizations suggested that credit constraints were a significant contributing factor to the global decline in trade (Auboin 2009). Because financial intermediaries were at the epicenter of the global crisis, financial constraints could be particularly important for firms engaged in international trade because they must extend trade credit to their foreign counterparties before the shipment of goods. If these lines of credit were suspended, importing firms would cancel their orders for foreign goods, and foreign firms would reduce production. This fear triggered many governments and development institutions to act immediately to make liquidity available and facilitate trade.

A year into the crisis, several empirical studies, either at the macro level or at the firm level, looked at the role of trade finance constraints in the trade collapse. Most of them concluded that a drop in world demand played a major role and that frictions in the financial market had a marginal negative impact (Mora and Powers 2009; Bricongne et al. 2010; Chor and Manova 2010). These global results, however, disguise the fact that certain countries and market segments may have been seriously constrained and undersupplied, even if the global situation was not necessarily as tight as feared at the onset of the crisis.

Export Firm Survey Findings

The firm survey results confirm these general findings. Three-fourths of the respondents declared that their exports have been severely or moderately constrained by the financial crisis, as figure 10.4 illustrates.

Figure 10.4 Severity of Export Constraints due to 2008–09 Crisis, by Country



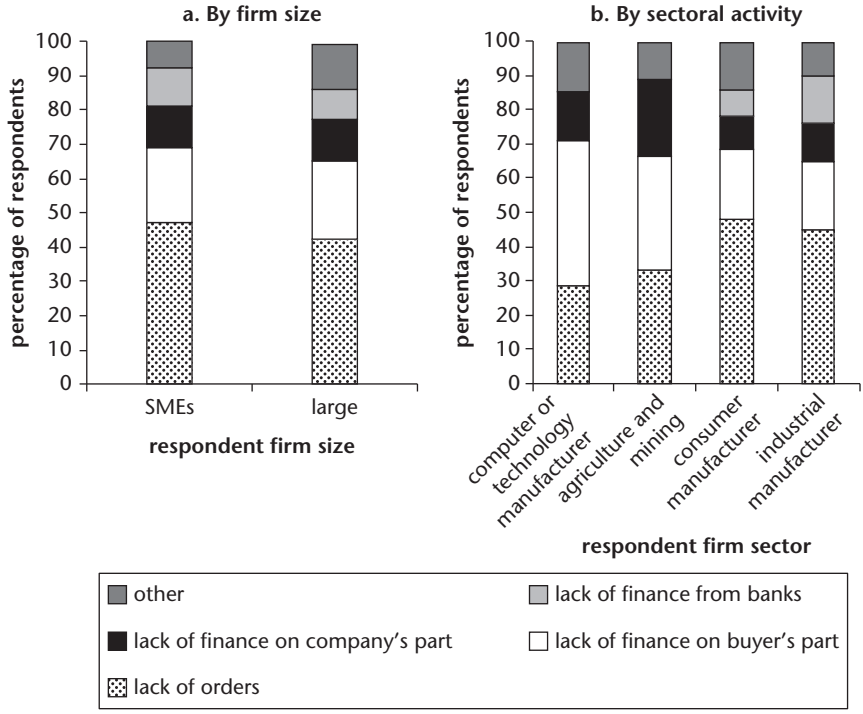
Source: Author's data from April 2010 firm survey.

Most respondents also reported that lack of orders and the related lack of finance—on the part of both buyers (trade credit) and their own companies—explained the market constraints, as figure 10.5 shows. Lack of finance from banks played a lesser constraining role.

Moreover, most firms did not cancel or postpone an activity because of trade finance constraints—the firm's activity, size, or location notwithstanding. Interestingly, the least-constrained exporters were those in Peru and the three low-income African countries and commodity exporters (Ghana, Kenya, and Sierra Leone). This result corroborates earlier findings that exporters in low-income African countries were insulated from the financial crisis because of the combination of (a) low development of the domestic financial sector and its limited exposure to international banks, (b) macroeconomic volatility, and (c) dedicated international credit lines for some commodity exporters.

These results were confirmed when firms were directly asked whether lack of trade finance or higher prices had affected their export plans. As shown in figure 10.6, panel a, more than 80 percent of respondents said they had neither canceled nor postponed a planned transaction because of lack of trade finance, or even because of higher-than-usual pricing of trade finance.

Figure 10.5 Sources of Export Market Constraints

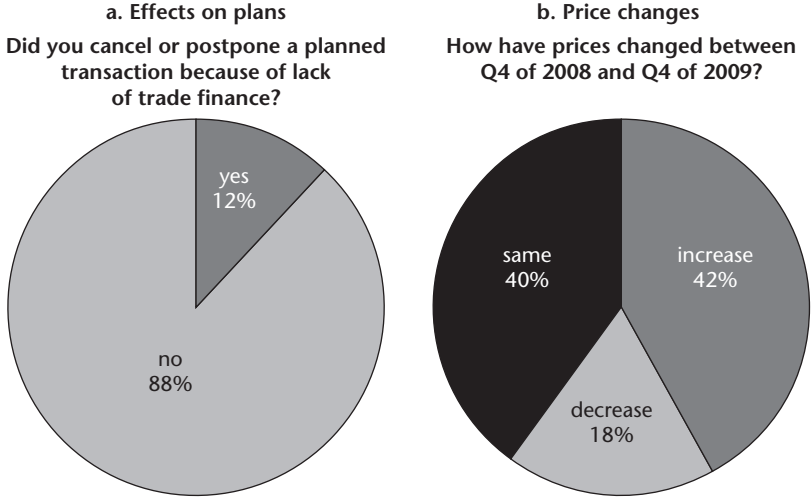


Source: Author's data from 2010 firm survey.
Note: SMEs = small and medium enterprises. Number of respondents = 257. "SMEs" have up to 250 employees; "large" firms have more than 250 employees.

Trade finance prices are reportedly still high and have even increased since the economic recovery started. As figure 10.6, panel b, shows, 42 percent of the respondents declared that prices had further increased by the last quarter of 2009 over the last quarter of 2008, when prices had been presumably at their crisis peak. A similar portion of respondents said prices remained the same, while a minority noted that prices decreased over the same period.

Although firms felt fewer trade-credit constraints from suppliers or buyers after global demand picked up, in particular from emerging markets, many respondents complained about the lack of access to bank-intermediated trade finance. Many firms—especially in Egypt and the Philippines, where banking intermediation is important—claimed that banks were still imposing stringent eligibility criteria for trade finance transactions, and 45 percent of firms reported

Figure 10.6 Trade Finance Changes and Effects on Export Firms



Source: Author's data from April 2010 firm survey.
Note: Number of respondents = 257.

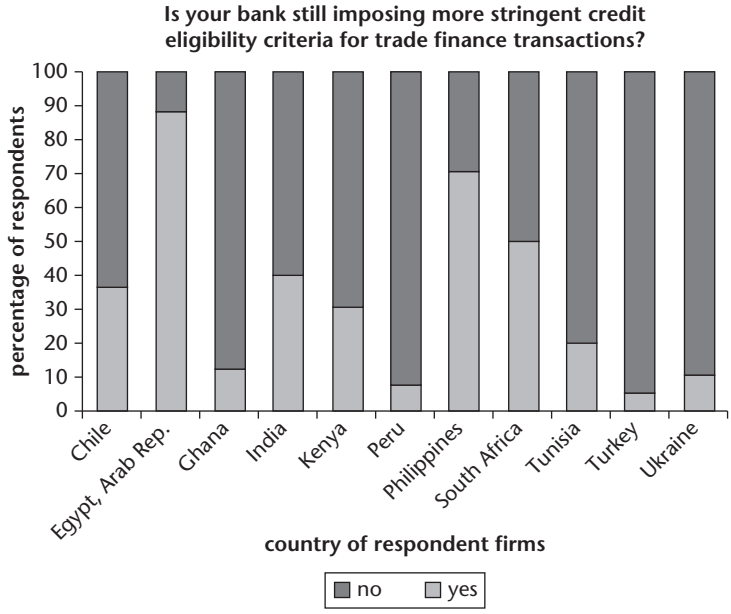
that banks remained as risk averse in the fourth quarter of 2009 as they had been in the fourth quarter of 2008.

Small and medium enterprises (SMEs) and firms operating in the sectors most affected by the slower demand (such as in Egypt, the Philippines, and South Africa) were those most often reporting that banks were still risk averse, as figure 10.7 shows. Financially weaker exporters, for which letters of credit (LCs) and documentary collection are the common payment method, were also finding it harder to access bank-intermediated trade finance.

Access to bank trade finance remained problematic because of heightened risk and the overall deterioration of traders' creditworthiness. It is worth noting that liquidity has not been identified as a constraint. Surveyed banks, even in low-income African countries, reported that liquidity was not an issue and that they could meet increased demand for short-term credit. These reports converge with those from the World Trade Organization (WTO) Expert Meeting on Trade Finance in April 2010, where participants noted that liquidity has returned to the trade finance market.

However, the cost of trade finance remained high in some markets. And the prices of trade finance instruments and spreads, although narrowing, remained higher than precrisis levels, even in macroeconomically sound economies such

Figure 10.7 Constraints on Bank-Intermediated Trade Finance, by Country



Source: Author's data from April 2010 firm survey.
Note: Number of respondents = 223.

as Chile. Regulatory issues—such as Basel II—remain a concern and have reportedly affected the degree of exposure banks can assume in a given transaction.

Other Bank and Firm Survey Findings

Other recent bank and firm surveys indicate a recovery in the trade finance market as a result of the recovery in trade, but access to bank trade finance remains difficult for small firms. An April 2010 survey of 93 major banks in 53 countries indicated an improvement in the trade finance market compared with previous surveys conducted in March and July 2009 (IMF-BAFT 2009; IMF and BAFT–IFSA 2010).

The results of an April 2010 International Chamber of Commerce (ICC) survey of 161 banks in 75 countries were somewhat less sanguine. It reported that the supply of trade finance remained constrained in both value and volume: 60 percent of respondents indicated that the value of trade finance activity

had decreased between 2008 and 2009; 43 percent of respondents noted a decrease in export LC volume (ICC 2010). Trade finance pricing remained higher than precrisis levels, raising the problem of affordability for exporters. Banks had also intensified due diligence processes and scrutiny of documents, leading to more refusals and court injunctions. The survey noted that existing regulations placed low-risk trade finance instruments in the same category as higher-risk balance sheet items, constraining the trade finance market.

Overall survey findings suggest that trade finance was not the primary culprit; global demand was. Moreover, interfirm trade credit has been more resilient than bank trade credit. However, trade finance constraints were not insignificant in some instances: in countries where bank intermediation is predominant, for small and financially vulnerable firms, and for new firms without established business partners.

Indeed, trade dropped mainly because of the spillover to the real economy, drop in economic activity and global demand, decline in export revenues, delays in payment terms by buyers, and shorter payment terms by suppliers. The trade decline, in turn, squeezed exporters' and importers' capital base, working capital, and capacity to self-finance their transactions.

Although interfirm trade credit picked up with the economic recovery, banks remained risk averse and continued to apply more stringent requirements, and prices remained higher than precrisis levels. That interfirm trade credit has been more resilient than bank trade finance is consistent with the determinants of trade credit. The latter can be a superior option to trade finance when suppliers have an advantage over banks because of their access to information on the financial health of clients and because providers can more easily liquidate the goods in the event of nonpayment.

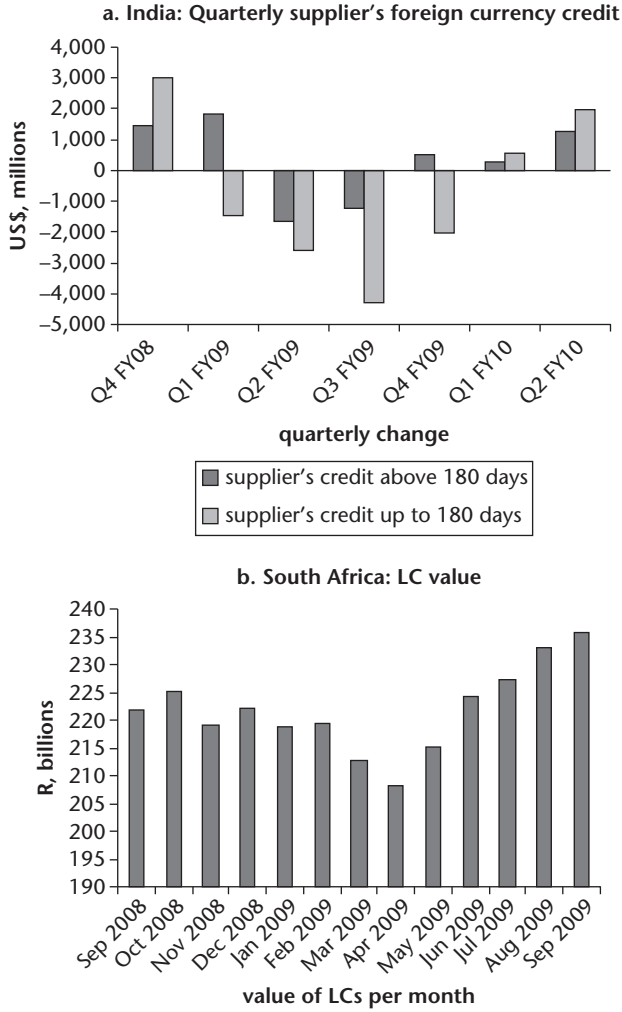
Country-Level Trade Finance Trends

One of the side objectives of this follow-up survey was to collect country-level data on trade finance value and volume because global and country-level data on trade finance have become illustrious for their scarcity. The dearth of data has seriously constrained policy makers in establishing an informed analysis of the impact of the financial crisis on trade finance.

An indication of the seriousness of this problem is that the WTO Expert Group on Trade Finance agreed to improve data collection through surveys under ICC leadership. The ICC and the Asian Development Bank (ADB) also established the ICC-ADB Register on Trade & Finance to collect performance data on trade finance products so that banks have better information on trade finance transactions and may treat them preferentially to riskier short-term transactions.[4]

Some countries do publish trade finance-related data, although under different formats and covering different aspects of trade finance (value of LCs, short-term suppliers, credit, and so on). The data for India and South Africa (shown in figure 10.8) and for Turkey (in figure 10.10 later in this chapter) show a drop in trade finance value starting in fall 2008, bottoming out in the second quarter of 2009, and picking up in the second half of 2009.

Figure 10.8 Export and Import Trade Finance, India and South Africa



Sources: Reserve Bank of India; South African Reserve Bank.
Note: LC = letter of credit. R = South African rand.

Trade Finance Data from Africa

Data for low-income African countries are of greater interest because concerns about liquidity constraints in these countries drew particular attention from policy makers and development institutions. The data indicated that trade finance increased in both Ghana and Kenya, as figure 10.9 shows.

However, the financial crisis has exacerbated the fragility of these economies' economic growth. In Ghana, banks increased import and export finance during the financial crisis, possibly reflecting the increased capital base in line with the new capital requirements, which also led to improved buffer for risk absorption in the banking sector. However, credit conditions tightened somewhat throughout the year because of the high interest rates and deterioration in the quality of banks' lending books.

In Kenya, commercial banks delayed credit in general, particularly export and import credit, with credit volume increasing sharply during the peak of the crisis but then stabilizing around an average value in 2009. In addition to domestic factors such as postelection violence and drought, external shocks (high commodity prices, the global financial crisis, and the subsequent global economic slowdown) exacerbated Kenya's negative economic performance and resulted in low demand for, and supply of, bank credit.

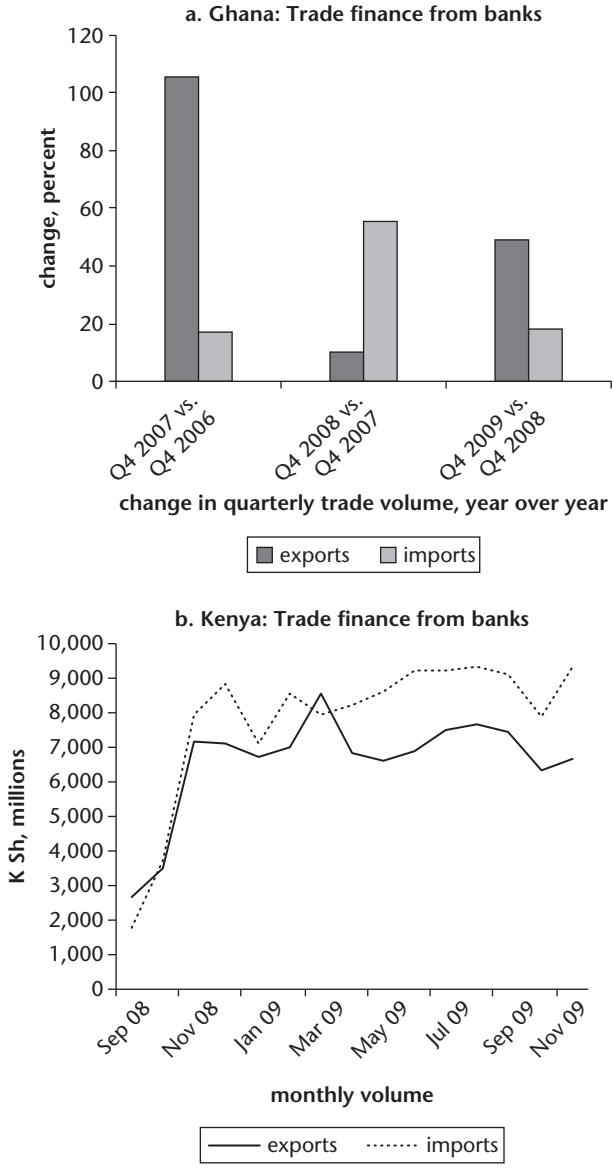
Liquidity was reportedly not a constraint in Sierra Leone, where bank finance remained available to creditworthy borrowers, the larger established banks still tend to be underlent, and the influx of new banks has increased competition to book credit facilities.

Trade Finance Data from Turkey

A closer look at the Turkish data—the most detailed in terms of trade finance instruments and available monthly from January 2008 to December 2009—indicates a drastic dive in trade finance value across most instruments, primarily for the most-used ones, as shown in figure 10.10. Export finance using cash against goods and cash on delivery (the riskiest methods of payment) and LCs dropped the most. The import finance decline was more proportional across instruments, although advance payment methods, followed by cash against goods and on delivery and LCs, are the most-used instruments.

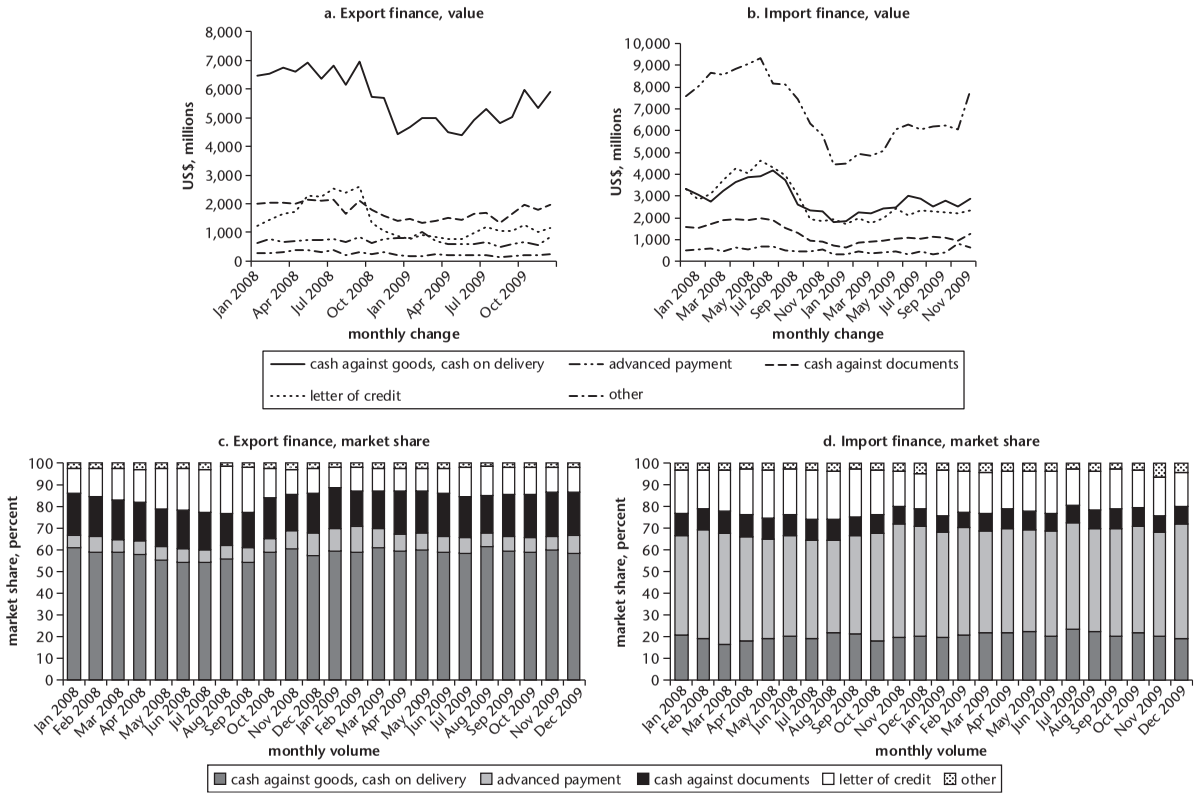
Turkish trade finance value picked up starting in January 2009 and remained on a positive trend until December 2009. These developments tend to support the idea that demand played a more important role than trade credit constraints. Moreover, it is worth noting that the value of trade finance increased in the months before the crisis, for exports more than imports.

Figure 10.9 Export and Import Trade Finance, Ghana and Kenya



Sources: Bank of Ghana Research Department; Central Bank of Kenya.
Note: K Sh = Kenya shilling.

Figure 10.10 Export and Import Trade Finance in Turkey, by Instrument



Source: TURKSTAT.

The share of LCs increased significantly, in particular for exports, leading to a compositional shift: the share of LCs reached 22 percent in August 2008, up from 12 percent in January 2008. This shift disappeared with the crisis, however, and the share of LCs hovered around 12 percent during the last quarter of 2009. Although it not clear why Turkish exporters relied to a larger extent on LCs in the months before the crisis, one possible explanation is that traders observed signs of an impending banking crisis and were already switching toward safer methods of payments.

Governmental and Institutional Interventions

Most governments implemented measures to support exporters during the financial turmoil, including fiscal stimuli, public spending, and making more funds available for lending. However, some governments are already withdrawing some of these measures (see Malouche 2009 for a list and box 10.1 for an update)—in particular, those aimed at increasing the liquidity in the financial sector, mainly because of (a) currently adequate liquidity in the banking system (for example, in India and the Philippines), or (b) some measures' ineffectiveness in adding liquidity in the real sector (for example, in Chile and Kenya). However, other countries (Ghana, for example) did not implement any direct measures to mitigate the impact of the crisis.

More specifically, government measures (or lack thereof) to support exporters in the surveyed countries included the following:

- *In Chile*, increased funding for commercial banks proved unnecessary because the situation never turned so critical, funds were not used significantly, and the program was discontinued soon after it began.
- *In Ghana*, the government took no direct steps to directly address the financial crisis's impact on trade finance. However, the Bank of Ghana's decision to increase its stated capital to ¢60 million (US$42 million) by 2010 helped improve the banking sector liquidity to undertake more trade financing. Also, the government's effort to stabilize the economy helped slow the increase in prices of trade finance instruments. This result could also be attributed to increased competition among the banks for trade finance provision.
- *In Kenya*, the Central Bank's efforts to increase bank credit to the private sector were hindered by inefficiencies in the transmission of monetary policy impulses from short-term to long-term lending interest rates. While interbank rates decreased considerably—from 6.66 percent in December 2008 to 2.95 percent in December 2009—commercial bank lending rates increased from 13.66 percent in September 2008 to 15.1 percent in June 2009, mainly because of higher risk perception by commercial banks.

Box 10.1 Policy Update on Selected Countries and Multilateral Initiatives

India

A year into the crisis, the Reserve Bank of India (RBI) announced the following policy changes with regard to export finance:

- Given the adequate liquidity within the banking system, the eligible limit of the Export Credit Refinance facility has been reduced from the level of 50 percent of the outstanding rupee export credit eligible for refinance to 15 percent.
- Interest subvention of 2 percent has been extended for one more year for exports covering sectors such as handicrafts, carpets, handlooms, and SMEs.
- The ceiling rate on export credit in foreign currency by banks has been reduced to London interbank offered rate (LIBOR) plus 200 basis points from the earlier ceiling rate of LIBOR plus 350 basis points.
- The RBI is in the process of replacing the existing Benchmark Prime Lending Rate (BPLR) system with a new system in which banks will be asked to announce a base rate below which they cannot extend loans to any borrowers. However, it has not yet announced the stipulations for export credit under the proposed system. Given that the interest rate on rupee export credit is now capped at BPLR minus 2.5 percent, it is unclear how the RBI will continue to support export credit under the new base rate system.

Kenya

The Central Bank has pursued an accommodative monetary policy to help cushion the economy from the negative effects of the global financial crisis, taking the following measures:

- Reduction of the cash reserve ratio from 6 percent to 4.5 percent (100 basis points in December 2008 and 50 basis points in July 2009) released an equivalent of K Sh 12.5 billion for lending to the economy.
- Consecutive reduction of the central bank rate from 8.75 percent to 7.75 percent was as a signal to banks to reduce lending rates.
- Allowing a reduction in foreign exchange reserves to less than three months reduced pressure on the depreciation of the Kenya shilling relative to hard currencies. Otherwise, the inflationary effect of the shilling's depreciation would have been worse in terms of intermediate imports, oil prices, and so on.

Peru

The government of Peru announced a stimulus plan in January 2009, listing around $3 billion in activities and financial resources to promote employment and continue economic growth. The first stage was to implement a stimulus package of $1.45 billion aimed at boosting economic activity, enhancing social protection, and increasing investments in infrastructure. The stimulus package was never fully implemented, and the government has debated whether to eliminate the temporary increase of 3 percent of the drawback to the exporters of nontraditional (noncommodities) products and return to 5 percent.

Multilateral Initiatives

Regional development banks and global institutions also put in place or ramped up their trade finance programs. The trade finance programs of the World Bank's private arm, the International Finance Corporation (IFC), have also been expanding in

(continued next page)

Box 10.1 *continued*

response to the financial crisis. The IFC's Global Trade Finance Program (GTFP) currently covers 183 emerging-market banks in 82 countries. As of May 2010, the GTFP had issued $3 billion in trade guarantees, of which 84 percent supported SMEs in IFC's client countries—52 percent in countries of the Bank's International Development Association (IDA) and 32 percent in Africa.

The IFC's Global Trade Liquidity Program (GTLP) is also on track to finance up to $15 billion of trade volume per year. As of March 2011, GTLP had mobilized $3 billion from development finance institutions and governments, significantly leveraging IFC funds of $1 billion allocated to this program. It also has supported $11.2 billion in trade volume without any default, mainly supporting SMEs, almost half of them in IDA countries and almost 30 percent in Africa. In response to a strong demand for GTLP solutions and to market priorities, the IFC is launching the program's second phase with GTLP Guarantee (portfolio-based, unfunded risk sharing) and GTLP Agri (food and agriculture sector–focused funding lines), with implementation first in regions that need it most: Europe and Central Asia, Africa, and Latin America and the Caribbean.

- *In the Philippines*, the Monetary Board decided in April 2010 to withdraw crisis-relief measures—in particular, reducing the peso rediscounting budget from ₱60 billion back to the original ₱20 billion.
- *In Tunisia*, the global crisis had limited first-round effects on the banking sector because of its limited exposure to financial assets and restrictions on capital transactions. However, the economy was hit hard because of its exposure to the EU business cycle. With slower pickup in the EU economies, the 2010 Budget Law maintained a supportive fiscal policy to ensure that the economic recovery would not be undermined by an early withdrawal of the fiscal stimulus measures introduced in 2009.

The firm and bank survey also aimed to shed light on how the private sector perceived the trade finance measures implemented by their respective governments and the multilateral development banks. Firms and banks were specifically asked whether they knew about these measures and, if so, how they viewed them.

The results indicate that a large majority of firms reported being unaware of any of these actions. Banks seemed slightly more informed than firms, and their feedback was positive about the credit lines made available by the International Finance Corporation (IFC), particularly in Africa. For example, a South African bank reported the IFC program bank was able to confirm LCs from countries and banks that it otherwise would not have had full credit appetite for. A Kenyan bank

was in favor of programs such as the IFC's Global Trade Finance Program (GTFP) that help reduce the country risk for Africa. In Sierra Leone, surveyed banks used IFC credit lines, although these lines seemed small relative to total trade value.

Three factors might explain this poor overall awareness of governmental and institutional trade finance initiatives:

- The crisis was short-lived, while policy actions take time to become effective and observable.
- The measures taken either had not had an impact on the real economy yet or were not needed, as illustrated above.
- The governments and multilateral development banks did not communicate well enough with the private sector about these measures at the country level.

Conclusions

The firm and bank surveys have been valuable sources of information on trade and trade finance in developing countries during the global financial crisis. The 2009 survey showed that the financial crisis spilled over to the real economy and dampened firms' trade volumes and access to trade finance. The follow-up survey conducted in April 2010 indicates that trade and interfirm trade credit have picked up with the economic recovery.

This result indicates that trade finance is less of a constraint for firms in sectors affected by the crisis and the drop in global demand, as well as those integrated in global value supply chains and relying to a large extent on interfirm trade credit. However, banks were still risk averse and continued to impose stringent requirements; prices also remained higher than precrisis levels. These findings suggest that access to bank trade finance remains a source of concern for small firms, financially vulnerable firms, and new firms—implying that interventions targeting these firms remain crucial.

Findings from the latest firm and bank survey also point to a demand-driven trade crisis. However, the results should not suggest that trade finance constraints were not important or that governments' interventions were unnecessary. Given the magnitude and the scope of the crisis as well as the lack of data on trade finance, policy activism and coordination among governments and international organizations have been important to restore confidence and mitigate the impact of the crisis in the short term. International coordination successfully led to quick reaction, and most governments reacted swiftly in support of their domestic economies.

Policies implemented by developing-countries' governments have had mixed results so far. For example, injection of liquidity has not necessarily proven

effective because banks remained risk averse, demand was low, and uncertainty about the soundness of the financial sector prevailed. Many governments dropped these measures within a year. More important, the financial crisis has proven that macroeconomic stability and fiscal consolidation are crucial in times of crisis so that governments have the option to implement countercyclical measures.

Annex 10.1 Key Findings from the 2009 Survey

The 2009 survey findings confirmed that the global financial crisis constrained trade finance for exporters and importers in developing countries. Yet drop in demand emerged as firms' top concern. The lack of export revenues was putting pressure on firms' cash flow and, therefore, on their capacity to fund their export and import transactions. The survey revealed some stylized facts at the firm, bank, and country-income levels.

Firm-Level Findings

Firms that rely to a large extent on the banking system for trade finance suffered from more risk averse and selective local banks. In contrast, firms that rely mostly on interfirm financing and self-financing were most affected by the slowing global economy, the lack and cancellation of orders, delays in buyers' payments, and shorter maturity imposed by suppliers.

SMEs were more affected than large firms because of a weaker capital base and bargaining power in relation to global buyers as well as banks. Also, SMEs have been more subject to high increases in the cost of trade finance instruments. Many SMEs operating in global supply chains or in the sectors most affected by the slow global economy, such as in the auto industry, reported being constrained both by the banking system and by the drop in export revenues and buyers' liquidity.

Bank-Level Findings

The drastic reduction in global financial liquidity and in the number of intermediary players pushed banks in developing countries to become more cautious, risk averse, and selective, and therefore more likely to tighten trade finance conditions.

Interviews with banks confirmed the increase in pricing and drop in trade credit volume. Yet the drop in volume seemed to reflect lack of demand due to the global recession rather than the increase in pricing. Moreover, lack of liquidity in local currency did not appear to be an issue.

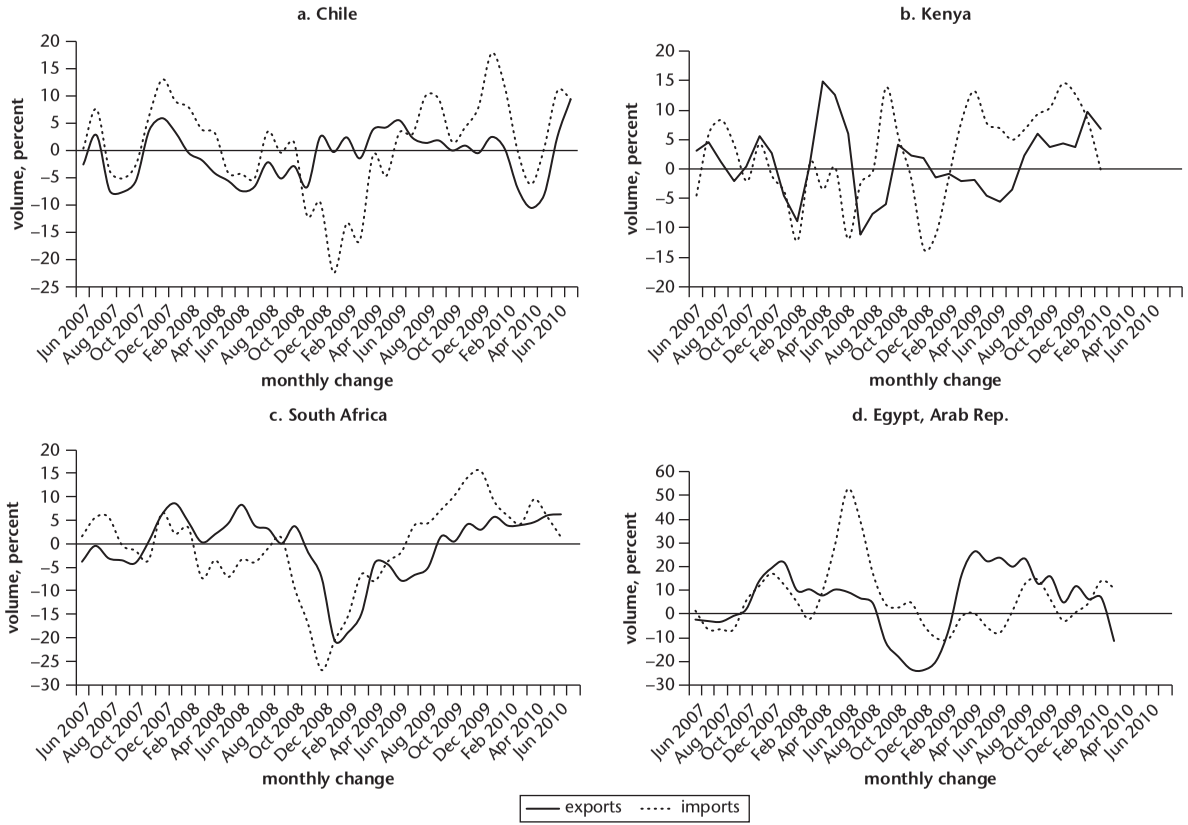
Region-Level Findings

The three low-income African countries where the survey was conducted (Ghana, Kenya, and Sierra Leone) seemed relatively more insulated from the financial crisis as of March–April 2009. Their primary trade finance constraints originated from more structural problems, such as poorly developed banking systems and trade finance institutions as well as macroeconomic imbalances.

Many of the African exporters have traditionally relied on self-financing and cash-in-advance; therefore, they were also affected by the drop in commodity prices and global demand from their main export markets. The drop in their cash reserves further constrained their trade finance. The financial crisis also added strains on the countries' domestic financial systems and was unfavorable to SMEs and new firms seeking to diversify away from commodity exports.

Annex 10.2 Import and Export Growth, by Country

Figure 10A.1 Export and Import Growth, by Country



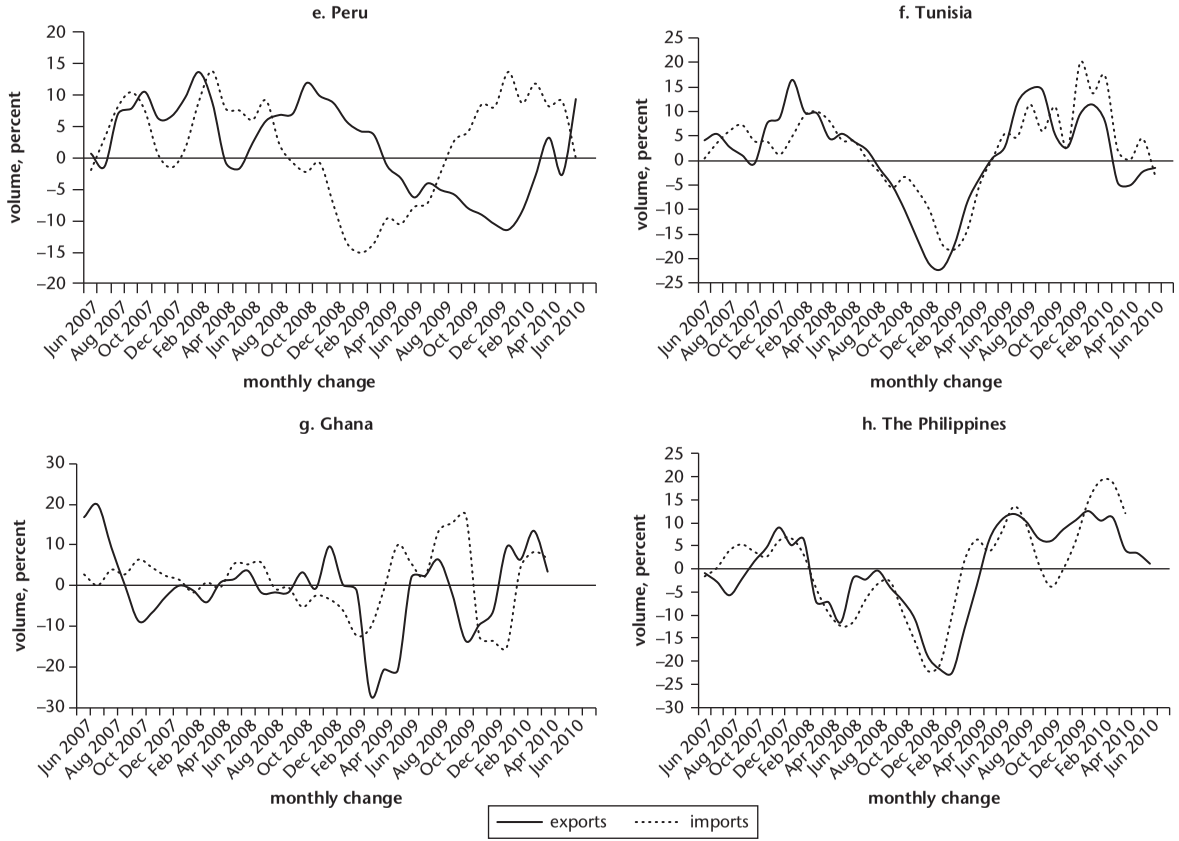


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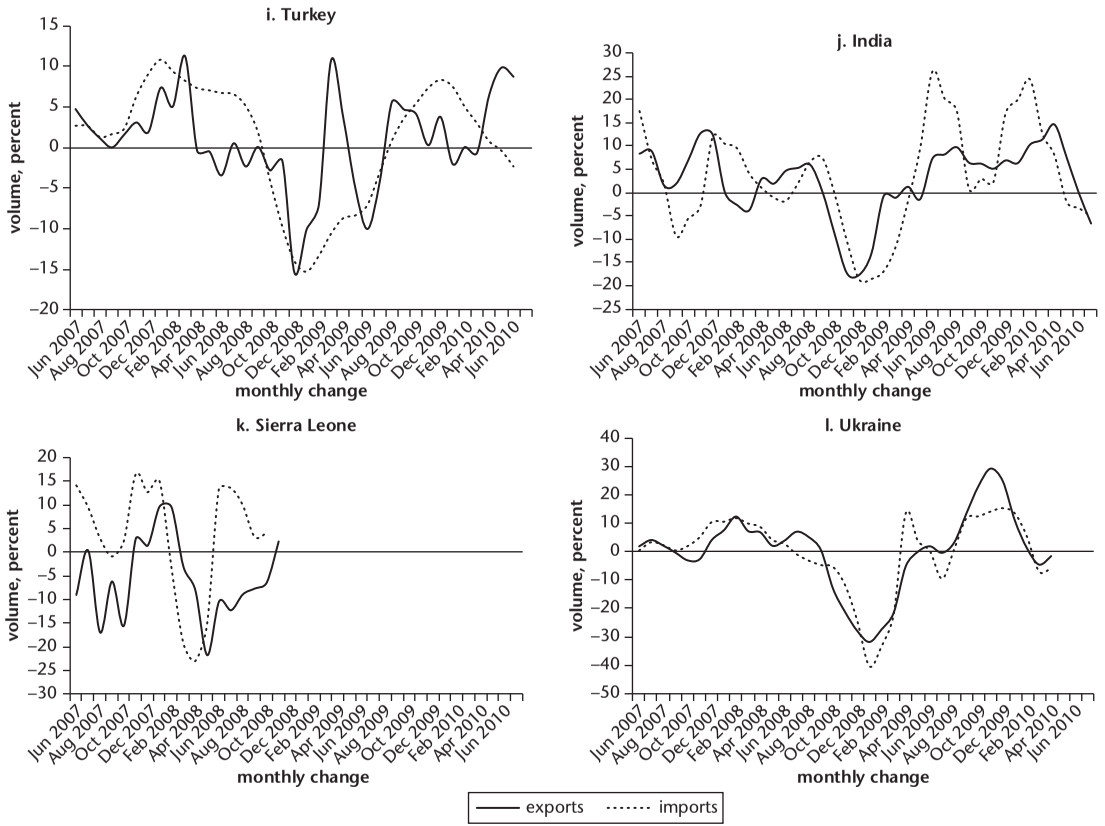
Figure 10A.1 *continued*



Source: Datastream and author calculations.

Notes

1. For the key findings of the 2009 survey, see annex 10.1 or Malouche (2009).
2. For country-level monthly import and export data, see annex 10.2.
3. The "intensive margin" of trade refers to changes in values of goods already being traded. The "extensive margin" refers to changes in the number of goods exported and in the number of destinations to which a country exports goods.
4. For more information about the ICC-ADB Register on Trade & Finance, see the announcement (http://www.iccwbo.org/policy/banking/index.html?id=39118) or "Findings of the ICC-ADB Register on Trade & Finance" (http://www.iccwbo.org/uploadedFiles/ICC/policy/banking_technique/Statements/1147%20Register%20Report%20ICC%20Final%20Draft%2021%20September%202010.pdf).

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11

PRIVATE TRADE CREDIT INSURERS DURING THE CRISIS: THE INVISIBLE BANKS

Koen J. M. van der Veer

This chapter deals with an explicit financial insurance market vital for domestic and international trade involving nonpayment risk: the market for trade credit insurance. After the Lehman Brothers' collapse, private trade credit insurers, too, were confronted with mounting risks calling for a quick and comprehensive reaction. Inevitably, they reduced their exposure substantially. Because private trade credit insurers have the right to reduce or cancel "credit limits" on buyers at any given time, they were able to react quickly to the increase in uncertainty.

The question is to what extent this reduction in the availability of trade credit insurance affected trade. In general, when suppliers are confronted with a loss of insurance cover on their buyer(s), they can (a) try to seek alternative means to avoid credit risk (bank letters of credit or factoring), (b) decide to take on the payment risk themselves, or (c) demand advance payment. If other instruments are available, trade might be unaffected. If one of the latter two options is chosen, the trade transaction need not be canceled, either, but negative side effects related to

This chapter is a revised and much-abridged version of an article that first appeared as DNB Working Paper 264 (van der Veer 2010). The use of the term *invisible banks* to characterize private trade credit insurers was introduced by Paul Becue, general manager at Euler Hermes Services Belgium, in his handbook on credit insurance, *Handboek kredietverzekering. De onzichtbare bank* (Becue 2009). The author would like to thank Gabriele Galati for carefully reading the manuscript. The findings, interpretations, and conclusions expressed in this chapter are entirely those of the author; they do not necessarily reflect views of De Nederlandsche Bank.

the balance sheet of the supplier or buyer could reduce the incentives to trade indirectly. When neither of the options is feasible, trade breaks down.

Van der Veer (2010) provides empirical evidence for the link between the supply of private trade credit insurance and trade, focusing on exports. The study exploits a unique bilateral dataset on worldwide activities of a leading private trade credit insurer and finds an average short-run multiplier for private trade credit insurance of 2.3. This multiplier implies that, on average, every €1 of insured exports generates €2.3 of total exports. Thus, the impact on trade of a change in the supply of private trade credit insurance is bigger than the change in the value of insured trade. One important reason that could explain this trade multiplier is that trade credit insurance improves a buyer's access to supplier credit.

In addition, van der Veer (2010) estimates the insurance supply elasticity of world and European exports. Extrapolating these estimates to the 2008–09 crisis period, the decline in the supply of private credit insurance in the last quarter of 2008 and the first half of 2009 can explain 5–9 percent of the collapse of world trade and 10–20 percent of the drop in European exports. Thus, even though private credit insurers cover only 6 percent and 12 percent, respectively, of world and European exports, the impact of changes in the supply of private credit insurance is economically relevant.

Within the literature on the role of trade finance during financial crises, the focus on private trade credit insurance is novel. More generally, van der Veer (2010) is the first empirical study to provide direct evidence on the link between the supply of a trade finance instrument and trade. Due to the lack of detailed trade finance data—that is, statistics on trade-related loans, trade credit insurance, and letters of credit—the literature thus far had either examined the link between trade finance and trade indirectly or relied on various proxy measures to study the role of the trade finance channel. The limitation of these proxy measures is that they include credits extended by other firms in addition to institutional finance or include credit for purchases other than trade. As a result, it is not always clear that changes in the supply of trade finance drive the results in these studies.

Moreover, while the literature shows convincingly that financial shocks affect trade, it does not fully address the extent to which trade finance frictions played a role in the 2008–09 global financial crisis. The results in van der Veer (2010) focus on just one aspect of the trade finance market—private trade credit insurance—and do not tackle this question, either. The outcome is indicative of a role for private trade credit insurance and can be interpreted as a minimum for the role of trade finance in the 2008–09 world trade collapse. For example, the market for letters of credit and short-term export working capital might have been an additional source of trade finance frictions, as surveys during the crisis seem to suggest.

The next section describes the general features of the private trade credit insurance market and how it differs from the better-known public counterpart. Subsequent sections provide

- a more detailed explanation of how a trade credit insurance policy works and how it compares to alternative instruments to cover nonpayment risk;
- an examination of the link between trade credit insurance and the provision of supplier credit and how this relates to the trade multiplier of credit insurance;
- a discussion of the results obtained in van der Veer (2010); and
- a preliminary evaluation of the policy response in European Union (EU) countries to support the availability of short-term export credit insurance during the 2008–09 financial crisis.

Private versus Public Trade Credit Insurance

The private trade credit insurance market differs in important ways from the guarantees provided by public export credit agencies (ECAs). In general, private trade credit insurers (a) cover short-term trade credits; (b) have a much higher exposure than ECAs; (c) cover domestic trade; and (d) are concentrated, although decreasingly, on trade involving Organisation for Economic Co-operation and Development (OECD) countries (European countries in particular). Because of these differences, relative changes in the supply of private trade credit insurance are likely to have a bigger and much faster impact on trade than changes in the supply of public insurance.[1]

Private trade credit insurers usually cover short-term credits with a tenor of 60 to 120 days, while medium- or long-term covers play only a minor role (Swiss Re 2006). Public guarantees, however, generally cover export projects with a duration of between two and five years. This difference in maturities is especially clear in Europe, where ECAs have been restricted from providing OECD core members with guarantees covering export risks with a maturity of less than two years. During the 2008–09 financial crisis, the ECAs' inexperience in the short-term credit insurance market, combined with the need for European Commission approval, delayed the implementation of public schemes to support the short-term export credit insurance market in Europe (see the final section for a fuller discussion).

Since the early 1990s, private trade credit insurance has registered strong growth. Private credit insurers provide substantially greater short-term credit insurance than ECAs do in all OECD countries except for Japan and Canada (Chauffour and Farole 2009). In 2008, an estimated €5.3 billion of global credit insurance premiums covered about €2.6 trillion of sales (Jones 2010). Based on Berne Union figures, the world share of private short-term insured exports to total

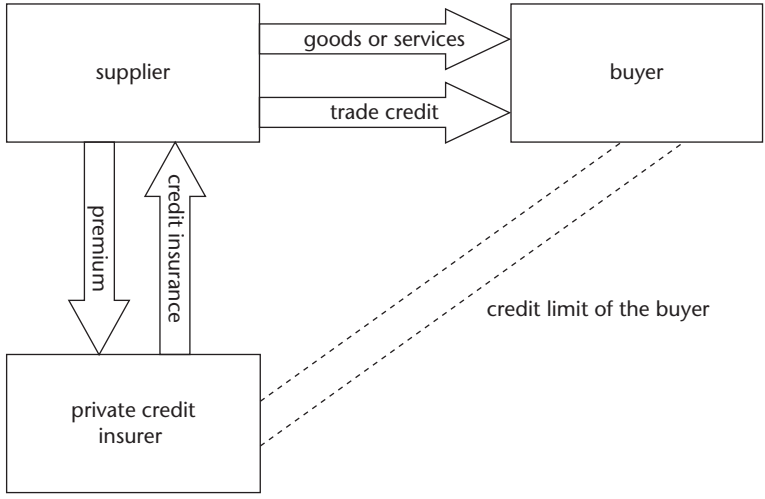
exports was an estimated 6.1 percent in 2007. Likewise, for Europe, private trade credit insurers cover an estimated 12 percent of overall exports.[2] Exports covered by public credit insurance can be roughly estimated at €325 billion in 2008.[3]

Three private credit insurers—the so-called Big Three—now dominate the world market, covering a combined 87 percent: Euler Hermes (36 percent), Atradius (31 percent), and Coface (20 percent). These players are traditionally focused on Western Europe but have also expanded to Eastern Europe and the American and Asian markets. Still, in 2008, 59 percent of short-term credit limits covered exports destined for Europe (Morel 2010).[4]

How Private Trade Credit Insurance Works

The basics of trade credit insurance are quite straightforward, as figure 11.1 illustrates. A supplier selling goods on credit to a buyer can insure against the risk of nonpayment. The credit insurer indemnifies the seller if the buyer fails to pay for the goods or services. In turn, the credit insurer charges the supplier a premium. Crucially, the private credit insurer must have a credit limit on a buyer to enable the supplier to insure against nonpayment by that particular buyer. The credit limit is the maximum exposure specifically approved or otherwise authorized by the insurer with respect to a buyer.

Figure 11.1 How Private Trade Credit Insurance Works



Source: Author.

A special feature of the credit insurance industry is that credit insurers have the right to reduce or cancel the credit limit on a buyer at any given time. Deliveries made after the date of the credit insurer's decision to cancel a credit limit are not covered by the insurance policy. This ability to dynamically manage credit limits allows credit insurers to react to a buyer's credit problems before they worsen. Thus, the mere expectation of rising claims can immediately affect exports through a reduction in the maximum exposure of credit insurers. Indeed, after the Lehman Brothers' collapse in September 2008, private credit insurers reduced their exposure substantially by reducing and canceling credit limits.

Credit insurers normally provide *whole turnover* policies that cover the insured suppliers' total trade receivables against the risk of nonpayment by their buyers. As a result, suppliers cannot select specific buyers for cover, even though the insurer can exclude or limit cover for buyers it considers not creditworthy. The whole turnover policies generally cover commercial and political risk—*commercial risk* referring to nonpayment due to default or insolvency and *political risk* relating to nonpayment as a result of action by the buyer's government (for example, intervention to prevent the transfer of payments, cancellation of a license, or acts of war or civil war).

Alternative Instruments: Letters of Credit and Factoring

Aside from trade credit insurance, suppliers can cover credit risk using letters of credit or factoring. Before the 2008–09 financial crisis, credit insurance also had some competition from capital market products such as credit default swaps and asset-backed commercial paper (Swiss Re 2006; Jones 2010). Nevertheless, these alternative bank services differ from trade credit insurance in important ways, making them imperfect substitutes.

Letters of Credit

A documentary letter of credit is a bank's agreement to guarantee payment by the buyer up to a stated amount for a specified period. They are most commonly used in international trade and cover about $700 billion to $1 trillion, or 10–15 percent, of global exports (Swiss Re 2006).

In general, letters of credit are more expensive than trade credit insurance for two reasons. First, unlike trade credit insurance, a letter of credit must be purchased by the buyer and reduces the buyer's available credit because it is charged against the overall credit limit set by the bank. Second, a letter of credit covers a single transaction for a single buyer, whereas trade credit insurance policies are usually whole turnover, that is, covering all sales.

Factoring

Factoring, another traditional instrument to deal with payment risk, allows a supplier that sells on credit to prefinance its receivables. Like trade credit insurance, factoring is used in domestic and international trade and had a transaction volume of $1.2 trillion in 2005 (Swiss Re 2006).

Factoring, too, is more expensive than trade credit insurance because the factor must also be compensated for prefinancing the receivables. Unlike letters of credit, factoring can be both a substitute and a complement to trade credit insurance. That is, factoring does not necessarily involve the transfer of credit risk to the factor (full-recourse factoring), in which case the factor has an interest in the client buying insurance to cover credit risk (Swiss Re 2006). Alternatively, under nonrecourse factoring, the factor does take on the risk of nonpayment by the buyer and may itself choose to purchase credit insurance cover.

Trade Credit Insurance, Supplier Credit, and the Trade Multiplier

Essentially, trade credit insurance stimulates trade with markets where a supplier would not sell otherwise. This follows immediately from the main reason for a supplier to buy trade credit insurance: the transfer of payment risk. Trade credit insurance also provides these benefits:

- Allowing suppliers to use the credit expertise of the credit insurer
- Facilitating access to receivables financing and improved credit terms from lending institutions
- Improving the buyer's access to supplier credit.

These benefits to both supplier and buyer provide the main rationale for the existence of a trade multiplier of credit insurance.

Supplier Credit

Even though buyers do not initiate trade credit insurance—often they do not even know that a private credit insurer has approved a credit limit until it is reduced or canceled—they are greatly affected by it. A trade credit insurance policy enables the supplier to extend credit to the buyer instead of requiring payment in advance. As a result, the buyer's working capital need is reduced, or the additional cash can be used for other purchases or investments.

Moreover, in practice, the news that a buyer's credit limit has been adjusted tends to travel fast among the buyer's suppliers, potentially influencing all of its trade transactions (Becue 2009); an upgrade generally improves the firm's access

to supplier credit and vice versa. Private trade credit insurers can thus be seen as *invisible banks*; while they do not provide funding, their actions influence buyers' access to supplier credit.

The Trade Multiplier

The benefits of trade credit insurance for the supplier might also add to the trade multiplier, although less so than the benefits for the buyer. This is because most of the private trade credit insurance policies cover all of a supplier's sales (whole turnover), and the trade multiplier relates to additional trade generated on top of the value of insured trade.

Either way, these benefits can increase the insured supplier's sales for several reasons. First, an insurance policy gives the supplier access to professional credit-risk expertise. To illustrate how this could stimulate the insured supplier's sales, Jones (2010) gives a telling example: "A wholesale company's credit department has granted a credit line of €100,000 to a customer. They then purchased a trade credit insurance policy and the insurer approved a limit of €150,000 for that same customer. With a 15 percent margin and average turnover of 45 days, the wholesaler was able to increase its sales to realize an incremental annual gross profit of €60,000 on that one account. $[(150 - 100) \times 0.15 \times 360/45)]$"

Second, trade credit insurance might facilitate the supplier's access to bank credit and improved credit terms from lending institutions, some of which will insist on trade credit insurance before providing financing (Becue 2009; Jones 2010). Basically, suppliers can increase their collateral value by insuring their accounts receivable. Especially in the case of international trade, banks might see a supplier's trade partners as an extraordinary risk that reduces the value of the supplier's assets used as collateral.[5]

Another argument used to explain the trade multiplier of credit insurance comes from the studies focusing on public trade credit insurance (Funatsu 1986; Egger and Url 2006; Moser, Nestmann, and Wedow 2008). These studies argue that trade credit insurance allows suppliers to learn about the creditworthiness of their trade partners. Subsequently, after repeated transactions, the supplier may decide to export without costly export credit insurance.

Finally, a trade multiplier of private credit insurance could also follow from the information on foreign markets and firms that private insurers provide to noninsured firms. For example, private credit insurers publish their country ratings, which, in principle, prevail over their sector- and firm-level ratings when determining premiums and credit limits (Becue 2009). Also, the Big Three insurers all offer some kind of information service, allowing firms to get access to the insurers' detailed firm-level information about key customers, prospects, or competitors, even without buying insurance cover.

The Private Credit Insurance Effect on Trade

Van der Veer (2010) examines empirically whether private trade credit insurance stimulates trade. A unique bilateral dataset is used that covers the value of insured exports, premium income, and claims paid by one of the world's leading private credit insurers from 1992 to 2006.[6] The data include annual observations on 25 exporting economies (OECD countries and Hong Kong SAR, China) and 183 destination countries.

Estimating a variety of specifications of the gravity model, the study consistently finds a positive and statistically significant effect of private trade credit insurance on exports. Moreover, it finds an average multiplier of private trade credit insurance of 2.3, implying that every euro of insured exports generates €2.3 of total exports.

The Identification Strategy

The estimation of the private credit insurance effect on exports relies on the standard *gravity* model of bilateral trade, which models trade between a pair of countries as a function of their distance and their economic *masses*. Possible concerns about endogeneity are addressed by applying the method of instrumental variables. Hereto, the insurer's claim ratio (claim paid divided by premium income)—a primary determinant of the supply of credit insurance—is used as an instrument for insured exports. This approach allows establishment of a causal link between the supply of private trade credit insurance and exports.

The claim ratio proves to be a valid instrument for the value of insured exports according to various statistical tests and, notably, a causal story motivates this choice of instrument. The rationale is that an increase (or the expectation thereof) in the claim ratio reduces insured exports in two ways: first, through an increase in premiums (by lowering demand); and second, through the reduction or cancellation of credit limits (by lowering supply). The second channel is more direct and changes the supply of private trade credit insurance immediately. The impact of the premium increase on the value of insured exports evolves more slowly because the private insurer can only raise premiums of new contracts. The bulk of the contracts are fixed for one year, and about 25 percent of all contracts have a duration of two or three years.

In case of a shock, such as a credit crisis or sovereign default, claims increase. The claim ratio also increases because the general premium level takes longer to adjust. For example, during the 2008–09 credit crisis, total claims paid to insured customers by all Berne Union members more than doubled from 2008 to 2009 and reached $2.4 billion. As the total premium stayed roughly the same at an estimated $2.8 billion, the claim ratio jumped from 40 percent to 87 percent (ICC 2010).

Private Trade Credit Insurance and the 2008–09 World Trade Collapse

The deteriorating economic environment and (expected) rise in claim ratios at the end of 2008 resulted in a decline in the supply of private trade credit insurance. Private trade credit insurers reduced credit limits and raised premiums. Annual reports of the leading insurers mention a "substantial" reduction of exposure, but unfortunately, exact figures on the supply decline are not available.

Some EU countries, however, did provide estimates of the withdrawal of private credit insurance coverage. For example, Austria estimated a private supply decline of 15–30 percent; Denmark, of 0–40 percent; Lithuania, of 20–40 percent; and Sweden, of 20–30 percent.[7] In addition, the publicly available Berne Union figures on the world total of private and public insurance exposure, combined with information on their evolving shares (ICC 2010), give an idea of the size of the reduction in private insurance cover. For example, in the last quarter of 2008 and the first half of 2009, private short-term export credit insurance exposure declined by 16 percentage points more than public exposure. Although demand and price factors are likely to have contributed to the reported declines, the much larger decline in private insurance exposure might be a rough indication of the private supply reduction.

Either way, the actual decline in the supply of private credit insurance during the 2008–09 world trade collapse is unknown. Therefore, van der Veer (2010) calculates the contribution to the world trade collapse of a 10 percent, 15 percent, and 20 percent decline in the supply of private credit insurance and extrapolates the estimates of the insurance supply elasticity of exports to the crisis period.

The calculations show that the reduction in private trade credit insurance exposure during the 2008–09 world trade collapse can explain about 5–9 percent of the drop in world exports and 10–20 percent of the drop in European exports. Thus, while macroeconomic factors played an important role in the world trade collapse, these calculations suggest that the effect of private credit insurance on exports can account for part of the world trade decline.

EU Countries' Support of Short-Term Export Credit Insurance

Over the course of 2009 and 2010, 14 EU governments implemented state aid schemes to support their markets for short-term export credit insurance, as the overview in table 11.1 shows. In particular, these measures were set up to provide credit insurance cover for exports to other EU member states and OECD core members.

Under normal circumstances, credit risks on these countries are considered marketable, and EU law forbids official ECAs from providing insurance cover. The European Commission and these 14 EU authorities adequately recognized the

Table 11.1 EU Countries' State Aid to the Short-Term Export Credit Insurance Market

	EC approval date	Maximum exposure (€ millions)	General eligibility restrictions			Premium (% of turnover)					
						Credit terms up to 6 months		Credit terms up to 12 months		Basic market rates	Private credit insurer fee (% of premium income)
			Top-up only[a]	Maximum top-up	Buyers excluded	minimum	maximum	minimum	maximum		
Luxembourg	April 20, 2009	25	no	old credit limit	risk assessment by ECA	1.50	4.00	1.50	4.00	± 0.50	none
Denmark	May 6, 2009	no budgetary limitations	no	no	very high probability of default	1.00	2.00	1.00	2.00	0.25–0.30	25–35
Denmark (modification)	October 29, 2009	no budgetary limitations	no	100% of current credit limit	very high probability of default	0.50	2.00	0.50	2.00	0.25–0.30	25–35
Finland	June 22, 2009	no budgetary limitations	no	no	risk assessment by ECA	0.30	0.95	0.60	1.65	—	none
Germany	August 5, 2009	no budgetary limitations	no	no	risk assessment by ECA	0.49	0.64	0.73	0.82	—	none
Netherlands	October 2, 2009	1,500	yes	100% of current credit limit	within certain rating categories	1.50	1.50	1.50	1.50	0.10–0.60	35
Netherlands (modification)	February 5, 2010	1,500	yes	100% of current credit limit	less rating categories	1.00	1.00	1.00	1.00	0.10–0.60	25; set-up costs maximum €50,000
France	October 5, 2009	1,000 (cumulative)	no	100% of current credit limit	within certain rating categories	0.50	3.00	1.50	6.00	0.24	15–17
Belgium	November 6, 2009	300 per quarter	yes	100% of current credit limit but not exceeding old limit	no	1.00	1.00	2.00	2.00	0.30–0.70	20

Sweden	November 25, 2009	no budgetary limitations	no	no	risk assessment by ECA	0.26	2.20	1.36	3.96	—	none
Austria	December 17, 2009	no budgetary limitations	no	70–80% of total credit limit	risk assessment by ECA	0.13	2.50	1.50	5.00	—	27
Lithuania	December 21, 2009	29 (cumulative)	yes	100% of current credit limit	no	0.30	0.95	0.60	1.65	0.40–0.80	based on state-insured amount
Slovenia	March 16, 2010	no budgetary limitations	yes	old credit limit	risk assessment by ECA	—	—	—	—	—	33
Latvia	June 10, 2010	14 (cumulative)	no	no	risk assessment by state-owned guarantee institution	0.39	2.60	0.39	2.60	0.20–0.50	none
Hungary	July 5, 2010	183	no	100% of current credit limit	risk assessment by ECA	0.47	2.77	0.95	3.32	0.25–0.35	15–25
Portugal[b]	—	—	—	—	—	—	—	—	—	—	—

Source: National reports in the State Aid Register (by member state) of the European Commission, available at http://ec.europa.eu/competition/state_aid/register/ii/index.html#by_ms.

Note: EC = European Commission. ECA = export credit agency. — = not available. The following EU countries lack a state aid scheme to support the market for short-term export credit insurance: Bulgaria, Cyprus, the Czech Republic, Estonia, Greece, Ireland, Italy, Malta, Poland, Romania, the Slovak Republic, Spain, and the United Kingdom.

a. Top-up only: yes = scheme requiring exporter to hold a private credit insurance policy with a nonzero credit limit on the buyer(s) in question; no = scheme also available for completely withdrawn or newly rejected credit limits.

b. Portugal State Aid scheme has gained approval, but a public version of the EC decision was not available as of March 2011.

need to support the short-term export credit insurance market and thus use the escape clause within the European Community Treaty.[8] However, 13 EU countries did not intervene. Arguably, the trade credit insurance market is underdeveloped in some of these countries, but this is surely not the case for all of them. For example, no state aid schemes were set up in Italy, Spain, or the United Kingdom, even though these countries were among the top six markets with the highest value of claims paid on short-term export credit insurance (see Morel 2010).

Still, it is questionable whether the countries that did implement state aid schemes were effective in providing cover for export credit risks when private insurance was temporarily unavailable. A few observations can be made.

Delay in State Aid under EU Rules

First, for a number of reasons, public insurance through most of the state aid schemes became available only after the private insurers had reduced their supply. Thus, the state interventions did not mitigate the initial shock to suppliers following the reduction in the supply of private insurance.

As table 11.1 shows, all of the state aid schemes were implemented after the first quarter of 2009 and most of them in the second half of 2009. Understandably, some delay was unavoidable, but EU legislation also delayed the reaction because all state aid schemes needed approval by the European Commission. Given that the European Commission needed about two months to approve a scheme and assuming it took governments an additional month to gather the required information, overall, implementation of the schemes was delayed by about one fiscal quarter because of EU rules. Moreover, most EU governments also needed time to acquire knowledge on how to provide public insurance cover in the short-term trade credit insurance market. The reason is that, since the late 1990s, EU governments no longer provided cover for these "marketable" risks.

Problematical Role for Private Insurers

Second, a number of these schemes, the top-up only variants in particular, depended on implementation by private insurers. For example, the Dutch state aid scheme notes, "The decision whether to provide exporters with top-up cover on an individual basis is left to the discretion of credit insurers."[9]

At the same time, private insurers have stated clearly their concerns with respect to state interventions. In particular, they noted their worries about "[what] the short-term trade credit insurance landscape would look like after a protracted active involvement by governments and that it will be hard to reverse the role of the state once the crisis is over" (ICISA 2009).

All top-up schemes do include a fee for private insurers to cover administration and acquisition costs, but it is questionable whether these fees trigger private

insurers to actively promote the availability of public insurance. For one thing, the fees do not compensate for the possible reputation costs to private insurers that might follow from state intervention. Moreover, some of the authorities noted their commitment to monitor the fees and costs incurred by the private insurers to ensure that the management fee does not provide revenues exceeding the costs incurred in running the scheme. In short, it seems somewhat problematic to build an effective state aid scheme that relies on the implementation by private insurers but does not allow them to make a profit.

Varied Effectiveness of State Aid Implementation

Last but not least, although little information is available at this moment, there are indications that the (initial) use of some of the state aid schemes was limited. For example, Denmark and the Netherlands modified their original schemes four months after implementation, arguing that the measure had proven insufficient to adequately provide exporters with the necessary coverage for their sound short-term export credit transactions. Both countries reduced the premium charge and eased other conditions to improve the functioning of the scheme (see table 11.1). The Dutch notification to the European Commission also stated that the total exposure of the scheme at the end of November 2009, two months after implementation, was (only) €5 million–€10 million.[10] In contrast, Germany experienced considerable demand from exporters for the coverage under the public scheme. On a cumulative basis, the total volume of approved limits under the measure amounted to €992 million (in the first seven months of the scheme), and the actual value of insured exports under these limits reached €465 million.

All in all, these preliminary observations call for a more comprehensive evaluation of the various state aid schemes to increase the effectiveness of such measures to support the short-term export credit insurance market in case of future crises. The evidence on the macroeconomic importance of trade credit insurance provided in van der Veer (2010) indicates that it will be worthwhile for governments and the European Commission to do so.

Notes

1. Egger and Url (2006) and Moser, Nestmann, and Wedow (2008) study the effect of public guarantees on Austrian and German exports, respectively, and find long-run multipliers of 2.8 and 1.7.

2. The world estimate is calculated using the 2007 world value of "short term new business insured" from the Berne Union *2010 Yearbook* (Berne Union 2010)—also available online at http://www.berneunion.org.uk/bu-total-data.html—and world exports from the world trade monitor of the CPB Netherlands Bureau for Economic Policy Analysis (http://www.cpb.nl/en/world-trade-monitor). Data from one of the Big Three private insurers reveals that 60 percent of the total value of its turnover on exports in 2007 related to exports from the Euro Area countries (excluding Cyprus, Malta, Portugal, and Slovenia). This share was used to calculate the value of private short-term insured exports from the Euro Area countries.

3. The Berne Union reports short-term export credit insurance new business covering $1.297 trillion in 2008. According to the International Chamber of Commerce, around 25 percent of this business ($324 billion) was covered by ECAs (ICC 2010). Medium- and long-term new business covered $154 billion of exports. Assuming that ECAs accounted for all medium- and long-term insurance (which is probably a slight overestimation), ECAs covered $478 (€325) billion of exports in 2008.

4. The Berne Union figures in Morel (2010) cover private and public short-term credit limits. A similar picture emerges from data from one of the Big Three private credit insurers.

5. Again, Jones (2010) gives a telling example of this link between trade credit insurance and access to bank credit.

6. This insurer is one of the Big Three private credit insurers. Company details are confidential.

7. This information was provided in the respective countries' State Aid Reports with respect to short-term export credit insurance, sent to the European Commission for approval. http://ec.europa.eu/competition/state_aid/register/ii/index.html#by_ms.

8. See point 4.4 of the "Communication of the Commission to the Member States pursuant to Article 93 (1) of the EC Treaty applying Articles 92 and 93 of the Treaty to short-term export-credit insurance." http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31997Y0917(01):EN:HTML.

9. See State Aid N 409/2009, the Netherlands "export credit insurance—reinsurance scheme," at http://ec.europa.eu/competition/state_aid/register/ii/by_case_nr_n2009_0390.html#409.

10. See State Aid N14/2010, the Netherlands "amendment to short term export credit insurance," at http://ec.europa.eu/competition/state_aid/register/ii/by_case_nr_n2010_0000.html#14.

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12

TRADE FINANCE IN THE RECOVERY OF TRADE RELATIONS AFTER BANKING CRISES

Cosimo Beverelli, Madina Kukenova, and Nadia Rocha

Trade finance may help explain not only the business cycle but also the eventual recovery of trade relations. The size of exports and exporting experience matter in the recovery of trade relations after banking crises. However, experience seems to matter more, especially in financially dependent sectors.

Using highly disaggregated U.S. import data, this chapter provides evidence on the impact of past and current banking crises on the duration of trade relations. It also investigates how product-level characteristics affect the recovery time of export relations after banking crises and whether such product characteristics affect recovery differently in long- and short-term financially dependent sectors.

International trade has been rapidly recovering after a 12.2 percent fall in 2009—the biggest fall in 70 years. The World Trade Organization forecast a 13.5 percent rise in 2010 over the previous year.[1] Additional evidence indicates that when recovery occurs, it occurs fast; most of the relations that recover after a banking crisis do so within two years, as table 12.1 shows.[2] Because recovery is well under way, it is as important as it is timely to draw lessons from past crises

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Table 12.1 Recovery Time after Banking Crises, 1996–2009

Recovery time (years)	Number of products	% of products
1	3,640	49.48
2	1,193	16.22
3	695	9.45
4	444	6.04
5	387	5.26
6	278	3.78
7	220	2.99
8	199	2.70
9	132	1.79
10	90	1.22
11	57	0.77
12	22	0.30
Total	7,357	100.00

Source: Authors' calculations based on recovery dataset.
Note: The recovery dataset contains information only on export relations that exit during a banking crisis. The sample consists of 13,055 products, of which 7,357 reentered the U.S. export market and 5,698 did not. "Recovery time" is defined as the number of years it takes to reenter the U.S. export market after the banking crisis–induced exit.

about the factors that affect the probability of resuming trade relations that have been interrupted by the crisis.

The authors seek to answer the following questions: Which trade relations recover first? And what distinguishes these fast-recovering relations? Is it the level of financial dependence of the sector they belong to? Or do product-level characteristics matter?

Using data on product-level exports to the United States, this chapter analyzes how banking crises affect trade relations.[3] Several studies have highlighted the importance of product-, sector-, and country-level variables in determining survival rates (Besedes and Prusa 2006a, 2006b; Besedes 2007; Brenton, Saborowski, and von Uexkull 2009; Fugazza and Molina 2009; Volpe-Martincus and Carballo 2009).

The work presented here is innovative because it estimates how a banking crisis in an exporting country affects the survival of its export relations—which, to the best of the authors' knowledge, has not been addressed elsewhere. The study is related, though, to the firm-level literature that links credit access to export performance. Manova, Wei, and Zhang (2009) show that less-credit-constrained firms (foreign-owned firms and joint ventures) have better export performance than private domestic firms in China, and this effect is amplified in financially vulnerable sectors. Muûls (2008) shows that liquidity-constrained firms in Belgium are less likely to become exporters and, conditional on trading, they sell fewer products to

fewer destinations. Also, Berman and Héricourt (2008) present similar results from a sample of 5,000 firms in nine developing and emerging economies.

Another original contribution of this work is the study of the determinants of recovery of trade relations that have been hit by a banking crisis. The novel result presented in this chapter is that, while both size and experience matter for recovery of trade relations after banking crises, experience has the greater significance, especially in financially dependent sectors. This outcome is consistent with some new empirical literature showing that not all exporting firms are the same and that firms that export for longer periods exhibit certain characteristics that differentiate them from sporadic exporters (Borgersen 2006; Álvarez 2007; Álvarez, Faruq, and López 2009). In this context, it is intuitive that, independent of size, those products that have been exported for longer periods are the ones that will have the least difficulty in recovering after a negative shock such as a banking crisis.

Trade Survival after Banking Crises

The authors collected annual product-level exports, disaggregated at the Harmonized System (HS) 10-digit level, from 157 countries to the United States between 1996 and 2009. The dataset provides information on the duration of each export relation, making it amenable to survival analysis. In this dataset, on average, 23 percent of trade relations were interrupted by a banking crisis between 1996 and 2008, as shown in table 12.2.

A simple graphical analysis confirms that banking crises negatively affect survival of trade. The Kaplan-Meier survival estimates shown in figure 12.1 suggest that trade relations hit by a banking crisis exhibit lower survival rates than trade relations not hit by a banking crisis.

The study also explores the effect of a banking crisis on the survival of export relations using a Cox proportional hazard model, as shown in table 12.3.

Estimates are expressed in terms of hazard ratios, with a hazard ratio greater than 1 indicating an increase in hazard and shorter duration, therefore meaning that an export relation is less likely to survive. The analysis indicates that a banking crisis raises the hazard ratio, thereby increasing the probability that a trade relation is interrupted by more than 11 percent (column [1], table 12.3). This outcome is in line with the stylized fact that banking crises negatively affect the survival of export relations.

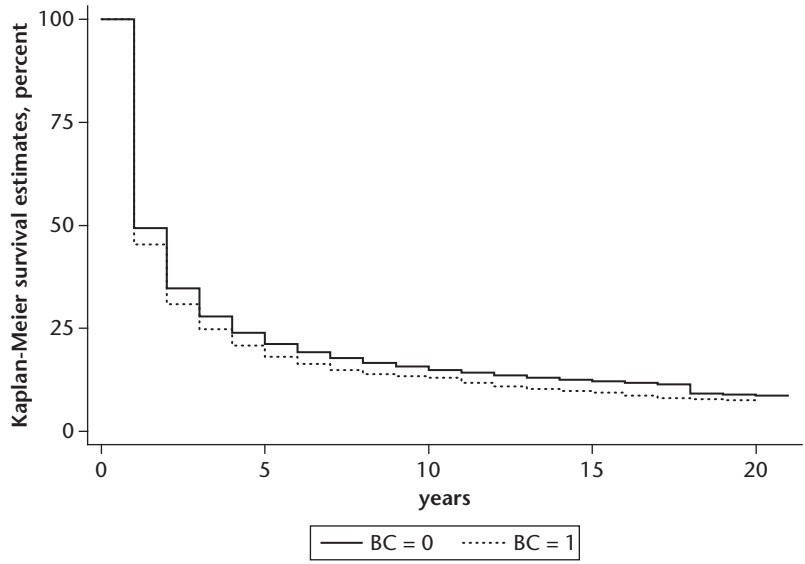
In addition, control variables such as the total number of suppliers and the total value of product exports have a positive impact on the probability of survival. This result is consistent with the results of the literature of trade survival, in which both the extensive and the intensive margins of competition positively affect survival. Also, the coefficient on demand shock presents an expected sign, implying that positive demand shocks reduce the probability of exit (however, this

Table 12.2 Survival of Trade Relations after Banking Crises, 1996–2008

Country	Year of crisis[a]	Total relations (number)	Relations destroyed (number)[b]	Relations destroyed (%)
Argentina	2001	2,534	636	25
Belgium	2008	6,596	1,450	22
Bulgaria	1996	726	246	34
China	1998	9,382	949	10
Colombia	1998	2,239	573	26
Czech Republic	1996	2,382	610	26
Denmark	2008	11,116	1,128	10
Dominican Republic	2003	2,210	494	22
Ecuador	1998	1,059	321	30
United Kingdom	2008	10,585	1,350	13
Honduras	1998	573	180	31
Iceland	2008	610	235	39
Indonesia	1997	3,619	649	18
Ireland	2008	3,280	833	25
Jamaica	1996	786	245	31
Japan	1997	10,014	985	10
Korea, Rep.	1997	7,013	1,118	16
Malaysia	1997	3,420	721	21
Nicaragua	2000	386	96	25
Netherlands	2008	6,856	1,295	19
Philippines	1997	3,334	704	21
Russian Federation	1998	2,415	667	28
Slovak Republic	1998	807	263	33
Thailand	1997	4,632	870	19
Turkey	2000	3,323	693	21
Ukraine	1998	752	235	31
Uruguay	2002	715	171	24
Vietnam	1997	825	186	23
Yemen, Rep.	1996	23	5	22

Source: Authors' calculations based on survival dataset.
a. The data refer to systemic banking crises between 1995 and 2008 in countries exporting to the United States. "Banking crisis," as defined by Laeven and Valencia (2008), includes all the crises since 1996 from their dataset as well as the 2008 crisis episodes in Belgium, Germany, Iceland, Ireland, Luxembourg, the Netherlands, and the United Kingdom. Each of those countries has experienced the failure of an important banking institution, including Fortis Bank in the Benelux countries, Hypo in Germany, Icesafe in Iceland, Bank of Ireland in Ireland, and Northern Rock in the United Kingdom.
b. The survival analysis uses a database with a total of 921,960 spells. The dataset contains information on the dates of exit and reentry of products into the U.S. export market. Relations considered "destroyed" are all those that had been active the year before the crisis and turned inactive in the year of the crisis.

Figure 12.1 Survival of Trade Relations after Banking Crises



Source: Authors' calculations based on survival dataset.
Note: BC = banking crisis.

Table 12.3 Effect of Banking Crises on Trade Relations Survival
Cox proportional hazard estimates

	BC (1-year length)	BC (1-year length)	BC (2-year length)
Variables	**(1)**	**(2)**	**(3)**
Banking crisis	1.112***	1.133***	1.052***
	[0.013]	[0.013]	[0.013]
Exports at spell end		0.906***	0.906***
		[0.001]	[0.001]
Number of suppliers at spell end	0.990***	0.988***	0.988***
	[0.000]	[0.000]	[0.000]
Total product exports at spell end	0.966***	0.992***	0.992***
	[0.001]	[0.001]	[0.001]
Demand shock	0.991**	0.993**	0.994*
	[0.003]	[0.003]	[0.003]
Number of previous spells	0.951***	0.945***	0.944***
	[0.002]	[0.002]	[0.002]
Observations	921,960	921,960	889,208

Source: Authors' calculations based on survival dataset.
Note: BC = banking crisis. Standard errors (in brackets) are clustered by country and by International Standard Industrial Classification (ISIC) three-digit industry. Sample is stratified by country, ISIC three-digit industry, and year.
***$p < 0.01$ **$p < 0.05$ *$p < 0.1$.

coefficient is not significant in most of the regressions). Size increases survival as well. However, its inclusion does not affect the banking crisis (BC) coefficient; to the contrary, it rises marginally.[4]

Neither the Laeven and Valencia (2008) dataset used for systemic banking crises nor other similar datasets provide systematic information on the final date of banking crises. Therefore, the previous regressions have assumed a common duration of one year for all banking crises. The replicated estimation considers that the effect of a banking crisis lasts two years instead of one year (column [3], table 12.3). The banking crisis coefficient is still positive and significant, although it is reduced by more than half. One intuition for this result is that, for a significant number of products, exports were resumed one year after a banking crisis (see table 12.1). Hence, the assumption that banking crises last for two years would suggest that those products never exited the export markets.

Alternative estimation techniques, such as linear probability and Probit models, have been used to check the validity of the previous results. In these models, the dependent variable is a dichotomous variable equal to 1 if an export relation is interrupted. Results, available under request, show that a banking crisis increases the probability of exit, as was found in the Cox regression. In addition, both size and experience reduce the probability of exit.[5] This outcome is in line with studies such as Brenton, Saborowski, and von Uexkull (2009), which show that initial size of an export flow, as well as exporting experience, positively affect survival.[6]

Time for Trade Recovery after Banking Crises

From the subsample of trade relations interrupted by a banking crisis in the exporting country, it is also observable that experience (defined as the number of years a relation was active before a banking crisis) unambiguously helps firms to recover faster. Specifically, 58 percent of the products exported for 18 years preceding the crisis reentered the export markets after 1 year, while only 17 percent of the products exported for 1 year reentered the market after 1 year, as table 12.4 shows.

Another way to visualize this is with Kaplan-Meier survival estimates. In figure 12.2, products have been ranked in three quantiles by experience level. The relations in the third quantile (more-experienced relations) recover faster than those in the second and first quantiles, respectively.

Size, however, does not matter as much as experience for recovery. In figure 12.3, products have been ranked in quantiles according to the size of the relation, measured as value of exports at the spell (that is, the time during which a product was exported) that ended with the crisis. This figure shows only limited evidence that bigger relations recover faster.

Table 12.4 Recovery Time, by Experience Level

Experience (years)	Total number of products	Product reentry after 1 year (number)	Product reentry after 1 year (%)
1	3,939	654	17
2	1,978	512	26
3	1,371	377	27
4	986	307	31
5	795	237	30
6	707	245	35
7	554	165	30
8	385	119	31
9	364	104	29
10	368	125	34
11	351	139	40
12	350	126	36
13	263	100	38
14	221	96	43
15	196	94	48
16	172	77	45
17	159	75	47
18	151	88	58

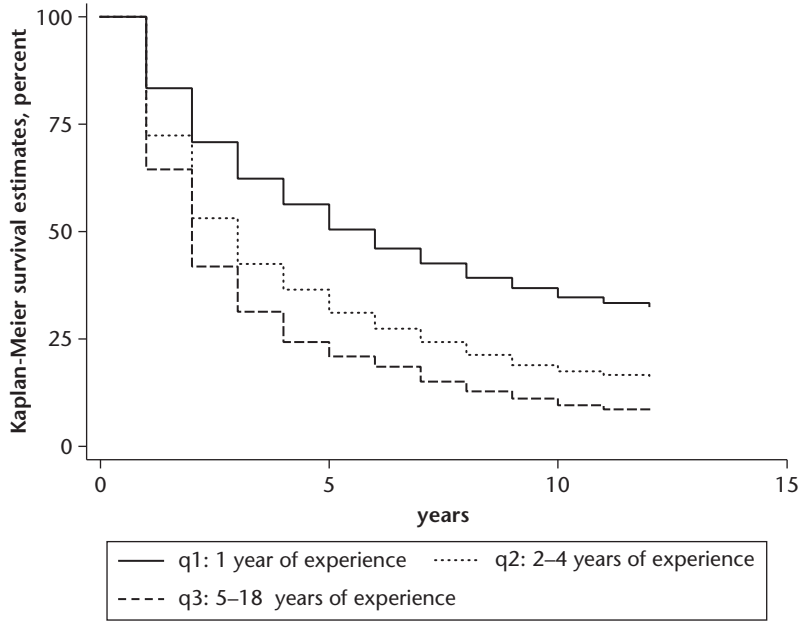
Source: Authors' calculations based on survival dataset.

Trade finance does not seem to affect the recovery of trade relations after a banking crisis. Put another way, different measures of short- and long-term sectoral financial dependence do not matter unconditionally for the recovery of trade relations.[7] A possible explanation for this result is the existence of significant product-level heterogeneity within sectors.[8]

Intuitively, even within sectors highly dependent on external finance, some products are likely to be affected more adversely than others by banking crises. Statistical analysis shows that measures of sectoral financial dependence have an experience-specific effect on the recovery of export relations. Consider, for instance, the unconditional survival estimates graphed in figure 12.4.[9]

Within the group of experienced relations (products with experience belonging to the third quantile), the survival function is lower in sectors of external financial dependence (EFD; EFD equal to 1) than in non-EFD sectors (EFD equal to 0). This implies that, in the former sector type, more-experienced trade relations reenter faster than those in the latter sector type. This pattern is reversed for less-experienced relations (products in the first and second quantiles). In fact, for this

Figure 12.2 Recovery of Trade Relations, by Experience Level



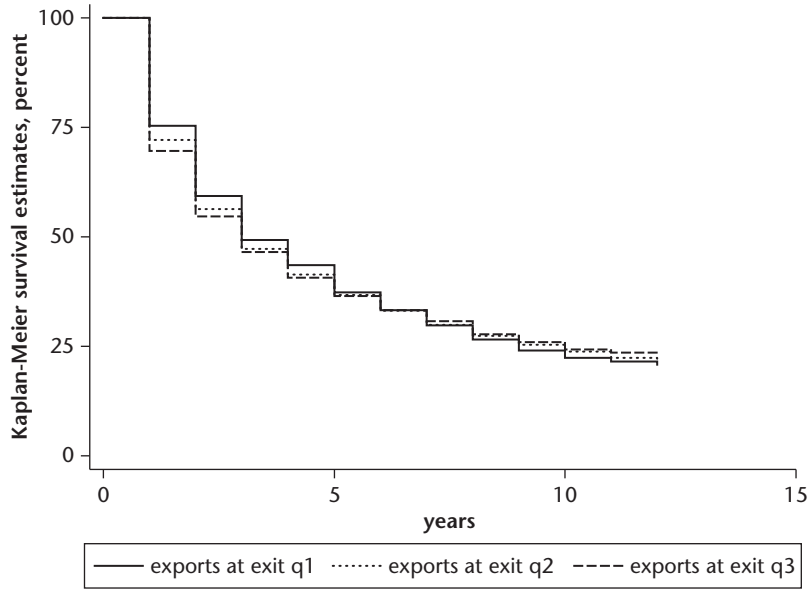
Source: Authors' calculations based on recovery dataset.
Note: q = quantile. In the graph, higher survival rates imply longer periods of inactivity, therefore a lower probability of reentry.

set of products, the survival function is higher in EFD sectors (EFD equal to 1) than in non-EFD sectors (EFD equal to 0). In contrast, as observable in figure 12.5, there is no clear descriptive evidence indicating effects of size heterogeneity, neither in financially dependent sectors nor in non-financially dependent ones.[10]

The effect of size and experience on time to recovery has been estimated using a duration model. In this case, duration refers to the time during which a trade relation has been inactive or, in other words, the number of years between the crisis-related exit and the restart of exporting (see annex 12.1 for details). Both experience and size increase the probability of recovering by 5.8 percent and 2.7 percent, respectively (columns [1] and [2], table 12.5).

The analysis also suggests that both the number of suppliers at reentry and the total exports of a certain product at reentry have a positive effect on the probability of recovery. These results indicate the presence of a pro-competitive effect at both the extensive and the intensive margins of competition. Finally, in all regressions, the higher the frequency with which a product has exited and entered the export market, the lower the probability of recovery.

Figure 12.3 Recovery of Trade Relations, by Size



Source: Authors' calculations based on recovery dataset.
Note: q = quantile. In the graph, higher survival rates imply longer periods of inactivity, therefore a lower probability of reentry. From the graph, it might seem that the variable size is not constant across time. This is controlled for in the regressions by stratifying the sample (see annex 12.1).

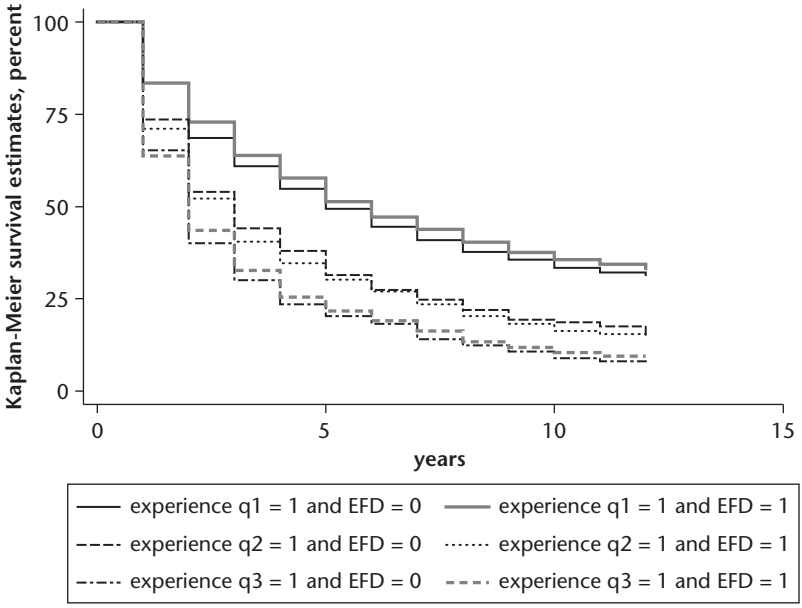
A possible intuition for this result is as follows: relationships with multiple spells before the crisis might be low-productivity ones, with productivity levels close to the cutoff that makes exporting profitable. These trade flows will therefore tend to reenter later than single-spell flows after a banking crisis.

The previous regressions have been replicated, with the inclusion of a set of variables that capture sectoral financial dependence (table 12.6). The regressions do not show that the indicators of financial dependence have a significant effect.

Table 12.7 presents an examination of whether such variables, despite not being significant *per se*, have an experience-specific effect. To do this, the Cox proportional model has been reestimated separately for each of the three groups of export experience.

Reading across columns, it is possible to observe that the coefficients of both long-term EFD and trade credit dependence (TCD) change across quantiles, implying that there is indeed an experience-specific effect. Specifically, although for least-experienced products financial dependence has a negative impact on the

Figure 12.4 Experience, Trade Credit Dependence, and Recovery of Trade Relations



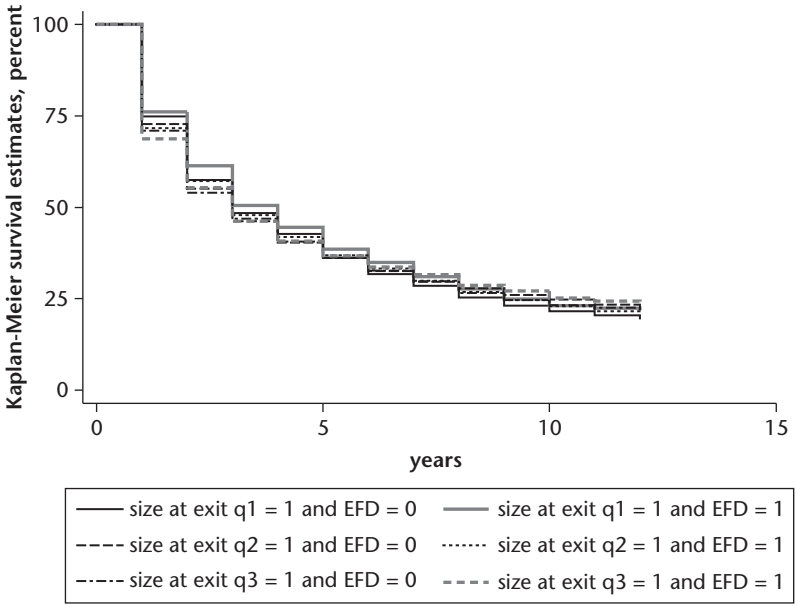
Source: Authors' calculations based on recovery database.
Note: q = quantile. EFD = external finance dependence. In the graph, higher survival rates imply longer periods of inactivity, therefore a lower probability of reentry.

time to recovery, more-experienced ones reenter faster in financially dependent sectors. The sign and the magnitude of the other explanatory variables do not vary significantly across different groups of export experience.[11]

An alternative approach—to investigate whether financial dependence has a product-specific effect—is presented in table 12.8. Both long-term financial dependence and trade credit variables are interacted with the two different groups of exporting experience and the size of exports, respectively. The results confirm that, in both long- and short-term financially dependent sectors, products with more experience recover faster than products with less experience (see columns [1] and [2]). In contrast, there is no clear evidence indicating the effects of size heterogeneity on the time to recover, neither in financially dependent sectors nor in non-financially dependent ones (see columns [3] and [4]).

Because the interpretation of interaction terms is not an easy task in Cox proportional models, similar regressions have been performed using both a linear probability model (LPM) and a Tobit model, as shown in table 12.9.

Figure 12.5 Size, Trade Credit Dependence, and Recovery of Trade Relations



Source: Authors' calculations based on recovery dataset.
Note: q = quantile. EFD = external finance dependence. In the graph, higher survival rates imply longer periods of inactivity, therefore a lower probability of reentry.

Table 12.5 Recovery Time, by Exporter Characteristic
Cox proportional hazard estimates

Variables	(1)	(2)
Years of experience at exit	1.058***	
	[0.005]	
Exports at exit		1.027***
		[0.008]
Number of suppliers at reentry	1.032***	1.034***
	[0.002]	[0.002]
Total product exports at reentry	1.020**	1.019**
	[0.008]	[0.008]
Number of previous spells	1.032**	1.090***
	[0.013]	[0.015]
Observations	13,055	13,055

Source: Authors' calculations based on recovery dataset.
Note: q = quantile. Standard errors (in brackets) are clustered by country and by ISIC three-digit industry level. The sample is stratified by country and by ISIC three-digit industry level.
***$p < 0.01$ **$p < 0.05$ *$p < 0.1$.

Table 12.6 Recovery Time and Financial Dependence
Cox proportional hazard estimates

Variables	(1)	(2)
Years of experience at exit	1.064***	1.069***
	[0.004]	[0.005]
Exports at exit	1.023***	1.020***
	[0.007]	[0.007]
EFD	0.986	
	[0.034]	
TCD		0.953
		[0.033]
Observations	12,928	11,628

Source: Authors' calculations based on recovery dataset.
Note: EFD = external financial dependence. TCD = trade credit dependence. Standard errors (in brackets) are clustered by country and by ISIC three-digit industry level. The sample is stratified by country and by ISIC three-digit industry level. Other controls: total product exports at reentry, total number of suppliers at reentry, demand shock, and number of previous spells.
***$p < 0.01$ **$p < 0.05$ *$p < 0.1$.

Table 12.7 Recovery Time and Financial Dependence
Cox proportional hazard estimates with group varying characteristics

	Experience q_1	Experience q_2	Experience q_3	Experience q_1	Experience q_2	Experience q_3
Variables	(1)	(2)	(3)	(4)	(5)	(6)
Exports at exit	1.014	1.024**	1.022**	1.002	1.023**	1.024**
	[0.013]	[0.011]	[0.010]	[0.013]	[0.011]	[0.010]
EFD	0.893*	1.017	1.066*			
	[0.055]	[0.049]	[0.041]			
TCD				0.844***	0.987	1.053
				[0.053]	[0.050]	[0.043]
Observations	3,744	4,257	4,927	3,253	3,861	4,514

Source: Authors' calculations based on recovery dataset.
Note: EFD = external financial dependence. TCD = trade credit dependence. Standard errors (in brackets) are clustered by country and by ISIC three-digit industry level. The sample is stratified by country. Other controls: total product exports at reentry, total number of suppliers at reentry, demand shock, and number of previous spells.
***$p < 0.01$ **$p < 0.05$ *$p < 0.1$.

For both methodologies, the dependent variable is the number of years it takes for an export relation to reenter the foreign markets after a banking crisis. In addition, the latter model takes into account that some export relations are right censored and, hence, have not resumed yet.[12] As in the Cox proportional model, both experience and size decrease the time to recover. However, the effect of experience

Table 12.8 Financial Dependence, Exporter Characteristics, and Recovery
Cox proportional hazard estimates

	FD = EFD	FD = TCD	FD = EFD	FD = TCD
Variables	**(1)**	**(2)**	**(3)**	**(4)**
Exports at exit	1.022***	1.020***		
	[0.007]	[0.007]		
Years of experience at exit q_2	1.322***	1.354***		
	[0.060]	[0.060]		
Years of experience at exit q_3	1.635***	1.693***		
	[0.085]	[0.093]		
FD	0.894**	0.857***	0.98	0.977
	[0.051]	[0.050]	[0.044]	[0.044]
Years of experience at exit $q_2 \times$ FD	1.129**	1.135**		
	[0.065]	[0.067]		
Years of experience at exit $q_3 \times$ FD	1.216***	1.256***		
	[0.082]	[0.091]		
Years of experience at exit			1.064***	1.069***
			[0.004]	[0.005]
Exports at exit q_2			1.017	1.036
			[0.041]	[0.040]
Exports at exit q_3			1.105**	1.130***
			[0.046]	[0.047]
Exports at exit $q_2 \times$ FD			1.034	0.994
			[0.054]	[0.054]
Exports at exit $q_3 \times$ FD			0.993	0.931
			[0.059]	[0.055]
Observations	12,928	11,628	12,928	11,628

Source: Authors' calculations based on recovery dataset.
Note: EFD = external financial dependence. FD = financial dependence. TCD = trade credit dependence. q = quantile. Standard errors (in brackets) are clustered by country and by ISIC three-digit industry level. The sample stratified by country. Other controls: total product exports at reentry, total number of suppliers at reentry, demand shock, number of previous spells, exports at exit (in columns [1] and [2]), and years of experience at exit (in columns [3] and [4]).
***$p < 0.01$ **$p < 0.05$ *$p < 0.1$.

is always higher. In addition, from columns (1)–(4), it is possible to conclude that more-experienced exporters enter first in financially dependent sectors. Once again, as shown in columns (5)–(8), the interaction between exports' size and long- and short-term financial dependence, respectively, is not significant.

From the previous results, it is possible to conclude that, independent of size, products with more years of experience might have a greater advantage in obtaining external finance, thereby recovering faster after a banking crisis.[13]

The results are in line with empirical studies on banks' lending behavior (for example, Petersen and Rajan 1994). They show that a firm's age and the duration

Table 12.9 Financial Dependence, Exporter Characteristics, and Recovery
OLS and Tobit estimates

	OLS	Tobit	OLS	Tobit	OLS	Tobit	OLS	Tobit
Variables	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Years of experience at exit	–0.208***	–0.443***	–0.230***	–0.488***	–0.266***	–0.542***	–0.289***	–0.590***
	[0.024]	[0.044]	[0.025]	[0.046]	[0.020]	[0.036]	[0.021]	[0.039]
Exports at exit	–0.146***	–0.223***	–0.133***	–0.196***	–0.178***	–0.269***	–0.175***	–0.255***
	[0.031]	[0.056]	[0.032]	[0.057]	[0.046]	[0.081]	[0.043]	[0.076]
EFD	0.311	0.626			–0.736	–0.958		
	[0.442]	[0.732]			[0.748]	[1.284]		
TCD			0.765***	1.177**			–0.478	–0.681
			[0.281]	[0.481]			[0.622]	[1.088]
Years of experience at exit × EFD	–0.104***	–0.178***						
	[0.030]	[0.050]						
Years of experience at exit × TCD			–0.117***	–0.197***				
			[0.030]	[0.049]				
Exports at exit × EFD					0.053	0.072		
					[0.062]	[0.107]		
Exports at exit × TCD							0.073	0.099
							[0.062]	[0.109]
Observations	12,928	12,928	11,628	11,628	12,928	12,928	11,628	11,628
R-squared	0.283		0.284		0.282		0.282	

Source: Authors' calculations based on recovery dataset.
Note: OLS = ordinary least squares. EFD = external financial dependence. TCD = trade credit dependence. Standard errors (in brackets) are clustered by country and by ISIC three-digit industry level. The sample is stratified by country. All regressions include country and sector fixed effects (ISIC three-digit). Other controls: total product exports at reentry, total number of suppliers at reentry, demand shock, and number of previous spells.
***$p < 0.01$ **$p < 0.05$ *$p < 0.1$.

of its relationship with the financing bank are important determinants of the cost of financing. In light of this evidence, it is not surprising that after a banking crisis—when banks face a lack of liquidity, requiring them to restrict credit—only well-established and better-known firms are likely to get access to credit from the banks, being able to cover some of the cost of producing and exporting.

Policy Implications

The effect of a banking crisis on different export sectors and products is an important consideration for policy makers as they try to mitigate financial shocks. This chapter, based on disaggregated data at the product level, helps derive important implications relevant to policy makers.

First, banking crises seem to hit more-productive exporters less adversely than less-productive exporters. In line with expectations, small and less-experienced exporters may not be productive enough to overcome a sharp drop in foreign demand and, more important, they may also be more affected by short- or long-term credit restrictions. In the first case, small exporters might lack sufficient collateral or credit guarantees; in the second case, exporters with less experience have not yet built their reputations. In both cases, the policy implication is that if the objective is to reduce exit of trade relations, the target for policy support should be relatively small and inexperienced exporters.

Second, although on average size and experience have a significant impact on the recovery after banking crises, only the latter matters for the recovery of products belonging to industries that are highly dependent on external finance. Consistent with the idea that within-sector heterogeneity matters, this analysis finds that long- and short-term sectoral financial dependence has an experience-specific effect. In particular, more experienced exporters reenter faster in financially dependent sectors. This result has important policy implications: for instance, if the objective is to help trade recover faster after financial disruption, relatively inexperienced exporters should be targeted to restart foreign operations, independent of their size.

Annex 12.1: Methodology

The empirical analysis is divided in two main parts. First, the authors estimate a duration model à la Besedes and Prusa (2004) to study how trade relations are affected in times of crisis. Second, always using a duration model but this time only for those products that exited with a banking crisis, the authors analyze how certain exporter and sectoral characteristics affect the time to recover after banking crises.[14]

Except when otherwise indicated in the explanatory note below each table, the estimations are stratified by exporting country and three-digit International Standard Industrial Classification (ISIC) industry level[15]—this to allow for a different hazard function for each country and sector, respectively. In addition, standard errors are clustered by sector (ISIC three-digit) and country to allow for intraindustry and country correlation in the error terms.

The main explanatory variable for the survival analysis is a banking crisis dichotomous variable, which takes the value of 1 in those years in which a certain country has experienced a banking crisis. In addition, a common set of control variables is included in all regressions. First, variables such as the total number of countries exporting a certain product to the United States and the total value of product exports, respectively, serve as controls for the extensive and intensive margins of competition. Second, to control for the fact that the banking crisis variable might be capturing a deterioration of demand in the destination country, a product-specific measure of the growth of U.S. imports is introduced.

With respect to recovery, the authors test whether the size and experience of export relations at the time of exit affect the number of years it takes to reenter the export market. In addition, to analyze whether products that exit the export market during a crisis recover at different speeds, according to the sectors to which they belong, the authors also include an interaction term between long- and short-term financial dependence indicators and product characteristics. In this case, too, the total number of countries exporting a certain product to the United States and the total value of product exports are included as controls. Because it is not possible to compute these control variables for the subsample of products where exports have never resumed, their averages are calculated between the first year after the banking crisis and either the year of reentry or the last year of the sample, depending on whether exports have resumed.

Some econometric issues related to this empirical methodology are common to all duration models. First and most important, in the survival analysis, the authors do not want to artificially record a banking crisis that occurred during a trade relation as happening at the beginning or at the end of its duration. This problem is solved by splitting each export relationship at the time of the banking crisis and assuming that the crisis lasts for one year.

Second, for some export relations, it might be impossible to accurately observe their beginning or their ending. Whether an export relation that is first observed at time t actually started at time $s < t$ (left censoring) is unknown. Also unknown is whether an export relation that is last observed at time T was interrupted at T or continued after it (right censoring). To control for left censoring, variables are constructed using trade data from 1991 until 2009. However, the spells that started in the initial five years of the dataset (1991–95) are excluded from estimations. The Cox model controls for right censoring.

Third, there are products that exit more than once (multiple spells). The general approach of the literature to control for multiple spells in duration models is to include in the regressions a multiple spell dummy equal to 1 if the relation has at least one exit during the sample period. However, to control for the fact that multiple spells are time-varying within a relation, a different definition of multiple spell is considered, with the construction of a variable equal to the number of spells before time *t*. This approach, the authors believe, is theoretically more correct than the standard approach of the literature because it does not consider a relation to be characterized by multiple spells until its first observed reentry, but only after it.[16]

Due to the high level of disaggregation of the dataset, throughout all the analysis the assumption is that there is a representative firm for each trade relation. This allows the analysis to refer to "experience" and "size" as two measures of heterogeneity among exporters. Because size and experience are not the same (in the sample, the correlation is 0.19), they capture different characteristics of exporters.

Notes

1. The World Bank's forecast is 15.7 percent, and the Organisation for Economic Co-operation and Development's forecast is 12.3 percent.

2. Using data on U.S. imports at the Harmonized System (HS) 10-digit level of disaggregation from 157 countries between 1995 and 2009, the authors have extrapolated all relations that were interrupted at the occurrence of a banking crisis in the exporting country.

3. The authors chose the United States as the destination country because the original trade data used (from the Global Trade Atlas and the Center of International Data at the University of California, Davis) contains information at the 10-digit level of disaggregation only for trade flows in and out the United States.

4. After inclusion in the regression of the market share of a product to control for product heterogeneity, results do not change.

5. The variable experience cannot be included in a Cox regression because it is highly correlated with the duration of a spell, which is the conditioning variable in duration models.

6. The effect of experience should be interpreted with caution, since it captures both the negative duration effect (the fact that the probability of exit decreases the longer a product has been in the market) and the presence effect (learning by exporting). The authors are only interested in the latter effect, which has an economic interpretation.

7. The indicator of long-term external financial dependence (EFD) comes from Rajan & Zingales (1998) and is computed at International Standard Industrial Classification (ISIC) three-digit industry level. For short-term financial dependence, we use trade credit dependence (TCD) from Levchenko, Lewis, and Tesar (2009), computed at the North American Industry Classification System (NAICS) four-digit level (the original measure is from Fisman and Love [2003]). In the data, the correlation between EFD and TCD is very high and equal to 0.7.

8. For a similar approach, see Besedes (2007), section 3.3.2.

9. Similar results can be shown when using trade credit dependence (TCD).

10. From figure 12.5, it might seem that the variable size is not constant across time. This is controlled for in the regressions by stratifying the sample (see annex 12.1).

11. A Cox regression was also estimated for different groups of export size. The results, available under request, show that neither the financial dependence variable nor the other control variables have a size-specific effect.

12. In the sample, the maximum value of time to recover is 12 years. The assumption is that the products that have not reentered the export market yet will enter after 15 years. Another assumption is that they enter after 20 or 30 years and results do not change.

13. To sharpen these conclusions, the authors are planning to perform the same analysis using firm-level data.

14. The estimated regression is a stratified Cox proportional hazard model of the form $h_c(t, x, \beta) = h_{c0}(t) \exp(x'\beta)$, where x denotes a series of explanatory variables and β is the vector of coefficients to be estimated. The baseline hazard $h_{c0}(t)$ represents how the hazard function changes with time and differs for each strata of the sample.

15. When sector-specific variables are included in the regression, the sample is not stratified by sector.

16. Alternatively, a multiple spell dummy equal to 1 if the relation that is interrupted at time t has at least one exit at time $s < t$ has been included. Results are qualitatively the same.

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SECTION III

UNDERPINNINGS OF TRADE FINANCE INTERVENTION DURING FINANCIAL CRISES

13

THE THEORETICAL CASE FOR TRADE FINANCE IN A LIQUIDITY CRISIS

Tore Ellingsen and Jonas Vlachos

The economic crisis of 2008 was characterized by a severe contraction of credit, and the contraction appeared to hit the trade finance sector particularly hard. Is there a theoretical case for policy intervention to boost trade finance in such a liquidity crisis?[1]

The main argument presented here in favor of trade finance intervention during a liquidity crisis is that it mitigates the problems that arise when firms hoard cash. When cash hoarding occurs, funding for interfirm transactions has greater social value than other funding because borrowers cannot hoard trade finance. Thus, the reasons for promoting trade finance are stronger than for promoting credit in general.

Although these arguments pertain to both domestic and international trade finance, they are arguably stronger in the international context. Because international loan enforcement is weaker than domestic enforcement, sellers are less willing to keep international loans on their books, and it is the seller's insistence on immediate payment that creates the demand for liquidity in the first place.

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A Theory of Trade Finance

Trade finance, broadly defined, is any financial arrangement connected to interfirm commercial transactions. By this definition, extension of ordinary trade credit is an example of trade finance. A narrow definition of trade finance is the funding of individual international commercial transactions by financial intermediaries.

Even under the broader definition, trade finance phenomenon is puzzling at first glance. Why do firms that do not specialize in financial intermediation extend credit to other firms? A common explanation is that firms in a business relationship acquire information about each other that would be expensive (or even impossible) for banks to obtain. Although plausible, the basic monitoring rationale does not explain why trade finance is provided almost exclusively in-kind; if the monitoring advantage is so great, why don't firms also lend cash to each other?

One explanation for this pattern is that firms with access to funding to buy illiquid assets are less tempted to engage in activities that are undesirable from the investors' point of view (Burkart and Ellingsen 2004). Because in-kind credit is expensive to divert to other uses, potential moral hazard problems on the borrower's side are reduced when trade credit is extended. The important implication here is that trade credit and other types of credit are complements rather than substitutes, a prediction supported by evidence in Giannetti, Burkart, and Ellingsen (2008). Such complementarities suggest that alternative sources of funding cannot fill the gap when trade credit dries up. Instead, reduced trade credit will reduce the access to other types of credit as well.[2]

The narrow definition of trade finance restricts attention to international transactions that are directly funded by intermediaries. Of course, not all international transactions are intermediated; sometimes the seller keeps the receivable on its own books, as is common for domestic trade credit. However, the more significant role of intermediaries in international trade informs us that there are often greater obstacles to international trade credit transactions than to domestic ones.

The authors' favored interpretation is that sellers are typically more worried about strategic default in the case of foreign buyers.[3] Thus, sellers tend to insist on up-front payment from foreigners. When the foreign buyer needs funding, a natural arrangement is to borrow from a bank in the buyer's own country. That bank, in turn, for the reasons discussed above, is more willing to provide specific loans for input purchases than to provide general cash loans. Hence, the obvious solution is for the buyer's bank to verify the shipment and pay upon delivery to the seller's bank while providing a loan to the buyer. In brief, this is the authors' theory of international trade finance.

The Case for Policy Intervention

If this theory is correct, what are the arguments for giving priority to trade finance programs rather than to more general programs aimed at easing credit conditions?

Before answering the question, the authors note that the markets for corporate funding differ from many other markets. In particular, corporate credit markets do not have market-clearing prices. Many borrowers would like to have additional funds at prevailing interest rates, but if their pledgeable returns are smaller than their full returns, lenders will rationally lend less than the borrowers desire. When credit constraints bind, it is sometimes (but far from always) justified to intervene in financial markets (Tirole 2005; Holmstrom and Tirole 2011). At the core of this argument in favor of an international trade finance program is the insight that it is more difficult to make credible pledges across borders than within borders.

Benefits of Financial Market Intervention

When a financial crisis turns into a recession, interventions in financial markets have two beneficial effects. The first direct effect is the value of additional funds to the financially constrained firms themselves. The second effect, an indirect one, is the value to the constrained firms' trading partners of the additional activity in the constrained firm. For example, when the constrained firm increases its production, it needs more inputs, and the input suppliers' profit goes up.

Policies to deal with the current crisis ought to focus on the indirect effect rather than the direct effect for two reasons. First, the indirect effects are large during a crisis because of excess capacity. Second, an increase of general credit provision may not lead to an immediate expansion of production at all because borrowers are so afraid of being even more heavily constrained in the future that they simply hoard the additional funds.

A final, and crucial, building block of this argument is that prices are downwardly rigid in the short term. For some reason, sellers cannot or will not immediately reduce their prices despite a high premium on liquidity.[4]

The assumption here is not that prices are stuck at a level that the buyer is unwilling to pay, but rather that they are so high that the buyer is unwilling to pay cash immediately, in view of the high opportunity cost of liquidity. Because of limited pledgeability, the seller, however, is unwilling to extend the necessary credit. Also, the opportunity cost of liquidity implies that a general loan to either party will be hoarded rather than spent on the transaction because the buyer does not internalize the seller's benefit when deciding whether to trade. However—and this is the main point—targeted trade finance loans cannot be used for another purpose and will thus be used to fund the transaction.

International Considerations

Next, consider how the argument works in a richer context where banks are involved in the funding of international transactions. Clearly, the pledgeability problem is again the central reason why international trade finance involves intermediaries. Sellers frequently do not extend trade credit to foreign buyers directly, but instead leave the lending to a domestic bank, which in turn contracts with the buyer's bank. Usually, these transactions leave the actual credit on the balance sheet of either of the banks rather than on the seller's. That is, the banks transfer liquidity to the seller. It is straightforward to see why the liquidity shock will disrupt such bank lending in the same way it disrupts spot transactions: if banks have the same opportunity cost of liquidity as the firms do, the firms will no longer be able to compensate the banks for the kind of liquidity service they have previously been offering.

The problem is most severe when there is less trust across borders than within them. Then, there is less trust between the two banks than between the buyer and the buyer's bank. In this case, the inability to pledge future returns is transferred from the buyer to the buyer's bank. In normal times, trade credit will typically be left on the books of the buyer's bank—with the seller's bank being paid off at the transaction date. Because nobody wants to make transaction-date payments when liquidity is scarce, the situation goes back to the original problem facing the two firms. (With complete cross-border trust between banks, the seller can hold a claim on the domestic bank, the domestic bank can hold a claim of the foreign bank, the foreign bank can hold a claim on the buyer, and all the claims can last until the buyer obtains cash.)

To the extent that sellers and buyers are in the same country, there is reason to expect domestic support for trade credit funding. However, when they are in separate countries, the most appropriate intervention is to provide selective funds to the buyer's bank, whereas the benefits to a large extent flow to the seller's country. This, then, is an argument for international policy coordination.

Annex 13.1 provides a simple formal model that articulates this argument more precisely. Annex 13.2 provides a model of short-term price rigidity and long-term price deflation, based on the assumption that buyers have private information about their financial position following a liquidity shock. The model demonstrates that it is optimal for sellers of durable goods to reduce their prices gradually over time. This model could be combined with the model in annex 13.1 to provide a rigorous justification for the assumption of nominal price rigidity.

As shown in Ellingsen and Vlachos (2009), asymmetric information about financial positions, as brought about by financial turmoil, could also affect prices and quantities in perishable-goods markets. However, according to this rudimentary analysis, the case for trade finance subsidies—as opposed to general

interventions in financial markets—appears to be weaker in the case of perishable goods.

Conclusions

In summary, sponsoring trade finance is desirable during a liquidity squeeze primarily because the extension of credit is tied to actual current transactions. Thus, the additional credit cannot be hoarded. The above discussion shows that these problems are particularly severe in international transactions because it is more difficult to make credible pledges across borders than within borders.

A second reason why multilateral organizations ought to support trade finance specifically, rather than providing funding more broadly, is that domestic policy initiatives are likely to place a relatively low weight on foreigners' gains (*Economist* 2009). Because the support of trade finance typically involves supplying funds to the buyer's bank while primarily benefiting the seller, it is easy to see how these transactions will suffer under purely domestic policies.[5]

Annex 13.1: A Simple Formal Model

Here is a simple model that formalizes the logic of the main argument.

A seller has a resource that a buyer may purchase and refine. Refining takes two periods. For simplicity, assume that the process is costless. It increases the value of the resource from c to v. Traditionally, the seller and the buyer have been trading at a price $\overline{p} = (c + v)/2$ that splits the gains from trade equally. For reasons alluded to above (and further expanded upon below), suppose that this price is rigid in the short run.

However, due to an imminent liquidity shock, both the seller and the buyer face a one-period return to holding cash of r. That is, from the date 0 perspective, the two parties know they can trade to generate a surplus at date 2 of $v - c$, but also that any cash held at the beginning of period 0 earns an expected return r if held until date 1. Note that r may reflect either the expected return on investments made at date 1 or the drop in input prices between date 0 and date 1 but not the nominal one-period return on holding cash—which is typically close to zero.

Consequently, the buyer is only willing to pay a price of p if $v \geq p(1 + r)$, or equivalently if $p \leq v/(1 + r)$. The seller, on the other hand, is willing to accept any price p satisfying $p \geq c/(1 + r)$. If the price for one reason or another is rigid at p, then trade is disrupted if $p > v/(1 + r)$, or equivalently if $r > (v - c)/(v + c)$. In other words, if the liquidity shock is sufficiently large relative to the return to trading, then it disrupts trade at the price $\overline{p}$.

So far, only spot payments at date 0 have been considered. What if the buyer could credibly promise to pay at date 2? In this case, the problem evaporates

because both parties are willing to trade at $\overline{p}$ as long as they do not have to forgo the date 1 return on liquidity.[6] In other words, the buyer's inability to credibly pledge future payments to the seller is at the heart of the problem. For simplicity, assume that the buyer cannot make any credible long-term promises about future payments to the seller.

Observe that this problem cannot be resolved by just extending more credit to the buyer because these funds are more profitably invested to earn the liquidity return r than by paying $\overline{p}$ at date 0. However, here comes the main point: extending specific trade finance to the buyer does work if the interest rate is smaller than $(v-\overline{p})/\overline{p}$. Because such funds have no alternative use, they will be used to facilitate transactions. Of course, liquidity is increased by the same amount as a general credit facility, but the liquidity benefits now accrue to the seller rather than to the buyer. Thus, funding of trade credit generates benefits over and above those generated by general credit facilities.

As indicated above, the presence of banks does not make a substantial difference to the argument. In normal times, outstanding credit will typically be left on the books of the buyer's bank—with the seller's bank being paid off at date 0. Because the date 0 payments are infeasible when liquidity is scarce, the two firms are essentially back to the original problem, at least as long as there is insufficient trust between the two banks.

Clearly, a general increase of credit to the buyer's bank will not solve the problem because the buyer's bank will prefer to earn the liquidity return r over any interest rate that can be economically offered in return for a date 0 payment. However, if the buyer's bank is instead offered a selective facility for trade credit extension, it will use it as long as it earns a positive return, even if that return is below r. Thus, the argument in favor of trade credit is the same whether banks are involved or not.

Annex 13.2: Durable Goods and Endogenous Deflation

The argument above rested on two key assumptions: rigid prices and financial frictions. One feature of the crisis is the fear of falling prices, especially in durable goods markets. What is the relationship between financial frictions and price deflation? Is there a channel from financial frictions to temporary downward price rigidity? These are big questions, but here is a small contribution to answering them.

Specifically, consider the following scenario, adapted from Stokey (1979).[7] A seller produces a durable good. For simplicity, suppose that production costs are zero and that the good is infinitely lived. Let time be discrete, and let buyers value the good at v per period. Due to impatience as well as financial constraints, buyers discount future utility at a rate r per period. Let $\delta = 1/(1 + r)$ denote the corresponding discount factor.

If all buyers are identical, the optimal pricing strategy is for the seller to extract all the buyers' surplus by setting the price

$$p^{\star} = \frac{v}{1-\delta}. \tag{13A.1}$$

Suppose now that the shock to the financial sector hits buyers differently. One group of buyers gets hit hard and now faces an interest rate r_H. The other group gets hit less and faces the interest rate $r_L < r_H$. Let δ_L and δ_H denote the corresponding discount factors. Ideally, the seller would now want to set different prices for the two types of buyer. However, such "third-degree" price discrimination may be impossible, either because of arbitrage or because the seller cannot observe buyers' financial constraints. To extract as much surplus as possible, the seller may therefore engage in intertemporal price discrimination instead.

Rather than deriving the optimal intertemporal price discrimination scheme, the argument is illustrated by considering the strategy to sell immediately to type L and wait one period to sell to type H. Obviously, if type L has bought already, the optimal price next period is

$$p_H^{\star} = \frac{v}{1-\delta_H}. \tag{13A.2}$$

To induce type L to buy immediately instead of waiting, the initial price must give a utility that is at least as high. That is,

$$\frac{v}{1-\delta_L} - p_L \geq \delta_L \left(\frac{v}{1-\delta_L} - p_H^{\star} \right). \tag{13A.3}$$

Let $p_L^{\star}$ denote the largest p_L that is consistent with the above condition:

$$p_L^{\star} = \frac{v}{1-\delta_H}\left(1+\delta_L-\delta_H\right). \tag{13A.4}$$

Let h be the fraction of type H buyer types, and let δ denote the seller's discount factor. The profit associated with intertemporal price discrimination can then be written as

$$\pi\left(p_L^{\star}, p_H^{\star}\right) = (1-h)p_L^{\star} + \delta h p_H^{\star}. \tag{13A.5}$$

Without intertemporal price discrimination, the seller can, in principle, choose between two options: (a) sell only to type L at a price $v/(1-\delta_L)$, or (b) sell to both types at price $v/(1-\delta_H)$. Note that the first option relies on the problematic assumption that the seller can credibly commit not to reduce the price in the next period. In a comparison of intertemporal price discrimination with the uniform

price strategy (option b), it is straightforward to check that price discrimination is preferable if

$$h < \frac{\delta_L - \delta_H}{1 - \delta + \delta_L - \delta_H}. \tag{13A.6}$$

At first sight, it appears that intertemporal price discrimination is more likely to be profitable when δ is large. However, if $\delta > \delta_L$, it would pay for the seller to lend to the most constrained buyers. On the other hand, if $\delta < \delta_H$, such a financial transaction is unprofitable. Thus, the likelihood of intertemporal price discrimination is highest when the seller is neither so unconstrained as to offer trade credit to fund immediate purchase by all buyers nor so constrained as to prefer all revenues immediately to larger revenues gradually.

Under intertemporal price discrimination, the winners from the financial shock are the buyers that are hit less hard; they now pay less than their reservation value. The relatively better financial position turns into a net gain. The other buyer group is indifferent, whereas the seller loses. Due to the inefficient delay of trade, the seller's loss is greater than the favored buyers' gain. Thus, there is a welfare loss, even if it is smaller than in the model with exogenous price rigidity.

Note that the durable goods model can produce a prolonged period of price deflation even if there is no exogenously imposed price rigidity. Moreover, if funds are being made available at interest rate r_L specifically for the purchases of durable goods, price deflation would end and purchases would be made immediately. Trade finance subsidies are one way to offer such targeted support.

Notes

1. During the crisis, the main piece of advice offered to firms by Boston Consulting Group was "Hoard your cash" (Rhodes et al. 2008).

2. While this general argument seems to favor targeting trade finance over other types of interventions, that conclusion is premature. Because the value of the additional bank credit could, in principle, be extracted by the trade credit provider, it is not clear that the trade credit multiplier effect justifies specific trade credit subsidies. Rather, it is an argument for relaxing the sellers' access to finance by improving the workings of the financial sector in general.

3. Numerous studies demonstrate the importance of strategic-default fears by documenting that international contract enforcement is a serious concern for firms involved in international trade (Rauch 2001). Indeed, much of the recent theoretical work on international trade builds on the assumption of imperfect contract enforcement (Antràs and Rossi-Hansberg 2009). See also Anderson and Marcouiller (2002), who find that poor contract enforcement is a major impediment to international trade. Similarly, cross-border trust is an important determinant of international trade and investment (Guiso, Sapienza, and Zingales 2009).

4. There is a large and rapidly growing literature on the causes of price rigidity. The authors' argument is valid under many of these causes, but perhaps not under all of them. Below, a specific and new argument is provided for price rigidity under financial turmoil.

5. Sponsoring trade finance may also, in general, help to alleviate insufficient trade due to incomplete information among nonfinancial firms, but unless there is a liquidity squeeze, trade finance

subsidies have no obvious advantage over general financial measures. For a fuller discussion of this point, including a formal model, see Ellingsen and Vlachos (2009).

6. Large buyers in industrialized countries sometimes unilaterally initiate delayed payments to domestic suppliers. In terms of this model, this is a rational response to liquidity shocks if the pledge to pay later is credible.

7. Stokey's main point is actually that intertemporal price discrimination does not occur when buyers have identical discount factors. The point here is that with different discount factors, it occurs under reasonable additional assumptions.

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14

WHY BOOSTING THE AVAILABILITY OF TRADE FINANCE BECAME A PRIORITY DURING THE 2008–09 CRISIS

Jean-Jacques Hallaert

Economists disagree on the role trade finance played in the recent collapse in world trade. In contrast, policy makers seem to have reached a consensus. In a nutshell, their reasoning is that trade finance is the lifeline of international trade. The decline in trade is larger than what would be expected given the drop in global output. So part of the fall in trade reflects a shortage of trade finance, which could amplify and extend the plunge in trade and make the financial and economic crisis worse. Hence, boosting the availability of trade finance has to be part of the international response to the crisis. This chapter examines the claims underpinning this storyline and highlights the uncertainties on the role trade finance played in the current crisis.

How Big Is the Trade Finance Shortfall?

International trade presents many risks that trade finance can mitigate. The risk of nonpayment may be limited with the use of instruments such as letters of credit. The credit risk can be reduced with the use of export credit insurance. Trade finance also provides liquidity because some exporters may need loans if they lack

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sufficient liquidity to process and acquire goods and services to fulfill export orders. However, a large part of trade finance does not involve financial institutions because trade partners often extend trade credit to each other.[1]

How much does international trade depend on trade finance? There is no solid statistical answer to this basic question. It is often reported that 90 percent of world trade relies on trade finance (WTO 2007). This estimate is of questionable quality and appears too high given the sharp increase over the past two decades in intrafirm trade, which is unlikely to use external financing. If the widely circulated numbers of trade finance reaching $10 trillion and world trade flows reaching $14 trillion are accurate, the share is closer to 70 percent.[2] The precise share of trade relying on trade finance does not matter much because, indisputably, trade finance is essential to trade. However, these uncertainties illustrate the poor quality of data on trade finance.

If it is so hard to measure total trade finance, estimating a shortfall cannot be more than a best guess. According to the World Trade Organization (WTO), a shortfall, albeit limited, existed before the 2008–09 crisis. In March 2007—on the eve of the financial crisis and more than a year before the bankruptcy of a major participant in trade finance (Lehman Brothers) and the collapse in trade—the WTO reported a transaction gap of less than $200,000 (WTO 2007). By the time of the WTO's Expert Group Meeting on Trade Finance in November 2008, market participants' broad estimate of the shortfall in trade finance had increased to $25 billion.[3] Four months later, in March 2009, at another WTO Expert Group Meeting, the estimate was revised to $100 billion–$300 billion, but it seemed that there was no consensus: "On the current market situation, *most* participants agreed that although trade flows were decreasing sharply, constraints to trade finance still existed" (WTO 2009, emphasis added).[4] In May 2010, participants in another Expert Group Meeting indicated that liquidity had returned to the trade market, although some regions (notably Sub-Saharan Africa) continued to face constraints (WTO 2010).

Jumping the Gun or Jumping on the Bandwagon?

Despite the lack of reliable data and the fact that the then-estimated shortfall accounted for only 0.25 percent of trade finance and less than 0.2 percent of world trade, the WTO put trade finance in the spotlight and marshaled strong support to trade finance by as early as the end of 2008.

Initiatives mushroomed. International and government-backed institutions were mobilized and responded quickly. The capacity of export credit agencies as well as regional and multilateral development banks was increased, new products were launched, and cofinancing with the private sector was encouraged,

among other efforts (Chauffour and Farole 2009). Moreover, several countries used their official reserves to supply banks and importers with foreign currencies. The international effort to support trade finance culminated in April 2009 when the G-20 pledged to "ensure availability of $250 billion over the next two years to support trade finance" (G-20 2009) and the World Bank announced the Global Trade Liquidity Program, which could support up to $50 billion of trade.

The response was unusual not only in strength, but also in speed. It started as early as October 2008 (arguably even before then), when the magnitude of the collapse in trade was not even known! Initially there were concerns that the financial crisis (more precisely the credit crunch) that started in 2007 could spread to trade finance. However, at least until the first half of 2008, trade finance "was stable with volumes and rates at normal levels."[5] Signs of possible tension appeared only when the financial crisis morphed into a full-blown economic crisis.

At that time, the political economy was ripe to boost the availability of trade finance. Long before the crisis, many countries had been lobbying at the WTO to find ways to increase the availability of trade finance for developing countries. The Aid for Trade initiative, whose scope explicitly includes trade finance (WTO 2006), was seen as providing leverage (Auboin 2007). The 50 percent increase in the ceiling of the International Finance Corporation's (World Bank Group) trade finance guarantee in October 2008 was welcomed by the head of the WTO as "Aid for Trade in action."[6]

The economic crisis provided extra leverage. Boosting the availability of trade finance was seen not only as an answer to the concerns of developing countries but also as a means to address the global crisis. Lessons were evoked from the Great Depression and the role played by trade finance in recent financial crises (such as in Asia and in Argentina and Brazil).[7] Supporting trade finance was also branded as part of the international fiscal stimulus. With a high political profile and no strong interest to oppose it, the policy response could only be strong and swift.[8]

An Overestimated Problem?

Precautionary action against anticipated problems has some merit. Nonetheless, the problem with trade finance may have been overestimated. It has been claimed that the shortage in trade finance could account for 10–15 percent of the decline in trade (*Financial Times* 2009). However, available econometric estimates suggest that the shortfall would need to be much larger than the one reported to contribute that much to the drop in trade flows (Ronci 2004; Thomas 2009; Korinek, Le Cocguic, and Sourdin 2010).

Some econometric studies on the mechanism of the trade collapse fail to find any support for the idea that trade credit played a role (Levchenko, Lewis, and

Tesar 2010). Moreover, from October 2008 to January 2009, when the drop in trade took place, trade volume declined much more than trade finance (possibly four times more, according to Chauffour and Farole [2009]), suggesting that the drop in demand explains the contraction in trade finance.

The perception that the supply of trade finance played a significant role in the crisis stems from the fact that the collapse in trade has been so sharp and so much larger than the contraction in global output (Levchenko, Lewis, and Tesar 2010) that it left the impression that something other than the drop in demand must have hampered trade. Because financial problems triggered the crisis, disruption in trade finance was seen as a possible culprit. However, there is no need to invoke a trade finance shortfall to explain the recent plunge in trade.

First, the rise in the fragmentation of production increased the elasticity of trade to income from under 2 percent in the 1960s and 1970s to about 3.5 percent in recent years (Irwin 2002; Freund 2009). As a result, trade flows reacted more in 2008–09 than in past crises to changes in global output. Supporting this view are these facts: (a) East Asia, the region most involved in the international supply chains (and thus the region exhibiting the largest elasticity of trade to income), is the region that suffered from the largest fall in trade, and (b) the 2008–09 collapse in U.S. trade was exceptional by historical standards but was driven by the drop in trade in intermediate goods (Levchenko, Lewis, and Tesar 2010).[9]

Second, the collapse in trade in goods, which attracts attention, is larger than the drop in total trade because trade in services has been much more resilient than trade in goods. This supports the idea that the initial drop in trade in goods was amplified by a destocking effect (which cannot affect trade in services because services cannot be stored). Firms, anticipating a slowdown in growth, drew down inventories, thus magnifying the drop in trade. A close analysis of the timing as well as the sectoral and regional patterns of trade flows supports this interpretation (*Economist* 2009).

Third, the plunge in trade is often calculated in nominal terms on a year-on-year basis. This calculation overestimates the decline in *real* trade because commodity prices had fallen dramatically since their historically high level of mid-2008. For example, Levchenko, Lewis, and Tesar (2010) calculate that price explains 40 percent of the collapse in U.S. imports and about 27 percent of the collapse in U.S. exports.

All these points do not negate the potential role of a trade finance shortage in the plunge in world trade. Rather, they highlight that the decline in trade is not necessarily much larger than the slowdown in global output would suggest. Thus, the importance of the collapse in trade does not suggest that "something else"—like a disruption in trade finance—has *necessarily* played a *significant* role.

In sum, the lack of reliable data is so dire that there is no certainty that the decline in trade finance contributed significantly to the decline in trade. This lack prevents observers from solving the familiar causality problem: did the drop in trade cause trade finance to contract (a demand shock), or did a shortfall in trade finance contribute to the drop in trade (a supply shock)?

Surveys to Fill the Information Gap

To remedy the lack of data, several organizations came to the rescue with surveys in early 2009:

- *The International Chamber of Commerce* (ICC) surveyed 122 banks in 59 countries (ICC 2009).
- *The International Monetary Fund* (IMF) and the *Bankers' Association for Finance and Trade* (BAFT)—now merged with International Financial Services Association (BAFT-IFSA)—surveyed 44 banks from 23 countries (IMF-BAFT 2009).
- *The Institute of Development Studies* (IDS) surveyed 31 medium- and large-scale, export-oriented Sub-Saharan African firms (Humphrey 2009).
- *The Organisation for Economic Co-operation and Development* (OECD) surveyed its members about measures taken at the national level regarding officially support export credit (OECD 2009).
- *The World Bank* surveyed 425 firms and 78 banks in 14 developing countries (Malouche 2009).

According to these surveys, the problem with trade finance was not its availability but its cost.

Trade finance was somewhat more difficult to get in some regions of the world (mostly in emerging markets), in some sectors (those perceived as more risky than others), and for some firms. Nonetheless, the surveys did not depict an overly dark picture. Few of the African firms surveyed by IDS faced any problems with availability of trade finance (Humphrey 2009). Firms surveyed by the World Bank indicated that "the drop in global demand was their top concern and that trade finance was not a major binding constraint" (Malouche 2009). The Australian government reported to OECD that it holds regular consultations with market practitioners and that "anecdotal evidence to-date suggest to us that the slowdown or contraction in international trade is leading the slowdown in trade finance and export credit insurance uptake rather than a financial crisis-induced tightening of trade credit and credit insurance preventing willing buyers and willing sellers from doing international trade deals" (OECD 2009).

Among the banks responding to the ICC survey, 47 percent reported a drop in the volume of letters of credit, while 32 percent reported an increase and 21 percent reported no change (ICC 2009). In the IMF and BAFT-IFSA survey, "banks in advanced countries reported roughly the same number of trade finance transactions in the final months of 2008 as occurred at the end of 2007. But emerging market banks reported an average 6 percent decline in trade finance transactions" (Dorsey 2009).[10]

This limited decline in transactions may reflect several factors and not necessarily a shortage. Tighter guidelines by banks in light of risk reassessment played a role, but the drop in transactions may have also reflected an increase in the cost of trade financing and a drop in the aggregate demand for trade financing because of the contraction of trade.[11] Although 57 percent of banks in the IMF and BAFT-IFSA survey explained the drop in the value of trade finance transactions between October 2008 and January 2009 as due to less credit availability, 73 percent mentioned a fall in the demand as a reason, and 43 percent cited the fall in transaction prices, which likely reflected the drop in commodity prices. In the World Bank survey, banks "confirmed the increase in pricing and a drop in volume of trade credit. Yet, the drop in volume seems to reflect lack of demand due to the global recession rather than a consequence of the increase in pricing" (Malouche 2009).

For some exporters, trade finance may have been available but unaffordable. Surveys clearly showed that the price of trade financing shot up. The main reasons for this price increase appear to have been a perceived increase in default risks, a rise in the banks' cost of funds, higher capital requirements, and a decline in the value of collateral (for example, linked to the drop in commodity prices).

In this context, a policy that targets only the quantity of trade finance would most likely fail. If banks are reluctant to lend because of perceived risks, boosting the availability of trade finance is unlikely to result in more lending. As Malcolm Stephens, a former secretary-general of the Berne Union, pointed out in his analysis of trade finance during the Asian crisis, "The traditional role of export credit agencies is to support trade and to facilitate trade. They are less effective in, somehow, trying to create or initiate trade, especially, in circumstances where neither importers nor exporters are really willing (or able) to trade with each other" (Stephens 1998).

A policy that targets the risks would have more impact. According to World Bank President Robert Zoellick, under its Global Trade Liquidity Program, the Bank "would underwrite the riskiest part of the lending, while private banks would provide the bulk of the less risky elements" (*Financial Times* 2009). Although likely to be more successful, this kind of initiative raises the potential issue of moral hazard.

Need for Regulatory Change?

Policy makers may also tackle the reasons for the increased risk aversion and cost of funds. According to some bankers, regulatory changes could help. They argue that Basel II has a pro-cyclical effect on the supply of credit and particularly affects trade finance, most notably trade finance with emerging markets.

This complaint is not new, but recently it has been voiced more forcefully, notably at the WTO expert meetings (Hopes 2008; WTO 2008a, 2008b, 2009, 2010). Moreover, it has been relayed by Robert Zoellick (who publicly complained about a regulation that tripled the amount of capital needed to back trade finance [*Financial Times* 2009]) and Pascal Lamy (who wrote to the general manager of the Bank for International Settlements and to the chairman of the Financial Stability Forum). However, only one-third of the 15 banks that responded to the IMF/BAFT-IFSA question about the impact of Basel II on their capacity to provide trade finance indicated that it had a negative impact; 27 percent reported it had a positive impact, and the remaining banks reported it had no impact.

Since the 2008–09 crisis, calls for changing the rules have been frequent. They go beyond the call by the Group of 20 (G-20) for "regulators to make use of available flexibility in capital requirements for trade finance" (G-20 2009). For example, in December 2008, the European Commission introduced temporary changes in the Commission State Aid Guidelines on short-term export credits. It increased the flexibility of an existing escape clause so that official export credit agencies can cover short-term transactions in the OECD if the private market fails to do so (OECD 2009). In January 2009, the participants in the OECD's Arrangement on Officially Supported Export Credits decided to adjust some of the disciplines of the Arrangement to facilitate the financing of projects. These modifications allow signatories to provide officially supported export credit at more favorable terms and to increase the limit of the share of officially supported export credit in intra-OECD project finance. Then, in June 2009, OECD countries agreed to boost official backing for exports of renewable energy and nuclear power equipment by offering more generous terms.[12]

These changes are rather limited, but a lesson from past crises is that pressures to use officially backed export credit to protect or stimulate national exports are considerable during a worldwide recession. This was the case during the Great Depression—an experience that led to the creation of the Berne Union and "apparently convinced the GATT [General Agreement on Tariffs and Trade] founders that export subsidies exacerbate international political tensions and should be eliminated" (Baldwin 1980).[13]

During the 1970s crisis, world leaders pledged to refrain from resorting to protectionism. Today's leaders do the same. However, they do not follow their

predecessors who also pledged to avoid competition in official trade credit. The concern about competition in official trade credit was so great in the 1970s that, to prevent it, OECD countries negotiated an Arrangement on Officially Supported Export Credit (Ray 1986). When international trade faced another contraction in the early 1980s, export subsidies came back in the form of tied aid and mixed credit (Byatt 1984; Messerlin 1986; Ray 1986).[14]

The rules currently in place were designed to prevent the mistakes of previous crises, namely competitions in export subsidies (through favorable terms) that not only distorted international trade and domestic protection but also proved to be fiscally expensive. They act as a safeguard, and no race for export subsidies has taken place in the current crisis. However, agricultural export subsidies and the lingering Airbus-Boeing dispute are reminders that the temptation to help domestic firms' exports is not a thing of the past. Moreover, pressures on policy makers to help domestic firms may increase if the recovery is not vibrant enough to rapidly reverse the rise in unemployment. The system may need more flexibility, but the lessons from history should not be forgotten.

Conclusions

Panic stemming from a sharp and sudden decline in trade flows, memories of the Great Depression, and the role of trade finance in recent financial crises, as well as a favorable political economy, explain why policy makers strongly and rapidly supported trade finance in response to the 2008–09 global financial crisis.

However, the trade finance shortfall and its contribution to the fall in trade flows are likely to be overestimated. Lack of reliable data is so dire that it is difficult to know whether a drop in the *supply* of trade finance contributed to the decline in trade or whether the decline was only due to the drop in *demand* for trade finance. In 2008–09, trade finance was somewhat harder to get in some parts of the world or for some firms but, in aggregate, available evidence suggests that a shortfall is unlikely to have contributed significantly to the plunge in international trade.

The cost of trade financing was more of a problem than its availability. If the rising cost was due to increased risk aversion, boosting the supply in trade finance is likely to be ineffective. Rather than trying to increase the supply of trade finance in particular, policy makers should help credit flows in general to return to normal. There are two main reasons to support this strategy. First, the access to intermediated trade finance appears to be less a constraint for exporters than preexport financing, which is similar to a working capital loan (Chauffour and Farole 2009; Humphrey 2009). Second, firms constrained in their access to institutional credit are likely to face difficulties in extending trade credit. Fixing

the financial system will ease the credit constraint and help boost the interfirm trade credit that accounts for a large share of trade finance.[15]

Moreover, boosting the supply of trade finance is risky. Relaxing the rules limiting the competition of government-backed exports credit (on the grounds that more flexibility is needed to provide more trade financing) could make it more difficult to resist pressures to help domestic exporters. In addition, in many countries, the recession and large fiscal stimulus packages have led to ballooning fiscal deficits and public debts. In this context, boosting the availability of trade finance is probably not the best use of scarce public resources, and encouraging export credit agencies to take more risks could result in fiscal contingent liabilities.

Notes

1. Chauffour and Farole (2009) describe the various instruments. Petersen and Rajan (1997) discuss interfirm credit.

2. In 2008, trade finance reached $10 trillion–$12 trillion and trade flows reached $15 trillion (Auboin 2009). These numbers imply a share ranging from 67 percent to 80 percent.

3. It is interesting to note the precise nature of this estimate: "Market participants gave a broad estimate of the gap in the trade finance market of $25 billion, which was the amount of trade finance that banks kept on their books but could not off-load on the secondary market" (WTO 2009).

4. A caveat to this estimate: "this being roll-over finance, the gap would nevertheless need to be divided in terms of net flows by the average maturity of letters of credit, which could vary widely across areas of operation" (WTO 2009).

5. WTO Director-General Pascal Lamy's report to the WTO Trade Negotiations Committee in October 2008 (WTO 2008c).

6. WTO Director-General Pascal Lamy's report to the WTO General Council in November 2008 (WTO 2008c). The new ceiling would be doubled one month later to reach $3 billion.

7. Problems with trade finance were sometimes cited among the main risks for trade looking forward. For example, in his address at the WTO's Second Global Review of Aid for Trade in July 2009, Waleed Al-Wohaib of the Islamic Development Bank claimed that international trade was facing "the twin risks of rising protectionism and dwindling trade finance" (Wohaib 2009).

8. On the political economy of boosting trade finance, see also Baldwin (2009).

9. Levchenko, Lewis, and Tesar (2010) also note that although the drop in trade was exceptional by historical standards, it was comparable to the drop experienced during the 2001 recession when elasticity of trade to income was already very high.

10. There are signs that the situation deteriorated somewhat between October 2008 and January 2009.

11. It is difficult to untangle the reasons for the decline in demand for trade financing. The drop in demand due to lower trade flows can be offset by the increase in demand for the protection offered by trade finance in light of increased risks. In the ICC survey, banks reported such an increase in demand for protection.

12. See "Modifications to the Arrangement on Officially Support Export Credits" (http://www.oecd.org/document/40/0,3343,en_2649_34169_42168680_1_1_1_1,00.html) and "OECD Countries Boost Official Support for Renewable and Nuclear Energy Exports" (http://www.oecd.org/document/10/0,3343,en_2649_34169_43152266_1_1_1_37431,00.html).

13. Auboin (2007) discusses the WTO's agreement on subsidies and countervailing measures and their link with OECD rules.

14. Ray (1986) provides the history of the negotiations leading to the OECD Arrangement. The intense debates on export-credit subsidies that took place in the first half of the 1980s in both the United Kingdom and France are summarized in Byatt (1984) and Messerlin (1986).

15. For analyses of this mechanism, see Petersen and Rajan (1997) and Love, Preve, and Sarria-Allende (2007).

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15

MARKET ADJUSTMENT VERSUS MARKET FAILURE

Jean-Pierre Chauffour and Thomas Farole

As noted in preceding chapters, G-20 leaders agreed at their April 2009 London Summit to ensure $250 billion of support for trade finance to promote global trade and investment.[1] Notwithstanding this increased activism around trade finance, it remains largely unclear how much of the contraction in international trade may have been caused by restrictions in the supply of trade finance and to what degree this represents a legitimate target for intervention.

For intervention to be justified, at least three preconditions should be met:

- The scale of the supply gap should be significant.
- The shortfall in the provision of trade finance can be attributed to a structural or temporary market failure.
- Targeted interventions can achieve the desired response by market participants (that is, supplying trade credit at market-clearing prices) without creating unacceptable moral hazards or subsidizing credit that would have been provided in any case.

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This chapter discusses these issues with a view to addressing the following questions: Is there a trade finance gap and, if so, what is its scale and nature? Is there a rationale for intervention to support trade finance? And what tools and policies are most appropriate to address the situation?

Is There a Trade Finance Gap?

By providing critical fluidity and security to enable the movement of goods and services, trade finance lies at the heart of the global trading system (Auboin and Meier-Ewert 2008). Some 80–90 percent of all trade transactions are said to be financed.[2] Trade finance mechanisms exist to support two fundamental aspects of the trading process*: risk mitigation* and *liquidity*.

Characteristics and Risks of Trade Finance

Trade finance differs from other forms of credit (for example, investment and working capital) in several ways that may have important economic consequences during periods of financial crisis.

Perhaps its most distinguishing characteristic is that it is offered and obtained not only through third-party financial institutions but also through interfirm transactions. That interfirm trade finance is so prevalent is typically explained by certain features that enable trade partners to better assess and mitigate risk than third parties, including an *informational advantage* and the advantage of trust, or e*ncapsulated interest* (Giannetti, Burkart, and Ellingsen 2008).

Relative to a standard credit line or working capital loan, trade finance—whether offered through banks or within the supply chain—is relatively illiquid, which means that it cannot easily be diverted for another purpose. It is also highly collateralized; credit and insurance are provided directly against the sale of specific products or services whose value can, by and large, be calculated and secured.[3] The illiquidity and collateralization of trade finance suggest that the risk of strategic default should be relatively low, as should be the scale of loss in the event of default.

However, the international nature of trade finance may imply greater potential risks, including the following:

- Higher macro-level or country risks, such as from exchange rate fluctuations, changes to policy, conflict, and political upheaval (Menichini 2009)
- Higher counterparty risk resulting from challenges of cross-border enforcement, which raises the risk of strategic default by suppliers, creating a problem of "credible commitment" across borders (Ellingsen and Vlachos 2009)

- Limited or nonexistent data by which to assess counterparty credit risk in many countries (for example, where public credit registry coverage or public access to accounts or court proceedings are limited).

These risks may be compounded in the case of supplier-extended credit because most suppliers operate in credit chains, which are vulnerable to shocks because they can quickly propagate problems across the chain (Kiyotaki and Moore 1997; Raddatz 2010).

Impact of Financial Crises on Trade Finance

Although trade finance was neither a proximate nor ultimate cause of the 2008–09 financial crisis, it quickly became collateral damage. As the crisis unfolded, the availability of trade finance tightened and its cost rose because of growing liquidity pressure in mature markets and a perception of heightened country and counterparty risks. However, with no comprehensive and reliable data on trade finance available, an overall assessment of trade finance developments in 2008–09 remains difficult. Historical precedents and selected information indicates that—along with global demand—trade finance flows declined in the last quarter of 2008.

Trade finance has tended to be highly vulnerable in times of economic crisis. During crisis episodes in the late 1990s and early 2000s in Argentina, Brazil, Indonesia, the Republic of Korea, Pakistan, Thailand, and other emerging economies, local banking systems encountered liquidity and solvency problems that made it difficult for local producers to get pre- and postshipment finance, open letters of credit (LCs), and obtain advance payment bonds and other forms of domestic trade finance. In 1997–98, for instance, bank-financed trade credits declined by about 50 percent and 80 percent in Korea and Indonesia, respectively. During the crisis in Latin America in the early 2000s, trade credits in Argentina and Brazil declined by as much as 30–50 percent (Allen 2003).

As noted in the next section, most banks reported a decline in the value of their LC business in 2008–09, and global buyers and suppliers indicated that foreign sales had been delayed or canceled due to both drops in new orders and difficulties in obtaining trade finance (Arvis and Shakya 2009). Evidence of liquidity pressure on trade finance was also reported by the banks participating in the Global Trade Finance Program of the World Bank Group's International Finance Corporation (IFC). Major international banks in the program have been unwilling to assume a portion of the risk in individual transactions, leaving the underlying risk to the IFC alone (International Financial Consulting 2009).

The firms most affected are generally those highly exposed to the international financial market (for example, in Brazil); small and medium enterprises (SMEs)

that are crowded out by large firms in accessing trade finance (for example, in Chile and the Philippines); and firms that are highly integrated in global supply chains (for example, in India, Indonesia, Tunisia, and Turkey). The firms least affected are those in low-income countries with underdeveloped domestic banking systems, especially in Sub-Saharan Africa (for instance, Ghana).

However, a World Bank survey indicated that the biggest financing constraint—particularly for SMEs and firms operating in global supply chains (which generally work through open-account methods)—is not access to trade credit (for example, LCs) per se but rather preexport finance (Malouche 2009). It is here where banks have become particularly stringent in their risk evaluation, especially regarding emerging-market participants and SMEs. As the crisis forces exporters who normally self-finance to seek additional liquidity, constraints on preexport finance may become the most important inflection point of the trade finance gap.

Perhaps more important than supply alone, the price of trade finance and the need to secure transactions through guarantees and insurance have increased markedly. Tight credit conditions have allowed lenders to drive up interest rates for their loans in many countries, especially in emerging markets. By the end of 2008, trade finance deals were offered at 300–400 basis points over interbank refinance rates—two to three times more than the rate at the end of 2007. The cost of LCs reportedly doubled or tripled for buyers in emerging countries, including Argentina, Bangladesh, China, Pakistan, and Turkey. A joint International Monetary Fund (IMF) and Bankers' Association for Finance and Trade (BAFT)—now merged with International Financial Services Association (BAFT-IFSA)—survey confirmed this cost hike, finding widespread increases in pricing of all trade finance instruments relative to banks' costs of funds (IMF-BAFT 2009). A large majority of respondents indicated that the price of various types of LCs increased because of an increase in their own institutions' cost of funds (80 percent of respondents), an increase in capital requirements (60 percent of respondents), or both.

A recent attempt to disentangle the effects of trade finance from demand shocks—using disaggregated bilateral import and export data from Germany, Japan, and the United States—shows that in industries more dependent on interfirm financing, trade with countries more exposed to the crisis has not been affected more than trade overall (Freund and Klapper 2009). This finding suggests that trade finance has not been affected more adversely than other types of financing that firms rely on. However, Freund and Klapper also find some evidence that, in countries more affected by the crisis, trade has fallen more sharply in industries that depend more on short-term financing (broadly defined). This implies that financial needs have affected trade patterns during the crisis. However, the results do not necessarily suggest that a shortage of trade finance has constrained overall trade growth. Rather, in industries with high financial dependence, trade has

shifted away from firms in the most-affected countries toward those in less-affected countries.

These findings show that bank-intermediated trade finance is only a small part of the story. Most exporters extend credit within the supply chain through open-account transactions and fund working capital or preexport finance through retained earnings. This means that in the short term most firms were not as badly constrained by restricted access to trade finance as anticipated. Yet, the massive drop in export orders from the end of 2008 through early 2009 means that the internal liquidity of these firms is likely to have dried up. And the survey evidence suggests that this type of financing (rather than necessarily LCs and other guarantees) pushed banks to be more selective and impose adverse conditions (such as greater collateral requirements and higher interest rates), particularly on SMEs. So although the interbank crisis of confidence was over by mid-2009, there was still danger of a second-round effect that could constrain trade and hinder the recovery.

Why Intervene to Address a Trade Finance Gap?

A critical question is whether the decline in trade finance supply resulted from market or government failures and, if so, whether there is a rationale for intervention or correction to address those failures. A precondition for answering this question is to understand what a trade finance gap is and what could contribute to its existence.

Trade Finance Gaps and How They Occur

First, a drop in trade finance could simply be the consequence of declining trade volumes. As long as those trade declines did not derive wholly and directly from *trade* finance constraints, a decline in demand for trade finance cannot be said to actually constitute a gap. In fact, the uncertainty brought about by the crisis might actually *increase* demand for trade finance (at preexisting price levels) as trading partners resort to more formal, bank-intermediated instruments to reduce the higher expected probability of default in open-account trade.[4]

Indeed, in a recent International Chamber of Commerce (ICC) survey, 48 percent of banks indicated they had experienced an increase in demand for issuance of bank undertakings between the last quarter of 2007 and the last quarter of 2008 despite stagnant trade volumes (ICC 2009). These developments are consistent with Berne Union data about export credit and investment insurance agencies, which indicate that, in the last quarter of 2008, total new insurance commitments fell by much less (7 percent) than trade volumes (20 percent), with medium- and long-term commitments remaining constant in volume (Berne Union 2009).

A real "gap" would emerge only when the supply of trade finance is insufficient to clear markets, either because it is not being supplied at all (missing markets) or because prices are temporarily too high to meet demand (overshooting markets).

Missing Markets: Insufficient Supply

Although trade finance transactions are dispersed globally, overall volumes are highly concentrated in a few major international banks, several of which (Lehman Brothers, for instance) went under in the latter part of 2008. Their business would be expected to be reallocated relatively quickly among other suppliers, at least in an efficiently functioning market. However, the severe liquidity constraints and a collective collapse of confidence may, in the short term, mean that alternative banks were unable or unwilling to take on this business. Thus, there might well be a need for transitory intervention to address this supply gap in the market.

There are a number of reasons that bank deleveraging and risk-adjustment processes in response to the financial crisis might unfairly restrict the supply of trade finance more than other forms of bank credit, even though trade finance should be a relatively low-risk product line.[5] Part of the problem may lie in the temporary inability of the market to properly calculate the risks; in other words, it is not a problem of risk per se, but of uncertainty.[6]

Uncertainty plagues trade finance (at least bank-intermediated trade finance) because of the number and nature of the parties involved. For example, in the case of LCs, the bank is reliant on three parties (the customer, the trade partner, and the partner's bank), two of which are in foreign countries. This may not have been perceived as a problem when banks were well capitalized and profits high. However, there is evidence to suggest that the 2008–09 economic crisis brought a systematic recalibration of international risk relative to domestic risk. Such a result stems from both real perceptions of higher macro-level risks and a herdlike "flight to safety" that works against international transactions.

Unique to this crisis is not just that developed-country banks lack confidence in their developing-country counterparts but also the other way around. This collective lack of confidence within the banking system may squeeze trade finance customers more than customers of traditional lines of credit because the most common forms of bank-intermediated trade finance, such as LCs, rely on *interbank* payments. This situation is particularly problematic for exporters in developing countries, who often lack access to other guarantees (for example, through export credit agencies [ECAs] and export-import banks) to cover the risks of nonpayment from developed-country importers. The problem of reduced interbank trust suggests a need for intervention—at the very least in emerging

markets—either through the use of guarantees to restore confidence or through the imposition of institutions to ensure transparency and enforcement.

Exacerbating the uncertainty are information asymmetries in international markets, particularly acute in trade finance due to lack of transparency (Allen 2003; Auboin and Meier-Ewert 2008).[7] In the best of times, such informational problems raise the risk of adverse selection. But as Ellingsen and Vlachos (2009) point out, the problem of ensuring a credible commitment from borrowers becomes more severe in a liquidity crisis because of the increased incentive to hoard cash. Extending their argument to the current crisis—characterized by large lending spreads and low returns for most private investors—banks may react by substantially reducing the availability of trade credit and diverting it to credit lines in which the counterparty's incentive to hoard cash is relatively lower. Thus, the risk of strategic default is high, particularly so if there is less trust between banks operating across borders. This moral hazard might be contained through intervention to reduce the incentives to divert credit for other purposes.

The short-term nature of trade finance is also an issue. With the liquidity crisis forcing banks to recapitalize as quickly as possible, trade finance credit lines—most of which have terms of less than 180 days—are relatively easy to call in and so tend to be the first lines of credit that banks cut. Although banks may maximize their own gains by choosing liquidity over loans, in doing so they may fail to take into account the wider benefits to their customers of increased productivity, improved liquidity, and their subsequent spillovers to firms down the supply chain.[8]

Finally, strong political-economy factors may have contributed to the insufficient supply of trade finance during the financial crisis. Because much of the response to the crisis has taken place at the national level, through central banks providing liquidity to domestic banks, there is likely to be strong political pressure and moral suasion to use these funds to support domestic lending. Informal requirements for lending locally have been introduced in several countries. Interventions do create distortions, not only domestically but also across borders, affecting competition across segments of the credit system. This potential for distortionary effects suggests the possible need for further intervention to reestablish the level playing field and support collective action in this regard.

Interfirm trade finance may also face a problem of missing markets. When firms withhold credit for fear of default, buyers are forced to resort to the formal, bank-intermediated market. Similarly, because retained earnings that normally fund preexport working capital dry up in the face of recession, exporters may be forced to seek extended bank credit lines, exacerbating the gap between market demand and supply of trade finance.

Overshooting Markets: A Mismatch of Supply and Demand

The largest piece of the trade finance gap may result not from a lack of demand or supply, but from the two failing to meet—specifically, when the banks' trade finance supply is priced too high to meet market demand. Again, specific aspects of trade finance may make it relatively more prone to this form of market failure, particularly during a financial crisis.

On the supply side, systematic recalibration of risk has forced a downward shift in the supply curve for all kinds of credit. If risks were simply adjusting to new market realities, the cost of risks should at least in part be passed on to customers. Here, price rigidities may come into play. The current economic crisis appears to have brought with it strong deflationary pressure. As a result, market prices for most goods became sticky, giving traders little scope to pass these costs on to customers.

Changes in regulatory regimes (specifically Basel II) may also temporarily affect the efficient functioning of markets—specifically, setting the floor price above that which would clear the market. Although it is not specific to trade finance per se, Basel II characterizes risk (that is, focusing on counterparty risk—normally proxied simply by country risk—rather than on performance risk) in a way that penalizes trade finance because the risk premiums on international transactions tend to be relatively high despite the low performance risk of trade finance. The case is aggravated further for trade involving developing countries, which generally have the highest risk ratings.

Virtually all of the market failures discussed above derive from the severe crisis of confidence affecting markets, in turn leading to greater uncertainty, recalibration of risks, and changed lending behavior. Such a problem of confidence is generally a transitory phenomenon. Markets are already adjusting in terms of the view that risk is assessed and treated. In any adjustment, markets will probably overshoot the equilibrium for a time. In this case, the result is that where markets may have systematically underestimated risk in recent years, they may well be overestimating it in the short term. There may be a case for government intervention that can speed up the adjustment process or that compensates the short-term losers.

Additional Rationales for Intervention

Two final rationales for intervention in support of trade finance lie in the potential multiplier effects inherent in it. Because of the strong interaction between bank-intermediated credit and interfirm credit, a banking sector liquidity shock

not only reverberates down supply chains, but also subsequently resonates back into the financial system as a result of increased defaults (Escaith and Gonguet 2009). Thus, trade finance may amplify and prolong the initial crisis, particularly in open economies that are integrated into global production networks. At the same time, an easing of the shock (for example, through the injection of liquidity or a demand stimulus) can also spread quickly across the chain. But because no individual seller is likely to fully take into account the cross-supply-chain gains of extending credit (including both demand and liquidity gains), there may be an insufficient provision of interfirm trade credit along a supply chain.

Second, the complementary nature of trade finance and other forms of firm financing (for example, investment and working capital) suggests that intervention to support trade finance could have a multiplier effect. Because trade credit cannot easily be diverted from production, it actually reduces the likelihood of default on other forms of firm-level financing (Ellingsen and Vlachos 2009). Thus, interventions to increase the flow of trade finance may reduce the cost of capital more generally or at least improve banks' liquidity positions.

Appropriate Intervention Approaches

The international community has had significant experience in dealing with financial crises recently as a result of the Asian crisis and further emerging-market crises in Latin America and in the Russian Federation and Turkey, among others. As such, a wide range of policies, tools, and programs have been implemented to address problems in trade finance markets—targeting specific issues such as liquidity, risk perception, and collective action.

Lessons Learned

Several important lessons can be drawn from the successes and failures of past interventions (Allen 2003):

- Interventions to support trade finance must be accompanied by macro and structural reforms.
- Where the domestic banking sector is weak, interventions that rely on the sector for intermediation are likely to fail.
- If the intervention doesn't target pre- and postexport liquidity, there may be no trade transaction to finance.
- The intervention must implement initiatives in a timely manner, including winding them down when markets begin to normalize.

- Interventions must be designed to ensure they are used by the specific parties being targeted.
- Interventions must ensure that pricing is appropriate, balancing between the risks of moral hazard and failing to complete markets.

Interventions to Date

Official interventions in support of trade finance multiplied in late 2008 and early 2009. As of April 2009, a number of economies and institutions (listed in annex 15.1) had launched domestic and multilateral interventions:

- National authorities have intervened to provide blanket liquidity to banks and targeted trade credit lines and guarantees for exporters that were cut off from trade finance.
- Governments have increased their support of ECAs to reflect substantial increases in demand after credit from traditional sources dried up.[9]
- Development institutions have taken actions to help ease access to trade finance.

For example, in response to the financial crisis, the IFC, among other actions, doubled its Global Trade Finance Program to $3 billion to facilitate trade by providing guarantees that cover the payment risk in trade transactions with local banks in emerging markets. To deal with the liquidity constraint, the IFC also introduced a Global Trade Liquidity Program, which, in collaboration with official and private partners, was designed to provide up to $50 billion of trade liquidity support in the three years following its launch in July 2009.[10]

Regional development banks such as the African Development Bank, the Asian Development Bank, the European Bank for Reconstruction and Development, and the Inter-American Development Bank also launched or expanded their trade finance programs.

Ten Principles for Intervention

Drawing on the lessons from past crises, the authors propose a set of 10 principles for effective public actions to support trade finance in the wake of the 2008–09 crisis.

Targeted interventions

One clear lesson that has already emerged from this crisis is that any money flowing into the banks—unless it is properly ring fenced and conditions are

attached—is at risk of being used for recapitalization rather than lending. This risk can be overcome by asking the banks to set up special-purpose trade finance vehicles that would be required to use the new liquidity or risk capacity solely for financing trade with emerging markets.

Holistic response

Without corresponding measures to address wider liquidity issues of banks and to stimulate lending for investment and working capital purposes, neither the banks nor their customers who participate in the trade finance market will be healthy enough to do so.

Integration with existing institutions

Most trade finance operates within fairly well-established institutional relationships, using simple products such as LCs. Effective interventions in past crises have generally worked within these existing market practices and documentation and did not seek to reinvent mechanisms or to apply unduly complicated documentation or practices.

Collective action

The interdependencies in the financial system, more than ever, demand a coordinated effort to revive trade finance flows. Coordinating national interventions could send a powerful signal to market participants that could help restore confidence and eventually lower the overall cost of public intervention. Coordination at the regional level can also be effective. For example, the Asia-Pacific Economic Cooperation established the Asia-Pacific Trade Insurance Network at the end of 2008 to facilitate regional trade. The international community appears to have recognized the importance of such coordination, and initiatives coming out of the G-20 meeting in London have adhered to this approach.

Balance of risk and liquidity support

The current crisis requires interventions that address real liquidity constraints (for banks and firms) as well as those that perceived escalation of counterparty risk. A combination of ring-fenced funding to support trade finance loans as well partial guarantee programs (like the IFC's Global Trade Finance Program) that help offset the heightened risk premium in the current market may be effective to catalyze trade finance lending.

Importance of developed-market banks to emerging markets

Without attention to international banks' involvement in trade finance and acknowledgment of their huge distribution power and networks as fundamental

to the global supply chain, initiatives that are devised to address the crisis may be too fragmented to have more than a marginal impact. Any new risk capacity should be distributed by institutions having the necessary processing capacity and technical expertise. As such, financial institutions in developed markets will be key players.

Promotion of interfirm credit

There is scope for financial institutions and enterprises to promote other sources of short-term financing, particularly for the large share of the market involved in integrated global supply chains. One such instrument that may be well suited to the heightened risk environment is factoring, which involves the outright purchase of an exporter's invoices at a discount rather than the collateralization of a loan. Although factoring is still a relatively small source of credit in emerging markets, the crisis affords an opportunity to expand factoring in both low-income and emerging countries.

Level playing field in terms of risk weight

As a result of Basel II, market dynamics, and domestic political pressures linked to bank bailouts, banks are increasingly going to give preference in their capital management processes and lending decisions to either domestic customers or those with a favorable risk profile. One way to offset the resulting risk handicap that trade finance counterparties in emerging markets incur is to provide partial risk guarantees from AAA-rated institutions, along the lines of the programs offered by the multilateral development banks. In the short term, at least, promotion of continued flexibility in the implementation of Basel II risk weighting may also help to give some relief to trade finance.

Improved transparency

The lack of available loss data for trade finance transactions—as well as participants' one-size-fits-all assumption that all trade is low-risk—are major factors in the specific problem of uncertainty in the trade finance market. This can be remedied only through a concerted collaboration of all the major trade finance banks to collate default and loss data so that appropriate relief can be argued with regulators and the Bank for International Standards. The creation of a Berne Union of banks as a forum for regular, confidential sharing of such data could be a potential long-term solution. In interfirm credit markets, extending public credit registers and voluntary exchange mechanisms to developing countries (where these systems are often still being designed) and promoting the sharing of this information across trading countries could be another important long-term solution.

Avoidance of moral hazards and wasteful subsidies

Achieving the desired aim of stimulating greater trade finance lending is a significant enough challenge. Doing so without creating substantial moral hazards or subsidizing "winners" is an even greater one. This challenge can be partly addressed through targeted programs that restrict program access to those banks and firms that really need them. However, experience has shown that achieving such restrictions often results in complicated programs that end up being too cumbersome and costly to be taken up in the market. Nonetheless, some practices have been shown to be effective in limiting moral hazards and wasteful subsidies—among them, limiting program time frames to avoid crowding out commercial banks and sharing rather than fully underwriting risk.

Annex 15.1 Governmental and Institutional Measures to Support Trade Finance, 2008–09

In the wake of the 2008–09 global financial crisis, governments have taken measures to make trade finance more accessible and affordable and also to support industries through potentially trade-distorting measures (table 15A.1).

With the liquidity crunch, international traders are requiring more secured means of payments than open accounts, increasing demand for documented transactions (for example, LCs) and guarantees. SMEs in developing countries are particularly challenged in coping with the rapidly changing risk landscape.

Table 15A.1 Governments and Multilateral Institutions that Took Trade Finance Measures, as of April 2009

Economy or institution	Trade Finance Measures
Argentina	√
Brazil	√
China	√
Ecuador	√
European Union	√
France	√
Finland	√
Germany	√
Italy	√
Netherlands	√
Portugal	√
Indonesia	√
India	√
Israel	√

(continued next page)

Table 15A.1 *continued*

Economy or institution	Trade Finance Measures
Japan	√
New Zealand	√
Norway	√
Korea, Rep.	√
Serbia	√
Taiwan, China	√
Thailand	√
United States	√
Vietnam	√
ASEAN, Japan, China, Korea, Rep.	√
Asian Development Bank	√
African Development Bank	√
G-20	√
Inter-American Development Bank	√
Islamic Development Bank	√
World Bank	√
International Monetary Bank	√
European Bank for Reconstruction and Development	√

Source: Authors' compilation.
Note: ASEAN = Association of Southeast Asian Nations. Trade finance includes loans and guarantees, foreign exchange allocations, subsidies, and other government financial support, including tax reductions and rebates.

Notes

1. "We will ensure availability of at least $250 billion over the next two years to support trade finance through our export credit and investment agencies and through the [multilateral development banks]. We also ask our regulators to make use of available flexibility in capital requirements for trade finance" (G-20 2009).

2. Although this range of 80–90 percent is widely reported, the source and evidence for the claim are unclear.

3. Of course, this is not true in all cases. Specific problems occur with products that are perishable (whose value erodes quickly or immediately), extremely differentiated (where there is little or no market value outside the intended buyer), and for services (which generally cannot be collateralized).

4. The economic crisis would be expected to threaten the viability of firms across supply chains and so would raise the overall probability of default in any interfirm financed exchange.

5. Bank deleveraging and risk adjustment is not in itself a reason for intervention. Indeed, it is a critical process to restore stability and confidence in the financial system over the medium and long term.

6. The reference here is to Knight's (1921) classic distinction between risk (where the probability of an outcome can be calculated mathematically) and uncertainty (where the probability of an outcome cannot be calculated, and so cannot be insured against).

7. It is normally difficult to get reliable information about the balance sheet of a foreign company (especially an SME) or a foreign bank.

8. This may be particularly relevant during a recessionary period, when spare capacity is likely to be high.

9. Economies that launched new programs include Chile, China, France, Germany, Hong Kong, the Nordic countries, and the United States. The programs include some specific bilateral agreements to provide targeted funding through export-import banks, including $20 billion between China and the United States and $3 billion between Korea and the United States.

10. For a more detailed discussion of the IFC Global Trade Finance Program and Global Trade Liquidity Program, see chapter 18 of this volume.

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16

SHOULD DEVELOPING COUNTRIES ESTABLISH EXPORT CREDIT AGENCIES?

Jean-Pierre Chauffour, Christian Saborowski, and Ahmet I. Soylemezoglu

International trade plunged in the latter half of 2008 and throughout 2009 (Baldwin 2009). The global financial meltdown not only led to a substantial drop in economic activity in both emerging markets and the developed world, but also made it increasingly difficult for potential trading partners to gain access to external finance. Although trade finance—due to its self-liquidating character—is generally on the low-risk, high-collateral side of the finance spectrum and underwritten by long-standing practices between banks and traders, developments have shown that it has not been spared by the credit crisis (Auboin 2009; Chauffour and Farole 2009).

The sharp drop in trade volumes was driven primarily by a contraction in global demand. Yet the decline in trade finance—itself driven mainly by the fall in the demand for trade activities but also, at least partly, by liquidity shortages—is likely to have further accelerated the slowdown. Reliable statistics on trade finance are scarce, but available evidence suggests that trade credit was the second-biggest cause of the trade collapse (Mora and Powers 2009). Anecdotal evidence from banks and traders reinforces this view, as do the sharp increase in short-term trade credit spreads and the sheer size of the trade volume decline.

Both bankers and the international community have since called upon state-backed export credit agencies (ECAs) to expand their operations to mitigate credit risk and keep trade finance markets from drying up. Given the renewed interest in

ECAs, the question arises whether a larger number of developing countries should follow suit and establish their own agencies to support exporting firms and to avoid severe trade finance shortages in times of crisis.

This chapter discusses some issues that require attention when deciding whether a country should establish an ECA as well as what shape, form, and modus operandi it should take. It also discusses why any decision to establish an ECA should be made only after a careful evaluation of the impact of such an institution on both the financial and real sectors of the economy. In addition, the choice of a sustainable business model for the ECA is crucial. The chapter does not seek to provide definitive answers as to whether, when, and how developing countries should establish ECAs. However, it tilts toward extreme caution in setting up such entities in low-income countries with weak institutions and highlights a range of factors that policy makers should consider in deciding whether an ECA should be established.

Export Credit Insurance and Guarantees: Public Agency Support?

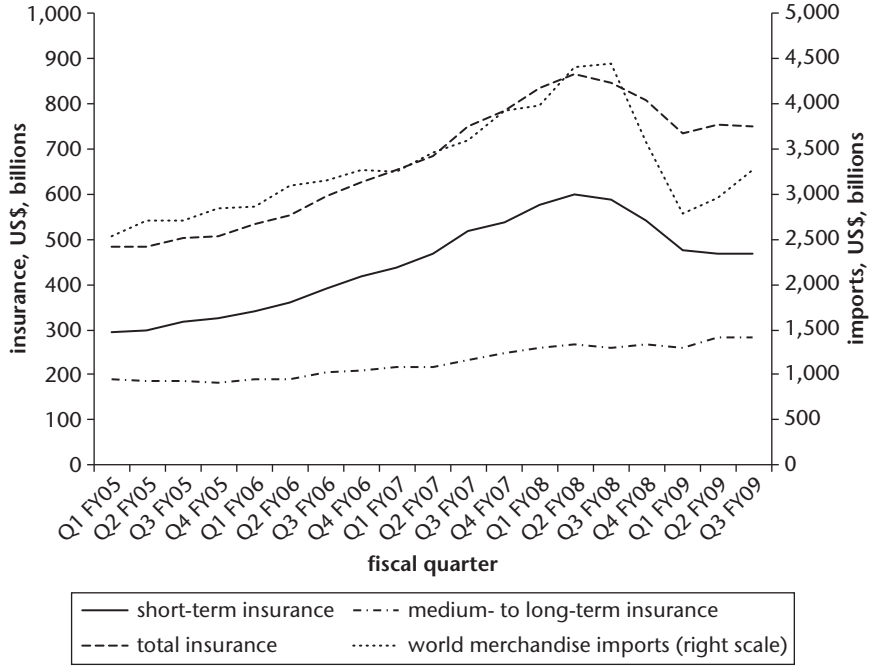
Opening the discussion is an analysis of data from the International Union of Investment Insurers (the Berne Union) on the export credit insurance industry. The issuance of export credit insurance and guarantees is an aspect of trade finance that is of crucial importance, especially in a crisis environment of high systemic risk. In the context of a declining secondary market to offload loans, along with an increase in bank counterparty risk, demand is high for export credit insurance and guarantees.

The market for export credit insurance and guarantees comprises not only private but also public players, namely ECAs. Whereas the market for short-term insurance (credit terms of up to and including 12 months, for the purposes of this chapter) is dominated by private agencies (some 80 percent of overall business), ECAs underwrite the wider majority of medium- to long-term commitments.

The Berne Union is the leading association for export credit and investment insurance worldwide. Its members represent all aspects (private and public) of the export credit and investment insurance industry worldwide. The Berne Union made recent country-by-country data available to the World Bank's International Trade Department that span 2005 through the third quarter of 2009. The data cover 41 countries, 9 of which are classified as high-income countries, 22 as middle-income countries, and 10 as low-income countries. For a given country, the dataset includes information on the total value of insurance offers and insurance commitments on its imports.[1]

Figure 16.1 shows the evolution of both global trade and export credit insurance volumes from the first quarter of 2005 through the third of 2009. Mirroring

Figure 16.1 World Trade and Trade Insurance Volumes



Source: Berne Union.

trade volumes, total insurance commitments of the Berne Union's members grew steadily during the past few years before dropping between the second quarter of 2008 and the first of 2009. Total insurance volumes have since recovered side by side with trade volumes. Intuitively, a growing volume of trade will increase the demand for trade finance, insurance, and guarantees independent of any change in the risk environment. This is likely the main reason why the export insurance business has grown steadily over the past years.

Similarly, the fall in trade volumes from the second quarter of 2008 through the first of 2009 can be seen as a proximate factor explaining the drop in overall insurance commitments. It is striking, however, that insurance volumes fell by much less (15 percent) than did global merchandise trade (36 percent) during this period. This observation is consistent with anecdotal evidence suggesting that trading partners resorted to more formal, bank-intermediated instruments to finance trade since the outbreak of the financial crisis to reduce the high probability of default in open-account financing. In addition, the increase in bank counterparty risk may have led to a substitution of export credit insurance for other

trade finance products such as letters of credit. Such developments would lead to a greater relative demand for external credit insurance and guarantees despite the substantial increase in risk premiums and the cost of insurance, thus reflecting the increasingly important role of insurance and guarantees during times of crisis.

Figure 16.1 also illustrates how the composition of export credit insurance has evolved. Short-term insurance commitments almost doubled in value until the beginning of the financial crisis but dropped strongly (by 22 percent) between the second quarter of 2008 and the first of 2009 and kept falling at a slower pace thereafter (by 2 percent). Medium- to long-term commitments, however, remained almost constant in volume during the period of the strongest impact of the crisis (falling by 3 percent) and have recovered since then (increasing by 9 percent since the first quarter of 2009).

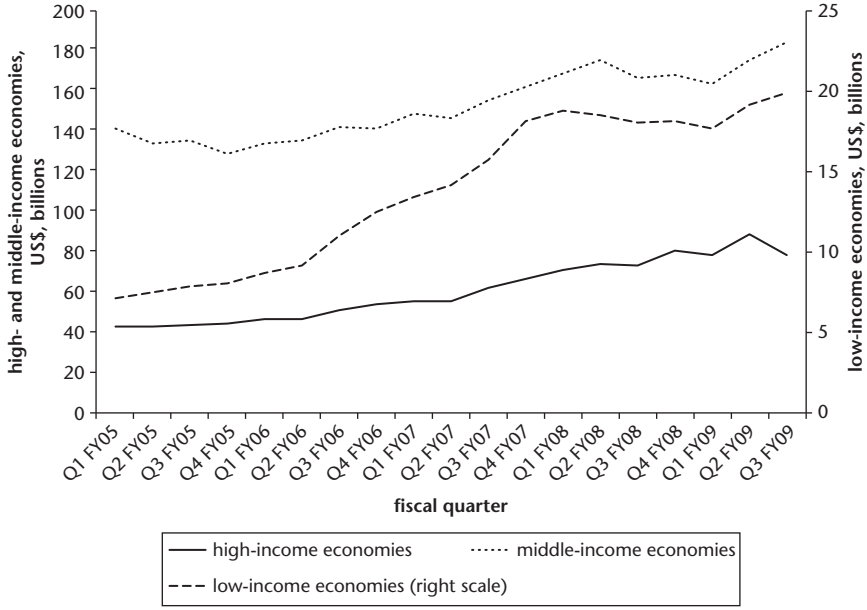
How may these findings be rationalized? Medium- to long-term insurance is typically used for large-scale transactions. The surge in longer-term relative to shorter-term commitments since the second quarter of 2008 was therefore likely because demand for insurance for large-scale transactions increases in an environment of high systemic risk. Given the need to recapitalize in a timely manner, supply-side factors may also have affected the composition of different maturities in insurance commitments. Indeed, with insurers and banks needing to recapitalize and offload their balance sheets from liabilities whose risk is difficult to assess, short-term commitments are more easily terminated on short notice.

However, given that insurance premiums for longer-term insurance are particularly expensive in an environment of high systemic risk and given that capital expenditures dropped rapidly during the crisis, the magnitude of the divergence between short-term and medium- to long-term volumes is difficult to explain solely based on the perspective of private market participants. Indeed, a likely factor that could explain these findings is the active intervention of the public sector. Whereas ECAs backed by state guarantees underwrite only about 10 percent of overall policies, this share is much higher for medium- to long-term insurance and historically accounts for most of the collected premiums and disbursed claims in export credit insurance. In other words, governments and multilateral institutions followed through on their pledges to boost trade finance programs.

It is interesting to consider the change in the composition of medium- to long-term commitments across income groups. Figure 16.2 shows that between the second quarter of 2008 and the first of 2009, medium- to long-term commitments grew by 6 percent for high-income economies, compared with decreases of 7 percent and 4 percent for low- and middle-income economies, respectively.

These numbers likely partly reflect the growing need for export insurance and guarantees for trade flows to industrialized economies that were previously at the low end of the risk spectrum. However, the figures may also indicate a shortage in

Figure 16.2 Medium- to Long-Term Export Credit Insurance



Source: Berne Union.

insurance supply for trade flows to developing, as opposed to developed, markets when the crisis reached its peak.[2] In the period after the first quarter of 2009, however, medium- to long-term insurance volumes rebounded strongly in both low- and middle-income economies (12 percent), suggesting that ECAs were more successful in supporting trade flows to developing countries during later stages of the crisis.

Key Issues When Setting Up an ECA

These findings suggest that ECAs, in line with recent pledges, may indeed have expanded their operations during the financial crisis to keep trade finance markets from drying up. The natural question to ask is whether more developing countries should follow suit and establish their own agencies to alleviate market frictions and support exporting firms. This section highlights specific issues that require attention when deciding whether to establish such an institution.

Many countries in both the developed and the developing worlds have set up ECAs to finance exports and alleviate market failures. However, it is difficult to make a generalized statement about the need for, and the most appropriate shape

and form of, these institutions. Given that restructuring, reforming, or abolishing a public institution is more difficult than establishing one, the decision to set up an ECA should result from a comprehensive evaluation process.

Although the main motivation to establish an export finance institution may differ from one country to another, the creation of a public financial institution—the main task of which is to direct credit to a specific set of economic activities—always represents an intervention into the resource allocation process of the domestic economy. Whether such intervention is warranted or adds value should be carefully examined and satisfactorily answered during the decision process. The issues involved in this regard are complex and have been at the core of an ongoing debate.[3]

Any type of financial institution that aims to play a part in the financing of exports has an impact on two main dimensions in the country where it is located. First, the financial institution's activity changes the structure of the financial sector and influences the behavior of other financial institutions (financial sector dimension). Second, it changes the incentive framework in the real sector (real sector dimension). The net impact on the economy as a whole depends on many factors—ranging from the structure of the real economy and its competitive position to the overall governance environment in the country and the business model for the new institution (business model dimension).

Financial Sector Dimension

At least two questions should be addressed regarding the financial sector when considering the establishment of an ECA. The first question is whether the ECA can provide additionality through more trade finance-related products and services or greater volumes of such products, given conditions in the country's financial sector. The answer to this question will give a fairly good idea of whether such an institution is needed. The second question concerns the impact of an ECA on the equilibrium level of prices and quantities in financial markets as well as on the growth dynamics of the financial sector.[4]

Public intervention in financial markets, like any marketplace intervention, can be justified when significant and persistent externalities or market failures persist. The principles of effective intervention to support trade finance have been examined by Chauffour and Farole (2009). Ellingsen and Vlachos (2009), among others, argue that public support of trade finance volumes can be more effective than support for other types of credit. Menichini (2009) emphasizes the particular nature of interfirm trade finance and discusses policy options to support interfirm financing volumes during times of crisis.

Examination of the need for a specialized export finance institution needs to start with comprehensive analysis of the current conditions and trends in the domestic financial sector. The analysis of the financial system should aim to detect any market failures and imperfections that may adversely affect the volume of exports. In this regard, it is important to assess the financial system's capability of (a) attracting both domestic savings and foreign flows of capital and (b) carrying out its intermediary functions. In other words, the depth of the financial system and actual lending practices should be examined carefully. The lack of financial depth is an important factor and usually takes the form of a resource constraint for the financial sector and, in turn, inadequate supply of credit to the real sector.

To make an informed decision about whether sufficient externalities or market failures are present to justify intervention, one finds it instructive to pay close attention to the following issues:

- The levels and terms of working capital and investment finance
- The mechanisms to obtain working capital and investment finance
- The presence of any peculiar constraints for exporting firms to obtain finance
- The capacity of the banking system to handle cross-border transactions.

In addition to the analysis of the domestic financial sector, the financial systems in export markets as well as in competitor countries warrant closer attention. Because it is difficult to expand exports to markets where buyers face significant financial sector-related constraints—in terms of both the availability and the pricing of financial products (especially trade-related)—such market failure can have an impact on the domestic economy similar to a genuinely domestic market imperfection. Market failures in partner countries may thus equally require intervention by the domestic government. In fact, the origins of many export finance institutions lie in this argument.

Another important dimension of export financing is the availability of special financing schemes offered by other countries that supply investment goods and raw materials. The export sector can use these facilities for both working capital and investment finance. However, while these facilities can potentially be important sources of funding for exporting firms, especially for exporters of manufactured goods, the same institutions may work against the interest of the country's exporting firms if they support the competition in export markets.

Interventions into financial markets by way of funds earmarked for special purposes or specialized financial institutions, if they are not additional to the existing pool of funds within the financial sector, serve as mechanisms of credit directing and rationing.[5] This could have a considerable impact on the competitive

pricing of credit. The magnitude of this impact depends on both the amount of the additional funds and the relative amount of credit demand.

Specialized financial institutions undoubtedly influence the composition of banks' loan books. The nature of this influence is highly dependent on the ECA's business model (Ascari 2007). For example, an ECA involved in retail lending and loans directed to final beneficiaries usually reduces lending by the rest of the financial sector to the targeted activities. However, the financial sector usually increases its lending to targeted activities if the ECA issues guarantees or acts as some sort of second-tier institution. Hence, following an intervention, the composition of final lending occurs either by choice of banks or by choice of borrowers. Which of these paths creates more distortion is an important question that must be answered.

ECAs can also potentially undermine the development of the financial sector. The presence of such institutions may discourage private banks from developing export-related financial products or may delink certain types of activities or borrowers from the commercial banking system if their influence becomes large. This result will limit the banking system's understanding and information about the activities and borrowers engaged in the export sector. In turn, the banking system may not only reduce its exposure to these activities but individual banks may also become hesitant to engage in additional business with the same borrowers because the system might not be able to properly assess underlying risks.

Likewise, a heavy reliance on ECAs primarily for borrowing may cause exporters to incur larger costs for other transactions. Commercial banks typically provide a wide array of services that an ECA cannot match in their entirety. A commercial bank may require higher fees from a client that maintains only limited business with the bank than it requires from a client that demands a variety of products and services. For example, a commercial bank may require higher fees for the opening of a letter of credit or the issuance of a performance bond from a customer that does not borrow from it and does not do business with it otherwise. To avoid such situations and to endorse close relations between exporters and the country's financial system, ECAs should channel their products to existing financial institutions as much as possible. The ECA's charter must, moreover, be clear enough to prevent competition between the ECA and the financial sector.

Real Sector Dimension

The main motivation behind the decision to establish an export finance institution is usually the judgment that a change in the behavior of the real sector toward export-related activities is warranted. In fact, an export finance institution is viewed as one of the main elements of a broader incentive framework to increase

exports. It is therefore important to understand why policy makers desire an increase in export volumes and whether specific export products and markets are to be targeted. These questions are crucial in designing the broader incentive framework, including the financing element, and in determining the appropriate business model for the ECA.

ECAs typically support various types of firms operating in different sectors of the economy. However, driven by the same objectives that led to its founding, an ECA's activities are often biased toward a specific subset of sectors of the domestic economy. Consequently, export finance institutions may end up serving a narrow set of economic activities. If the broader incentive framework to boost exports (including the export finance element) is effective, the composition of both real sector activities and exports may change. Such changes will inevitably alter the structure of the economy and its macro balances in the long run.

Different policy objectives regarding the real economy point to different types of ECAs. For example, an ECA with wider reach may be preferable if balance-of-payment concerns are dominant. If, however, export-led growth policies are to be pursued, an export finance institution could be useful to promote economies of scale by dealing only with firms above a certain size threshold.

The financial products of an export finance institution should be shaped by the founding objectives. For example, providing credit to a cotton outgrower scheme for export purposes may require working capital loans with at least nine months' maturity, although a three-month facility would be sufficient for most manufacturing processes. If the country is mainly concerned with providing credit to buyers of its exports, the nature of the financial products needed would differ from those needed to support exporting firms with credit or guarantees directly. In particular, longer terms and lower interest rates may be necessary if the objective is to provide credit to purchasers of exports.

Finally, it should be kept in mind that real sector conditions evolve over time, both domestically and globally. Sufficient flexibility should be built into the product range and the ECA's objectives to allow it to adjust. For example, an ECA that starts out solely supporting the country's domestic export base can evolve into a global underwriter of trade risk or a facilitator of international projects that works with different suppliers from various countries, some of which may be competing with domestic firms.

Business Model Dimension

Specifying business models and governance structures as well as their implementation have proven to be important challenges for public sector entities. These challenges are especially formidable for financial institutions owned directly by the state.

A well-functioning financial sector is an important precondition to a sustainable path of economic development. Strong financial systems are built on good governance—of both the intermediaries and their regulators. An ECA is typically strongly linked with the government, although there are various options for the precise structure of the relationship. The institution is also designed to interact with many firms and financial institutions in the private sector. A satisfactory governance record is therefore crucial not only to efficient fulfillment of an ECA's role in the economy, but also to its influence on the quality of governance in the economy as a whole, given its tight relationships with both the government and the private sector (Beck and Honohan 2006). The stronger the ECA's position in the economy and the larger the resources dedicated to its business, arguably the more enhanced its role will be.

In the specification of an ECA business model, its governance structure should thus be among the most important considerations. In particular, the nature and quality of its board of directors deserve special attention because they could be potential destabilizing factors. Good governance cannot be achieved if the ECA's senior management and board of directors are not properly configured.

Care should also be taken in specifying a legal form for the ECA that is consistent with its business model. At least two interlinked quality characteristics, described below, are desirable in achieving efficient functioning of the institution as well as a strong governance record: operational independence and a sustainable mandate.

Operational independence

First, the ECA should be given operational independence. Good governance is difficult to achieve in the absence of an entity's operational independence and without a supporting legal form. In this respect—and because the independence of an export finance institution cannot realistically be achieved if the institution fails to generate enough income to meet its operational expenses and produce a surplus—it is important to equip the ECA with sufficiently large resources from the outset to efficiently fulfill its role in the economy.

The amount of operational expenses varies widely, depending on the ECA's specific business model. An institution involved in retail lending will need to have more staff, more branches, and a more expansive information technology (IT) platform than a second-tier organization would require. A small-guarantee scheme that underwrites specific portfolios of commercial banks could technically be operated by just a few people. If sufficient funds are not available, the potential outsourcing of some functions such as payroll and IT, using specialized consultancy services, should be considered as an option.

A sustainable mandate

Second, an ECA must be given a mandate that is both sustainable and compatible with the objectives of the institution. Sufficient financial resources are again important in fulfilling this condition. An export finance institution will likely fail to achieve its objectives if it cannot dispose of sufficient and sustainable resources from the outset. Many developing countries have established various export finance schemes and structures, but these institutions have failed to be relevant because of resource constraints. For the ECA to meet its objectives, it should be a relevant player in the country where it is located, in terms of both its resource base and its operational footprint.

A strong governance structure and the availability of a sufficiently large capital stock for the ECA to act independently and to have a strong enough operational footprint to achieve its objectives are two preconditions that are unlikely to be met in many low-income countries. Low-income countries often suffer from sovereign debt problems, weak institutional capacity, lack of good governance practices, and, more broadly, difficulties in applying the rule of law. These concerns are reminiscent of those related to the functioning of other types of public-backed institutions to support exports. For instance, export promotion agencies in developing countries have long been criticized for lacking strong leadership and client orientation, being inadequately funded, and suffering from government involvement (Lederman, Olarreaga, and Payton 2009).

A possible way to circumvent these issues may be the foundation of some form of a global ECA—in other words, an ECA designed as an international institution to support exporting firms in various low-income countries. The relative merits of establishing such an institution, however, would go beyond the scope of this chapter.

Conclusions

A number of issues require attention when deciding whether a country should establish an ECA as well as what shape, form, and modus operandi it should have. Any decision to establish such a specialized financial institution should be made only after a careful evaluation of its potential impact on both the financial and the real sectors of the economy.

In addition, the choice of a sustainable business model is crucial. A sustainable business model involves a strong governance structure as well as the availability of a sufficiently large capital stock for the institution to be capable of acting independently and to have a strong enough operational footprint to achieve its objectives. These are two preconditions that are seldom met in low-income economies,

which often suffer from sovereign debt problems, weak institutional capacity, poor governance practices, and difficulties in applying the rule of law.

Notes

1. It is important to notice that the sample, albeit representative in its composition, does not cover all countries whose imports are insured by Berne Union members.

2. Insurance volumes had been growing strongly for low-income economies before the recent drop. Thus, an alternative explanation may be that volumes are returning to normal levels.

3. State intervention in financial markets has been discussed by many in the literature (addressing concerns such as principal-agent problems, information asymmetries, and regulation). Stiglitz (1994) and Besley (1994) provide good generalized discussions of state intervention in the financial sector. See also Zingales (2004) for a critique of endorsements of state intervention based on Coase's (1960) arguments applied to financial regulation.

4. The issues mentioned here are valid for a broader set of development finance institutions (DFIs) in developing countries, of which ECAs can be regarded a subset. DFIs are also the subject of many debates (Beck and Honohan 2006; De la Torre, Gozzi, and Schmukler 2007).

5. The impact of government intervention in financial markets on the equilibrium level of prices and quantities has been subject to close examination from a wide range of perspectives. For theoretical treatments of historical arguments, see Stiglitz (1994); Hoff and Stiglitz (2001); and Murphy, Shleifer, and Vishny (1989). For an empirical study of the impact of government-owned institutions, see Barth, Caprio, and Levine (2001) and Caprio and Honohan (2001).

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SECTION IV

INSTITUTIONAL TRADE FINANCE SUPPORT DURING THE 2008–09 FINANCIAL CRISIS

17

WORLD TRADE ORGANIZATION RESPONSE TO THE CRISIS: A CONVENING POWER TO BOOST THE AVAILABILITY OF TRADE FINANCE

Marc Auboin

About 80–90 percent of world trade relies on some form of trade finance. Since the first half of 2008, there has been evidence of tightening market conditions for trade finance. As market participants expected, the situation worsened in the second half of the year and further declined in the first quarter of 2009. In market-based surveys, respondents indicated they expected the trade finance market to face difficult times through 2009. This situation had the potential to accelerate the great trade collapse due to a finance shortage—a direct spillover from the financial crisis. Policy intervention was required to avoid a disorganization of the trade finance market and a reduction of trade flows, particularly in the direction of developing countries.

Although public-backed institutions responded rapidly in 2008, their interventions were not enough to bridge the gap between supply and demand of trade finance worldwide at that time. As a result, the G-20 members, during their April 2009 London Summit, adopted a wider package for injecting some $250 billion in support of trade finance. This package greatly helped to restore confidence in world trade finance markets and, in particular, to secure international supply chains. In 2010, the global trade finance situation improved, but some gaps remain at the periphery of global trade flows.

This chapter lays out some recent facts and explains decisions made at the G-20 London Summit regarding what was potentially one of the main sources of contagion of the financial crisis from a trade perspective.

Why Trade Finance Matters

Part of the collapse of world trade, particularly in its early stage in late 2008, was due to problems with trade credit financing, but the policy response was rapid and prevented the problem from becoming worse. The global market for trade finance (credit and insurance) was estimated to be around $10 trillion–$12 trillion in 2008—roughly 80 percent of that year's trade flows.

The potential damage to the real economy from shrinking trade finance is enormous. International supply-chain arrangements have globalized not only production but also trade finance. Sophisticated supply-chain financing operations, including those for small and medium enterprises (SMEs), rely on a high level of trust and confidence that global suppliers will deliver their share of the value added and have the necessary financial means to produce and export it in a timely manner. Any disruption in the financial sector's ability to provide working capital, provide preshipment export finance, issue or endorse letters of credit, or deliver export credit insurance could create a gap in complex, outward-processing assembly operations and lead by itself to a contraction in trade and output.

WTO Involvement in Trade Finance Issues

The *institutional case* for the World Trade Organization (WTO) to be concerned about the scarcity of trade finance during periods of crisis is relatively clear. In situations of extreme financial crisis, the resulting credit crunch has the potential to reduce trade finance and hence trade. This happened already during the Asian financial crisis, when the collapse of the financial sector brought trade to a halt in some countries. In the immediate aftermath of the currency crisis, a large amount of outstanding trade credit lines had to be rescheduled on an emergency basis by creditors and debtors to reignite trade flows and hence the economy. Under the umbrella of the Marrakech Mandate on Coherence, the heads of the WTO, the International Monetary Fund (IMF), and the World Bank in 2003 convened an Expert Group on Trade Finance to examine what went wrong in the trade finance market and prepare contingencies.

The *economic case* for the involvement of international organizations, in particular the WTO, is based on the idea that trade finance is largely a secure, short-term, self-liquidating form of finance (Auboin and Meier-Ewert 2003). Even in some of the most acute periods of financial crisis (for example, in 1825 and 1930),

international credit lines have never been cut off. For centuries, the expansion of trade has depended on (a) reliable and cost-effective sources of finance, backed by a deep, global secondary market of fluid and secured financing instruments; and (b) a wide range of credit insurance products provided by private and public sector institutions (including national export credit agencies [ECAs], regional development banks, and the International Finance Corporation [IFC] of the World Bank Group). Trade finance normally offers a high degree of security to the trade transaction and its payment. Such prime, secure corporate lending normally carries little risk and hence only a small fee (typically, a few basis points over the London interbank offered rate [LIBOR] for a prime borrower).

However, since the Asian crisis, the trade finance market has not been immune from general reassessments of risk, sharp squeezes in overall market liquidity, or herd behavior in the case of runs on currencies or repatriation of foreign assets. Such a situation happened again in the recent turmoil. Commercial risk in trade finance normally stems from the risk of nonpayment by the counterparty to the trade operation (either the client company or its bank). The perception of this risk obviously has changed along with exchange rate fluctuations, the rise in political risk, and bank failures, all of which undermine the profitability of trade. Such rapid change in risk perception happened again abruptly, for example, in fall 2008 regarding certain Eastern European countries. What aggravated the situation was that the secondary market also dried up. As much as lending was directly affected by the tight liquidity situation worldwide, the reinsurance market also suffered from the difficulties faced by AIG (American International Group, Inc.) and Lloyd's of London.

Of course, it can be argued that liquidity squeeze, exchange rate fluctuations, and other exogenous factors affecting risk are not specific to trade finance; they would likely affect any unhedged cross-border flow. Likewise, the credit supply would be affected by the greater scarcity of liquidity available to some banks in the interbank market. Yet because trade finance has to compete for an equal or reduced amount of liquidity, like any other segment of the credit market, the price of transactions increased sharply under the combined effects of scarce liquidity to back up loans and a reassessment of customer and country risks. Spreads on 90-day letters of credit soared in 2008 (from 10–16 basis points, on a normal basis, to 250–500 basis points for letters of credit issued by emerging and developing economies).

Even under stress, one finds it hard to believe that the safest and most self-liquidating form of finance, with strong receivables and marketable collaterals, could see its price increase by a factor of 10 to 50. Indeed, this segment of the credit market was by far one of the most resilient when the subprime crisis started in mid-2007, and signs of market gaps on a global scale appeared only in fall 2008.

This resilience can be partially attributed to facilitation devices developed by public-backed regional or multilateral financial institutions after the Asian

financial crisis. Trade finance facilitation programs that provide for risk mitigation between banks issuing and receiving trade finance instruments have been developed into a worldwide network in which the IFC, the European Bank for Reconstruction and Development, the Asian Development Bank, and the Inter-American Development Bank participate. In addition, national ECAs have expanded short-term trade finance operations and added considerable liquidity to the markets in recent years, according to Berne Union statistics. Both types of institutions have developed a savoir-faire in recent years and could add further liquidity and expand the risk mitigation capacity if the need arose.

The Crisis Situation

Despite the resilience of the trade finance markets in 2007, the global liquidity situation became a major constraint in late 2008 for the largest suppliers, along with a general reassessment of counterparty risk and an expected increase in payment defaults on trade operations. The market gap initially appeared on Wall Street and in London when U.S.- and U.K.-based global banks, particularly those with deteriorated balance sheets, could not offload or refinance on the secondary market their excess exposure in trade credits. As a result, these banks could not meet customer demand for new trade operations, leaving a market gap estimated at around $25 billion in November 2008. That gap increased with the evaporation of the secondary market.

Some other large banks that used to roll over $20 billion per month of trade bills in the secondary market no longer found a counterparty. Demand for new trade credit could hence not be satisfied, and prices for opening letters of credit rose well above the levels required by a normal reassessment of risk. Large banks reported on several occasions that the lack of financing capacity made them unable to finance trade operations. The liquidity problem spread to other developing countries' money markets, with the poorer countries in Asia, Latin America, and Africa being particularly affected.

As discussed in chapter 5 of this volume, the joint IMF and Banker's Association for Finance and Trade (BAFT)—now merged with International Financial Services Association (BAFT-IFSA)—survey of commercial banks found that trade finance flows from developing-countries' banks fell by some 6 percent or more year on year (from the end of the third quarter of 2007 through the third of 2008).[1] That decline exceeded the reduction in trade flows from and to developing countries during the same period, implying that the lack in supply of trade finance was indeed an issue for these countries—and still is, for some of them. In late 2008, it was expected that trade finance flows for the same categories of banks would fall by another 10 percent in 2009 (IMF-BAFT 2009). If

such numbers were confirmed (at least the surveyed local bankers seemed to agree), the market gap could be well over the $25 billion estimate mentioned above—between $100 billion and $300 billion. Such scarcity of trade finance likely accelerated the slowdown of world trade and output, at least during the peak of the crisis (end of 2008 and beginning of 2009).

Before the 2009 G-20 London Summit, the IMF and BAFT–IFSA provided a survey update that indicated the decrease in trade finance value had accelerated between October 2008 and January 2009 in almost all regions. Although more than 70 percent of the respondents attributed this further decline to the fall in demand for trade activities, 6 in 10 respondents attributed it also to restrained credit availability, thereby pointing to banks' increased difficulty in supplying trade credit because of the general liquidity squeeze and the increased risk aversion to finance cross-border trade operations (as chapter 5 also discusses further). Spreads (prices) on the opening of letters of credit had risen 10–15 basis points above LIBOR, up to 300 basis points in some emerging economies. Some banks even reported 600 basis points for particular destinations.

Results from an International Chamber of Commerce (ICC) survey (ICC 2009) broadly confirmed the conclusions of the IMF and BAFT–IFSA analysis, albeit relying on a wider panel of banks and countries (122 banks in 59 countries).[2] The results were also released for the WTO Expert Group meeting of March 18, 2009, and were further updated before the 2009 G-20 London Summit. It was obvious that tight credit conditions were affecting world trade. About half of the banks had confirmed a decrease in the volume and value of both letters of credit and aggregate transactions—a trend that was particularly clear when comparing data of the fourth quarter of 2007 with the fourth of 2008. This trend held particularly true for developed-countries' markets (and even more so for least-developing countries), with large-scale financing projects being deferred or having difficulty in obtaining finance.[3]

Apart from the reduction in the demand for trade, the main reasons provided by banks for the decrease in credit lines and increase in spreads[4] were the application of more stringent credit criteria, capital allocation restrictions, and reduced interbank lending. The ICC also pointed out that intense scrutiny of underlying guarantees by some banks led to higher rates of rejection of letters of credit. Prospects for trade finance in 2009 were negative, with the general view that "tight credit conditions may further reduce access to trade finance" (ICC 2009).

The Supply-Demand Mismatch

Because overall trade finance flows are unfortunately not subject to comprehensive statistical compilation but only to measurement by surveys, it is not possible to

appropriately gauge changes in trade finance flows. However, the overall increase in spreads requested for opening letters of credit points to a supply shortage despite the reduced demand because of the overall decline in trade transactions.

Disagreement persists as to the causes of the trade finance shortage. Although the public sector in general maintains that trade finance gaps in extreme circumstances are a result of market failure, the private sector traditionally argues that they result from the cost of new rules—in this case, the implementation of the Basel II Accord (Auboin and Meier-Ewert 2003).

The market-failure argument rests on the inability of private sector operators to avoid herd behavior, in particular when credit risk and country risk are being confounded (for example, in cases of sovereign default rumors). Also, noncooperative games are played by global suppliers, with the best-run institutions refusing to refinance on the secondary-market letters of credit from banks in a less favorable liquidity situation.

On the regulatory side, commercial bankers have long complained about the implementation of Basel II rules, which are regarded as having a pro-cyclical effect on the supply of credit. When market conditions tighten, capital requirements for trade finance instruments tend to increase more than proportionally to the risk when the counterparty is in a developing country.

Both Western banks and developing countries have recently complained that ratings from international rating agencies maintain a bias against developing countries' risk. Several developing countries have made that point within the WTO Working Group on Trade, Debt and Finance, among other forums. They argue that they have neither been involved in the elaboration of recommendations of Basel II rules by the Basel Committee on Banking Supervision (BCBS) nor had any control over ratings by international rating agencies. Before and during the G-20 London Summit, it was agreed that all G-20 countries would become members of the Financial Stability Forum and its components, including the BCBS and other coordinating bodies on financial regulation. Therefore, they would be able to participate in the review of Basel II rules.

Recommendations by Business Associations

In the context of the current financial crisis, BAFT–IFSA, ICC, Business Europe, and individual commercial banks made recommendations to the G-20 London Summit in the following areas:

- *Reviewing Basel II rules.* Results from a survey conducted by the ICC United Kingdom in parallel with the ICC Global Survey (2009) indicate that implementation of the Basel II framework eroded banks' incentive to lend short-term

for trade because capital weightings do not fully reflect the low risk level and short-term character of the activity. In a risk-weighted asset system, increases in minimum capital requirements had particularly adverse consequences on trade lending to SMEs and counterparties in developing countries.

- *Creating a ring-fenced liquidity pool for trade finance.* The general proposal was to design a small and targeted liquidity fund run by international financial institutions and useful for smaller segments of the market or new countries, in particular those most likely to be hit by the contraction of trade credit supply.
- *Increasing the cosharing of risk with public sector-backed institutions.* The idea would be to encourage cofinance between the various providers of trade finance. Public sector actors, such as ECAs and regional development banks, should be mobilized to shoulder some of the private sector risk.

One clear lesson from the Asian financial crisis is that, in periods prone to lack of trust and transparency as well as herd behavior, all actors—including private banks (which account for some 80 percent of the trade finance market by way of lending), ECAs, and regional development banks—should pool their resources to the extent practicable (IMF 2003). Cooperation among the various players is also important in the absence of a comprehensive, continuous dataset on trade finance flows. The main channel for reasonably assessing the market situation is through the collection of informed views and surveys from various institutions. Information collection has been a key objective of the WTO Expert Group chaired by the WTO director-general, particularly after the November 12, 2008, meeting.

The response of public sector–backed institutions since fall 2008 has been more than positive—in fact, of a magnitude unseen in recent history. Capacities in three types of activities were enhanced significantly as early as fall 2008:

- *All regional development banks and the IFC, on average, doubled their capacity under trade facilitation programs* between November 2008 and the G-20 meeting in London. Further enhancements of these programs were agreed on at the G-20 meeting, in particular the IFC's establishment of a liquidity pool allowing cofinancing operations with banks in developing countries, which would likely have a high leverage and multiplier effect on trade.
- *ECAs also stepped in with programs for short-term lending of working capital and credit guarantees aimed at SMEs.* For certain countries, the commitment is large (Germany and Japan). In other cases, large lines of credit have been granted to secure supplies with key trading partners (for example, the United States with China and the Republic of Korea). In still other countries, cooperation has developed to support regional trade, in particular supply-chain operations.

To this effect, the Asia-Pacific Economic Cooperation summit announced the establishment of an Asia-Pacific Trade Insurance Network to facilitate intra- and extraregional flows and investment through reinsurance cooperation among ECAs in the region. Japan's Nippon Export and Investment Insurance (NEXI) established itself as the leader and main underwriter of this collective reinsurance system.

- *Central banks with large foreign exchange reserves supplied foreign currency to local banks and importers*, generally through repurchase agreements. One problem often underestimated in developing countries is the difficulty for banks and importers of finding foreign exchange—for example, where the main currency of transactions (say, the euro or the U.S. dollar) has become scarce because of the depreciation of the local currency or because of the fall in receipts from remittances and exports. Since October 2008, Brazil's central bank has provided $10 billion to the local market. The Korean central bank pledged $10 billion of its foreign exchange reserves to do likewise. The central banks of Argentina, India, Indonesia, and South Africa are engaged in similar operations. However, many developing countries lack foreign exchange reserves and, unfortunately, cannot use similar facilities.

Why the Market Had Not Rebalanced Itself by Early 2009

The effort to mobilize public sector institutions to shoulder some of the risk carried by private sector banks has been, to an extent, a race against time. Although public institutions have provided more financing capacity, the private sector's ability to respond to importers' and exporters' demand for finance seemingly deteriorated even faster, particularly in developing countries in the last quarter of 2008 and the first of 2009. Also, BAFT–IFSA members (commercial banks) have complained that measures announced by ECAs and regional development banks were hard to track, so the banks lack information about who provided what and under which conditions. Filling this information gap was of one of the highest priorities of the WTO Expert Group meeting on March 18, 2009.

In this context, it is important that implementation and design of ECA programs are carried out cooperatively. Bankers have also raised the issue of financing both exports and imports because the survival of supply chains partly depends on the financing of both sides. Perhaps the Asian example of ECAs supporting both intra- and extraregional trade by working as a network should be examined by other regions.

As a result of the above factors, policy makers found that there was no quick fix to the trade finance problem but rather a need for quicker, more sequenced, cooperative implementation of measures mixing liquidity provision and risk

mitigation. To that end, the WTO Expert Group on Trade, Debt, and Finance recommended the following:

- Accelerate implementation of IFC and regional development bank programs to enhance trade finance facilitation, which should open a liquidity window for cofinancing
- Fill the information gap about ECAs' activities by circulating a list of new programs and opening quick, user-friendly liquidity and reinsurance windows for both exporters and importers
- Encourage coordinated actions by ECAs (possibly regionally)
- Encourage liquidity pools by allowing rapid cofinancing between banks, ECAs, and international financial institutions (IFC proposal)
- Review Basel II regulation to better acknowledge the self-liquidating character of trade finance

In the meantime, the WTO and other institutions had to engage in intensive advocacy and mobilization work to explain why the trade finance collapse could be another source of economic contraction (Auboin 2009). Another role of multilateral agencies was to explain the rationale for a "trade finance"-specific package at a time when most of the liquidity provided by central banks to commercial banks was banked back at the central bank and not intermediated.

The G-20 Trade Finance Package

The Expert Group's recommendations were, to a large extent, reflected in the trade finance package of the G-20 London Summit's communiqué on April 2, 2009. Under the heading "Resisting protectionism and promoting global trade and investment," the communiqué says, "We will take, at the same time, whatever steps we can promote to facilitate trade and investment, and we will ensure availability of at least $250 billion over the next two years to support trade finance through our export credit and investment agencies and through the [multilateral development banks]. We also ask our regulators to make use of available flexibility in capital requirements for trade finance" (G-20 2009).

As indicated above, the trade finance package responds largely to the criteria developed by the WTO Expert Group: strengthened public-private sector partnerships in the context of existing trade finance facilitation programs, to be further enhanced with the opening and expansion of liquidity windows in these programs. The IFC showed the way by introducing a new global trade liquidity pool, allowing the IFC to immediately finance trade with commercial banks, on a 40–60 percent colending agreement. The IFC's scheme mobilized $5 billion in its own

and donor funds, to be matched by $7.5 billion in commercial-bank funding, according to the colending formula. The total capacity of $12.5 billion, based on the rollover of a letter of credit every six months, would finance the targeted $50 billion in trade transactions over two years.

Another pillar of the package was to strengthen the existing capacities of ECAs within and outside the Organisation for Economic Co-operation and Development, allowing them to offer more finance and a wider spectrum of instruments (in particular, more short-term direct funding such as working capital and other forms of short-term direct support) and more capacity for short-term insurance, under state guarantees.

Conclusions

Markets have improved since fall 2009 although recovery patterns have been mixed across regions, and emerging markets have been leading the improvement. Consistent with the rapid recovery of trade in the Asian region, the high end of the market showed a large appetite for risk and ample liquidity to finance trade from China, India, and Korea, with a lowering of spreads. In Latin America, Brazilian authorities have been playing a significant role in the stabilization of the local market for trade finance; hence, with the recovery of trade and bank liquidity, spreads are returning to precrisis levels. The situation in other Latin American countries is more mixed. The same applies in the Middle East, where the situation is easing in some countries but remains a source of concern in others. Constraints on trade finance persist in Africa, particularly in Sub-Saharan Africa and in the financing of manufacturing imports and inputs.

The G-20 package is generally seen as having been instrumental in dealing with the 2009 crisis, in particular by helping to restore confidence and making available significant risk mitigation capacity to protect large supply-chain operators and buyers in regions such as Europe and Asia. In June 2010, the question was whether the remaining resources could be somewhat redirected toward the needs appearing in 2010. Thanks to the G-20 package, national ECAs and multilateral development banks have stepped up their activities, mobilizing some $190 billion in commitments in one year (and using $105 billion). The average utilization rate for additional capacity committed has declined from some 70 percent in the first half of 2009 to around 40 percent in the second half, reflecting the improvement in the global market situation. Given that some regions remain affected, there is currently little rush for a premature exit of the package, which remained valid until at least the end of 2010.

The assessment of the G-20 package points out that despite the G-20 London Summit's promise to mobilize $250 billion in additional short-term trade finance

and guarantees within two years, the reality has been largely front-loaded. Large traders have been able to benefit from the rapid mobilization of their ECAs and risk-sharing mechanisms enhanced by international financial institutions. Within a year of implementation, the initiative helped mobilize $170 billion in additional capacity, mainly from ECAs, of which $130 billion had already been used. Therefore, at the November G-20 meeting, concerns were raised that the full impact of the G-20 package had not been felt by smaller exporters from Central America, Africa, Eastern Europe, and generally in low-income countries. These concerns motivated WTO Director-General Pascal Lamy to ask leaders at the 2010 G-20 Toronto Summit to ensure that remaining G-20 funds be focused on the users that need it the most and to commit to keeping the situation under close watch.

Notes

1. The IMF and BAFT–IFSA survey was undertaken in the context of the WTO Expert Group on Trade and Finance meeting on November 12, 2008, and was presented at the Expert Group meeting on March 18, 2009.
2. Chapter 21 of this volume discusses the ICC Global Surveys on Trade and Finance in greater detail.
3. Society for Worldwide Interbank Financial Telecommunication (SWIFT) data pointed to a deterioration that was particularly visible in the Asia and Pacific region.
4. Some 40 percent of the respondent banks indicated that spreads had increased over the previous year.

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18

THE WORLD BANK GROUP'S RESPONSE TO THE CRISIS: EXPANDED CAPACITY FOR UNFUNDED AND FUNDED SUPPORT FOR TRADE WITH EMERGING MARKETS

Bonnie Galat and Hyung Ahn

Trade finance is the engine of an estimated $14 trillion in annual global commerce and is fundamental to the movement of goods at all stages of the supply chain, especially in emerging markets. Trade is recognized as a key driver of global integration and gross domestic product growth in many developing countries during the decade preceding the 2008–09 financial crisis.

The severe financial disruption witnessed internationally in late 2008 significantly curtailed trade flows, signaling potentially devastating effects on the economies of the developing world. The International Finance Corporation (IFC) of the World Bank Group immediately deepened its engagement with trade facilitation as one way to stimulate economic activity. Leveraging its experience from the Global Trade Finance Program (GTFP), launched in 2005, IFC sought to complement the program, which extends unfunded support through guarantees for individual trades.

The new IFC initiative, the Global Trade Liquidity Program (GTLP), was conceived to channel liquidity quickly to targeted markets by providing trade credit lines and refinancing portfolios of trade assets held by selected banks. GTLP also

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was premised on leveraging the funding available from IFC by creating an historic collaboration with other international financial institutions (IFIs), which also contributed their financial resources when the GTLP began operations in 2009.

Both GTFP and GTLP successfully facilitated trade during the crisis period. This chapter presents the experience of each program.

The Global Trade Finance Program

Trade was an early victim of the deteriorating financial environment. The dramatic crisis of confidence among banks that brought the interbank market to a standstill in late 2008 severely affected the already fragile and contracted levels of liquidity among many major banks addressing their own portfolio pressures. Many banks quickly pulled or reduced short-term trade lines to ease pressures on the balance sheet. Risk mitigation from traditional sources such as private credit insurance also contracted and was further weakened by rating downgrades.

In late 2008, as a first step in responding to the unfolding crisis, IFC doubled GTFP's capacity to $3 billion (a revolving program ceiling) to enhance the countercyclical role that the World Bank Group was called upon to play. As a triple-A multilateral institution with a zero capital risk weighting under Basel rules, IFC experienced continued growth in demand for cover under GTFP.

In the context of a marked contraction of global trade volumes in 2009 by as much as 13 percent, banks made strategic decisions that ranged from reducing their trade books to exiting markets to building market share. Those banks that continued to intermediate trade sought risk mitigation arrangements with a stepped-up urgency. The market demand for 100 percent, as opposed to partial, coverage for guarantees issued under GTFP doubled in 2009 in contrast to the previous year. The full-cover accommodation permitted banks to continue to provide trade services and credit at a time when goods were reportedly languishing in ports because of lack of financing. Thus, the decline in global trade notwithstanding, GTFP's guarantee volume continued to grow from 2008 onward, meeting the demands comfortably under its larger program capacity and expanded coverage of markets and participating banks. With few exceptions, IFC maintained its original strategic focus on the smaller banks in emerging markets, the smaller trades, and the critical sectors such as agriculture.

2010 ushered in a recovery in global trade volumes—which, by year's end, had expanded by 15 percent for the year and exceeded precrisis levels for the first time (CPB 2011).

Despite the improved volume statistics and generally eased credit environment, the trends of bank retrenchment endured. Commercial banks' high priority on optimizing their capital resources led to a systematic requirement to incorporate

risk mitigation as part of booking trade business, particularly for exposures in emerging markets. IFC's experience indicates that the recovery under way, largely driven by emerging markets, is not benefiting all markets evenly. There is evidence that low-volume markets, banks ranked below the top-tier institutions, and small and medium enterprise (SME) importers and exporters continue to struggle with limited access to bank financing.

Thus, the initial reduction in credit lines by major international banks in late 2008, although eased, was not uniformly reinstated due to several competing factors:

- Adoption of highly selective cross-border market strategies
- Persistent caution about the global credit environment
- Heightened sensitivity to counterparty bank risk
- Tightening effects of the Basel II and prospective Basel III regulations on capital for short-term trade
- Increasingly less favorable cost-return analysis of compliance with rigorous know-your-customer (KYC) requirements.

GTFP Operating Results

GTFP has grown consistently since its inception in 2005. With its principal focus on smaller, private-sector banks in the emerging markets, the program has helped such institutions establish relationships with an international network of potential financing partners. Before the crisis, when there was unprecedented liquidity in the global system, the program supported a strategy shift among many international banks to refocus on SMEs in emerging markets, where financing options were less available and pricing was more attractive.

Maintaining its focus during the crisis period but expanding its capacity and footprint, GTFP's issuance of guarantees continued to grow steadily—from $1.45 billion in fiscal year 2008 to $3.46 billion in fiscal year 2010, the later figure representing a 44 percent growth over the previous fiscal year. Notably, the number of guarantees issued in fiscal year 2009 grew at its fastest rate since the program began operations, evidencing the smaller shipments that were more typical during the period. To date, with more than 8,600 guarantees issued, no claims have been made under the trade program.

In concert with historical program trends, most of GTFP's guarantees (roughly two-thirds) have supported flows with underlying letters of credit as instrument of choice. However, given the need for funded support, the program also saw high-paced demand for IFC guarantees covering bank-to-bank promissory notes related to the extension of preexport and postimport loans, which grew from one-fourth of all 2008 guarantees to more than one-third in 2009–10.

GTFP now offers coverage for more than 200 banks in emerging markets, shown by geographic distribution in figure 18.1.

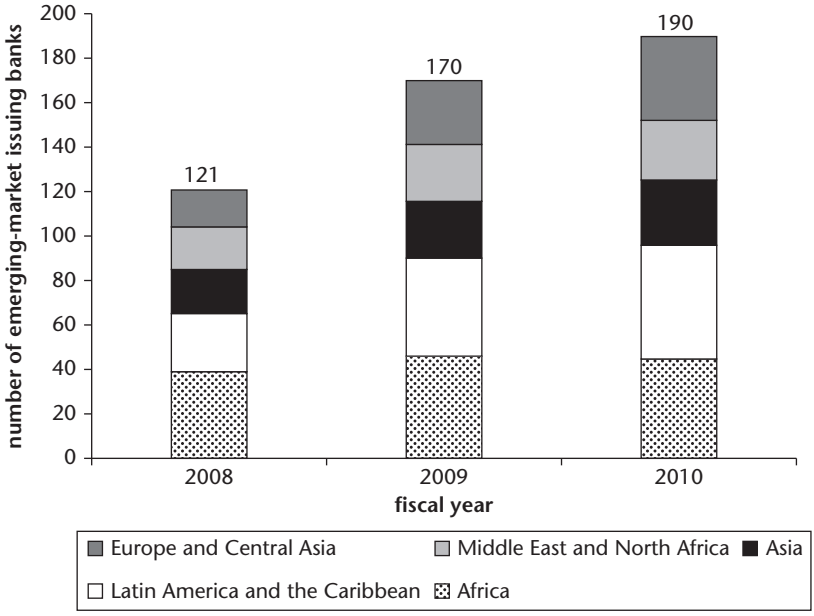
An additional 216 confirming banks from both developed- and emerging-market countries plus another 650 branches and subsidiaries worldwide are also GTFP participants, creating a vast network that has promoted trade across roughly 600 distinct trading routes, supported imports into more than 100 developing countries, and facilitated exports from 70 emerging markets.

Of the $3.46 billion of guarantees issued under GTFP in fiscal 2010, 36 percent supported flows between emerging markets, or South-South trade. Commitment volumes in International Development Association countries held steady at 51 percent throughout the crisis and recovery period. Figure 18.2 shows the regional shares of GTFP guarantee volume in 2010.

Regional Observations

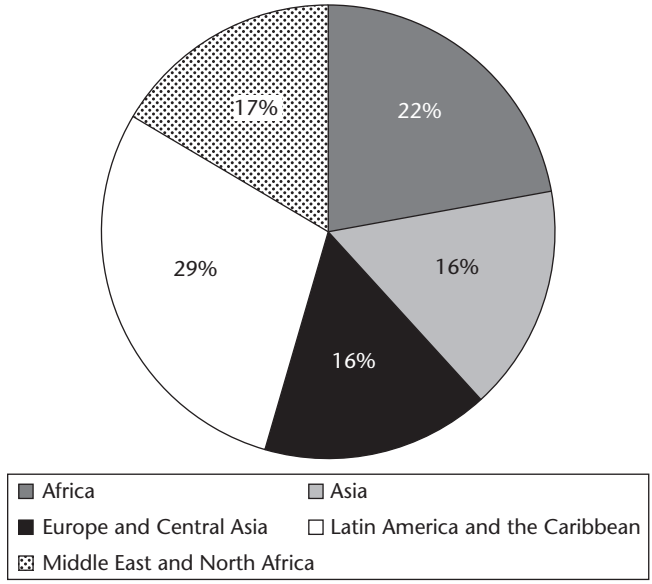
GTFP is a global program, unique among the multilateral IFIs in its mandate to facilitate trade across all regions. Given that broad platform, GTFP provided a

Figure 18.1 Number of GTFP-Covered Banks in Emerging Markets, by Region



Source: IFC databases 2010.

Figure 18.2 Shares of GTFP-Issued Guarantees in 2010, by Region



Source: IFC databases 2010.

window on how the crisis affected the 84 emerging markets it serves in the program.

GTFP in Africa

Banks in Sub-Saharan Africa were affected by the crisis but were somewhat shielded because of their relative lack of integration into the global banking system. The banks remained in fairly good condition and remained reasonably liquid because of both the cautious credit environment and the reduced corporate and consumer demand. Depressed commodity prices drove down the value of trade volumes, and a concomitant fall in remittances curtailed consumer consumption; both commodity prices and remittances had been steadily increasing before the crisis. Overall, GTFP data reveal that pricing for short-term, cross-border trade credit extended to IFC clients in Africa did not experience the dramatic swings witnessed in other markets worldwide.

In Nigeria, a domestic banking crisis, lower oil revenues, and political uncertainty caused a business slowdown that was reflected in a 22 percent drop in the value of guarantees issued for 2009. In response to the crisis, IFC extended guarantees to support trade-related cash advances, addressing liquidity constraints in

countries such as Nigeria. By the second quarter of 2010, GTFP trade activity in Africa showed signs of a rebound, led by Nigeria.

Beyond Nigeria, IFC began working in close partnership with an African bank whose banking network spans several of the continent's poorest countries; the program was thus instrumental in leveraging the parent guarantees to support activities of its subsidiaries in weaker environments. This support facilitated trade in smaller African countries where banks had been even more affected by the global financial crisis.

GTFP in Asia

Given the relative strength of the Asian economies going into 2008 and the solid trends of intraregional trade driven by an economically robust China, Asia was largely unscathed by the crisis. From the time of its launch in 2005, GTFP's focus had been on the smaller economies and underserved banks in the region. Thus, the private banks in Bangladesh and Vietnam continued to be the most active beneficiaries of GTFP support. In fact, it was an intraregional shipment of steel from Malaysia to Vietnam that in December 2010 took the program over the $10 billion mark of guarantees issued since its operations began in 2005.

In keeping with industry trends elsewhere, Asian demand for risk mitigation through GTFP was significant, with guarantee dollar volume growing by as much as 175 percent in 2009. Pricing for short-term trade credit in the smaller economies rose but did not exhibit the dramatic swings seen in the large, high-volume markets of China, India, and the Republic of Korea. Those markets experienced significant supply-demand imbalances in credit capacity as market players urgently sought to recoup returns that had plummeted to meager levels in the months preceding the crisis.

GTFP in Europe and Central Asia

This Commonwealth of Independent States region was hard hit during the global financial crisis, with trade banks reporting drops in trade volume of 30–50 percent—a particularly harsh development for the import-reliant smaller economies such as Belarus and Ukraine. Despite the diminished aggregate of trade flows, the demand for risk mitigation was acute. GTFP asserted its support in the region in fiscal 2010 by approving 12 additional banks for trade lines and adding countries (Bosnia and Herzegovina and Romania) to the program. The GTFP trade volumes more than doubled in the region against the previous year, driven mainly by banks in Belarus, Kazakhstan, and the Russian Federation. Pricing generally rose with the perception of increased risk and, notably in the case of Russia, came down considerably in 2010.

With counterparty risk perceived to be untenable, IFC saw a migration from open-account transactions to GTFP-supported letter of credit issuance. Such instruments, available with postimport financing, provided much-needed financing to SMEs in the region. The general risk perception of Central Asia was severely affected by the protracted and controversial events surrounding the Kazakh restructuring. GTFP continued to lend support to two small, private sector banks there that emerged unscathed from the turmoil. In keeping with its strategic focus of supporting South-South trade and staying the course in challenging markets, the program recently issued a guarantee for a $3.4 million shipment of sugar from Brazil to Kazakhstan.

GTFP in Latin America

The decisive, well-timed intervention of the Brazilian government set the tone for the region, which emerged from the crisis early and avoided the depths experienced elsewhere. The challenge for the dynamic Brazilian market and particularly for the smaller economies in the region was the lack of liquidity available from the traditional international banks, which had been regular providers of finance to the real sector. The dearth of financing was most acute in the exporting countries such as Argentina, Brazil, Guatemala, Honduras, and Paraguay.

GTFP stepped up its capacity in the region by covering the risk of 51 banks and mining the GTFP network of banks for viable partners to channel funding to Latin American countries during the period. IFC maintained its focus on critical flows, with as much as 56 percent of its support representing agricultural goods. In addition, the program began to support energy-efficiency-related exports, which made up 14 percent of the $1.2 billion coverage extended in the region in fiscal 2010.

GTFP in the Middle East

Most of the banks in the Middle East and North Africa were not directly affected by the global financial crisis. The region's emerging markets were less exposed to the "toxic" assets affecting other banking systems, partly because of conservative central bank regulations and less integration into the global financial system. Nonetheless, banks assumed protective positions in the wake of the financial uncertainty, which made trade an indirect casualty of the resulting contraction in credit capacity. The eventual debt default and restructuring situations in Dubai and Saudi Arabia kept the region in a holding position.

As in other regions, the impact of the crisis varied from country to country. GTFP bank clients are drawn mostly from the region's non-oil-producing economies, which have a diversified export base and import needs highly reliant on the European and U.S. markets. Thus, the softening of these markets has put

pressure on trade flows. For example, GTFP extended its guarantee in support of a bank in West Bank and Gaza, facilitating the shipment of critical medical imaging equipment to health centers there.

GTFP guarantees have historically been used in the region for unfunded risk mitigation related to letters of credit. In response to the onset of the crisis, the program increased the number of banks covered and enhanced the trade facilities for existing partner banks where it was most needed, notably in Pakistan. Assistance to Pakistan included a landmark trade transaction that brought together support from IFC, the Asian Development Bank, a global confirming bank, and a local Pakistani bank to provide trade finance coverage of up to €110 million in equipment for the textile industry, which accounts for more than 60 percent of the country's industrial activity.

GTFP Solutions Provided and Lessons Learned

In the wake of the crisis, IFC's responsiveness and ability to play its countercyclical role by taking more risk through the existing trade program and launching the complementary trade program proved critical to its success in supporting clients engaged in cross-border trade across all regions. IFC's ability to engage quickly and assume a leadership role among multilateral institutions was rooted in the experience and in-house expertise gained before the onset of the financial crisis, through three years of operating the GTFP platform.

Since GTFP's inception in 2005, the program has facilitated many first-time partnerships between banks looking for trade solutions on a transactional basis. Such "brokered" relationships have expanded correspondent banking opportunities for client banks, including bank lines of credit and released cash collateral requirements. Improved financing availability has enabled the client base of small local banks, largely SME importers and exporters, to reach new markets under competitive terms. Annually, roughly 80 percent of the guarantees issued have been for amounts less than $1 million, with the median at $155,000, reflecting support for shipment sizes consistent with small businesses.

As of late 2008, the crisis of confidence among banking institutions became a defining feature of the disruption to trade financing, which especially affected smaller banks, low-volume markets, and SME clients in the emerging markets. GTFP's mandate facilitates access to trade financing for underserved market segments. The program's ability to sustain partnerships among a broad number of banks from developed and developing markets helped to maintain trade across established corridors and to support nontraditional, nascent trade corridors—from exports of cashews from Côte d'Ivoire to Vietnam, to grain from Thailand to Mali, to cement from Turkey to Sierra Leone.

In addition to delivering access to trade credit, GTFP continued to provide trade advisory services to enhance the functioning of trade and the training of the trade professionals globally. During the crisis, the advisory program expanded its course offerings to respond to the heightened risk environment by adding modules in risk management and KYC compliance. In the midst of the crisis in 2009, the program provided its first training for Iraqi bankers to help this emerging nation rejoin international trade networks and promote growth of the Iraqi economy. In 2010, GTFP facilitated 58 trade training courses in 34 countries, reaching more than 1,880 bankers.

The Global Trade Liquidity Program

Against the backdrop of a world financial system in turmoil, IFC and development finance institutions, as part of the G-20 mandate, began exploratory discussions in early 2009 with global banks on how to work together to help keep trade flowing worldwide. These initial talks culminated in the GTLP initiative.

GTLP plays a stabilizing and catalytic role in trade finance. Phase 1 of this program—launched July 2009 at the second annual World Trade Organization (WTO) Aid for Trade Global Review in Geneva—has focused on a collaborative crisis response to rapidly mobilize and channel funding to support emerging markets' trade finance. GTLP is the first global solution of its kind in the trade finance business. It was implemented through a partnership among development finance institutions (DFIs), bilateral and multilateral organizations, and governments to mobilize temporary funding targeted to support trade finance in the developing world.

The IFIs, bilateral and multilateral organizations, and governments that have partnered with IFC for GTLP include the U.K. Department for International Development, the U.K. Commonwealth Development Corporation, the Japanese Bank for International Cooperation (JBIC), the Netherlands Ministry of Foreign Affairs, the African Development Bank, the Organization of Petroleum Exporting Countries' Fund for International Development (OFID), the Saudi Fund for Development, Canada's Department of Finance, the Swedish International Development Cooperation Agency (Sida), and China's Ministry of Finance (indirect support through private placement of IFC bonds).

IFC acts as agent on the program partners' behalf and partners with global, regional, or local banks (utilization banks, or UBs) to channel liquidity to the banks in two ways: (a) a 40 percent risk funded participation, and (b) short-term loans. The UBs that have partnered with GTLP include Standard Chartered Bank, Citibank, Commerzbank, JPMorgan Chase, Standard Bank South Africa, Afreximbank, and Rabobank.

A total of $1.7 billion in commitments from eight participants has been raised, along with an additional $1.5 billion parallel arrangement with JBIC under a memorandum of understanding. Since its official launch in July 2009, GTLP implemented a rapid-response approach to mobilize and channel funding to support emerging markets trade finance. This momentum has continued, supporting more than $12 billion in trade as of February 2011 and financing more than 8,500 trade investment instruments, with close to 40 percent of the program reaching low-income countries (LICs) and lower-middle-income countries (LMICs), and 81 percent supporting small and midsize businesses. The program's financial performance has been solid with no losses and an average net annualized yield of 1.96 percent. Three leading publications (*Global Trade Review*, *Trade Finance*, and *Finance Asia*) have recognized GTLP as "Deal of the Year" for its innovation, rapid deployment, and development impact.

GTLP Phase 2

As the financial crisis abated, the needs have evolved—turning from injecting liquidity to guaranteeing risk. Statistics show that global trade has picked up once again but with a slow recovery to different degrees across regions.

A survey of 88 banks by the International Monetary Fund (IMF) and the Bankers' Association for Finance and Trade (BAFT)—now merged with International Financial Services Association (BAFT-IFSA)—found that risk premiums for private trade finance continued to rise, although at a slower pace than during the peak of the crisis (IMF-BAFT 2009). The International Chamber of Commerce's Global Survey in April 2010 reported that banks continued to be risk-averse and selective in supplying trade finance (ICC 2010); 76 percent of the banks interviewed said more stringent credit criteria were being applied, and 24 percent cited capital allocation restrictions as a constraint on trade finance. One underlying reason for the overall constraint on trade finance is that the many countries' and banks' credit ratings were downgraded, which in turn also increased capital allocation requirements.

Although global trade recovery is encouraging, growth patterns have yet to stabilize across the globe. This instability is partly attributable to the temporary nature of some key drivers of the trade recovery. The IMF's *World Economic Outlook Update* reported that global exports, after growing at a 21 percent annualized rate in the first half of 2010, decelerated sharply, declining at an annualized pace of 1.65 percent in the third quarter of 2010 (IMF 2011). Other factors include high unemployment, limited consumer confidence, sovereign risks, spikes in food and fuel prices, and certainly recent turbulence in Europe, the Middle East, and North Africa, which are contributing to the slowing pace of global trade recovery. Therefore, since late 2010 as GTLP entered its first year anniversary, the initiative

was implemented with mostly regionally-focused solutions to direct its resources where the needs were greatest—forming the foundation of GTLP Phase 2.

In L'Aquila, Italy, in 2009, the G-20 cited food security as a key priority for agriculture investments over the next three years. Trade was identified to play a role in the larger, comprehensive Global Food Initiative. As a complement, agriculture trade support is expected to help facilitate availability and movement of agricultural products. The leveraging of established vehicles such as GTLP offers one immediate and effective solution to help address the demand for greater action in addressing global food security.

In Phase 2 of GTLP, IFC will address these two challenges—mitigating risk and supporting agriculture trade—through two new products:

- *GTLP Guarantee.* IFC's proposed unfunded, risk-sharing solution aims to encourage banks to finance trade by helping to mitigate the credit risk of reentering, or expanding into, emerging markets.
- *GTLP Agri.* This program aims to support eligible export-oriented SMEs in the food and agribusiness sectors through banks. It provides a short-term loan solution to scale up lending to the agricultural export sector, thus supporting agriculture investments and food security over the next three years. GTLP Agri will help increase liquidity and stimulate trade flows in the agricultural sector, at the same time aiming to meet seasonal working capital needs to facilitate production and supply of agriculture commodities and food.

GTLP Design and Implementation

GTLP is structured to maximize each party's resources and network. The program has been implemented in phases, both on funding and use, to give the program partners a flexible platform to channel the aggregated funding to the UBs. The funding is allocated to each UB under a separate UB trade facility.

Phase 1 programs

Funds are channeled to the UBs through a risk-sharing structure. The setup maximizes leverage; program partners bear 40 percent of the funding and risk, and the UBs bear 60 percent. The risk sharing of funded trade financing is on a pro rata basis by purchasing up to 40 percent of short-term, self-liquidating trade assets. Trade assets are issued from a preapproved list of emerging-market issuing banks. These trade instruments go through a compliance check before they are deemed eligible. The estimated average size is up to $1.4 million and an average tenor of up to 140 days. Most of the facilities run for one year, with an option to extend for another year or two. GTLP and the UBs share returns on a pro rata basis.

Part of IFC's role as an agent is to supervise the portfolio to ensure that the UB uses funding for trade finance and meets the criteria. The UB also must demonstrate the developmental reach and incrementality of the trade assets. In the case of Standard Bank South Africa and Afreximbank, dedicated short-term loans are provided for trade financing to smaller or regional UBs without a risk-sharing scheme.

Specifically, GTLP comprises three basic interlinked components:

- Supply-side, or aggregate, funding from the program partners
- Demand-side funding, or individual UB trade facilities, whereby the program partners either (a) cofinance with the UB's pools of trade receivables under a risk-sharing scheme, or (b) provide fully funded, short-term loans to UBs, thus linking the supply and demand
- Handling of operational issues concerning IFC's role as agent on behalf of the program partners.

Supply-side funding

The program partners sign a GTLP Master Framework Agreement that governs the agreement among program partners, setting forth the

- guiding principles, capital contributions and cash flow management, regional and sectoral distribution, representations, and reporting requirements;
- criteria and guidelines to select the UB;
- role of IFC as agent for the program partners;
- establishment of a GTLP master account (for all cash flows) to be managed by a processing bank; and
- required information to be provided to program partners for each to endorse and to make credit decision (IFC is not the lender of record on behalf of other program partners).

The benefits of this structure to the program partners include

- increased deal flow through IFC's global origination capacity;
- access to IFC's due diligence, structuring skills, and global presence;
- efficiency in terms of time and costs; and
- equal rights and obligations among all program partners.

The benefits to the UBs include

- enhanced access to IFC and all program-partner funding while directly dealing only with IFC; and
- time and cost savings throughout the life of the facility.

Demand-side funding

The program partners together sign a UB Trade Facility Agreement with each of the UBs. IFC, acting as agent, undertakes the appraisal and negotiates on behalf of each of the program partners. Each agreement stipulates, among other things, the level of program partner funding, eligibility criteria, a list of preapproved issuing banks and their limits, and a regional diversification to meet the program partners' requirements.

Program partners are expected to cofund (their pro rata share of commitments) under the 40/60 risk-sharing investment structure. Under this approach, the program partners purchase up to 40 percent of pools of trade receivables confirmed by the UB and issued by preapproved issuing banks. Underlying trade receivables are self-liquidating and mature within 360 days.

The risk sharing, among other features, ensures that the UBs retain a significant ownership interest in the trade assets, which mitigates the risk of cherry picking. Under the fully funded short-term loan, the program partners simply provide short-term (up to one year) loans to a UB, which would be renewable at the end of each year at the sole discretion of IFC. The flow chart in figure 18.3 shows an overview of the supply and demand structure.

Phase 2 programs

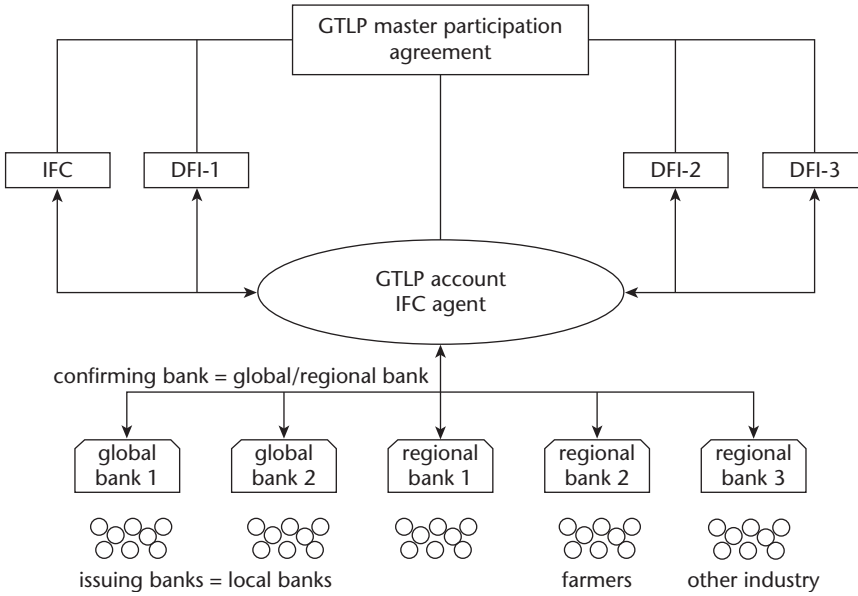
As summarized previously, IFC developed its GTLP Phase 2 programs to address two evolving needs: to mitigate risk and to support agriculture trade.

GTLP Guarantee

GTLP Guarantee envisions unfunded risk-participating arrangements that IFC and other program participants will provide to banks to facilitate trade across challenging markets. Consistent with the broader GTLP objectives, the GTLP Guarantee-supported portfolio will comprise funded and unfunded trade transactions where the obligor is an eligible emerging-market issuing bank (EMIB). GTLP Guarantee responds to an increasing demand for unfunded regional and multiregional solutions and also meets the needs of potential program participants that wish to join GTLP using guarantees instead of liquidity.

IFC and the program participants will provide credit guarantee coverage of up to 40 percent on portfolios of trade transactions (or 50 percent in Africa, to induce expansion in this region) originated by UBs through their networks of EMIBs. IFC will be the primary guarantor, with the program participants providing a pro rata counterguarantee in the countries they have agreed to support so that the net IFC exposure is capped at any given time.

Figure 18.3 GTLP Supply-Demand Overview



Source: IFC GTLP team.
Note: GTLP = Global Trade Liquidity Program. DFI = development finance institution. IFC = International Finance Corporation.

This structure allows IFC to fulfill its agency role to quickly mobilize and channel risk-sharing support from various mobilization sources to banks while also providing AAA guarantee coverage. In addition, it facilitates the ease of administration by the UB, which will interact with only one guarantor as opposed to several. The first projects under GTLP Guarantee are with Intesa Sanpaolo S.p.A (Italy), which provides a wide presence in Central and Eastern Europe, and Commerzbank for an Africa-focused portfolio.

GTLP Agri

GTLP Agri extends GTLP through its focus on the food and agribusiness industry. It complements the G-20 pledge to establish the Global Food Security Program to improve food security through support to the agribusiness sector and increased agriculture investments.

GTLP Agri, which provides mostly short-term funding, is designed to extend trade and working capital loans through regional banks in developing countries to

eligible food and agribusiness farmers and SMEs in regions with an active food and agriculture export market to achieve a wider reach and greater development impact.

GTLP Solutions Provided and Lessons Learned

GTLP has shown that a successful program is not only about the raising of funds, but also about strategic placement of those funds. Partners will remember and assess such initiatives based on how effectively the funds were used to achieve their development and commercial objectives.

The program's approach of anticipating clients' needs and offering win-win solutions to build credibility for long-term partner-agent relationships has created a demonstration effect among IFIs, bilateral and multilateral organizations and governments, and banks. As a result, several GTLP partners and banks are keen to join Phase 2. GTLP has also been set up in a way that is not exclusive to IFC. Its flexible, market-based structure is designed for scalability and replicability. The GTLP Guarantee program, as an example, has provided an innovative, outside-the-box structure whereby IFC "fronts" DFIs' or governments' participation with counterguarantees.

Given that producers and exporters were hit hard by the economic crisis, GTLP was structured to seamlessly inject large amounts of funds in support of the world's trade system. The structure ensured that trade finance reached those in need without adding to the cost or administrative burden of the beneficiary companies—and without them even knowing how they were being supported "behind the scenes" and at no additional cost to them. Thousands of companies in key importing and exporting nations have benefited from GTLP, and the cases below are among the many that demonstrate how this extra capacity benefits the trading community.

Notwithstanding the overall success of GTLP, this initiative will be systematically wound up as originally planned beginning in 2012 given the temporary nature of this crisis response program. Despite this exit, GTLP provides IFC and its partners with a foundation of additional experience, partnership platform, and lessons that can be leveraged to develop future innovative solutions to tackle global strategic priorities such as SMEs and agriculture.

An award-winning cocoa financing deal in Nigeria[1]

As sole arranger and lender, Nigeria's Stanbic IBTC Bank, a member of the Standard Bank Group, successfully closed a $15 million cocoa financing for Agro Traders Ltd. (ATL) in November 2009. The transaction was one of the first applications of the Standard Bank Group's dedicated trade finance lines from the IFC

to support trade to and from Sub-Saharan Africa. ATL is based in Akure, southwestern Nigeria, and is one of the country's largest cocoa exporters, handling more than 15 percent of Nigeria's annual cocoa output.

The facility, structured as preexport finance, supported ATL's purchase of cocoa beans from the 2009–10 Nigerian cocoa harvest for export to Europe. Olu Ajayi, head of structured trade finance for Stanbic IBTC, called it arguably the first such "Made in Nigeria" transaction—provided in Nigeria by a local bank to a local exporter with documentation undertaken by a local legal counsel.

The transaction provided significant support to the Nigerian cocoa industry, which is undergoing regeneration as part of the Nigerian federal government's efforts to encourage the growth of the agricultural sector and to enhance the country's non-oil exports and revenues. The transaction also provided much-needed access to U.S. dollar funding and liquidity support to a local commodity trader at a time when a number of banks, both local and international, were withdrawing their U.S. dollar liquidity lines or applying punitive interest rates to Nigerian corporate borrowers because of the global financial crisis and the current crisis engulfing the Nigerian banking sector.

The transaction is particularly interesting in terms of the in-country Nigerian trade finance team supporting the local businesses rather than always transacting from outside the country. It also supports the bank's strategy of bringing experienced trade finance practitioners into the Nigerian market, thereby increasing the skills base in Lagos.

IFC's support, through a $400 million funding line for trade finance in Sub-Saharan Africa, enables Stanbic to originate transactions in West Africa, resulting in more deals in the continent.

The food producer in Vietnam

A mid-size Vietnamese food producer that exports to the East Asia region manages its working capital efficiently by obtaining discounts against its export receivables from Standard Chartered Bank through its local bank. Financing so channeled into the trade deal between these two parties happened swiftly and at a lower cost than they would have otherwise incurred. Their local banks, facing a liquidity crunch, would have charged much more for financing if not for the support of this GTLP program.

A garment manufacturer in Indonesia

A garment manufacturer based in Indonesia has a contract to supply to a buyer in Colombia. Typically, the exporter would prefer to be paid upon shipment, while the buyer can obtain the most favorable terms from the seller by paying cash on delivery. Through the GTLP, the buyer could receive cost-effective import financing from

its local bank, and the exporter received payment earlier in its working capital cycle, lowering costs and reducing risks for both parties.

Trade during postconflict reconstruction in Angola

Ango Rayan Group International is a company based in Luanda, Angola, that began operations toward the end of the country's decades-long civil war. It employs 700 staff members, and its business lines include food distribution, highway construction, and wholesaling electrical equipment, among others. With an annual income of about $4.8 million (in 2008), Ango Rayan's sales territory is 100 percent local, and its main customers are Angolan agencies, local stores, and outlets.

Early this year, with an export clean trade advance, Ango Rayan imported $500,000 worth of food products from Palmali Industrial de Alimentos Ltd., a meat exporter in Paraná, in south Brazil. The financing was extended by Brazil's Banco Bradesco, a GTLP issuing bank. It is companies like Ango Rayan that can contribute to the diversification of Angolan industries apart from the oil sector, preserve jobs, and contribute to reconstructing postconflict Angola.

Note

1. Summary of an article from *GTR* magazine, March 2010.

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19

REGIONAL DEVELOPMENT BANKS' RESPONSE TO THE CRISIS: SCALING UP THE TRADE FINANCE FACILITIES

Rudolf Putz, Ghazi Ben Ahmed, Steven Beck, and Daniela Carrera

This chapter describes the impact of the 2008–09 financial crisis on regional trade and trade finance, the institutional response of four regional development banks—the European Bank for Reconstruction and Development (EBRD), the African Development Bank (AfDB), the Asian Development Bank (ADB), and the Inter-American Development Bank (IDB)—and the lessons learned from their trade finance programs.

As trade credit froze and trade volumes plummeted in most developing countries, regional development banks quickly recognized the need to ramp up their trade financing provisions. Their programs helped both to cover risks and to increase liquidity. They mainly targeted small local financial institutions and small and medium enterprises (SMEs). Moreover, cofinancing arrangements among development banks, export credit agencies (ECAs), foreign commercial banks, private insurance underwriters, and investment funds have been critical in times of both risk aversion and constrained availability of trade finance.

European Bank for Reconstruction and Development

During the 2008–09 financial crisis, most countries in Eastern Europe and participating countries in the Commonwealth of Independent States (CIS) where

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EBRD operates suffered deterioration in economic activities, which reflected negatively on trade finance volumes. These countries witnessed the worst crisis since the collapse of the centrally planned economy in the early 1990s as a consequence of accelerated economic decline in Western Europe, which led to a drop in foreign capital flows into the region as well as the decline of commodity prices.

Impact of the Crisis in Eastern Europe and Central Asia

Economic activity contracted rapidly, and by the end of 2008, many Eastern European and CIS countries were experiencing significant declines in industrial production. At the beginning of 2009, this was particularly noticeable as the crisis was spilling back from the real economy into the financial sector. Fears of bank credit losses triggered a new wave of currency pressures, coupled with an already ongoing depreciation of local currencies. The first quarter of 2009 saw levels of negative output even in the countries that had remained more resilient at the beginning, such as Bulgaria, Moldova, Mongolia, Romania, the Russian Federation, and the Slovak Republic.

The financial shock of September 2008 severely affected trade in the region. After years of developing trade integration in Eastern Europe and the CIS—within the region and with the rest of the world—and years of partially double-digit growth in export and import volumes, these countries faced a sharp fall in volumes. Even insulated countries in the Balkans or the Caucasus region were not immune and were eventually hit by the collapse of global trade. In Kazakhstan, Russia, and Ukraine, import and export volumes declined by approximately 50 percent in 2009 compared with 2008. Although trade volumes bottomed out in 2009 and improved over the course of 2010, there were no signs (as of the end of 2010) of swift recovery to the levels seen before the crisis.

Coupled with lower demand for investment and consumer goods, many local banks in Eastern Europe and the CIS region are still suffering from a high percentage of nonperforming loans. As a result, local banks had to stop lending to local exporters and importers to strengthen their capital base. Many local banks are now heavily engaged in restructuring their nonperforming loans and are cautious about taking on new risks. These banks perform stricter credit risk assessments of their clients, whether they are exporters or importers, and require good credit standing to give them access to trade finance; however, even a good credit standing does not guarantee the necessary support for these companies.

Although the liquidity crisis has eased and some banks are becoming more liquid again, there are no signs of granting more credit to companies engaged in export or import businesses. Especially for SMEs with low credit ratings, it is increasingly difficult to obtain the support they need to conduct international

business. This is especially true in less-developed countries where local banks are restrictive in their business activity—further underlined by the fact that many Western commercial banks have reduced or completely closed their trade finance limits for many banks in Eastern Europe and the CIS region. In particular, this is the case in Kazakhstan and Ukraine, where the banking sector suffered enormously from well-known banking defaults.

EBRD Response to the Crisis

EBRD responded quickly to the crisis by increasing the overall program limit of its Trade Facilitation Program (TFP) from €800 million to €1.5 billion, which would have allowed the program to facilitate more trade. But, unexpectedly, TFP's overall use and volume fell sharply in 2009. After nine years of increased volumes year over year, the TFP turnover decreased by more than one-third—from €890 million in 2008 to €573 million in 2009. A major reason for the decline was the decrease in imports of investment goods (for example, machinery) that usually have a higher underlying value. Most TFP transactions were related only to essential goods such as foodstuffs and lower-value consumer goods, which continued to be imported to the region and were supported mainly by smaller local banks. In particular, foreign-owned subsidiary banks and larger local banks, which are usually involved in higher-value transactions with a special focus on the import of investment goods and machinery, were using TFP less because they had become more cautious about covering and financing large-scale transactions.

However, as the economies in many countries improved, EBRD saw an increased demand for TFP in the first half of 2010. Overall European Union (EU) industrial production began to recover in early 2010, with particular strength in Germany and France. Together with positive industrial confidence, data indicated a strong second quarter for the EU economy—with benefits accruing to those non-EU economies in EBRD's region that have strong trade links to the EU. Therefore, countries like Belarus also reported strong growth in the second quarter of 2010 when gross domestic product (GDP) grew faster than anticipated, led by a buoyant growth in exports and construction. These positive trends mirrored the increased demand for TFP support as more goods were being exported and imported into EBRD's countries of operation.

As of mid-2010, trade finance levels had stabilized but were unlikely to return quickly to the high-volume levels that preceded the financial crises. The TFP will continue its support, especially for small banks and banks in less-advanced countries, which will in turn allow those banks to manage the demand for trade finance from local SMEs needing support for their import and export businesses.

Lessons Learned

An important factor that enabled the EBRD to deal efficiently with the economic crisis was that TFP was already established and firmly in place, so it was well-developed and tested before the 2008–09 crisis. (See annex 19.1 for information about the history of TFP.) It was crucial to act swiftly, react, and adapt, implementing specific crisis-response measures during and after the crisis.

Because the latest economic crisis also encompassed a liquidity crisis, it became imperative not only to help cover risk but also to provide liquidity to the market. This was particularly the case for smaller banks and banks in less-developed countries where the general support was more directed toward a handful of large banks and international banking groups. TFP focused on supporting SMEs through smaller banks and banks in less-developed countries, often being the only source of support for their trade finance operations.

Because the program operates only through local banks, EBRD has implemented controls and monitoring measures jointly with its partner banks to develop a mechanism ensuring that only genuine trade finance transactions are guaranteed or financed. These control measures—such as checking the transactions and underlying documents to verify the cross-border movements of actual goods and services for quoted amounts—were introduced to provide security and to identify transactions that would not qualify as real trade finance. As a result of the crises and its subsequent losses, banks in EBRD countries of operation and foreign confirming banks are now more cautious and are checking transactions in more detail to ensure that their funds are actually used for trade finance and match the underlying trade finance cycle.

It has also been proven that cofinancing arrangements with other development agencies, export credit agencies, foreign commercial banks, private insurance underwriters, and investment funds is an advantage especially during times of risk aversion and constrained availability of trade finance. TFP has been in the forefront of such cofinancing arrangements and signed cofinancing arrangements with the Netherlands Development Finance Company (*Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden, or* FMO), the Organization of Petroleum Exporting Countries' Fund for International Development (OFID), and private insurance underwriters. These institutions share EBRD's risk in TFP facilities for selected banks in Azerbaijan, Belarus, Georgia, Kazakhstan, Moldova, Russia, Tajikistan, and Ukraine. Without EBRD's involvement and expertise, private insurance underwriters in particular could not have continued their support and investments in many Eastern European and CIS countries because of the increased economic risks. The continuous involvement of risk-sharing partners allowed the TFP to maintain the limits for its issuing banks and provided the necessary support the banks in the region needed.

Another consequence of the crisis is that foreign exporters and commercial banks are more likely than before to decline new business, even with 100 percent EBRD risk cover under TFP guarantee facilities. The main reason is that they lack sufficient liquidity to finance these transactions, particularly in larger amounts and of longer tenors. If at all, foreign exporters are ready to accept payment by letters of credit (LCs) until delivery of the goods, but they can no longer grant longer payment terms to finance sales of machinery and equipment, storage, and distribution of the imported goods in EBRD countries of operation.

Importers and exporters in these countries, therefore, find it increasingly difficult to finance foreign trade transactions (particularly imports of machinery and equipment), exports from EBRD countries of operation, and intraregional trade transactions. As a result, EBRD not only offers up to 100 percent risk cover for LCs issued by TFP client banks in Eastern Europe and the CIS, but also provides the issuing banks with the necessary liquidity for preexport finance, postimport finance, and financing of local distribution of imported goods. EBRD often is the only institution that can still provide risk cover and liquidity to finance foreign trade with importers and exporters in this region.

African Development Bank

The adverse impacts of the financial crisis that hit the world in 2008 became evident in Africa toward the end of the same year. Its severity and detrimental impact on investment and trade required urgent, collective countercyclical actions by the international financial community, using creative and pragmatic approaches to support the recovery of trade flows as soon as possible. As many African commercial banks faced severe liquidity constraints, AfDB played an important role in helping the continent through the financial crisis.

Impact of the Crisis in Africa

Since the onset of the crisis, growth on the continent fell well below the 2006–08 trend line of 6 percent per year but remained positive overall. International Monetary Fund (IMF) Managing Director Dominique Strauss-Kahn expressed optimism about the continent's 2010 economic prospects, which have been strengthened by "good policies that had given Africa's governments the fiscal space to cope with the crisis" (Willson 2010).

The global economic crisis has given new impetus to domestic resource mobilization in Africa. However, it has also underlined Africa's lack of export diversification—that is, continued primary commodity dependence. Growth in the medium term will continue to depend largely on the recovery of global demand. The problem of import financing in Africa will likely fully materialize

as demand picks up, and if not addressed adequately, it may hamper economic growth.

Furthermore, global commercial banks indicate that the high cost of information gathering on counterparty risk and the low profitability of small operations in the region are making the financing of imports in Africa, or the confirmation of LCs from local banks, unattractive. The impact of Basel II is preoccupying the market, and all major international players have become more selective in working with local counterparty banks—increasing requirements for documentation, cash collateral, and other forms of guarantees that are costly and cumbersome to fulfill. These conditions may lead to a shortage of international credit on affordable terms when consumer and investment demand pick up in Africa.

AfDB Response to the Crisis

In early 2009, AfDB assessed the activities of 74 African commercial banks and specialized financial institutions to develop an overview of the African trade market, its trends, and key actors and to determine how these have been affected by the global financial crisis. The assessment was updated in March 2010 to reexamine the situation and provide guidance. AfDB's primary concerns have been to ensure that its intervention meets the following objectives:

- Addresses the critical market constraints (that is, is effective)
- Responds to the crisis in a manner that is timely and that matches the AFDB's resource capacity
- Does not put AfDB's financial soundness at risk (that is, is prudent)
- Leverages the comparative advantages of partners while giving AfDB adequate visibility for its contribution (that is, garnering recognition that is both additional and complementary).

Following this assessment, AfDB established a Trade Finance Initiative (TFI) in January 2009 as part of a broader package of crisis response initiatives. The TFI responds to calls from its regional member countries and aims to help African commercial banks and development finance institutions (DFIs) to use AfDB resources to support and boost trade finance operations.

At the institutional level, while the largest pan-African banks have been able to support their clients on the financing of exports during the crisis (although at a higher cost and for a smaller size and tenor of transactions), smaller banks and banks in countries whose rating has been downgraded have suffered a loss of access to domestic and international inter-bank resources at acceptable terms. Like everywhere else in the world, smaller banks are suffering from the general

re-assessment of "counterparty" risk. The response has therefore consisted in building a global network of DFIs that pool financial resources for maximum outreach and scale, broad risk diversification, and ability to leverage the economies of scale of partners already actively involved in the business. (Box 19.1 below summarizes the terms and conditions of TFI's credit products.)

Box 19.1 Terms and Conditions of TFI Credit Products

Eligibility

African financial institutions (commercial banks and DFIs) that are engaged in trade finance may apply for a trade finance line of credit (LOC) under the AfDB TFI. In reviewing credit applications, AfDB will use its standard selection criteria, including strategic alignment, commercial viability, development outcomes, additionality, and complementarity. All financial intermediaries must meet AfDB's credit standards (risk rating of 6 or better), and the risks of each transaction will be evaluated on a case-by-case basis. All applications will be subject to the AfDB's prescribed review and approval processes and procedures.

Use of Proceeds

The proceeds of a trade finance LOC will be used by the recipient financial intermediary for trade finance operations. This includes, but is not limited to, standard import and export finance operations including pre- and postshipment finance. Given the short-term nature of trade finance (90 percent is less than one year), the financial intermediary will be permitted to reuse or revolve the proceeds until the contractual repayment dates of the facility.

Maturity

Given the short-term nature of most trade finance operations, the standard final maturity of trade finance LOCs will be up to 3.5 years. Shorter final maturities can be expected.

Repayment Terms

Trade finance LOCs may have amortizing repayment terms with an agreed grace period on principal repayments (typically up to one year) or may be repaid in a single (bullet) installment at final maturity. In line with standard practices, AfDB may charge a prepayment fee for early repayment and a penalty for late repayment.

Disbursement Terms

Like standard LOCs, a trade finance LOC will usually disburse in two tranches. The first tranche (generally up to 50 percent) will be drawn after the conditions precedents have been met. The second tranche will be disbursed after AfDB has verified that the use of proceeds of the first tranche complies with the terms and conditions of the legal agreement.

Pricing

Like standard LOCs, a trade finance LOC will attract up-front fees of up to 1 percent of the committed amount and will be priced with a margin over a standard interest rate reference such as the London interbank offered rate (LIBOR) in the currency of the facility.

AfDB has allocated $1 billion for TFI, which has two main components: $500 million for trade finance lines of credit (LOCs) and $500 million allocated to the Global Trade Liquidity Program (GTLP) of the World Bank Group's International Finance Corporation.[1] AfDB's contribution to GTLP plays a key role in allowing the beneficiary banks to leverage their credit and cross-border limits and to significantly enhance trade credit availability across the continent. AfDB's involvement in the GTLP has also helped increase the share of GTLP resources targeted for Africa.

For the African component of the GTLP, the confirmed partner banks included Standard Bank of South Africa (SBSA), Afreximbank (to complement AfDB's trade finance LOC), and Citibank. The $250 million LOC facility to SBSA was the first GTLP transaction to be approved by AfDB and disbursed.

Initial demand for trade finance LOCs was strong. Cumulative trade finance requests to date amount to approximately $1 billion. This total includes requests from five regional banks, one DFI, one trade insurance agency, and three national banks. However, because the trade finance market has been improving in some African regions (North Africa, for example), some of the initial financing requests did not materialize.

In addition, AfDB helped secure the syndication for financing the purchase and export marketing of Ghana's 2009 cocoa harvest by the Cocoa Board of Ghana (Cocobod) because the diminished risk appetite of many international commercial lenders had initially indicated that a financing gap was threatening this vital trade transaction. For this transaction, AfDB and several commercial financiers raised a $1.2 billion preexport facility in September 2009. AfDB's endorsement of the feasibility of the transaction, with its $35 million participation in this globally syndicated trade finance operation, instilled confidence among commercial banks to successfully close the deal. Cocobod supports more than 2 million Ghanaians involved in the cocoa industry. In March 2010, AfDB sold $12.5 million (50 percent) of the remaining Cocobod exposure to Nedbank of South Africa, pricing it at par.

Although AfDB is a newcomer to the trade finance market, the urgent nature of the global financial crisis has forced it quickly up the learning curve. The learning process has been greatly facilitated by the sharing of experience with partner institutions including sister international financial institutions (IFIs) that have been active in the trade finance industry for many years. A recent roundtable discussion on trade finance cochaired by the AfDB president and World Trade Organization (WTO) Director-General Pascal Lamy concluded that, going forward, AfDB and other IFIs have an ongoing role to play in Africa's trade finance markets.

Lessons Learned

Local and international commercial banks active in Africa as well as DFIs acknowledged that AfDB still has an important role to play in supporting trade finance in the immediate postcrisis period.

First, several commercial banks indicate that the crisis is not over and that AfDB should maintain its TFI. Therefore, GTLP will continue to provide needed support and is expected to cease operations only after the markets have normalized and demand for its products is no longer sufficient to justify continuation of the program.

Second, access to trade finance facilities continues to be constrained by the small size of many African financial institutions. The liquidity problem has become a capital allocation problem based on a problem of risk appetite. In the short term, AfDB should therefore assess the additionality and impact of a guarantee program in partnership with a key trade finance player. This outsourcing would allow major partners active in trade finance to increase the scope of their programs (that is, include more banks) and to complement the existing program so existing banks can access increased trade lines.

Finally, African commercial banks reported increasing demand for facilities with importers and exporters in emerging Asia. However, the banks also reported that trade transactions are constrained by Asian banks' unfamiliarity with the continent and its financial institutions. Asian firms require LCs, and transactions are slow and difficult. African commercial banks suggested that AfDB could facilitate trade transactions by working with its counterpart financial institutions in Asian markets, especially China, India, the Republic of Korea, and Thailand.

Inter-American Development Bank

In the immediate aftermath of the crisis, the Latin American and the Caribbean region suffered many of the shocks experienced in other parts of the world: a fall in stock and bond prices, sharp currency depreciations, and recession, causing the productive asset values of the seven largest Latin American economies to collapse in the second half of 2008.

Impact of the Crisis in Latin America and the Caribbean

Because of an increase in the risk premium, the region experienced an increase in public sector borrowing costs and a leap in corporate costs. Risk perception also caused a significant outflow of capital, leaving the private sector with no access to

external funding. In addition, Latin America experienced a significant decline in trade volumes, given that its major trading partners are the United States and the EU. The drop in prices of primary commodities such as oil had a dichotomous impact initially: oil exporting countries faced a detrimental period of trade shock while oil importing countries benefited, albeit only initially. Later, as the crisis unfolded through 2009, the general trend was downward for all the major economies in the region (Fernández-Arias and Montiel 2009).

However, unlike in previous periods of financial turmoil, Latin America faced neither bank runs nor currency and debt crises. Strong macroeconomic fundamentals of low inflation, twin current account and fiscal surpluses, considerable reserves, and increasingly flexible exchange rate regimes arguably cushioned the impact of the crisis (Izquierdo and Talvi 2010). Particular emphasis is placed by Izquierdo and Talvi on the role of the international community as a lender of last resort.

IDB Response to the Crisis

When the crisis hit, the IDB's Trade Finance Reactivation Program (TFRP) was in place to support IDB's fast response in Latin America and the Caribbean. Recognizing the countercyclical role that international trade plays to promote the exchange of goods and services, create jobs, enhance national production, and foster inclusive economies, the IDB's TFRP made a commitment to strengthen supply-side capacity and trade-related infrastructure in the region.

The TFRP includes the following tripartite offering of products and services that together seek to ensure stable and reliable sources of trade finance in the region:

- Trade Finance Facilitation Program (TFFP) guarantees and A/B loans
- Trade funds
- Specialized technical assistance and trade finance training

The TFFP implemented in 2005 proved an effective tool for not only mitigating the effects of the liquidity crisis, but also expanding trade finance for financial intermediaries (FIs) and their clients. The TFFP is a fast-delivery vehicle that provides guarantees and loans that allow importers and exporters to reduce systemic and transaction risks, access new capital sources, and strengthen competitiveness without subsidizing and distorting the market.

The TFFP A/B loans target the liquidity shortage by directly funding FI clients' trade-related activities, while guarantees continue to enable the region's network of issuing banks to access a broader number of international confirming banks.

The program issues standby LCs to cover confirming banks' trade finance risk and provide trade finance loans to issuing banks in Latin America and the Caribbean so that they can continue to finance export and import clients. In response to the global economic crisis in late 2008, the IDB increased its TFFP limit from $400 million to $1 billion. Currently, the TFFP has more than $1.2 billion in approved credit lines and issued guarantees and loans for more than $800 million. These funds supported more than 1,100 individual international trade transactions. The TFFP has built a network of 72 issuing banks in 19 Latin American and Caribbean countries. Through the network of international confirming banks, the program is now present in 51 countries worldwide with 250 confirming banks belonging to 92 banking groups.

The Financial Markets Division also finances trade funds that mobilize equity investors to offer short-term trade finance for medium-size exporters through special-purpose trade vehicles. These innovative instruments provide access to finance to SME clients who would otherwise face unaffordable or limited financing from conventional outlets. In 2010 alone, IDB participated in trade funds that financed more than $914 million in trade activity, supporting more than 1,400 transactions in 12 different countries with 70 different companies. This engagement leads to a multiplier effect—stimulating the production, movement, and consumption of more goods and services across a range of countries and industries.

In 2007, IDB launched a technical assistance project targeting the participation of smaller FIs hitherto underserved in the TFFP. It focused on remedying the high fixed cost of identifying appropriate institutions, conducting credit analysis, and monitoring FIs' compliance with TFFP requirements. Using preliminary market research and bank-specific knowledge, the project identified FIs that would most benefit from TFFP integration but were outside its reach on a stand-alone basis. This was followed by credit analysis and technical consultations to integrate them into the TFFP as issuing banks and to use their trade finance capacity for the benefit of SME clients.

To further enhance the coverage of SMEs in the region, issuing banks and their SME clients have benefited from specialized trade finance training to address supply- and demand-side barriers, share knowledge, and create competitive advantages. The goal is to increase the FIs' trade finance skills and enable them to better identify and meet their exporting and importing clients' needs.[2]

Lessons Learned

IDB programs helped recognize the demands of small and medium FIs, which traditionally work with smaller importers and exporters, and quickly adapted

Box 19.2 IDB Trade Financing Increases Intraregional Transactions

A trend in IDB's trade financing is the emergence of intraregional transactions. In its initial stages, the Trade Finance Facilitation Program (TFFP) disseminated information and promoted collaboration within its participating bank network. (For more information about the TFFP network and the extent of both interregional and intraregional transactions, see annex 19.2.)

Gradually, contacts formed—first between banks, and then intraregional or South-South, trade deals transpired. In one such transaction, Ecuador's Banco de Guayaquil issued an eligible instrument for Banco de Comercio Exterior de Colombia (BANCOLDEX) to guarantee the export of trucks. IDB's TFFP provided BANCOLDEX with $4.1 million in coverage. According to Banco de Guayaquil's external trade manager, Luis Ceballos Córdova, "Intraregional trade is traditionally backed by reciprocal credit agreements under the Latin American Integration Association (ALADI). While numerous transactions have been closed under ALADI, its limits oftentimes prove insufficient. The IDB's TFFP offers an excellent alternative to not only complement the support provided by ALADI's Reciprocal Agreements but also to allow our transaction volume to grow significantly."

In similar deals, IDB has supported the import of Argentine hydroelectric turbines to Paraguay, export of Brazilian turbo generators to Peru, and import of Argentine automobiles to Honduras, among other transactions. Without the necessary support, trade would involve higher costs and levels of risk for Latin American and Caribbean economies that rely on such diversification to foster product specialization, technology transfer, competitiveness, and resistance to market volatility.

products and services to respond to clients' needs. These FIs have been targeted given their difficulty in accessing international markets, coupled with their critical role in stimulating employment, reducing poverty, deepening intraregional trade, and fostering a robust and inclusionary real sector—important countercyclical forces during economic downturns.

The IDB program has also helped foster intraregional trade. Intraregional transactions grew partly in response to the IDB network approach of supporting confirming and issuing banks through financing, technical assistance, and relationship building. The IDB is able to ensure a stable source of trade finance and in traditionally larger volumes while reducing dependency on international markets, which in turn furthers business alliances, generates jobs, and contributes to real sector growth in Latin America and the Caribbean.

Long-term relationships with issuing banks are critical to efficiency and agility. Although time and dedication are required up front to manage the short-term, dynamic nature of trade finance transactions, the IDB's implementation of the TFFP stressed the importance of maintaining close relationships with clients. As a result, it has been able to facilitate future transactions—especially important

when exploring areas of high social impact such as housing, SME, and education financing. Similarly, the IDB recognized the added value it could bring by employing a more holistic approach to the trade finance loans and risk mitigation products. with a combination of financing with training, technical assistance, and enhanced networks, there is a positive impact in capacity, expertise, and access to new markets in Latin America and the Caribbean.

Finally, coordination and communication between international institutions seeking to support and promote international trade have proved essential throughout program implementation.

Asian Development Bank

There is a persistent private sector market gap for trade finance in the more challenging Asian emerging markets—Bangladesh, Mongolia, Nepal, Pakistan, Sri Lanka, and Tajikistan to name only a few—but the gap became wider in both relatively well-off Asian emerging markets and the more challenging ones during the crisis. The gap widened after the September 2008 collapse of Lehman Brothers, when

- financial institutions took major hits to their capital base, leaving fewer resources available to support business in general, including resources for trade finance;
- everyone was concerned about counterparty risk, which dried up the secondary market for trade finance;
- financial institutions were worried about country risks—the prospect that evaporating demand for Asia's exports, lower remittances, and high unemployment could lead to social and political unrest; and
- Basel II rules (requiring more capital to be set aside for trade finance compared with Basel I) removed capital that otherwise would have been available to support trade.

Although there are persistent market gaps in trade finance at the best of times in the more challenging Asian emerging markets, the confluence of these four elements had a significant impact on the availability of finance—loans and guarantees—to support trade during the financial crisis. The Asian Development Bank's TFP focuses on the more challenging markets. The five greatest users of ADB's TFP are Bangladesh, Nepal, Pakistan, Sri Lanka, and Vietnam. Because the TFP focuses its resources on the more challenging markets, it does not assume risk in relatively developed markets such as China, India, Malaysia, and Thailand.

Impact of the Crisis in the Asia

While American and European financial institutions suffered, most of Asia's financial institutions—with some exceptions in central Asia such as in Kazakhstan—were in relatively good condition. Banks in these countries were generally not dependent on capital markets for funding because they tended to be funded through deposits, and they were not exposed to the subprime mortgage investments and credit default swaps that hit many Western financial institutions particularly hard. But the real economy in many export-dependent Asian countries was hit as American and European markets fell into recession and required fewer Asian goods. Numerous companies were affected, and this led to a rise in nonperforming loans among Asian banks, notably in Bangladesh, Pakistan, and Vietnam.

Recovery in the global economy is driving a sharp rise in trade, particularly in Asia. The trade increase, in turn, is spurring a rising demand among exporters, importers, and their banks for finance to support their trading activities. Although the trend in intra-Asian trade was established several years ago, the crisis accelerated the trend. China has played a major role in this trend, buying parts from other Asian countries for assembly in China for export to Europe and North America. Increasingly, we see China not only as an assembler and exporter of Asian parts but also as a final consumer. Although this dynamic has helped fuel a rebound in Asian trade, there will be challenges ahead, and the recovery will be uneven. Developed nations are recovering from the effects of the downturn much more slowly than emerging Asia.

ADB expects Asia to continue leading the global economic recovery. It projects a sharper rise in trade volumes in Asia as the region produces more for local consumers whose incomes are gradually rising, as well as for customers elsewhere who are starting to rebuild the inventories they depleted during the crisis. Within Asia itself, some countries will have more trouble than others in accessing enough trade finance. Even during noncrisis times, there is limited appetite for risk among private sector IFIs in Bangladesh, Nepal, Pakistan, Sri Lanka, and other more-challenging developing Asian markets. SMEs will also continue to find it difficult to get pre- and postshipment financing. And in all the exuberance about the rise of Asia, ADB is focused on the more than 900 million Asians living on less than $1.25 a day.

ADB Response to the Crisis

In March 2009, ADB ramped up its TFP activities, which supported $2 billion in trade—an increase of more than 300 percent over 2008. In 2010, the program

supported $2.8 billion in trade, up from $2 billion in 2009. In the first two months of 2011, volumes were up by more than 500 percent compared with the same period in 2010. These figures suggest that although the TFP plays an important role in a crisis, its noncrisis role of filling persistent market gaps in the more challenging Asian markets is extremely important and continues to grow.

TFP provides guarantees and loans to more than 200 banks in support of trade within 24 to 48 hours of application. The program has made a point of not assuming risk in China and India, preferring to focus resources on more-challenging Asian markets where the private sector is not very active. In 2010, the bulk of TFP's activities were in Bangladesh, Nepal, Pakistan, Sri Lanka, and Vietnam, but TFP was also active in Azerbaijan, Indonesia, Mongolia, and Uzbekistan as well as other markets.

The program delivers tangible and measurable development impact. For example, in 2009 and 2010, TFP provided trade support for more than 540 SMEs. Supporting SME growth is a priority for ADB because smaller firms employ the largest number of people in most Asian countries. Increased trading activities and cross-border relationships enabled by TFP are helping to boost economic integration and cooperation in challenging Asian markets, which should, in turn, spur faster economic growth and help reduce poverty. In 2009 and 2010, nearly half of the TFP portfolio supported trade between ADB's developing-member countries (south-south trade).

Clearly ADB has played a role, albeit a small one, in supporting trade in ADB's most challenging developing-member countries. In 2010, TFP continued its explosive growth in business volumes, driving the program more deeply in central and other parts of Asia. The program expanded in Azerbaijan, Bhutan, Mongolia, the Philippines, Tajikistan, and Uzbekistan. The TFP will also be expanded to Armenia, Georgia, Kazakhstan, the Kyrgyz Republic, Turkmenistan, and some Pacific island countries in 2011 and 2012.

Lessons Learned

Public institutions proved to be critical intermediaries through which governments implemented their interventions during the crisis. They will continue to play key roles in the future, too. Being part of the multilateral development banks' trade finance programs is an important element in preparing for crisis, for banks in both emerging markets and the developed world. If crisis strikes, for whatever reason—be it national, regional, or global in scope—the multilateral trade finance programs and ECA initiatives can provide ways in which institutions can continue to offer loans and guarantees to keep the wheels of trade running smoothly.

Another lesson learned through this crisis is that there is a serious lack of statistics in trade finance. When considering what interventions may abate the free fall in international trade, policy makers applied "guesstimates" about the role a lack of trade finance played in plummeting trade volumes—and the extent of that role.

To address the general lack of trade finance statistics and to work toward more appropriate capital requirements for trade finance in the Basel framework, ADB, in conjunction with the International Chamber of Commerce (ICC), created the ICC-ADB Trade Finance Default Register. The ICC-ADB Register collected data on more than 5.2 million transactions going back five years, which included the financial crisis period. Statistics on this data set show a 0.02 percent probability of default on trade finance transactions.

This information was presented to the Basel Secretariat in October 2010 to support the case that Basel III guidelines should treat trade finance as a separate asset class for capital treatment. To do otherwise would deplete resources that could support trade by billions of dollars. Those emerging markets that would be most affected are those where persistent market gaps in trade finance exist, crisis or no crisis. These statistics in trade finance will help the trade finance community, national and international regulators, and policy makers to make more informed decisions to support companies engaged in international trade, which is a strong engine for economic growth and job creation.

Annex 19.1: History of the EBRD Trade Facilitation Program

After the Russian banking crisis in the late 1990s, the European Bank for Reconstruction and Development (EBRD) developed the Trade Facilitation Program (TFP) in 1999 to deal with liquidity crises, making it the first IFI to tackle trade finance-related problems.

The TFP is designed to support primarily small local banks and banks in less-advanced countries by promoting foreign trade to, from, and within the EBRD countries of operations. Through this program, EBRD provides guarantees to international confirming banks—taking the political and commercial payment risk of international trade transactions undertaken by banks (the issuing banks). The program currently includes 109 issuing banks in 22 countries, with limits exceeding €2 billion. In addition, more than 700 confirming banks throughout the world have joined TFP since its inception, including 128 banks in 23 EBRD countries of operation. The program strengthens local banks' ability to provide trade financing and gives entrepreneurs in the Eastern Europe and CIS region the support they need to expand their import and export trade.

Originally, the program aimed to service mostly short-term transactions of up to 180 days' tenor to facilitate basic trade. However, the facility was later extended

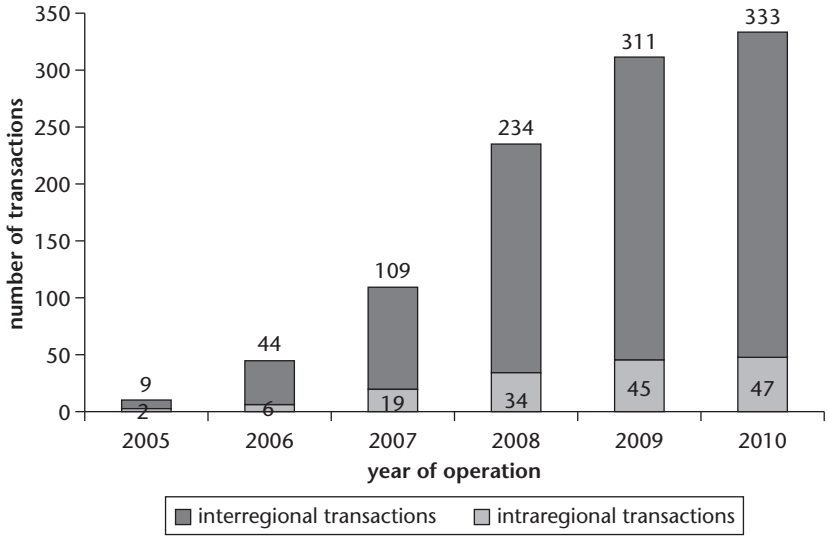
to accommodate longer-tenor transactions to accommodate purchase of equipment, construction, and other term payment guarantees for up to three years for selected banks and countries. This was particularly crucial during the current crisis when local banks struggled to receive trade finance limits for transactions with a tenor longer than six months.

Annex 19.2: IDB Trade Finance

The Inter-American Development Bank's (IDB) Trade Finance Facilitation Program (TFFP) has built a network of 72 issuing banks from 19 Latin American and Caribbean countries with lines amounting to $1.2 billion. Through the network of international confirming banks, the program is now present in 51 countries worldwide, with 250 confirming banks belonging to 92 banking groups. Banks that were already confirming banks are now rejoining as B lenders—furthering the virtuous cycle and maintaining a constant source of trade financing in otherwise uncertain times.

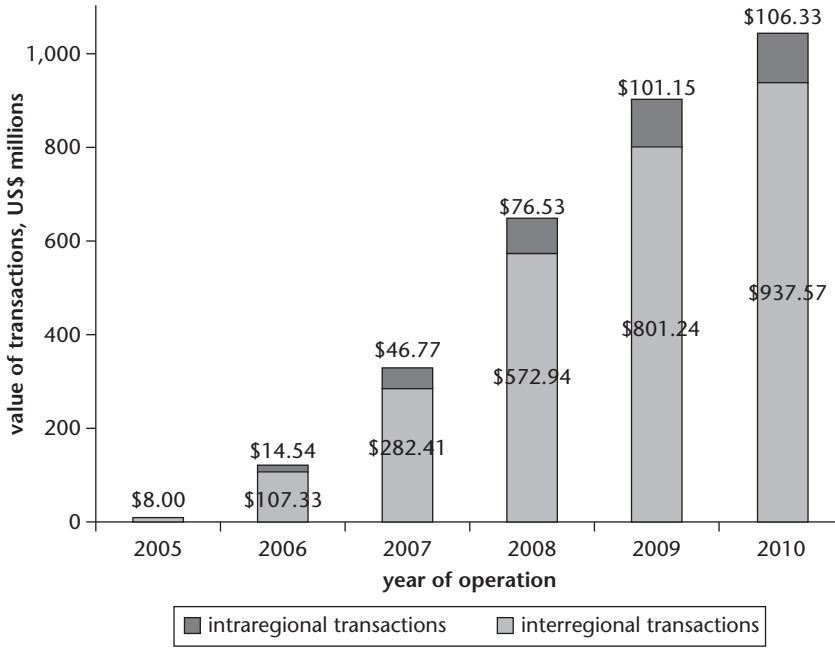
Figures 19A.1 and 19A.2 show the extent of TFFP's interregional and intraregional transactions since its inception in 2005.

Figure 19A.1 TFFP Transactions since 2005, by Number



Source: Authors' compilation.
Note: TFFP = Trade Finance Facilitation Program.

Figure 19A.2 TFFP Transactions since 2005, by Value



Source: Authors' compilation.
Note: TFFP = Trade Finance Facilitation Program.

Notes

1. Chapter 18 of this volume discusses the GTLP in greater detail as well as other World Bank programs in response to the crisis.

2. To complement training efforts, the IDB's beyondBanking program, launched in November 2009, highlights the catalytic role that FIs play in promoting large-scale economic growth and corporate change for IDB clients and the region. The program encourages FIs to recognize that financial operations that are more inclusive, environmentally friendly, and transparent translate into lower risk, access to new capital, and reputational advantages—as well as a tendency to produce higher financial and social returns than traditional operations. IDB, "beyondBanking: Banking on Global Sustainability." IDB, Washington, DC. http://www.iadb.org/es/recursos-para-empresas/ beyondbanking/beyondbanking-banking-on-global-sustainability,1961.html.

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20

CREDIT INSURANCE IN SUPPORT OF INTERNATIONAL TRADE: OBSERVATIONS THROUGHOUT THE CRISIS

Fabrice Morel

For decades, export credit insurers, public and private, have worked in the background oiling the wheels of international trade—largely unnoticed by the wider public or, indeed, by a large part of the community of exporters worldwide. This changed in mid-to-late 2008 when, in a deteriorating global economic environment, the crucial importance of trade finance and credit insurance to support international trade flows became apparent. Recognizing that international trade was a means of overcoming, or at least alleviating, the negative impact of the crisis, governments took initiatives in line with the call of the G-20 London Summit in April 2009 to support trade finance and trade flows through their official export credit agencies (ECAs) (G-20 2009). This chapter describes recent trends observed in export credit insurance, especially from 2008 to mid-2010.

The statistical background is provided by the Berne Union (BU), the International Union of Credit and Investment Insurers, which counts the major private credit insurers and most ECAs worldwide among its members. The BU collects

The views expressed are those of the author and cannot necessarily be attributed to the Berne Union or members of the Berne Union. Errors and omission remain the responsibility of the author. The author gratefully acknowledges guidance and advice from Lennart Skarp and Kimberly Wiehl, without whom this article would not have been written. Peter M. Jones reviewed the article and provided most helpful comments.

Box 20.1 Credit Insurance and How It Works

Credit insurance facilitates trade, allowing suppliers to sell goods and services without having to worry about not being paid by their customers. In simple terms, a credit insurer promises to indemnify a seller if a buyer fails to pay for the goods or services purchased. In return for accepting this default risk, the credit insurer charges the supplier a premium. Although credit insurance works for both domestic and international trade, international trade is, by definition, subject to a wider range of risks.

In addition to risks related to the buyer and its creditworthiness—the commercial risk, also called credit risk—international trade transactions are subject to political risks where an overseas buyer willing and able to pay might be prevented from doing so because of a political situation.

Export credit insurance allows exporters and trade banks to safely extend credit to buyers abroad, thus enabling trade transactions that would not happen otherwise. It is customary to define short-term export credit insurance (ST) as insurance for trade transactions with repayment terms of 1 year or less, while medium/long-term export credit insurance (MLT) covers trade transactions of more than 1 year (typically 3–5 years, occasionally up to 15 years). ST business is usually insured on a whole turnover basis whereby the credit insurer insures the exporter's entire portfolio of trade receivables—the "whole turnover." MLT business is usually insured on a transactional basis, covering sales of capital goods and services with repayment terms over several years.

data from its members on a quarterly basis. BU statistics show export sales that are credit insured. As such, they provide an indication of underlying trade flows. Altogether, BU members cover more than 10 percent of international trade, usually the riskier transactions for which exporters and banks decide to buy insurance to trade safely.

Short-Term Export Credit Insurance

This section briefly describes how credit insurers determine credit limits, and why the resulting volume of exports covered is typically higher or lower than those limits.

Credit Limits

Credit limits represent the amounts an insurer has committed to insure. These are credit limits on buyers, set by the insurer, that are influenced by various factors.

On the demand side, exporters request credit limits to protect their trade flows: To whom do exporters want to sell and in which countries? For which destination

countries are exporters seeking insurance cover? In this respect, BU statistics are a proxy for international trade movements. The largest commitments by BU members in ST business (covering sales with credit periods of one year or less) are in destinations like the United States and countries in Western Europe. This is where most of the trade happens. These are the countries most goods are exported to.

On the supply side, credit limits set by the insurers reflect how much cover credit insurers are willing to provide. The constraints are the insurers' risk appetite and their capacity to offer the required coverage. Are the buyers creditworthy? What about political risk? Does an insurer have enough capital to support further risky business?

Credit insurers use their market intelligence regarding the financial situation of buyers and the economic and political situation in countries to "underwrite risks," which means to set credit limits and to accept or reject covering sales to a particular buyer. An additional piece of information is the actual payment behavior of a buyer: Did a certain buyer always pay on time in the past? This may point to a particularly diligent company that will strive to continue paying on time even if its financial situation is stretched. Or is a specific buyer usually late in paying for goods delivered? This may point to a buyer who will not necessarily strive to perform according to its obligations during hard times.

A deteriorating economic environment that puts more and more companies in difficulty prompts credit insurers to review the risks in their portfolios and to carefully scrutinize any new risk they are asked to cover. A credit insurer may reduce or cancel limits on buyers. In this case, any future sales to those buyers would not be insured and would be made at the exporter's own risk. Limit reductions or cancellations only apply to future sales. Shipments that have been made under an insurance policy before reduction or cancellation of a limit remain protected.

Covered Exports

In ST business, covered exports represent the turnover or the value of shipments made while being covered under a credit insurance policy. Covered exports are not identical with credit limits as described previously. Once an insurance policy and the respective credit limits are in place, actual exports may not take place for reasons that are independent from the credit insurance. Or, on the contrary, covered exports to a buyer during a year may be higher than the credit limit set. Indeed, once a shipment is delivered and paid for on time, the credit limit is freed up to support further shipments.

Although covered exports give a retrospective view of the trade flows that have actually been insured during a time period, credit limits give an indication of the insurer's commitment to insure at a given point in time.

Short-Term Export Credit Insurance during the Crisis

During the crisis, credit insurers were faced with a rapidly deteriorating risk environment and, at the same time, high demand from exporters who wanted credit insurance protection. The following describes the trends in export credit insurance during this period, taking into account the interplay of supply and demand.

Covered Exports

After several years of sustained growth, short-term exports covered by BU members declined by 13 percent, from $1.3 trillion in 2008 to $1.1 trillion in 2009 (Berne Union 2010). During the same time period, global trade contracted by around 23 percent in absolute terms, according to the United Nations Statistics Division (UNSD 2009).

Demand for ST export credit insurance experienced opposing influences from mid-2008 through a large part of 2009. On one hand, global trade was generally declining, as was the amount of international sales for which exporters could potentially seek insurance cover. On the other hand, the global crisis that followed the financial turmoil was showing its effects on the real economy, and companies around the world were defaulting on their obligations. Quite rapidly, exporters recognized the benefits of export credit insurance.

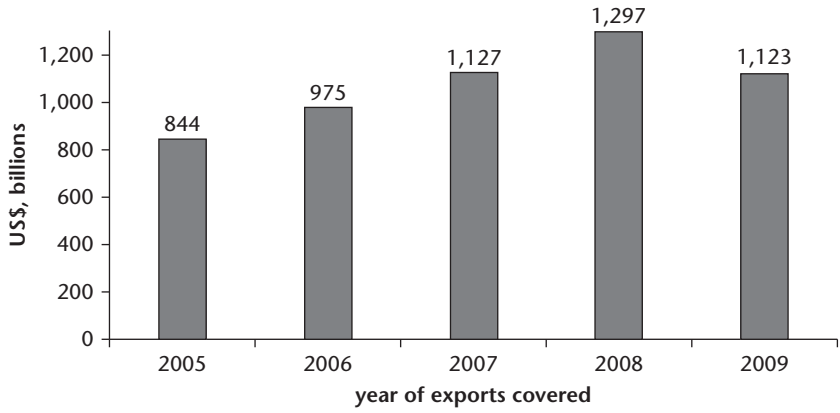
The worsening risk environment prompted those exporters who were willing to continue trade to turn to credit insurance to manage their receivables risks. Some decided to seek insurance for their entire receivables portfolios, where in the past they may have only insured a part of their risks. Other exporters who had never previously used credit insurance found the product was vital to protect their cash flows and to keep their business operations afloat.

Export credit insurers responded cautiously to the demand because they were feeling the impact of the crisis on a daily basis, with insured exporters filing more and more claims as a result of buyer defaults. Despite the challenging risk environment, the reduction of insured ST exports in 2009 was only around half the reduction in world trade in percentage terms. In the end, the total value of cross-border trade supported by BU members in 2009 was the same as in 2007, as figure 20.1 shows.

ST Credit Limits

Since 2005, BU members had continuously expanded their ST insurance, much in line with the growth of world trade. The peak in aggregate limits was reached in mid-2008 with a total amount of slightly more than $1 trillion for all BU members together.

Figure 20.1 ST Exports Covered, 2005–09



Source: Berne Union databases 2010.
Note: ST = short-term export credit insurance.

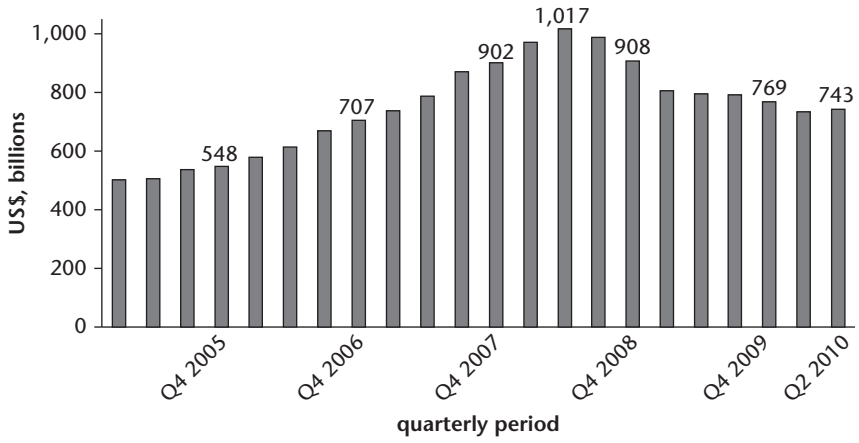
During the three quarters following the mid-2008 peak, overall limits quickly declined for two reasons: (a) lower underlying trade volumes due to reduced international economic activity; and (b) a more cautious risk assessment by private market insurers, which account for most of the ST business of the BU. When the crisis started to bite and claims notifications began to rise dramatically, several private insurers cut back limits—understandably so from their point of view, because buyer defaults had started to accumulate and insurers were hit by a wave of claims to pay. However, the cutbacks raised criticism in the exporters' community, and many claimed they could not sell without being covered by credit insurance. Private credit insurers countered the criticism, arguing that the risk environment had substantially changed from a previously benign economic environment to a challenging one, that they were adapting to the new circumstances, and that they were acting in the best interest of exporters by preventing them from entering into transactions with unsound buyers.

Since the second quarter of 2009, export credit limits seem to have stabilized, although further, smaller reductions were recorded at the end of the last quarter of 2009 and the first quarter of 2010. At the end of the second quarter of 2010, aggregate limits stood at $743 billion, a level last seen in early 2007, as figure 20.2 shows.

Private and Public Insurers

How did various players behave in the crisis, and what roles did they play? The Berne Union includes private market insurers that operate commercially to make

Figure 20.2 ST Credit Limits, Q1 CY05 to Q2 CY10



Source: Berne Union databases 2010.
Note: CY = calender year. ST = short-term export credit insurance. Figures represent end of calendar quarter.

a profit for their shareholders as well as public insurers, the official ECAs who are backed by their governments and whose mandate it is to support national interests. According to the World Trade Organization (WTO), ECAs are required to be self-sustaining and, therefore, have to break even in the long term (WTO 1995).

From the peak in credit limits in mid-2008 through the first quarter of 2009, all credit insurers felt the impact of the slowdown in world trade. With a few exceptions among ECAs, both public and private insurers recorded a drop in credit limits extended during that time.

From the second quarter of 2009, private market players as a group continued to reduce their credit limits. In contrast, the ECAs increased theirs because of government initiatives, in line with the call of the G-20, asking their ECAs to fill a perceived gap in export credit insurance supply (G-20 2009). As seen in BU statistics, the ECAs' share in global ST business increased in 2009 and 2010 compared with previous years.

The movement in market shares from private insurers to ECAs (as table 20.1 shows) was primarily due to a reduction in the volume of cover offered by private market players. To a smaller extent, it was also the result of some ECAs' real volume growth, particularly from East Asia and North America.

Much discussion has concerned the European Union (EU) Commission's temporary permission for ECAs from EU countries to be active in the so-called ST marketable risk business—coverage of ST exports to Organisation for Economic Co-operation and Development (OECD) countries, including those in the EU.

Table 20.1 Market Shares of Private and Public ST Credit Limits, 2006–10

	2006–08	2009	2010
Private insurers	85%	79%	72%
ECAs	15%	21%	28%

Source: Berne Union databases 2010.
Note: ST = short-term export credit insurance. ECA = export credit agency.

Under EU regulations, this was an area that EU ECAs had exited and left to the private market years ago. EU ECAs helped, and continue to help, thousands of European exporters, particularly small and medium enterprises (SMEs), by providing them with needed ST credit insurance during the crisis. The activity of EU ECAs in this field increased significantly, by around 50 percent as a group and more for some individual agencies. But their overall share of the ST business remains small, less than 2 percent of the overall volume, which is in line with their mandate to complement private market capacity in difficult times.

ST Credit Limits per Destination Region

Credit limits are the result of interplay between demand from exporters and supply considerations by insurers. Variations in credit limits on destination countries and regions give an indication of underlying trade flows (demand) and risk perception by the insurers (decision to supply cover).

The Berne Union tracks aggregate credit limits granted by its members for five destination regions: Africa, the Americas, Asia, Europe, and Oceania. The largest trade region is Europe, with around 60 percent of the total trade amounts covered by BU members, followed by Asia and the Americas, with Africa and Oceania being much smaller. Since 2005, as table 20.2 shows, the shares of ST credit limits for exports to the five regions have stayed relatively stable, with a slight indication of decline in the European share and a slight increase for Asia.

Most of the limits within the European region are for risks in Western European countries, which account for more than 70 percent of the European exposure. The biggest Asian destination country is China, with approximately 20 percent of the total credit limits for that region. Slightly more than 50 percent of the credit limits to the Americas is for cover on buyers in the United States.

In an analysis of the quarterly evolution of credit limits during the crisis for the largest destination regions—the Americas, Asia, and Europe—the first observation is that credit limits evolved in a similar fashion for all regions of the world

Table 20.2 Shares of ST Credit Limits, 2005–09, by Destination Region

	2005	2006	2007	2008	2009
Africa (percent)	3	3	3	3	4
Americas (percent)	15	15	14	15	15
Asia (percent)	18	18	19	21	21
Europe (percent)	63	63	62	59	59
Oceania (percent)	1	1	1	1	1
Total credit limits (US$, billions)	548	707	902	908	769

Source: Berne Union databases 2010.
Note: ST = short-term export credit insurance.

until the end of 2009. The trend shows a growth in limits until mid-2008 and then a sharp downturn until the first quarter of 2009, followed by a relative stabilization until the end of the year. This is in line with the fact that no decoupling between regions of the world was observed in the early phases of the crisis. Although the initial banking crisis began in the United States and extended to Europe soon after, the economic crisis that followed became widespread more or less simultaneously all over the globe. Consequently, variations of credit limits for different destination regions moved in line during 2008 and 2009.

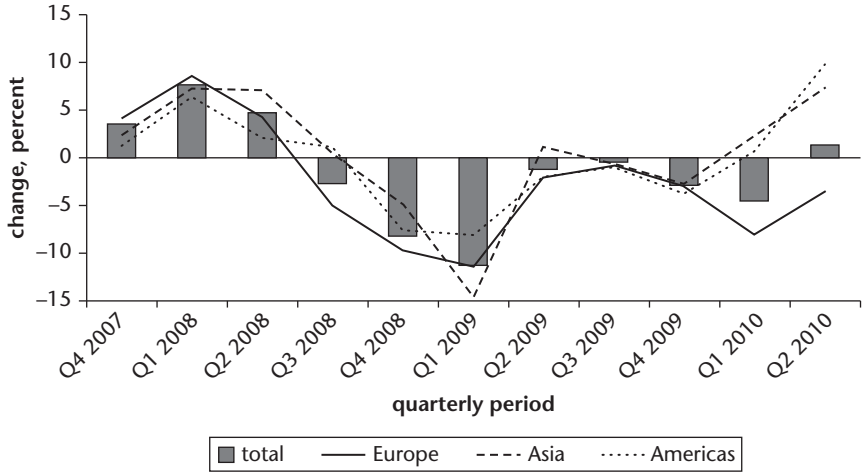
The second observation is that the parallel movement did not continue in 2010. While credit limits on Asia and the Americas started to increase again, minimally during the first quarter and significantly by 8–10 percent during the second quarter of 2010, credit limits for exports to Europe continued to decrease, as figure 20.3 illustrates. Although this decrease slowed down in the second quarter of 2010, the figure is still negative. This suggests a looser connection of the big economies during the recovery, with Europe being less dynamic than Asia and the Americas. Whether this interpretation is substantiated will be shown as BU statistics continue to unfold for 2010 and beyond.

ST Claims Paid

If a buyer fails to pay for the goods purchased and the sale was covered by credit insurance, the exporter applies for indemnification for the loss under the insurance policy. The ability to make a valid claim and to be indemnified for a loss suffered is the fundamental reason why exporters buy export credit insurance.

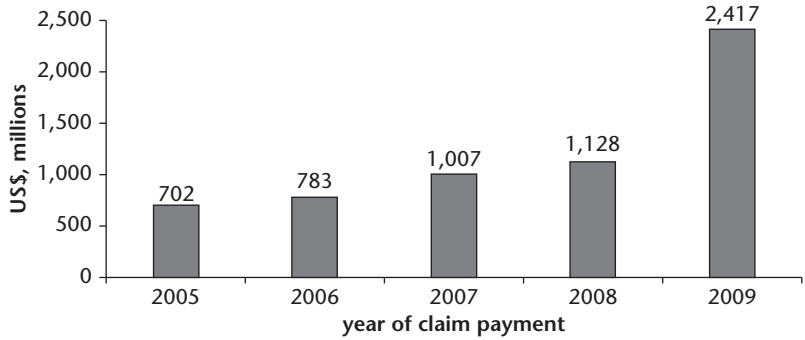
ST claims paid by BU members to insured exporters more than doubled, from $1.1 billion in 2008 to $2.4 billion in 2009. Many claims were generated in late 2008 and were paid by insurers in 2009. The processing time explains why BU statistics for the year 2008 show a relatively low level of claims in figure 20.4.

Figure 20.3 Change in ST Credit Limits, Q4 2007–Q2 2010, by Region



Source: Berne Union databases 2010.
Note: ST = short-term export credit insurance. Figures represent end of calendar quarter.

Figure 20.4 ST Export Insurance Claims Paid, 2005–09



Source: Berne Union databases 2010.
Note: ST = short-term export credit insurance.

The jump in claims paid in 2009 pushed the loss ratio—claims paid in relation to premium income, a measure used by credit insurers to quantify the quality of the underwriting result—to 88 percent. Although this was a level at which insurers overall took an operational loss, the loss ratio did not reach the insurers' worst-case expectations at the beginning of the crisis. Notably, the years immediately

preceding the crisis had been particularly beneficial for ST export credit insurers, with low loss ratios of 35–40 percent for BU members as a whole.

Overall, credit insurers coped with the extremely quick deterioration of the situation and the heavy volume of claims submitted in actual numbers and resulting value. Insurers paid claims promptly and supported their insured clients in the worst moments of the crisis.

The level of claims paid declined in the first two quarters of 2010. BU members also recorded a drop in obligor defaults and fewer notifications of buyer problems in general. These are signs that claims reached their peak in 2009 and that 2010 should be a better year for credit insurers. It remains to be seen at what level claims will stabilize and whether the situation will return to the particularly benign claims levels of the immediate precrisis years.

ST Claims Paid per Country

The global nature of the crisis was evident from the BU claims statistics. Buyer defaults, for which insurers had to pay claims, occurred and increased in every region and every country of the world.

The United States and Western European countries were among those with the highest volumes of claims. For defaults that occurred (from highest to lowest claim volume) in the United States, Italy, the United Kingdom, Spain, and Germany, BU members paid a total of nearly $800 million in claims in 2009, up from around $500 million the previous year, as shown in table 20.3.

Claims paid on exports to these five countries alone represented 32 percent of all ST claims paid globally by BU members in 2009. As mentioned previously, these countries are among the main destination countries for exports covered by BU members. They therefore account for a similar share of global

Table 20.3 ST Claims Paid, 2008–09, by Destination Country
US$, millions

	2008	2009
United States	183.8	294.0
Italy	107.6	152.1
United Kingdom	88.1	125.5
Spain	52.2	116.8
Germany	57.9	95.8
Total	500	800

Source: Berne Union databases 2010.
Note: ST = short-term export credit insurance.

insurance commitments—around 31 percent of all ST credit limits extended by BU members.

Credit insurers also suffered in emerging markets, where the total volume of claims in 2009 was of a magnitude similar to industrialized countries but with a much more dramatic increase over the previous year. For defaults that occurred (in order of highest to lowest claims) in the Russian Federation, Ukraine, Turkey, Brazil, and Mexico, for example, BU members paid a total of $550 million to insured exporters in 2009, up from around $100 million in 2008, as shown in table 20.4.

Claims paid in these five countries represented 23 percent of the total amount paid globally by BU members in 2009. But insurance commitments in these markets were much smaller, with only around 6 percent of total credit limits extended by BU members globally. This differs from industrialized countries, where the share of claims and credit limits was similar—around one-third of the totals. It was expected that claims would be paid because of defaults in emerging countries, but the speed and size of the increase in claims might not have been anticipated.

Year on year, claims in the five industrialized countries mentioned above (the United States, Italy, the United Kingdom, Spain, and Germany) increased by 60 percent. Among the five listed emerging countries (Russia, Ukraine, Turkey, Brazil, and Mexico), claims increased by 435 percent.

ST Outlook

The past two years have been unusually testing for ST credit insurers, private and public. However, despite unprecedented claims levels, no insurer defaulted and the industry paid claims promptly to insured exporters. Overall, the industry proved resilient.

Table 20.4 ST Claims Paid in Selected Emerging Markets, by Destination Country
US$, millions

	2008	2009
Russian Federation	22.5	188.2
Ukraine	2.9	128.0
Turkey	32.4	94.9
Brazil	26.8	91.3
Mexico	18.5	48.7
Total	100	550

Source: Berne Union databases 2010.
Note: ST = short-term export credit insurance.

Private market insurers reduced credit limits. This was understandable from their perspective because the risk environment had seriously deteriorated and they were affected by large amounts of claims to pay. Exporters argued that insurers made a difficult situation worse for many companies because the lack of coverage made it difficult to sell goods abroad. Insurers countered that they prevented exporters from trading unsafely, ultimately saving them from potential negative consequences. Without doubt, the measures taken helped to limit the losses of private market insurers, ensuring that they are still operating today and that they are in a position to further insure trade.

To continue to support ST trade, ECAs had to respond to multiple challenges. At a time when they were paying claims as well, they were able to quickly implement measures, as asked by their governments and the G-20, to supplement private market capacity. These measures helped to alleviate the impact of limit reductions by private players.

The level of claims paid declined in the first two quarters of 2010, and BU members also noticed a drop in obligor defaults and resulting claims notifications. Insurers now report cautious optimism that claims are leveling off and that confidence is returning to the market, which would be in line with early signs of a global recovery. However, insurers are aware of the volatile risk environment and continue to monitor their portfolios of risks closely.

Medium/Long-Term Export Credit Insurance during the Crisis

Most medium/long-term export credit insurance (MLT) worldwide (covering sales with credit periods of one year or more) is provided by official ECAs with the backing of their governments. BU statistics show MLT cover offered by ECAs only, and the following analysis does not include cover provided by private market insurers.

The MLT situation is quite different from the ST business, where different types of players reacted differently to the challenges posed by the global economic environment. In contrast, the behavior of BU members regarding MLT export credit insurance was generally consistent because, in the MLT field, BU members are all public insurers—that is, ECAs with similar mandates to support national exports and national interests.

After the Lehman shock in September 2008, bank financing almost dried up for a few months into early 2009. Activity then picked up during the year, particularly in sectors such as aircraft financing, telecom and satellite financing, infrastructure, and oil and gas. During this period, ECAs were instrumental in keeping the trade flows going. Indeed, in many cases, ECA insurance coverage

had become a condition of lending without which banks could not finance MLT transactions.

New Exports and Total Exports Covered

Two parameters should be looked at to analyze the amount of insurance provided by ECAs in the MLT field: (a) new exports covered during a year, and (b) the total stock of export credits under cover at the end of a year. Because MLT transactions are repaid over a number of years and stay on insurers' books as "insured exposure" for a significant time period, both figures are important measures and give slightly different indications of recent and historic business activity.

MLT new exports

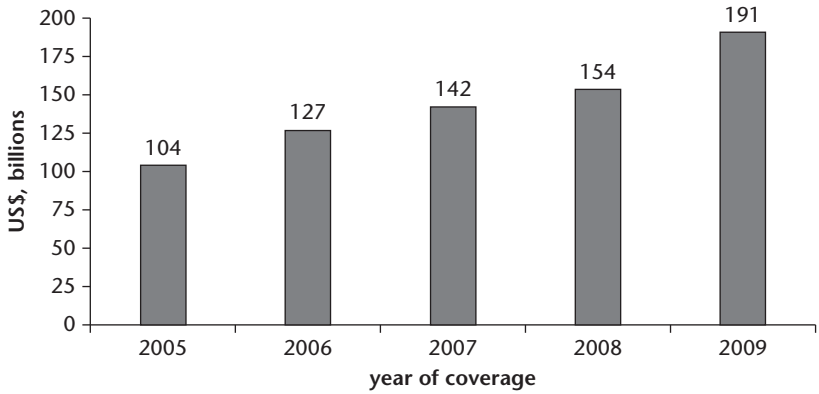
New exports covered show the volume of transactions for which an insurance contract has been signed during the year. Although an insurance policy comes into effect during a particular year, it is the result of work that has been performed before signature. In that respect, "new business" more often than not reflects the work of a time period that is much longer than the current year. This is particularly the case when a credit insurer underwrites large, complex projects that can take years to come to fruition.

MLT exports insured by BU-member ECAs had healthy growth in recent years, despite a seemingly benign risk environment. But when the crisis started in 2008, it gave exporters and banks an extra reminder of the volatility of the global economic environment. Banks, whose business is primarily to provide financing and which might have taken some risk in the benign precrisis years, were not prepared to do so in the higher-risk environment. Although insurance is not a source of liquidity in itself, it enhances the creditworthiness of the buyer. ECAs had a crucial role in this respect because they carry the full faith and credit of their respective governments, a security that was sought after, especially during the crisis. ECA cover was therefore able to ensure that bank liquidity continued to be available for MLT lending.

Consequently, ECAs, particularly those in developed countries, saw a huge increase in demand for their MLT cover in 2009. After a first quarter with relatively low business levels, new MLT exports covered increased steadily in each quarter to reach a full-year total of $191 billion, the highest level ever recorded, as shown in figure 20.5. The 2009 growth rate was 25 percent, almost double the compound annual growth rate of 13.7 percent from 2005 to 2008.

The largest destination countries for new MLT exports covered in 2009 were the United States, Brazil, the United Arab Emirates, Russia, Canada, Indonesia,

Figure 20.5 MLT New Exports Covered, 2005–09



Source: Berne Union databases 2010.
Note: MLT = medium/long-term export credit insurance.

and India. New exports covered to these countries totaled $87 billion, close to half of the total global amount.

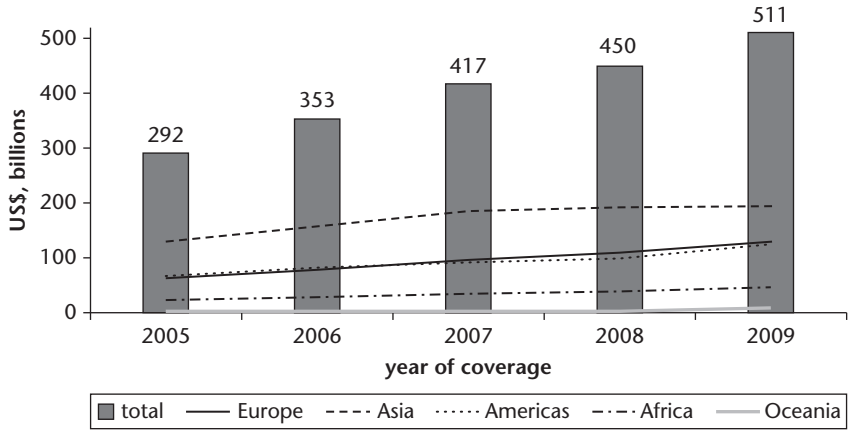
MLT Total Exports

Total exports under cover show the amount that credit insurers are exposed to under the insurance policies that are currently in force. For each policy, this would be the amount of credit covered at the beginning of the insured transaction, less any repayments made. In other words, it is the maximum amount that BU-member ECAs all together would have to pay to insured exporters in the unlikely event that all buyers under all current transactions would default on their obligations at the same time. Of course, such a situation would not happen in reality, but it shows the financial exposure that ECAs incur due to these transactions.

Figure 20.6 shows the total amount of MLT export credits under cover by BU-member ECAs at the end of a given year. This exposure includes deals that have been underwritten during the year as well as transactions where insurance cover started in previous years and where repayments are still due.The total MLT exposure on ECAs' books at the end of 2009 stood at $511 billion, 14 percent higher than in 2008. This was a record, as well as for the new exports covered.

Growth in insured MLT exports has been continuous and sustained since 2005. As table 20.5 shows, it was similar in all regions except for the biggest destination region, Asia, to which covered MLT exports have remained stable since

Figure 20.6 MLT Exports Covered, 2005–09



Source: Berne Union databases 2010.
Note: MLT = medium/long-term export credit insurance.

Table 20.5 Shares of MLT Exports Covered, 2005–09, by Destination Region

	2005	2006	2007	2008	2009
Africa (percent)	9	8	9	9	9
Americas (percent)	23	24	22	22	25
Asia (percent)	45	45	45	43	38
Europe (percent)	22	23	23	25	25
Oceania (percent)	1	1	1	1	2
Total exports under cover (US$, billions)	292	353	417	450	511

Source: Berne Union databases 2010.
Note: MLT = medium/long-term export credit insurance.

2007. Consequently, the Asian share has somewhat declined as a percentage relative to other regions.

With the exception of the United States (the largest-exposure country in MLT insurance), the big-exposure countries in this field are all in emerging markets: Russia, Brazil, India, China, the United Arab Emirates, Turkey, Saudi Arabia, and Mexico. This is a contrast to the ST market, which is dominated by industrialized Western European destination countries and the United States.

Both new business covered during the year by BU ECAs and the total amounts under cover at year's end reached an all-time high in 2009. This was

also the case for insurance offers—transactions in which the export contract is not yet concluded. MLT offers increased even more than the two other indicators, by 32 percent, to $168 billion.

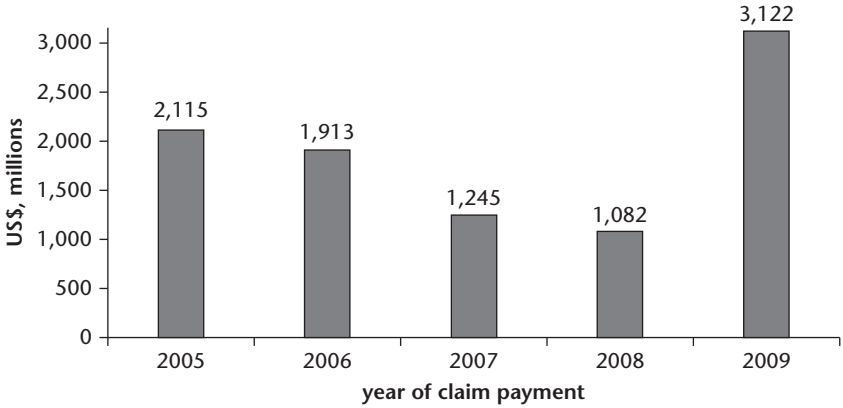
The MLT story is therefore very much a success story "from peak to peak" and is a testimony to ECAs' ability to support banks and exporters through the crisis and to prevent a potentially drastic reduction of MLT transactions.

MLT Claims Paid

Claims paid by BU-member ECAs to customers in 2009 nearly tripled compared with the previous year to reach $3.1 billion, as shown in figure 20.7. The 66 percent loss ratio was high relative to both 2008 and 2007, when it had been 29 percent and 35 percent, respectively. However, the 2009 level was not exceptional because similar levels had been recorded in 2005 and 2006. Historically, even much higher loss ratios had prevailed for more than a decade, from the early 1980s to the mid-1990s.

Two-thirds of the MLT claims paid by BU members in 2009, amounting to $2 billion, originated in commercial buyer defaults. The remaining one-third, slightly more than $1 billion, was due to defaults for political reasons. The country with the largest amount of commercial defaults was the United States, followed by Canada, Mexico, Brazil, Russia, and Kazakhstan. For claims paid due to political risks, the countries with the largest defaults were the United Arab Emirates, Serbia, Iraq, Angola, Sudan, and Argentina.

Figure 20.7 MLT Claims Paid, 2005–09



Source: Berne Union databases 2010.
Note: MLT = medium/long-term export credit insurance.

MLT export credit insurance is dominated by relatively few large—sometimes very large—transactions, which is why it is called a "lumpy" business. Compared with ST business, it does not have the same broad spread among thousands of smaller risks in many countries. In MLT business, a single large claim can have a noticeable impact on the loss ratio of the whole industry.

Even if a loss ratio of 66 percent is not unusual in MLT, several claims paid in 2009 were the result of the global financial crisis. The crisis put private buyers in a position where they were unable to pay their creditors (the commercial defaults) or prompted governments to decide not to honor their obligations or to interfere with private transactions (the political risk defaults).

MLT Outlook

Throughout the crisis, the ECAs' support of exporters and banks proved crucial in helping attract the necessary financing for MLT export transactions and therefore in sustaining international trade.

The question can be asked whether the 2009 losses indicated the beginning of a period of generally increased defaults due to the deteriorated financial and economic conditions worldwide. It is too early to tell, as it will depend on the speed of global recovery and future economic conditions for private companies and governments.

ECAs are used to dealing with risk and are familiar with the challenges of the global economic environment. They have therefore been able to run their business on a steady course since the start of the crisis in late 2008. The biggest challenge was a particularly high demand resulting in a busy operational activity that stretched their resources. With the support of their governments, ECAs took initiatives to pursue and expand their mandates to support national exports and national interests. ECAs also paid claims at a high but not exceptionally high level, and they have been commended by exporters and the banking community for the role they played during the crisis.

From a historical perspective, ECAs have usually recovered the largest part of the claims they have paid in the past. Recoveries might take a long time, but in the long run, the business of ECAs has been self-sustaining. With a satisfactory financial situation and with their governments behind them, ECAs can take a long-term view of the business that allows them to operate successfully in the MLT field.

Conclusions

The challenges posed during the crisis by a deteriorated economic environment and the resulting risks have highlighted the importance of risk management,

Box 20.2 The Berne Union

The International Union of Credit and Investment Insurers was founded in Berne in 1934. Known as "The Berne Union," it is the international trade association for credit and investment insurers promoting stability and cooperation in cross-border trade. Its membership includes the major private credit insurers and most national ECAs worldwide. Berne Union members support international trade and foreign direct investment by providing risk mitigation products to exporters, investors, and banks.

The Berne Union facilitates professional exchange among its members and with external stakeholders. It promotes the adoption of best practices and sound principles in export credit and investment insurance.

In 2010, the Berne Union had 49 members and 33 members in the Berne Union Prague Club, a group of credit and investment insurers in emerging and transition markets.

Information about the Berne Union can be found at www.berneunion.org.uk.

which has become a priority for companies and financial institutions all over the world.

As the global crisis moves on and signs of economic recovery are seen in some regions of the world, the indications for the credit insurance industry are positive:

- The value of credit insurance as a risk mitigation tool in cross-border trade has gained in global recognition, leading to increased demand for the product. Higher risk awareness and product awareness will bring opportunities for existing credit insurers, public and private, and for new market entrants.
- The solidity of the credit insurance industry has been demonstrated in light of an unprecedented global situation. Credit insurers met their obligations and paid claims—at a high level in MLT and at an unprecedented level in ST.
- Although credit insurance is not a source of liquidity in itself, it helped to unlock bank financing during the crisis and was able to ensure that liquidity was available for ST and MLT finance.
- The crisis also showed that both private and public credit insurers have a role to play and that ECAs are a vital part of the industry, complementing the private market as they demonstrate the ability to offer risk capacity even during difficult times.

This is a time where regulatory changes in the financial industry, especially concerning capital requirements, are being discussed and considered by various

governments and regulatory bodies. Because such changes could affect trade and export finance, export credit insurers are carefully watching the developments.

With the lessons from the 2008–09 crisis, the credit insurance industry is well equipped to support international trade in the future. As they have done since 1934, Berne Union members, whether public or private credit insurers, will continue to offer risk capacity to facilitate trade transactions worldwide.

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BUSINESS RESPONDING TO THE FINANCIAL CRISIS: SETTING UP A POLICY AGENDA FOR TRADE FINANCE

Thierry J. Senechal

How do financial institutions and policy makers respond to the worst financial crisis in decades and develop policy actions to restore trade to normal levels? One answer to this question focuses on improving market intelligence so that future financial decisions can be based on solid evidence. To that end, the International Chamber of Commerce (ICC) over the past three years has developed intelligence gathering initiatives in trade finance to promote a banking model that would continue to finance a sustained expansion of international trade, even in difficult times. At the same time, the ICC has argued for the application of fair capital adequacy requirements for trade finance in view of its safe, essentially short-term, and self-liquidating nature.

This chapter explains how the ICC has addressed the lack of reliable information in trade finance and mobilized resources to engage in a constructive dialogue with regulators to bridge the information gap. It first reviews measures undertaken by ICC in the midst of the financial crisis, then discusses the market intelligence projects developed by the ICC Banking Commission—in particular, its reports on the Global Surveys on Trade and Finance titled "Rethinking Trade Finance" (ICC 2009c, 2010c, 2011). It also discusses key findings of ICC research contained in its Trade Finance Register and concludes by discussing future patterns of international cooperation and the need to establish a new set of regulations to supervise banks.

The World Trade Contraction during the Crisis

Substantial research has been conducted concerning the causes of the financial crisis. Some leading economists, apart from looking at the macro patterns and causes, have also looked into the role of trade finance to explain how recent events have affected different countries. The global financial downturn of 2007 was unique in many ways. It was the worst since World War II and pushed the issue of trade into the spotlight. Among its effects were unprecedented limits on the access to trade finance, an impediment that continued for more than two years (2007–09) and significantly curbed import and export trade, one of the principal drivers of economic growth worldwide.

The ICC has provided key information to document the contraction process. In the absence of a comprehensive set of international data and statistics on trade finance, the ICC Banking Commission, taking advantage of its international membership, undertook major market intelligence and research work.[1] At the outbreak of the crisis, the commission was ready to demonstrate that international trade in goods and services—supported by trade finance—remained a cornerstone of the financial system, facilitating economic expansion as well as international cooperation and development. When the crisis developed in 2007, the commission expressed concern to policy makers and regulators that trade finance had been severely affected and therefore that specific measures would be needed to bolster it to restore liquidity and trust in the markets. Early on, the ICC also pointed out that the capital requirements for trade finance under Basel II could exacerbate the crisis. Indeed, the ICC maintained that, after many years of rapid growth, the hard-earned gains of global trade seemed to hang precariously in the balance.

ICC Global Surveys: Gathering Market Intelligence

More than ever, our increasingly interconnected and interdependent world faces far-reaching uncertainties. The 2008–09 financial crisis has demonstrated, if it were necessary, that localized or isolated events could have systemic global consequences. The current fragile recovery must be sustained by informed financial decisions. In particular, the recovery of the banking sector requires that operators be better informed about the risks of their activities.

The ICC surveys have become an important information source enabling bankers, traders, and government officials to gain an accurate snapshot of the trends prevailing in the markets and to gauge future expectations for global trade.

Scope and Purpose

Global trade was plummeting to levels not seen since the 1930s, with all of the attendant social, economic, and political consequences. The ICC, recognizing that

well-informed decision making at policy levels depended on the reliability of market information and data, decided to play a leadership role in gathering market intelligence.

In 2008, there was an absence of any knowledge management tool at the aggregate industry level that would provide an overview of the needs for adequate trade finance and could clarify the links between trade finance and economic growth. Apart from the piecemeal data available for some market segments or for particular regions, no global aggregates were available. Nor did the industry formally document information or experience that could be useful to others, especially during periods of crisis.

The ICC Global Surveys on Trade and Finance were made possible when the World Trade Organization (WTO) asked the ICC to provide data for the G-20 meeting of world leaders at their first economic summit, held in 2008 in Washington, DC. The WTO Expert Group on Trade Finance became an important forum during the crisis, holding regular meetings with partners from the commercial banks, the Berne Union, regional development banks, and other multilateral export credit and specialized agencies. The group, of which the ICC was a member, was instrumental in understanding the causes of the trade finance shortage and in devising cooperative solutions through which public institutions would help private sector financial institutions shoulder the risk of operating in an unstable financial environment.

The purpose of the ICC Global Surveys was to gain an accurate snapshot of the trends prevailing in the markets and to gauge future expectations for global trade and traditional trade finance. When planning the survey series in 2008, the ICC foresaw that the work would be most beneficial when acquired from the greatest number of sources and disseminated to the widest possible audience. Because the organization also planned to develop more substantial knowledge and research in the future, it convened high-level roundtable meetings of leading trade negotiators, WTO officials, academics, and business representatives.

Key Survey Findings

In early 2008, the ICC warned that the current environment was creating a risk-averse culture among both banks and traders. A special ICC report was sent to WTO on November 11, 2008: "Trade Finance in the Current Financial Crisis: Preliminary Assessment of Key Issues" (ICC 2008). The report contended that the credit crunch was entering a new phase, one in which it was becoming increasingly difficult to predict the timing and magnitude of events. Clearly the world was facing a period when it would be even more difficult to raise money to finance trade. The ICC was also keen to demonstrate that the logic of trade

finance—to promote trade through accessible and affordable credit facilities—was being challenged in many ways.

Starting in 2008, tight credit conditions led lenders to drive up interest rates for their loans in many countries, especially in emerging markets. The increase in trade pricing in turn increased the reluctance of some banks to take on new trade assets, lest they miss an opportunity to price higher in the future. With banks having constrained balance sheets, global currency volatility, and more rigorous risk assessment, it was not surprising that the cost of trade finance soared. The tension in the market was also reflected in the Baltic Exchange's Dry Index, a measure of the cost of moving raw materials by sea (the means of transport for more than 80 percent of international trade in goods), which fell to a nine-year low on November 4, 2009, having plummeted 11-fold from its record high in May 2008.

The ICC Global Surveys highlighted a few key issues emerging from the 2008–09 crisis (ICC 2009a, 2009c, 2010c):

The global economy contracted sharply in 2009, and signs of recovery remained uncertain. Global gross domestic product declined by 2.2 percent in 2009, while the rate of growth in developing countries decelerated from 5.6 percent in 2008 to 1.2 percent in 2009. World trade, a casualty of the financial crisis, contracted in volume by around 12 percent in 2009, according to the WTO. Compounding the fall in demand from developed countries, developing countries became more vulnerable in 2009 because of a decline in foreign direct investment and remittance inflows. In aggregate, the crisis prompted a narrowing of global imbalances because of an overall decline in the volume of trade, falling oil prices, and a narrowing of the trade imbalance between China and the United States.

The 2008–09 supply of trade finance remained constrained in both value and volume. The constraint on supply raised fears that the lack of trade finance could prolong the recession. The trade messaging figures provided by the Society for Worldwide Interbank Financial Telecommunication (SWIFT) showed that the 2008 downward trend in volumes continued in 2009 (falling from about 46 million messages in 2008 to 42 million in 2009).

The weaker emerging economies—such as Bangladesh, Pakistan, and Vietnam—were being hit first. Based on a 2007 survey of its 92 offices worldwide, the ICC could point to considerable evidence that, at the inception of the crisis, ICC members reported an important decline in the syndicated loan market targeting most emerging markets. They noted that these syndications were an important means of backing international trade transactions for these countries. Fast-growing developing economies such as India and the Russian Federation were also suffering from the contraction, although Brazil and China were less vulnerable. Countries such as Argentina, Hungary, and Romania also had become vulnerable. Although low-value letter of credit (LC) business remained relatively unaffected, problems were

reported in some Central and Eastern European countries and in the smaller, export-oriented economies in Southeast Asia.

However, some regions and sectors were more resilient than others. The 2010 survey showed that the trade slump was less marked in some regions, particularly in Asian countries (ICC 2010c). SWIFT data showed that the Asia and Pacific region continued to register far greater volumes of both sent (import) and received (export) messages. Most Chinese trade partners benefited from a fiscal stimulus and the rebound in Chinese imports.

During the crisis, exports of durable goods were the most affected. Meanwhile, trade in nondurable consumer goods such as clothing and food declined the least because basic demand for these products cannot be put off as long. In general, services trade was more resilient than merchandise trade.

Demand remained high in 2008–09, but access to affordable trade finance was still constrained. Demand for bank undertakings was sustained in 2009, with 50 percent of survey respondents indicating that demand was increasing for traditional trade finance instruments that helped substantially reduce risks for both exporters and importers. However, trade finance costs remained substantially higher than their precrisis levels, raising the problem of affordability for exporters. The widespread increase in pricing was said to reflect higher funding costs, increased capital constraints, and greater counterparty risk.

Over the 2008–10 period, there was more intense scrutiny of documents, leading to increases in refusals and court injunctions. In 2009, discrepancies cited in documents increased. The 2010 survey results showed that 34 percent of respondents had seen an increase in the number of refusals in 2010, up from 30 percent in 2009 (ICC 2010c). The number of respondents that had seen an increase in spurious or doubtful discrepancies remained high at 44 percent (albeit slightly down from 48 percent in 2009). This trend toward claiming discrepancies that have little or no foundation was worrisome and may prove damaging to the integrity of the documentary credit as a viable means for settlement in international trade.

The most recent ICC survey, in 2011, showed that trade flows had rebounded in many regions, and most experts agreed that business had significantly improved since the final quarter of 2009. Markets in several advanced economies were quickly returning to normal trading conditions, in terms of liquidity and the availability of trade finance. Similar improvements were seen in the acceptance of risk and in pricing. One positive development is that the average price for LCs in large emerging economies fell from 150–250 basis points in 2009 to 70–150 basis points in 2010. On the whole, the recovery was being driven by increased trade within North America, Europe, and Asia, and between Asia and the rest of the world.

However, the recovery has been uneven, particularly in Africa, where the market remains under stress. Moreover, traders in many low-income countries still have considerable difficulty accessing trade finance at an affordable cost, particularly for import finance.

In Asia and Latin America, liquidity has returned, but there is still a market gap resulting from a general deterioration in the creditworthiness of traders, coupled with greater risk aversion by commercial banks. As a result, the cost of trade finance in these regions remains disturbingly high.

According to the ICC 2011survey respondents, both the volumes and the overall value of trade finance transactions increased in 2010. The percentage of trade credit lines that were cut for corporate and financial institution customers fell markedly. Fees for bank undertakings and LC confirmations appear to have settled down and mainly flattened during the course of 2010. Respondents reporting an increase outpaced those reporting a decrease by about a 3-to-1 ratio. Of the financial institutions responding, some 58 percent reported an increase in export LC volume and 66 percent reported an increase in import LC volume. Considerable increases were also reported for guarantees.

Moreover, many respondent banks continued to report an increase in demand for documentary credits, which are considered to substantially reduce risks for both exporter and importer. Not surprisingly, therefore, the LC is considered today to be the classic form of international export payment, especially in trade between distant partners.

In terms of affordability of trade finance, around 75 percent of respondents indicated that their fees for issuing bank undertakings had not changed in 2010. And 78 percent of respondents anticipated that their fees for the issuance of bank undertakings would not rise in 2011. Still, as noted in 2009, there was intense scrutiny of documents in 2010, leading to a large number of refusals. Levels of court injunctions also increased.

Survey Impacts

The ICC Global Surveys were important for many reasons. To begin with, they were conducted at a crucial time for the global economy—a time of uncertainty about the course of economic recovery and one during which major economic policy and financial regulatory reforms were at the center of the G-20 summit discussions. These conditions rendered the surveys particularly influential in several ways:

- *They collected feedback on the timing and the calibration of reforms, helping policy makers achieve the right balance between stability and growth.* In fact, the

information was used to formulate coordinated and targeted measures to stimulate trade finance markets and to prioritize the direction of available support. WTO Director-General Pascal Lamy confirmed that ICC research submitted in advance of the 2009 G-20 London Summit "contributed to help leaders make informed decisions on a support package for trade finance" (ICC 2010c).

- *In their comprehensiveness, the surveys ensured full industry representation and coverage.* For instance, the 2010 survey received responses from representatives of 161 banks in 75 countries—representing a 32 percent increase over the 2009 survey. The 2011 survey attained even better levels of responses, from 210 banks from 94 countries. More important, the 2011 survey was conducted in partnership with leading industry actors, including the World Bank, SWIFT, the Berne Union, the European Bank for Reconstruction and Development (EBRD), the International Finance Corporation (IFC) of the World Bank Group, the Asian Development Bank (ADB), the Inter-American Development Bank (IDB), the African Development Bank (AfDB), and Coastline Solutions.
- *The surveys, collectively, were a powerful instrument enabling the ICC to propose specific mitigation measures to policy makers and to engage in a dialogue with regulators.* The issues involved in financial regulation and the elements of policy change are highly complex and require an understanding on all sides. The ICC focused on collecting relevant market intelligence so that any decisions could be evidence-based. By collecting information from the private sector, governments, multilateral financial institutions, and official bilateral credit agencies, the surveys were unique in encouraging the parties to develop a mutual understanding of the issues with a view to reaching a consensus on processes and hence on a new regulatory framework.

The Changing Regulatory Environment and ICC Responses

ICC has welcomed the strengthening of the banking supervision framework. The recent crisis signaled the need to review the global financial regulatory framework to reinforce the banking sector's ability to absorb economic shocks and to build a stronger, safer international financial structure. ICC has also consistently voiced strong public support for the stated goals of the Basel Committee on Banking Supervision (BCBS) to improve the resilience of the banking sector.

Adequate and affordable trade finance is fundamental to economic recovery and growth. Most trade in developing countries is financed using traditional trade finance products such as LCs. In these countries, the shortage of available trade finance is critical, as it is for small and medium enterprises (SMEs) in developed countries, which often rely on smaller banks as their source of financing.

However, as ICC conveyed to the BCBS, some of the new regulatory measures will deter international banks and financial institutions from doing business in important ways. The most severe impacts are likely to be felt by SMEs in developing countries. The unintended effects of the regulatory reforms may defeat the G-20 goals of providing readily available short-term, trade-related funding at lower costs to businesses in these countries.

ICC Seeking Concessions on Basel II

The 2009 G-20 London Summit came up with a substantial package of measures to support trade finance—specifically, $250 billion of funding to be made available through multilateral banks and export credit agencies as well as a mandate for regulators to "make use of available flexibility in capital requirements for trade finance" (G-20 2009). The ICC had been actively promoting these two measures in the months preceding the summit. Regarding the latter, unfortunately, there has been limited follow-up from regulators concerning the impact of Basel II on trade finance.

To follow through on the trade finance data gleaned from its research, the ICC has pressed the case for further capital relief for traditional trade transactions. The 2009 and 2010 ICC surveys, for instance, highlighted the impact of the Basel II capital adequacy requirements on the provision of trade finance. The surveys found that implementation of the Basel II charter had significantly increased the capital intensity of trade finance lending, thereby constraining the ability of banks to provide short-term trade credit. The ICC clearly indicated that these increases had particularly adverse consequences on trade finance for SMEs and counterparties in developing economies.

The relatively favorable treatment received by trade finance under the previous international capital adequacy framework (Basel I) was reflected in the moderate rate of capitalization for cross-border trade credit during the 1980s and 1990s. However, as the banking and regulatory communities moved toward "internal-rating based" and "risk-weighted assets" systems under Basel II, a number of concerns emerged about the treatment of trade credit, particularly during periods of economic crisis. These trends could be ascribed to three primary factors:

- *Basel II's focus on counterparty risk rather than product or performance risk.* Basel II makes capital requirements an increasing function of banks' estimates of their loans' "probability of default" and "loss given default." However, insufficient mitigating consideration is given to the inherent strengths of trade finance products—for example, their short-term, self-liquidating nature and the tendency of companies to avoid defaulting on trade finance facilities. As a

result, the anomaly is that trade is treated as having almost the same kind of risk as other unsecured lending, such as overdrafts.

- *Rigidities in the maturity cycle applied to short-term trade financing.* Although trade financing is usually short-term, based on 0–180 days' maturity, the Basel II framework applies a one-year maturity floor for all lending facilities. Because capital requirements naturally increase with maturity length, the capital costs of trade financing are artificially inflated as a result. All regulators have the national discretion to waive this floor. Although the U.K. Financial Services Authority did so at the end of 2008, several regulators have chosen not to take this step.
- *A lack of historical and performance data to assist in validating risk attributes.* Many banks face difficulties identifying and isolating sufficient data to estimate risk attributes for trade financing that can be validated. The factors causing this lack of data are many and varied, but particular problems include (a) migration of facilities (that is, when a trade loss results in an exposure on another facility, such as an overdraft), (b) customer-centric data collection practices, and (c) inherent biases in the data collected.

By increasing the amount of capital that banks are required to hold against trade finance lending, each of the above factors significantly restricted the ability of banks to provide essential short-term credit to businesses, particularly in the capital-constrained environment that prevailed in 2008 and 2009. In this context, the ICC Banking Commission issued a recommendations paper in advance of the 2009 G-20 London Summit, calling on the international community to address the impact of Basel II on the provision of trade credit (ICC 2009b).

ICC Comments on the Basel III Proposals

At its December 2009 meeting, BCBS approved for consultation a package of proposals to strengthen global capital and liquidity regulations, with the goal of promoting a more resilient banking sector. The consultation document includes proposals to introduce a new framework to limit the buildup of excessive leverage in the banking system, referred to as a "leverage ratio constraint."

Without commenting on the appropriateness of a new mechanism to limit bank leverage, the ICC has been concerned that the proposals would group trade products with other instruments that exhibit significantly different characteristics, effectively categorizing some trade products (such as LCs) as "risky" asset classes. The ICC sought to demonstrate that this approach was unjustified. Moreover, if implemented, it would potentially lead to an overall reduction in the supply of trade finance, which would conflict with the 2009 G-20 London

Summit agenda to promote international trade as a key component of economic recovery.

Summary of the proposals and ICC concerns[2]

Under the current Basel II framework, Credit Conversion Factors (CCFs) are used to calculate the potential future credit exposure for off-balance-sheet (that is, contingent) items. The most frequently used CCF values for contingent trade products are 20 percent for LCs and 50 percent for performance guarantees. These values reflect the fact that an off-balance-sheet exposure for a contingent trade product will not necessarily fully crystallize to become a credit exposure for the bank. The Basel Committee proposed, however, to increase the CCF for all off-balance-sheet exposures (including trade products) to 100 percent for the purposes of calculating a leverage ratio constraint. This proposal was based on the view that (a) all off-balance-sheet items are a significant source of leverage within the financial system, and (b) the failure to include off-balance-sheet items in measuring exposure creates an "incentive to shift items off the balance sheet to avoid the leverage ratio constraint."

The ICC considers this blanket approach to off-balance-sheet items under the proposed leverage ratio to be based on a fundamental misunderstanding of both the operational context and the mechanics of trade financing. Specifically, it is difficult to maintain that trade-related exposures are a source of significant leverage because the underlying transactions are driven by genuine economic activity—for example, the sale of goods or services. Furthermore, because trade transactions originate at the request of a client, these types of facilities are unlikely to be written as a way of avoiding leverage constraints.

What is more, the conversion of off-balance-sheet trade exposures is not driven by counterparty default but is performance-related (for example, performance guarantees) or dependent on documentary requirements (for example, LCs). Regarding the latter, for example, a bank has no obligation to pay an exporter under an import LC unless a range of documentation is submitted in compliance with the requirements of the instrument. In this connection, if the bank is not comfortable with the creditworthiness of the transaction, it has no obligation to waive the documentary discrepancies and make payment.

Increasing the CCF to 100 percent for trade-related contingencies to calculate a leverage ratio could significantly disadvantage trade finance-focused banks. When the leverage ratio becomes the binding constraint, the bank may choose to increase the cost of providing trade products or only selectively offer these products to customers. It is the fundamental concern of the surveyed ICC members that this cycle will adversely affect the supply of cost-effective trade credit to businesses, thereby compounding existing market constraints.

In this context, the ICC recommended that, if a leverage ratio is to be adopted, a framework should be developed to allow trade finance products to retain the CCF values used under the current Basel II framework. It is the ICC's view that such an approach would be consistent with the G-20 agenda to promote trade finance without compromising the overall objective of the Basel Committee proposals.

Views of 2011 ICC global survey respondents

In the 2011 survey, 81 percent of respondents indicated that their financial institutions were aware of the new regulatory regime imposing new capital, liquidity, and leverage requirements on all banking activities. The survey asked this question: "Do you anticipate that the Basel III requirements will cause your bank to reassess its trade finance strategy and products?" Thirty-four percent of the respondents said yes. Altogether, 31 percent of respondents also indicated that regulatory constraints had negatively affected their businesses in 2010.

An alarming 57 percent of respondents said they lacked sufficient information about new regulatory requirements at this stage—indicating an information gap between the industry and policy makers. Some 35 percent of respondents said they expected the Basel III requirements to "negatively" or "very negatively" impact their trade finance business.

Not surprisingly, ICC respondents have been seriously concerned about the unintended consequences that could arise from the new regulatory regime, which indiscriminately puts trade finance in the same risk class as other high-risk financial instruments. According to the respondents, the increase in the leverage ratio under the new regime would significantly curtail their banks' ability to provide affordable financing to businesses in developing countries and to SMEs in developed countries. Banks are now likely to be required to set aside 100 percent of capital for any off-balance-sheet trade finance instruments such as commercial LCs (against 20 percent under Basel II), which are commonly used in developing and low-income countries to secure trade transactions.

Specifically, survey respondents expressed the following concerns:

- *Banks could move away from trade finance.* There is a risk that small- to medium-size banks will move away from the trade finance market, significantly reducing market liquidity and the availability of trade finance.
- *The timing of implementation could have unintended consequences in different regions.* Considerable uncertainty persists about the impact of Basel III because of the role of regional regulators in deciding the local form of the rules. At this point, under the new regime, the movement of contingent liabilities onto balance sheets, financial institution counterparty risk weighting, and the weighting of export credit agency exposure could vary by country.

- *Trade finance costs could rise.* Those who remain in trade finance could raise their prices as a result of the more stringent regulatory requirements. There are already examples of what can happen when liquidity is reduced.
- *SMEs and banks in emerging markets would be the most constrained.* A reduction in the supply of trade financing and an increase in pricing would most severely affect SMEs in the developing world, where trade financing is needed most to create jobs and alleviate poverty.
- *Trade assets could gravitate toward nonregulated sectors.* Banks will be encouraged to move high-quality trade assets and contingents into nonbank sectors such as hedge funds. For instance, banks may likely decide to securitize their trade assets—pushing them into higher-risk, unregulated markets—contrary to the purpose of Basel III, which is being implemented to prevent another financial crisis.

The ICC-ADB Register on Trade & Finance: An Instrument for Regulators

To further advance the ICC research agenda and demonstrate to policy makers that trade finance merits some flexibility under the new regulatory framework, the ICC and ADB decided in 2009 to establish a project, the ICC-ADB Register on Trade & Finance, to collect performance data on trade finance products. This initiative aims to help the industry develop a pool of data to substantiate the argument that trade finance is, relatively speaking, a low-risk form of financing. At the same time, it seeks to provide the much-needed empirical basis for discussions regarding the treatment of trade financing under the Basel framework.

Notable features of the dataset

In the initial phase of the ICC-ADB project, a group of leading international banks provided portfolio-level data comprising 5,223,357 transactions, with a total throughput of $2.5 trillion between 2005 and 2009. Given the short business cycle, five years of data is considered sufficient to produce meaningful data. The data pooled within the register supported the view that trade finance is a relatively low-risk asset class, including the following findings (ICC 2010b):

- *Short tenor of trade transactions.* The average tenor of all products in the dataset is 115 days; the off-balance-sheet products covered by the register (import LCs, export confirmed LCs, and standby LCs and guarantees) exhibit average tenors of less than 80 days.
- *Low default across all product types.* Fewer than 1,200 defaults were observed in the full dataset of 5.2 million transactions. Default rates for off-balance-sheet trade products were especially low, with only 110 defaults in a sample

of 2.4 million transactions. Using a standard calculation, the ICC estimated the following average default rates within each product type over five years: import LCs, 0.058 percent; export confirmed LCs, 0.282 percent; standbys and guarantees, 0.01 percent; import loans, 0.124 percent (corporate risk) and 0.293 percent (bank risk); export loans, 0.168 percent (corporate) and 0.023 percent (bank). These low rates of default are consistent with the ICC's theoretical understanding of the mechanics and context of trade financing.

- *Relatively few defaults through the global economic downturn.* Fewer than 500 defaults were recorded out of more than 2.8 million transactions in 2008 and 2009. Indeed, the number of defaults on some products (for example, import loans, guarantees, and standby LCs) remained negligible through this period despite prevailing economic conditions and higher transaction volumes.
- *Good average recovery rates for all product types over the five years.* Looking at recoveries from written-off transactions, the ICC observed from the dataset an average recovery rate of around 60 percent across all product types, albeit with significant variance year on year.
- *Limited credit conversion from off- to on-balance-sheet.* Counterparty default—unlike, for instance, credit default swaps—does not in itself automatically result in the conversion of contingent trade products from off- to on-balance-sheet. From the data, the ICC found the documentary and (implied) performance contingencies inherent in trade products, which mitigated potential defaults for on-balance-sheet exposures. In the case of import LCs, for instance, an average of 50 percent of document sets presented to banks to make drawings under import LCs contained discrepancies on first presentation. In these cases, the bank has no obligation to waive the documentary discrepancies and make payment unless it provides reimbursement or the discrepancies are corrected within the validity period of the LC.

Evidence-based recommendations

Given the overarching economic imperative of promoting international trade as an engine of global economic recovery, the ICC-ADB Register on Trade & Finance is a powerful instrument that can provide a basis for reconsidering the mitigation of risk inherent in trade instruments and their correlation with mitigating credit risk under the Basel framework. The ICC recommended these particular steps:

- Implementation of the waiver of the one-year maturity floor for trade products on an international basis
- Reevaluation of the basis for calculating risk-weighted assets for trade facilities, in view of observed rates of recovery and demonstrated contingencies related to payment and default

- Consideration of appropriate uniform credit conversion factors for off-balance-sheet trade products under the proposed leverage ratio, in view of the data showing that the conversion of contingent trade products from off- to on-balance-sheet is not automatic and is separate from default.

Conclusions

The ICC Banking Commission, a leading international forum for the banking industry, has demonstrated its willingness to build on the solid groundwork of its day-to-day experience in trade and finance. In recent years, the commission has been at the forefront of market intelligence work to provide a clearer picture of conditions in the trade finance market, given concerns about the ability of companies to access this finance during the financial crisis. In pursuing that objective, the ICC Banking Commission has consistently advocated a fair and rules-based multilateral trading system that would work to the benefit of nations at all levels of development.

It is important that professionals in trade finance and regulators meet as often as possible in open and transparent discussions to share their experience with new and current forms of financing. Coordination among the parties regarding the issues highlighted in this chapter can assist in developing user-friendly intelligence for both the public and private sectors. Meanwhile, the ICC Banking Commission will continue its own efforts to collect market intelligence data to ensure that trade finance continues to benefit from the best available information. As a framework, however, governments need to take measures to make trade finance more accessible and affordable and, at the same time, avoid taking actions that distort trade.

Notes

1. The ICC Banking Commission is a leading global rule-making body for the banking industry, producing universally accepted rules and guidelines for international banking practice, notably letters of credit, demand guarantees, and bank-to-bank reimbursement. The ICC rules on documentary credits—the Uniform Customs and Practice for Documentary Credits (UCP)—are the most successful privately drafted rules for trade ever developed and are estimated to be the basis of trade transactions involving more than $1 trillion per year. With more than 500 members in 85 countries, many of which are emerging economies, the Banking Commission is one of the ICC's largest commissions. The ICC's voluntary, market-based approaches developed by the Banking Commission have often been praised for leveling the playing field in trade finance practices.

2. A full technical analysis is contained in the "ICC Response to the Basel Committee Consultative Document on 'Strengthening the Resilience of the Banking System'" (ICC 2010a).

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PRIVATE BANKERS' RESPONSE TO THE CRISIS: WARNINGS ABOUT CHANGES TO BASEL REGULATORY TREATMENT OF TRADE FINANCE

Donna K. Alexander, Tan Kah Chye, Adnan Ghani, and Jean-François Lambert

In this chapter, representatives of the Bankers' Association for Finance and Trade–International Financial Services Association (BAFT-IFSA) and of three global banks—Standard Chartered Bank, Royal Bank of Scotland, and HSBC—present their assessment of how the 2008–09 crisis affected trade finance, their response to the crisis itself, and their concerns about the effect of the Basel Committee on Banking Supervision (BCBS) regulations on trade finance.

The authors agree that the global economic crisis seriously disrupted the trade finance market in 2008–09 and that the regulations under Basel II further constrained the supply of trade finance during the crisis. They echo the broader view of the banking and trade community (as expressed by 18 banking, services, and trade industry associations around the globe in a November 2010 letter to BCBS) about the unintentional consequences of the BCBS recommendations to increase capital requirements for trade finance. Although the signatories strongly support the BCBS's stated goal to improve the resilience of the banking sector, they also

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believe that the proposed recommendations neither reflect the risk profile of trade finance assets nor take into account the adverse effects of the proposed changes on global trade and growth.

The BAFT-IFSA Response

BAFT-IFSA[1] and the International Monetary Fund (IMF) were among the first institutions to join forces to help fill the information gap concerning trade finance developments during the 2008–09 financial crisis. BAFT-IFSA and the IMF collaborated on global trade finance surveys to gauge the magnitude of market dislocations around the globe and to benchmark key trends.[2]

Global Trade Finance Surveys

The first survey, conducted in late 2008**,** found a drop in the banks' ability to provide trade credit in fall 2008 (IMF 2009). The third survey conducted in July–August 2009 (IMF–BAFT 2009) showed that the capital and liquidity crisis mutually fueled the crisis in confidence and that the value of total trade finance activity dropped by 11 percent. Credit markets froze, transnational movement of goods fell, and protectionist measures gained footing, threatening to slow recovery. Banks also reported that the implementation of Basel II, concomitant with the global recession, added liquidity pressure because global risk deterioration had a dynamic effect on bank capital requirements. As global banks rushed to improve their capital positions to avoid losses in the crisis, trade finance credit lines suffered from heavy cuts. Global trade took a corresponding hit—hurting economic growth, triggering job losses, and depressing consumption.

The results of this joint survey served as an important reference, enabling all stakeholders to clearly understand the magnitude of the problem. Since then, BAFT-IFSA has conducted three more surveys with the IMF. The fourth, conducted in March–April 2010, found that the trade finance situation had started to stabilize (IMF and BAFT–IFSA 2010). Trade finance activities fell by 1 percent on average between the fourth quarter of 2008 and the fourth quarter of 2009—an improvement over the 11 percent decline noted above. Yet, given the global economic contraction, international banks continued to be exposed to heightened risks on a broad scale. Between the retrenchments in the markets and decreased access to private-sector risk mitigation providers, the effect was felt by both trade and non-trade-related clients.

These survey results have been regularly provided to Group of 20 (G-20) finance ministers, central bank governors, and other key regulators. The surveys and position papers gave policy makers tools for considering solutions to the crisis—including (a) a $250 billion pledge for multilateral development banks and export

credit agencies (ECAs) to launch programs addressing trade finance market dislocations and (b) G-20 recognition that waivers by national jurisdictions of Basel II's one-year maturity floor for trade finance would help mitigate the crisis.

Other Collaborations

Throughout the crisis, BAFT-IFSA engaged on several fronts through its global convening power, its involvement in country-specific and regional matters, and its broad advocacy for fairer treatment of trade finance by the Basel Committee.

Global trade finance summits

BAFT-IFSA hosted the first of four global trade finance summits in London in January 2009. For the first time since the crisis hit, all major stakeholders in the trade finance crisis were gathered: banks from around the world, ECAs, public and private credit insurers, government officials responsible for trade and finance, the World Bank Group, the regional development banks, and other key multilateral institutions such as the World Trade Organization.

The first summit's aim was to promote a common understanding of trade finance among the gathered experts and stakeholders, to highlight the impact of the crisis on each region of the world, and to agree on recommended solutions. In preparation, BAFT-IFSA circulated a position paper that highlighted the low-risk, short-term nature of trade finance; its long history as "the oil to the wheels of commerce"; and BAFT-IFSA's recommended solutions to the crisis. Foremost was a warning against a retreat to protectionist measures. BAFT-IFSA recommended that governments form public-private partnerships to address the liquidity problems and revive the secondary markets for trade risk. It also advocated for ECA participation in, and creation of, short-term trade finance programs to ensure recovery.

Regional and country-specific efforts

A number of regional and country-specific trade finance difficulties had potentially broader systemic implications. BAFT-IFSA helped to address those difficulties—for instance, by collaborating with key banking associations, federations, and multilateral entities around the globe to ensure that Kazakhstan officials fully understood industry expectations of adherence to international practices for treatment of trade finance obligations during that country's banking sector crisis. It sensitized key policy makers to the perils of ignoring such practices, given that trade finance remains an integral tool for global recovery. Although this particular advocacy effort was country specific, it was a useful precedent for influencing the treatment of trade finance liabilities in similar restructuring exercises worldwide.

Response to Basel requirements

BAFT-IFSA has also played a key role in informing policy makers and regulators about the unintended consequences that the capital and liquidity requirement proposed in BCBS's consultative papers could have on trade finance. In BAFT-IFSA's view, implementation of the BCBS recommendations could result in decreased trade flows for trade-focused banks at a time when such flows are essential to supporting global economic recovery. Among the key arguments, BAFT-IFSA emphasized that the Basel II requirements disproportionately affect trade instruments and do not take into account the inherently safe nature of trade.

Because regulators have not fully addressed Basel II–related issues, BAFT-IFSA concerns are magnified by the pending BCBS capital and liquidity recommendations—collectively known as Basel III. These recommendations include proposals that could increase the risk weighting for trade finance instruments in a manner inconsistent with their short-term, low-risk nature. BAFT-IFSA is concerned that, given the crucial role of trade finance in global recovery, the Basel recommendations could ultimately limit trade activity. According to BAFT-IFSA, the BCBS recommendations fail to take into account that the movement of goods and services underpins trade finance, differentiating it from other forms of financial transaction in terms of lending security. In April 2010, BAFT-IFSA submitted comment letters to BCBS regarding these recommendations and their impact on trade and on transaction banking in general. It continues to work with other stakeholders in the international community to ensure that the Basel Committee and the G-20 are aware that, if adopted, the Basel Committee recommendations could ultimately result in decreased trade flows.

During the 2008–09 global economic crisis, BAFT-IFSA helped raise awareness about the key role of trade finance in sustaining the global trade recovery. It contends that a more appropriate treatment of trade finance under Basel II and III, alongside sustained public-private sector support and cooperation for trade finance, would help ensure the sustainability of the ongoing recovery.

Private Banks' Response to the Proposed Basel Regulations

This section describes how three private banks— Standard Chartered Bank, Royal Bank of Scotland, and HSBC—responded to the proposed Basel regulations.

Standard Chartered Bank

As a result of the global economic crisis, global trade fell some 23 percent, or $3.5 trillion, in value. Of this sum, Standard Chartered Bank estimates that 10–15 percent stemmed from lower trade finance liquidity. It is estimated that banks slashed their trade finance loans by 10 percent to shore up their capital

positions. As a result, $350 billion to $525 billion of world trade, or up to 0.85 percent of global gross domestic product (GDP), may have been wiped out.

Financial support

Standard Chartered Bank took several steps to meet the markets' constraints, including signing an innovative $1.25 billion Global Trade Liquidity Program (GLTP) partnership with the World Bank Group's International Finance Corporation (IFC) to help support $50 billion of global trade. It also entered a $500 million risk-sharing program with the Organization of Petroleum Exporting Countries (OPEC) Fund for International Development to potentially fund more than $2 billion of trade.

Response to Basel requirements

In addition, Standard Chartered Bank actively helped foster sound banking regulation of trade finance activities. Although supportive of the Basel Committee's overall proposals in December 2009 to strengthen the resilience of the banking sector, Standard Chartered Bank considered that the proposed changes could have disproportionately adverse effects on banks' ability to provide trade financing at affordable costs to both importers and exporters.

In particular, the Basel proposals treat trade finance as a risky type of bank asset in the following ways:

- All trade contingents are subject to a 100 percent credit conversion factor (CCF) on the balance sheet in calculating the leverage ratio (compared with 10 percent for certain credit derivatives).
- Trade assets are not recognized as a high-quality liquid asset for the purpose of the liquid asset buffers.
- The proposed one-year maturity floor means that banks will have to hold more capital than is representative of the average trade tenor of 115 days.
- Basel makes no allowance for using real data to calculate the actual asset value correlation (AVC) and CCF of trade finance and instead imposes metrics that assume a much riskier profile than empirical evidence suggests is warranted.

As a result, the Basel proposals would lead to a significant increase in banks' cost of providing trade finance in terms of both capital and liquidity, which will lead to a lower supply or higher prices or both. Standard Chartered has taken the lead in highlighting the potential adverse effects that some of the proposed Basel regulations could have on world trade, supply, and trade finance costs:

- *Further drop in world trade.* If banks do not raise new capital (and if the consultation document is approved as drafted), banks could slash trade finance

lending by as much as 6 percent a year, triggering a drop in international trade of up to $270 billion based on today's trade value. That would represent 1.8 percent of world trade or 0.5 percent of global GDP.

- *Decreased supply of trade finance.* A 25 percent increase in the AVC factor will require banks to hold as much as 10 percent more capital for banking and trading book exposures to large financial institutions worth more than $100 billion in assets. This requirement will erode 50 basis points from banks' capital adequacy ratio, limiting their ability to lend and negatively affecting their profile with investors and rating agencies. Banks will have two choices: raise more capital to preserve the market's confidence in their capital levels or lower their capital adequacy ratio to comply with the fledgling regulations, for all their negative consequences.
- *Increased pricing of trade finance.* As trade finance becomes more capital-intensive, its availability will decline, spurring higher prices. Trade finance banks lend to importers and exporters with funds from either other banks or clients' deposits. If a trade finance bank funds its lending through other banks, such borrowing will cost up to 37 percent more than it costs large financial institutions. These incremental costs may be passed on to the ultimate importers and exporters. If the trade finance bank's funding is from its deposits, the cost of its lending will rise by 15–25 percent for mid- to lower-rated importers and exporters in the emerging markets, which usually need trade finance the most.

Recommendations

Given trade finance's paramount importance in supporting international trade, Standard Chartered Bank recommends that the new regulations recognize that trade finance is different from the normal corporate or financial institution lending exposures. Standard Chartered has made concrete proposals to reduce the impact of the proposed Basel regulations on trade finance.

First, Standard Chartered proposes that the appropriate capital adequacy ratios be applied through the following means:

- *Mandatory extension of the maturity floor waiver to trade products* that are self-liquidating, short-term, nonrevolving, uncommitted, and do not form part of the ongoing financing of clients. BCBS should remove the national discretion given to regulators to waive the maturity floor rule and make it mandatory for banks to apply actual maturity tenor for trade finance and apply a minimum one-year tenor only on an exceptional basis.
- *Adoption of a separate AVC for trade finance* because trade finance is short-term and self-liquidating in nature, and such transactions are generally small, diverse, short-term, and self-liquidating—that is, inherently less risky.[3]

- *Permission for banks to use industry data* such as the Trade Finance Default Register of the International Chamber of Commerce (ICC) and the Asian Development Bank (ADB) rather than simply relying on internal estimates. Recent survey results from the ICC-ADB Register show that trade off-balance-sheet items (letters of credit [LCs] and guarantees) have low conversion rates into on-balance-sheet items that in turn require funding from the banks (ICC-ADB 2010).[4]

Second, Standard Chartered proposed recognizing the role of trade and financial institutions in providing liquidity through the following means:

- *Including trade of less than 30 days as a stable source of funding.* Short-term trade assets that will be paid off in less than 30 days should be considered as liquid assets. The attraction of trade finance as a class of assets is its ability to generate cash flow even during economic stress due to its self-liquidating nature.
- *Prescribing a required stable funding ratio for off-balance-sheet trade exposures.* Trade is an international, cross-border business, and hence, there should be greater harmonization in the treatment of global trade finance transactions. As such, leaving the required stable funding ratio for each national regulator to decide as trade business will run the risk that regulators, naturally inclined toward conservatism, would apply a 100 percent ratio, thus creating a complicating mix of rules for a global business. It is recommended that this required stable funding ratio be determined by calculating the probability of an off-balance-sheet trade exposure being converted into an on-balance-sheet asset.

Royal Bank of Scotland

The Royal Bank of Scotland (RBS) experienced the same trade finance developments as other institutions in 2008–09: business volumes declined, and the cost of trade finance increased. Exporters were hit by reduced order books, a demand for extended credit terms, and a greater propensity for their buyers to default. Importers were also hit by declining order books and destocked significantly.

The more successful companies paid down debt; reduced their levels of restocking; and adopted prudent, secure methods of settling export transactions. However, those that struggled did not respond quickly enough, finding themselves with too much stock and no demand. As a consequence, their credit ratings deteriorated—in some cases, quite dramatically. However, given the transparent nature of trade finance (whereby all parties involved have full control and visibility of transactions), trade finance should have been the least-affected method of financing during that turbulent period.

Three factors affected the reduced appetite for trade finance facilities and conspired to drive up prices:

- *Credit quality deteriorated, affecting price.* However, before the crisis, many trade finance professionals felt pricing had become too fine. Price increases were driven by an element of price correction as well as by the deteriorating credit quality of counterparties.
- *Capital availability became more constrained and much more expensive.* The Revised International Capital Framework (Basel II) played a role here: being highly risk-sensitive, a relatively small deterioration in credit quality results in a disproportionately large increase in the amount of capital required to support exposures.
- *The collapse of the interbank funding market led to a shortage of liquidity.* During the crisis, financial institutions found it difficult to fund their customers, but the downturn in demand mitigated this impact to an extent.

Notably, the impact on companies' behavior varied. In the United Kingdom, for example, small and medium enterprises (SMEs) tend to use overdraft facilities to finance international trade. Such facilities until recently were relatively cheap and flexible and were typically supported by a tangible security (such as property or shares). During the crisis, the value of the security underpinning the overdraft diminished and was worth less relative to the level of exposure. As a result, lenders scaled back overdraft facilities. (Lending on this basis is never a good way of supporting international trade because it does not link the finance to the underlying trade cycle.)

Financial support

RBS continued to provide trade finance solutions to importers and exporters. In the United Kingdom, for example, the bank offers export finance support to companies through packaged solutions that include export LCs, invoice discounting, and guarantees and bonds. RBS also plays a role in encouraging companies, particularly SMEs that have not exported in the past, to consider new markets by offering financial tools that fund credit periods and mitigate risk. RBS has also entered into risk-sharing arrangements designed to encourage exports. The bank participates in the LC guarantee scheme operated by the United Kingdom's official ECA, the Export Credits Guarantee Department (ECGD). Under the scheme, the ECGD shares the credit risks associated with confirmed LCs. The ECGD is also engaged in U.K. government schemes launched in 2011 to support exporters in accessing facilities for bonds, guarantees, or working capital related to export contracts.

For major importers in the North American and European markets, supply chain finance (SCF) open-account solutions—which introduce liquidity and security into the supply chain—have continued to grow. Before the crisis, many large importers believed the benefit of these solutions was all on the suppliers' side; however, the downturn highlighted the risk to buyers of failures in their supply chain. Buyers now see SCF as a way to ensure certainty of supply. Suppliers can reduce their Days Sales Outstanding from 90-day credit periods to seven days or less, and buyers can improve Days Payable Outstanding, taking longer deferred credit while remaining on commercial terms.

The adoption of SCF is blurring the boundaries between traditional trade finance and international cash management. Further developments include initiatives such as the Society for Worldwide Interbank Financial Telecommunication (SWIFT) Trade Services Utility and related Bank Payment Obligation, which provide many of the risk and finance benefits of traditional trade instruments but in a digitized environment, using data from the trading partners' supply chains.

Response to Basel requirements

As noted above, Basel II requirements contributed to capital constraints during the crisis. Under the Basel III proposals, measures such as the leverage ratio—aimed at preventing banks from using off-balance-sheet structures to leverage their balance sheets—will cause off-balance-sheet trade obligations to be treated in the same manner as on-balance-sheet items. LCs, bonds, and guarantees may therefore become less attractive options for banks that are capital constrained. Trade finance instruments, though off-balance-sheet in nature, directly reflect the value of customers' underlying commercial transactions; they are not a method banks can use to leverage their balance sheets.

The financial crisis showed that trade finance, which links funding to a customer's cash conversion cycle, is the most effective way of supporting international trade. A more prudent and risk-averse approach to trade finance will emerge as a result of the crisis. The trend toward open-account trade, in which export credit insurance and factoring were used to finance the trade, has been temporarily reversed in many cases. As the economic recovery takes hold, traditional LCs, which enable companies and their financial institutions to collaborate within a robust framework, will continue to play a role in risk mitigation, finance, and settlement of international trade.

HSBC

Trade has traditionally grown faster than GDP and, as such, is a key driving factor of the world economy. When the 2008–09 crisis hit, trade flows were rapidly

affected, and it became clear that one of the governments' priorities was to foster trade to re-create the proper background for world growth to resume as early as possible. The 2009 G-20 London Summit was mainly dedicated to this subject. Then the availability of finance for trade activities became a key focus.

Trade finance became scarcer for a number of reasons, and, although none of those reasons can be held solely responsible for the overall squeeze, together they created the following significant negative impacts:

- *Increased distrust among banks.* Pursuant to Lehman Brothers' demise, the general level of distrust in the bank-to-bank market gathered momentum, first in developed economies and then in some developing economies. Toxic assets were hard to locate, and the general suspicion surrounding the presence of such assets in banks' balance sheets around the world triggered a general reassessment of risk among banks. Trade finance, being largely reliant on bank intermediation, was therefore gradually affected.
- *Scarcer liquidity.* Liquidity became scarce in developed countries. Banks, therefore, focused their support on their domestic markets. Gradually, this shift started to affect developing-market banks that received less hard-currency funding and, thus, faced growing difficulties in supporting their customers' international trade requirements.
- *Higher capital requirements.* The reassessment of country risks (as the crisis spread) and of bank-to-bank risks led to higher capital requirements for banks, affecting all of their lending activities. This phenomenon was amplified by the concomitant implementation of Basel II regulations in most parts of the world, with the noteworthy exception of the United States. Basel II, by putting more emphasis on the counterparty risk than on the instrument of lending, created a more challenging environment for trade finance in the context of the spreading crisis than would have existed during the previous regulatory environment.

The rebound of trade since mid-2009 is an encouraging sign that the crisis has diminished in intensity. In HSBC's May 2010 Trade Confidence Index, more than 50 percent of the respondents were bullish about trade outlooks, and they expected trade volumes to rise over the following six months. This optimism was confirmed in the September survey. However, the effect of the crisis on world economies was deep, hence recovery is still fragile. In this context, it is important that all pro-trade measures taken at the height of the crisis be maintained.

Financial support

HSBC has been an active provider of trade financing. It views international trade as a key driver of its development. Beyond its history, its raison d'être is its ability

to serve its customers' businesses along their supply chains throughout the extensive HSBC global network. It takes a different view on trade risk than other financiers: because it has relationships on both sides of a global trade transaction, HSBC understands the business intimately and can weigh the risks associated with trade transactions accordingly.

During the crisis, HSBC continued to support its customers in financing their businesses for trade. Early on, decisions were made to direct financing to the corporate sector and notably to SMEs. HSBC announced a global $5 billion fund for the express purpose of lending to fundamentally sound SMEs and mid-market enterprises to supply working capital and to support businesses that trade or aspire to trade internationally. Furthermore, HSBC has been working closely with ECAs to help them devise financial packages to support trade finance, notably in the United Kingdom.

Recommendations

Trade finance never appeared more strategic than it did in the midst of the crisis. The 2008–09 financial crisis revealed that the trade finance industry was not organized and structured enough to assess its sheer weight and to face the challenges posed by the regulators. Banks have since taken measures to build a common base of information and organized dialogue.

In particular, the ICC-ADB Trade Finance Register represents a significant step forward because it will create a living database of the trade finance market that will help to demonstrate the resilience of this business (ICC-ADB 2010). The database will then enable the industry to objectively claim more favorable regulatory treatment of trade finance and thereby create the necessary incentive for banks to increase their commitment to international trade.

More generally, a closer dialogue between the banking industry and regulators over the treatment of trade finance in the Basel II and III frameworks is paramount to avoid unintended negative consequences over the financing of trade flows. HSBC welcomes the recent progress made in that respect.

HSBC has been closely involved in helping the industry to devise propositions to provide trade finance with a better regulatory environment and is committed to remaining at the forefront of such initiatives. HSBC obtained, together with other institutions, the lifting of the penalizing one-year maturity threshold by the U.K. Financial Services Authority. This action freed significant capital and created more space for banks to finance their customers' trade requirements. HSBC would advocate that such simple yet effective measures be replicated in all jurisdictions.

Trade financing has evidenced its low-risk nature, thanks to its unique features (self-liquidating, fast-turning, and linked to trade of goods and services): At the

height of the biggest crisis since 1929 and as shown by the ICC-ADB Register, trade default rates remained at insignificant levels. The exchange of goods and services is the most powerful tool to create growth and prosperity. If there is one positive outcome the crisis has created, it is the awareness of the importance of trade and the availability of trade financing—a lesson that has resonated with HSBC's culture since its founding in 1865.

Notes

1. BAFT-IFSA is an international financial services association formed by the 2010 merger of the Bankers' Association for Finance and Trade and the International Financial Services Association, whose members include a broad range of financial institutions and suppliers around the globe.

2. Chapter 5 of this volume provides an in-depth discussion of the IMF and BAFT-IFSA global trade finance surveys.

3. For consumer banking, there is separate AVC for retail mortgage, credit cards, and other retail exposure because they vary in behavioral and payment factors and also react differently to macroeconomic factors. However, for corporate banking, there is only one AVC for all corporate products (lending, overdraft, derivatives, swaps and trade finance, and so forth).

4. We would recommend that the current CCF rule be refined such that off-balance-sheet trade will attract a CCF that matches its conversion level to on-balance-sheet items. Alternatively, BCBS could allow banks to adopt a CCF based on their internal methodology.

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TRADE FINANCE UNDER THE CURRENT BASEL REGULATORY FRAMEWORK: WHAT ARE THE ISSUES?

Marc Auboin

This chapter discusses issues related to the treatment of trade credit by international regulators. Although trade finance traditionally received preferential treatment regarding capital adequacy ratios on grounds that it was one of the safest, most collateralized, and most self-liquidating forms of finance, the introduction of the Basel II framework led to complaints inside and outside the World Trade Organization (WTO) about its potential adverse effect on the supply of trade finance during financial crises.

With the collapse of trade and trade finance in late 2008 and 2009, the regulatory treatment of trade credit under Basel II became a public issue, and a sentence in support of trade finance made its way into the communiqué of G-20 leaders following the April 2009 London Summit, calling on regulators to exercise some flexibility in the application of prevailing rules (G-20 2009). As the removal of obstacles to the supply of trade finance became a priority in the context of the WTO and of the G-20, new proposals on capital adequacy by the Basel Committee on Banking Supervision (BCBS), in the context of the making of Basel III, have spurred new policy discussions. The trade finance community hopes that the debate will lead to a better understanding of the two (trade and regulatory) communities' objectives and processes, eventually resulting in a set of regulations that is right and fair.

Basel I and Basel II: Apparently Similar but Different

Traditionally, short-term trade finance has been considered one of the safest, most collateralized, and most self-liquidating forms of finance. In the Basel I framework, assets are risk weighted based on the borrower's risk of default, ranging from the lowest risk weight (0 percent for the world's best government bonds) to a 100 percent risk weight (or more, in successor arrangements) for standard corporate loans. A 100 percent risk weight meant that the capital to be set aside for such loans had to be no less than 8 percent (minimum capital ratio to assets) of its notional value. The logic of this regulatory system—as well as its successor arrangement—was to protect financial institutions against risks of insolvency in case of default on their assets by accumulating enough capital to cover possible losses in difficult times, each category of asset being weighted in relation to estimated, historical risk.

The low-risk character of trade finance was reflected in the moderate rate of capitalization for cross-border trade credit in the form of letters of credit (LCs) and similar securitized instruments under the Basel I regulatory framework put in place in the late 1980s and early 1990s. The Basel I text indicates that "short-term self-liquidating trade-related contingencies (such as documentary credits collateralised by the underlying shipments)" would be subject to a credit conversion factor equal or superior to 20 percent under the standard approach. This meant that for unrated trade credit of $1 million to a corporation carrying a normal risk weight of 100 percent and hence a capital requirement of 8 percent, the application of a credit conversion factor (CCF) of 20 percent would "cost" the bank $16,000 in capital.

The basic text and CCF value for trade finance was kept largely unchanged under the Basel II framework. In particular, short-term, self-liquidating, trade-related contingencies (such as LCs) remained subject to an unchanged 20 percent CCF. However, issues of pro-cyclicality, maturity structure, and credit risk have arisen under the Basel II framework. In an internal-rating-based and risk-weighted assets system, the amount of capitalization to back up lending depends on the estimated risk at a particular time and for a particular borrower. For financial institutions without the resources to operate their own models of credit risk estimation, the standardized approach would provide guidelines of how to manage risk and allocate capital according to the wider proposed set of economic risk categories.

External credit ratings for cross-border lending under Basel II are based on benchmarks provided by international commercial agencies. More sophisticated financial institutions rely on an "advanced internal rating-based" approach to estimate such credit risk themselves, taking into account a number of compulsory

criteria. Among the most-contested criteria is that, under Basel II, the country risk cannot be worse than any counterparty risk in that country; therefore, any deterioration of the country risk during a recession, for example, will automatically and negatively affect the country risk regardless of the underlying creditworthiness of that counterparty. The subordination of the risk weighting of end borrowers to that of the country risk is one reason why there are still 30 to 40 countries in the world in which access to trade finance at affordable rates is difficult—because recent sovereign defaults in Eastern Europe, Central Asia, or Africa still have a negative effect on the rating of individual counterparties.

Although even regulators acknowledge that the Basel II framework is inherently pro-cyclical in design (with capital requirements increasing in low cycle), trade finance professionals consider that banks face higher capital requirements for their trade assets relative to other forms of potentially riskier domestic assets, notably during crises. The reason is the high intensity of the banks' trade lending to midmarket companies and customers in developing countries. As the International Chamber of Commerce (ICC) indicates, "The capital intensity of lending to mid-market companies under Basel II is four to five times higher than for equivalent transactions under Basel I" (ICC 2009).

Regulators generally temper the professionals' remarks with the following arguments. First, the 20 percent CCF recognizes that trade credits are normally less risky than ordinary loans. Second, acknowledging that the bulk of the trade finance business is in the hands of large international banks, the regulators also suggest that, under the advanced internal rating-based approach, these institutions can determine their own estimates of the appropriate CCF to apply to a trade finance commitment when calculating the required amount of capital to back it up. Depending on historical loss experience, particularly if it is low, the capital required under the advanced internal rating-based approach could be lower than under the standardized approach.

Finally, perhaps the most difficult issue now facing trade financiers is the maturity cycle applied to regulation of short-term trade lending. Although trade finance lending is usually short-term in nature (markets indicate that more than two-thirds of lending is 60–90 days), the Basel II framework applies a de facto one-year maturity floor for all lending facilities. Because capital requirements increase with maturity length, the capital costs of trade finance are felt to be artificially inflated. If capital costs were instead to be applied for the exact maturity of self-liquidating instruments, considerable amounts of capital could be freed for trade finance.

Although the U.K. Financial Services Authority waived the one-year maturity floor, no other authority followed through immediately after the G-20 London Summit, when the Leaders Statement asked regulators to support trade finance by

applying the rules more flexibly (G-20 2009). The Basel Committee responds that, subject to supervision discretion, the floor does not apply, for example, to short-term, self-liquidating trade transactions; import and export credit; and similar transactions. So the issue was not so much related to the rules of Basel II, but rather to how jurisdictions have implemented them.

At least, there might be a need for clarification within the competent regulatory circles. When one looks at the text of paragraphs 321 and 322 of the Basel II framework (BCBS 2006), the drafting clearly poses the principle of application of the one-year maturity floor to lending assets (Article 321) but indicates

> short-term exposures with an original maturity of less than one year that are not part of a bank's ongoing financing of an obligor may be eligible for exemption from the one-year floor. After a careful review of the particular circumstance of their jurisdictions, national supervisors should define the types of short-term exposures that might be considered eligible for that treatment. The results of these reviews might, for example, include some transactions such as: . . . some short-term self-liquidating transactions. Import and export letters of credit and similar transactions could be accounted for at their actual remaining maturity.

One the one hand, the text can be read as applying the one-year maturity principle unless some categories of short-term assets are exempted after review. On the other hand, the text could be read as clearly defining the exemptions to the rules and advising regulators to perform due diligence when providing for such exemptions. However, no regulator to date has conducted reviews apart from the U.K. Financial Services Authority.

Basel III Proposals

Notwithstanding the treatment of trade finance in the Basel II framework, on January 10, 2010, BCBS made new proposals to the Committee of Governors of Central Banks and Heads of Supervision of the Bank for International Settlements (BIS). These proposals, contained in a Consultative Document ("Strengthening the Resilience of the Banking Sector"), were opened for public comments in spring 2010 (BCBS 2010). The 279 comments from financial institutions, including commercial banks and export credit agencies, were published on the BIS website (www.bis.org). After an ongoing process of consultation, BCBS was scheduled to propose final recommendations by the end of 2010.

One of the Basel Committee's key proposals to reduce systemic risk is to supplement risk-based capital requirements with a leverage ratio to reduce incentives for leveraging. The intention of reducing such incentives is relatively consensual and has been shared by economists, regulators, and bankers. The idea, under

paragraphs 24–27 of the BCBS draft proposals, is to impose such a leverage ratio, in the form of a flat 100 percent CCF to certain off-balance-sheet items (BCBS 2010).

The WTO's view is certainly not to challenge the well-founded principle of creating a leverage ratio to discourage the accumulation of off-balance-sheet items that could potentially become toxic for the financial system as a whole. On the contrary, its director-general has been on the record in calling for a strong, rules-based international cooperation on financial regulatory matters, not least because in the 1995 ministerial Decision on Coherence in Global Economic Policy Making, WTO ministers called for a stable financial environment. The current efforts of BIS and the Basel Committee are undoubtedly strengthening the international economic architecture as a whole.

Under paragraph 232 of the new Basel proposal, though, the leverage ratio would apply to "unconditionally cancellable commitments, direct credit substitutes, acceptances, standby letters of credit, trade letters of credit, failed transactions and unsettled securities" (BCBS 2010). The trade finance industry must examine the implication of this provision. Clearly trade credit exposures have never been used as a source of leverage, in particular given that they are supported by an underlying transaction that involves either movement of goods or the provision of a service.

The question of why off-balance-sheet trade exposures are not being automatically incorporated into the balance sheet (to avoid the leverage ratio) is one of process. The processing of LCs, which are highly documented for the financial transactions' own security, involve off-balance-sheet treatment at least until the verification of the documentation is finalized—a process that has existed for a long time. The financial crisis has resulted in even greater scrutiny of such documentation. The rigor of the document verification process is at the very heart of what an LC is, and it concurs to its safety. Given the high rejection rate of poorly documented LCs (up to 75 percent for first submissions) and the fact that, if definitively rejected, the LC might not even enter the balance sheet, it is argued that the off-balance-sheet management of these exposures is necessary and usually only a temporary treatment of what would eventually become an on-balance-sheet commitment.

The banking community argues that the application of the leverage ratio to off-balance-sheet LCs would increase banks' cost to offer such risk mitigation products. That cost will either be passed on to customers, making it even more difficult for smaller businesses to trade internationally, or, absent incentives to issue LCs, customers may simply choose to use on-balance-sheet products such as overdrafts to import goods (because these carry less-stringent documentary requirements) that may be far riskier for the banking sector in general.

Finally, the issue has some importance for developing-countries' trade. Open-account financing is not as appreciated by developing countries as by developed countries. Traditional LCs bring more security and are more appreciated. Given that world trade is likely to be driven by South-South trade in the future, the prudential treatment (and cost) of LCs is critical for developing- and emerging-market economies.

BCBS representatives argue that the adoption of a leverage ratio would have the effect of placing a floor under the risk-based measure and thereby help contain the buildup of excessive leverage in the banking system, one of the sources of the recent financial crisis. A leverage ratio per se is not risk-based. For example, cash items and AAA-rated government bonds would also be included at face value, although they are not subject to capital requirements under the risk-based measures. Conceptually, the leverage ratio also implies that all off-balance-sheet items would be included in the calculation using a flat 100 percent CCF, and hence, trade finance would not necessarily be at a disadvantage relative to other high-quality assets. But it is clear to regulators that the leverage ratio would help contain banks' building of an excessive, systemic position even in what appear to be low-risk activities, but that could pose severe risks in periods of systemwide stress. BCBS is nonetheless prepared to take account of the quantitative impact of its proposals based on the results of a comprehensive study it is conducting.

What is important at this stage is that the trade finance community and regulators speak based on facts and figures, not only on principles. The Basel II framework requires a minimum of historical data to establish the maturity structure and the safe character of specific financial instruments, but it has not always been easy for banks to isolate trade finance data from other credit exposure. For this purpose, under the sponsorship of the WTO Expert Group on Trade Finance, the Asian Development Bank and the ICC launched in November 2009 a pilot project to create an International Trade Finance Loan Default Registry, aimed at collecting data on trade finance operations and showing that the default rate for such business is one of the lowest in the industry (ICC 2010). The database has been operational since spring 2010, and the data are likely to be most instrumental in the discussion between the trade finance community and regulators on some of the regulatory aspects of both Basel II and the making of Basel III. On June 1, 2010, a first official and direct meeting took place to discuss some of these issues, with a view to reach a fair and just regulation for trade finance.

Conclusions

In the economics of regulation, there can be doubts about the ability of public authorities to adopt fully independent points of view. A recent paper argues that

the Basel II framework did not fail because it was too ambitious but rather because creators fell short of their aim of improving the safety of the international banking system (Lall 2009). Intense and successful lobbying by the banking sector was, according to the paper, largely responsible for the failure of regulators and supervisors to impose sufficiently stringent standards.

For the same reason, Lall believes that recent proposals to reregulate the international banking system are likely to meet a similar fate. Drawing on recent work on global regulatory capture, the paper presents an interesting theoretical framework, emphasizing the importance of timing and sequencing in determining the outcome of rule making for international finance (Lall 2009). Lately, though, G-20 leaders have shown great resolve in amending international prudential regulation to strengthen the international financial system and avoid the repetition of past regulatory failures. To this aim, the Financial Stability Board has been reinforced in its mission to present important reforms, commensurate to the magnitude of the recent financial crisis.

The matters involved in financial regulation are inherently complex and require the understanding of all sides. In matters that are at the crossroads of trade and financial regulation, there should be a thorough examination of both cultures and instruments. In this regard, there should certainly be some middle ground in attempting, on the one hand, to prevent toxic assets from spreading throughout the financial system and harming its transparency through off-balance-sheet vehicles and, on the other hand, seriously disrupting a long-standing process for securing trade credit instruments.

For this reason, the trade finance and the regulatory communities should understand one another's processes and objectives; they are not necessarily at odds. The trade finance community believes it promotes a cautious model of banking that has clearly been financing the sustained expansion of international trade without major hurdles until the recent crisis. The two communities should be encouraged to develop a mutual understanding and to meet regularly during the comment period to reach a consensus on processes and, hence, on a new regulatory framework that can be both right and fair.

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