Post-Crisis Growth in Developing Countries

A Special Report of the Commission on Growth and Development on the Implications of the 2008 Financial Crisis

COMMISSION ON GROWTH AND DEVELOPMENT

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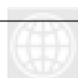
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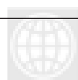
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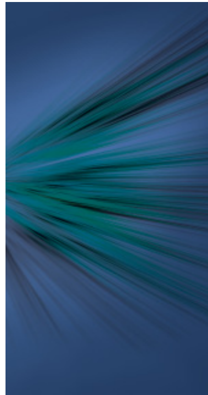

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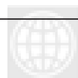

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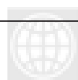
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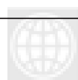
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Preface

The Commission on Growth and Development brings together 20 leaders, mostly from developing countries, and two academics, Bob Solow and me. The leaders carry with them decades of accumulated experience in the challenging work of making policies that influence millions of people's lives.

In May 2008, the Commission released *The Growth Report: Strategies for Sustained Growth and Inclusive Development*. At that time, the financial systems of the United States and Europe were under stress. Commodity prices were also spiking, posing particular difficulties for developing countries because of the impact on the poor and on potential future inflation.

But no one foresaw the full magnitude of the crisis that erupted in the fall of 2008, more than a year ago. The crisis was a destructive malfunction of the financial sectors of the advanced economies, which spread rapidly to the real economy and to the rest of the globe. Even countries far from the source of the crisis had to cope with capital volatility, tight credit, and rapidly falling trade.

At the request of several members of the Commission, we held a workshop on the crisis and its implications for developing countries. We followed our standard procedure of asking for help and insight from a distinguished group of scholars, analysts, and practitioners. The results of that workshop will be published as working papers, on the Commission website, and in a separate volume.

This report is an outgrowth of that process. It is an attempt to look at the crisis and its aftermath from the point of view of developing countries.

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We wanted to assess the impact of these events, and determine if the growth strategies we recommended needed major revision, or some adaptive fine-tuning. We also wanted to think more carefully about resilience, and what it might mean for successful sustained growth.

The report that follows is a summary of our thinking on these and related questions.

Since this is likely to be the final report from the Commission itself, I would like to repeat what I said at the time of the publication of *The Growth Report*. It has been an honor for me to serve with the Commissioners and also a high-speed learning process. I suspect we would all agree that the experience of the past 14 months could be described in similar terms. I hope we are successful in sharing the Commissioners' experience and insights through this report. I also hope readers will benefit from the papers, workshop proceedings, and case studies that go along with it. These additional publications present the views and findings of a dedicated community of academics and practitioners who played a prominent role in deepening the Commission's understanding.

As we speak, major developing countries are recovering rapidly from the crisis. There is reason for optimism. But there is also reason for concern about the poorer, more fragile countries whose capacity to shield themselves from a crisis of this magnitude is limited. In *The Growth Report* we underscored the importance of national inclusiveness as part of a successful growth strategy. The same thing may be said of the global economy. It needs to enhance its ability to respond quickly to protect the more vulnerable people who occupy the same planet.

As was true of the original *Growth Report*, this follow-up publication tackles difficult areas of policy, about which thoughtful people disagree or remain uncertain. Some of that diversity of thought and insight is reflected in the Commission. We have done our best to identify these areas of disagreement or uncertainty as we encounter them, to suggest the range of opinion, and to sum up the benefits and costs of various approaches and choices. I think it is fair to say that we have gone out of our way to make sure that any variance of opinions, assessments, or priorities has not been hidden from view.

The work has been rendered possible by the engagement and commitment of a large number of individuals. The Commission and I have relied on a working group—I should say a hard-working group: Homi Kharas, Danny Leipziger, Edwin Lim, Paul Romer, Bob Solow, and Roberto Zagha. Together we have tried to assimilate a vast amount of material; organize and review the work prepared for the workshops; and decide on principal themes for the report.

Our editor, Simon Cox, again played a particularly important role. Seldom does one find an editor who so deeply and thoroughly understands the

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logic and structure of the argument, and then expresses it with simplicity, clarity, and vividness.

A dedicated group of staff at the World Bank—Muriel Darlington, Maria Amparo Gamboa, Diana Manevskaya, Dorota Nowak, and Pavneet Singh organized the workshop, the outreach strategy, and publication of the special report, related working papers, and proceedings. I thank them again for their dedication, efficiency, and grace under intense pressure.

I would also like to thank Manu Sharma, who under the guidance of Milan Brahmbhatt, worked with us on many reiterations of the statistical appendix. Our publications team—Aziz Gökdemir, Stephen McGroarty, and Denise Bergeron—were immensely helpful (and patient) in working with us to prepare this report for publication.

As we conclude our work, I want to express our deep appreciation again to our sponsors: the governments of Australia, Sweden, the Netherlands, and the United Kingdom; the William and Flora Hewlett Foundation; and the World Bank Group for their interest and support.

I want to thank again the Vice Chair of the Commission, Danny Leipziger. He has since retired from the World Bank and embarked on a number of projects that are consistent with his long years of commitment to development and poverty reduction.

Roberto Zagha, the secretary to the Commission, continues to hold the title of the heart of the operation. Though committed to his new role as country director in India with the World Bank, he managed to keep us all together and functioning one more time. His range of knowledge of the relevant work in development, his respect for, and his personal relationships with, leaders in academia and in practice have been the essential ingredients in this enterprise. I have enjoyed immensely working with him and will miss that in the future.

Michael Spence
December 2009

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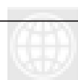
Abbreviations

ABS	Asset Backed Securities
BRICs	Brazil, Russia, India, and China
CDO	Collateralized Debt Obligation
FDIC	Federal Deposit Insurance Corporation
Fed	U.S. Federal Reserve
GDP	Gross Domestic Product
IMF	International Monetary Fund
LIBOR	London Interbank Offered Rate
LIBOR-OIS	London Interbank Offered Rate-Overnight Index Swaps
MBS OAS	Mortgage Backed Security-Option Adjusted Spread
NTSB	National Transportation Safety Board
OAS	Option Adjusted Spread
OECD	Organisation for Economic Co-operation and Development
S&L	Savings and Loan
SEC	Securities and Exchange Commission
SIVs	Structured Investment Vehicles
TED	T-Bill and Eurodollar
T-Bills	U.S. Treasury Bills



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PART 1

Introduction

In May 2008, the Commission on Growth and Development released its flagship report, distilling the results of a two-year inquiry into the causes of poverty and progress. *The Growth Report: Strategies for Sustained Growth and Inclusive Development* drew inspiration from economies that had sustained growth of 7 percent or more, for 25 years or longer, quintupling in size in the space of a generation. It attempted to demystify these economic "miracles," identifying characteristics they all shared. Five of these common features are described below.

1. They fully exploited the world economy. They imported ideas, know-how, and technology from the rest of the world. At the same time, they produced goods that met global demand, allowing them to specialize and expand rapidly without saturating the market.
2. They maintained macroeconomic stability. They kept a grip on inflation and did not stray down unsustainable fiscal paths.
3. They mustered high rates of investment, including public investment, financed by equally impressive rates of domestic saving.
4. In allocating resources, these economies paid due respect to market signals. This deference to the market was not absolute: in some cases, governments bent the law of comparative advantage, by favoring some industries over others. But even in these cases, the favored industries had to pass a market test by successfully exporting their products to foreign customers

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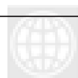
who did not have to buy them. And when the market gave its verdict, these economies were able to respond. Labor was relatively mobile, and stagnant industries were allowed to fail, creating space for more promising rival ventures. Governments recognized their duty to protect laid-off workers from economic misfortune. But they felt no obligation to preserve unviable industries, companies, or jobs.

5. As a complement to these functioning markets, the successful economies also had committed, credible, and capable governments. While market incentives and entrepreneurial dynamism are the proximate drivers of growth, governments cannot be written out of the script. Their macroeconomic strategies and microeconomic regulations provide the setting in which market dynamics can work. Governments must also furnish a range of public goods, such as schooling and infant nutrition, that the market may under-provide. In the successful countries, governments showed great perseverance in their pursuit of growth, experimenting with different country-specific growth strategies, and abandoning strategies that had outlived their usefulness, despite the upheaval this often entailed. They offered a credible vision of the future that justified sacrifices today in the expectation of rewards tomorrow. And they tried to distribute these rewards quite widely. They promoted equal opportunities as far as possible and narrowed unequal outcomes, not least because gross inequality can threaten the legitimacy of a growth strategy. The somewhat chaotic microeconomics of structural transformation can create hardship and a skewed pattern of burdens and rewards. In successful growth strategies, the government works hard to ameliorate both.

These characteristics are relatively easy to identify. It is harder to know how to replicate them in new places and new circumstances. *The Growth Report* laid out a number of reforms, policies, and other ingredients of a successful growth strategy, but warned that the specific "recipe" that weighs and mixes these ingredients will differ from country to country, as well as evolving over time. Economic development is a decades-long process, which requires a long time horizon and a measure of persistence to circumvent the roadblocks that inevitably emerge along the way.

The Purpose of This Special Report

At the time *The Growth Report* was published in May 2008, the Western financial system was in some distress. But we did not anticipate the terrifying mayhem that followed in September. The crisis started with a spectacular failure of the most sophisticated financial systems in the world. It then spread far beyond its origins, wreaking havoc on developing economies, which were abruptly deprived of foreign capital and foreign custom.



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The crisis delegitimized an influential school of thought, which held that many financial markets could be left to their own devices, because the self-interest of participants would limit the risks they took. The Commission had never subscribed to that philosophy. In the original *Growth Report*, it warned of the financial system's susceptibility to "shocks and crises," noting the devastating consequences of these conflagrations for growth.

But the crisis was nonetheless a humbling experience for anyone who seeks to understand and explain the world economy. It demonstrated the limits of brain power, knowledge, and policy experience. The magnitude of the crisis surprised the Commission and the numerous distinguished academics and practitioners in the many workshops that helped the Commission catch up with the state of the art in economic thinking. At a huge cost, it taught us an unforgettable lesson about how financial systems really work.

For those intent on picking up the pieces and fixing the system, the principal focus of attention is the Western financial system, the epicenter of the crisis. That is as it should be. But the mandate of the Commission does not lie in this area. Our focus continues to be sustained growth and poverty reduction in developing countries. The crisis has, however, raised a number of questions about the best strategies for achieving these ends.

- Was the failure of the financial system also a broader failure of market-oriented capitalist systems?
- Is the lightly regulated Western model of finance no longer a model to follow?
- Has the emergency response to the crisis, which entailed a dramatic loosening of monetary and fiscal policies, raised inflationary risks or fiscal dangers for developing countries?
- Do the risks posed by exposure to the global economy now outweigh the rewards?
- Are the growth strategies that worked in the past still valid in the post-crisis world? Were these strategies always flawed, vulnerable to "tail risks" that failed to materialize until now? Or to put it another way: were we just lucky for 20 years, as risky growth strategies seemed to pay off?

The events of the past year have fundamentally altered the global financial system and our understanding of it. They have changed facts and minds. In light of this experience, we wanted to revisit the recommendations of the original *Growth Report*, to determine whether any of its conclusions should be amended or withdrawn. After providing a concise account of the ongoing crisis, this Special Report will assess its longer-term impact on developing countries (Part 2). It will ask whether the original *Growth Report* got anything significantly wrong, or left anything significant out (Parts 3 and 4). It will explain how developing countries can make themselves more resilient in

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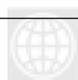
the face of such blows, and examine what international institutions and forums, such as the G20, can do to help (Part 5). In two brief asides, this Special Report will also reflect on one prominent theory of financial crises and one proposal for sifting the evidence these disasters leave behind.

To explore some of these issues, we held a two-day workshop at Harvard University's Kennedy School of Government in April 2009, followed by a meeting of the Commission. To preview our conclusions: we believe the crisis was a failure of the financial system, not the market per se. The crisis will raise the threat of protectionism, but we expect an open trading system to survive. It follows from these two conclusions that an outward-looking, market-friendly strategy, as suggested in the original *Growth Report*, remains broadly valid. It should be amended, but not abandoned.

Although that strategy remains better than any of the alternatives, it may not be as rewarding as it was in the years before the crisis. The world economy that emerges from the recent upheaval may be marked by slower trade, costlier capital, and a more inhibited American consumer. Developing countries may also choose to sacrifice some growth for the sake of stability (that is, a reduced probability of shocks) and resilience (that is, a better capacity to respond to shocks). Moreover, the success of this growth strategy will depend not only on domestic choices. It will also depend on the decisions of foreign policy makers, especially in systemically significant countries. These policy makers must stabilize their own economies, rebuild their financial systems on firmer ground, resist protectionist pressure, and give the international financial and development institutions the resources and legitimacy they need to respond to the crisis and to do their jobs in the post-crisis world.



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PART 2
The Crisis

At the time the Commission's report was written, clouds were gathering on the financial horizon. U.S. house prices had peaked in 2006 and adjustable mortgage rates had risen, damaging the balance sheets of highly indebted households and undermining faith in mortgage-backed securities. It became evident that a variety of securitized assets, some quite highly leveraged, were far riskier than advertised. Nevertheless, the Commission was not alone in failing to anticipate the sudden ruptures of September 2008.

Prior to that month, global aggregate demand had remained robust. Trade was not in rapid decline. The biggest problem facing many developing countries was the spike in commodity prices in the previous 18 months, peaking in the spring and summer of 2008. But when the crisis struck, the U.S. economy quickly descended into a double downward spiral. Thanks to the damage to their balance sheets, financial institutions restricted credit and households curtailed their spending. Declines in investment, employment, and trade followed soon after. These declines in the real economy then inflicted further damage on the balance sheets of banks and consumers, starting another turn in the spiral.

The size and speed of the collapse created a situation of extreme uncertainty. That led to highly conservative, risk-averse behavior on the part of investors and consumers. That, of course, caused further deterioration. The global automobile industry, for example, shrank dramatically, because the purchase of cars and other consumer durables can be postponed in times of uncertainty or distress.

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The crisis spread to the developing countries through a number of channels. The fastest channel was financial. Credit tightened everywhere, as capital inflows reversed abruptly. At the time, this was described as a "flight to safety." But the exodus owed more to losses in advanced countries than to worries about emerging markets. Financial institutions had to sell whatever they could to shore up their balance sheets. The capital reversal was immediately reflected in large falls in the currencies of developing countries, even those with large stocks of foreign-exchange reserves. The big exception was China.[1]

After they had collected themselves, policy makers mustered a response. They offset the reversal of capital flows by spending foreign-exchange reserves and taking other measures to ease credit, such as rate cuts. More than a year into the crisis, private capital flows are beginning to stabilize and credit spreads, while still high, are coming down.

The IMF entered the crisis with about $250 billion in hand to stabilize volatile capital flows. This was not anywhere near enough. In addition, some East Asian countries are still reluctant to deal with the IMF, because of painful memories of the Asian financial crisis over 10 years ago. Some countries benefited instead from swap facilities with China, worth about $95 billion, and Japan, which offered a similar arrangement in May 2009. Others enjoyed a swap line with the Federal Reserve. As a result of the G20 summit in April, IMF resources will be expanded to about $750 billion.

The second channel involved the real economy. As the advanced economies contracted, trade fell off a cliff. It is still not clear why trade declined so much more than economic activity. The reasons may include the well documented drying up of trade finance, the greater cyclicality of tradable goods, especially consumer durables, and protectionist responses to economic distress. Regardless of the cause of the breakdown in trade, the effect was very powerful.

The combined impact of tighter credit and vanishing external demand created a recessionary spiral, with declines in investment, employment, and consumer spending reinforcing each other. Asset prices were also hit. Stock markets fell by over 50 percent on average in the developing countries, even underperforming markets in the advanced countries where the crisis origi-

1 China was less vulnerable to mobile investment funds, because of its capital controls. FDI inflows declined but not by much. China's high savings rate means it is not quantitatively dependent on foreign capital. Its huge reserves (on the order of $2 trillion) also give it control over the currency. China used this control to stabilize the dollar-yuan exchange rate. The net effect was a de facto appreciation of the yuan relative to most countries except Japan. As in 1997-98, this put China at a competitive disadvantage, and it responded with a rapid and large stimulus package in November 2008. China could undertake such a fiscal response without jeopardizing its creditworthiness, thanks to its budget surplus on the eve of the crisis and its low public debt. In many ways China's response to this crisis was a repeat of its response to the Asian financial crisis in 1997-98, but on a much larger scale.

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nated.[2] As in the advanced countries, there was great uncertainty about where and when a bottom would be found. This contributed to conservative behavior by consumers, businesses, and financial investors. Developing countries did what they could to counter the drop in demand with a variety of stimulus packages.

To some extent, developing countries suffered the same double downward spiral as the advanced economies. In both the financial sector and the real economy, declines in assets and incomes fed on each other. There were, however, important differences. Households were not as indebted. And financial institutions in developing countries were not debilitated by large holdings of toxic assets. This made it somewhat easier to respond to the withdrawal of external financing than would otherwise have been the case. The exceptions were in emerging Europe, where several countries suffered from currency mismatches that were toxic in their own way. Banks, companies and mortgage-holders held liabilities denominated in euros or Swiss francs. They fell afoul of the same dangerous combination of fixed exchange rates and open capital accounts that wreaked havoc during the Asian financial crisis a decade before.

Response to the Crisis

In fighting this financial fire, the government, including the central bank, has several roles. One is to prevent a complete failure of the financial system and to replace essential functions like credit provision until the normal channels reappear. That has been done quickly and aggressively in the advanced countries, with central banks playing a prominent part. The authorities injected capital into banks, furnished liquidity, and purchased a wide range of assets on a large scale.[3] These interventions likely averted a far worse outcome, akin to a depression, in which banks and businesses fail in large numbers, for no other reason than a shortage of credit.

A second role is to try to prop up economic activity and asset prices by filling the gap left by sidelined consumers and investors. In performing both these functions, the government's role temporarily expands. It becomes a player as well as a referee on a much broader front. If successful, coordinated government action will mitigate the damage, even if it cannot eliminate it.

2 In many developing countries, equity prices have since rebounded strongly. Whether this recovery persists remains to be seen.

3 The balance sheets of the advanced country central banks expanded dramatically in responding to the crisis. The Federal Reserve, for example, expanded from $900 billion to over $2 trillion, taking on commercial paper and a wide and unprecedented array of assets as collateral for loans to restore liquidity and capital to the system. A post-crisis challenge is to unwind this expansion in a non-disruptive manner over time.

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As normal economic activity returns, the government withdraws.[4] The aim is not to prevent the recession and the decline in asset prices but rather to prevent a destructive overshoot. Government action helps to resolve a costly co-ordination failure, in which private-sector efforts to deleverage thwart each other. Individual households, firms and banks know their cutbacks will hurt everyone else, but they also know that if they do not retrench, when everyone else does, they will go under. As a result, everyone retrenches, which is socially disastrous, even if it is privately rational.

The government must, then, act as a "circuit-breaker", interrupting the transmission of shocks from one part of the economy to the other. Fiscal stimulus reduces declines in the real economy, boosting employment, income and credit quality. Restoring credit increases the bang a government gets for its stimulus buck. Interventions in the financial economy and the real economy are more effective in combination than in isolation.

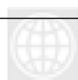
The Post-Crisis Global Economy

What can we expect as the world's economy emerges from its most serious downturn in seventy years? No one knows with certainty but the most likely outcome is what is sometimes called a "new normal," with slower growth, somewhat reduced openness in the global economy, and a more regulated, more stable core financial system. The U.S. consumer will become the U.S. saver in an effort to repair the damage to household balance sheets. The world will also face a set of additional challenges (energy, climate, and demographic imbalances, to name a few) with varying time horizons that will test our collective capacity to steer the global economy.

This slump is sometimes referred to as a balance-sheet recession. It was caused by an overexpansion of the balance sheets of households and financial institutions, and it will not be resolved until those balance sheets are repaired. In the run up to the crisis, American households and financial institutions held overpriced assets on one side of their ledger and unsustainable liabilities on the other.

Regulators and central banks failed to appreciate the full dangers of this financial fragility. In the future, they cannot afford a narrow focus on consumer prices and employment, leaving asset prices and balance sheets to their own devices. Someone in the regulatory system will have to take responsibility for the stability and sustainability of asset prices, leverage, and balance sheets. If this task falls to central bankers, they will need additional instruments to match the additional objectives. They cannot hope to control inflation, manage growth, check overstretched balance sheets, and

4 See "Government's Role in the Financial Crisis" by A. Michael Spence. PIMCO working paper. March 2009.



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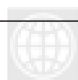
ward off related sources of instability by manipulating short-term interest rates alone. Even with the right tools, it will not be easy for the authorities to judge when balance sheets or asset markets are getting out of hand. Some members of the Commission suspect it may be impossible. But the alternative, which is to go back to the pre-crisis status quo, is neither economically nor politically acceptable.

In one sense, both the fragility of the financial system and the severity of its collapse are ultimately traceable to excessive leverage. Borrowing was allowed to increase to destabilizing levels due to a widespread failure to "see" the rising systemic risk it entailed, as well as a failure to react to it. We lack widely accepted measures of systemic risk. Leverage is difficult to gauge, because it can be smuggled into the derivative instruments institutions buy. As a result, many distinguished regulators, economists, and bankers saw part of the problem, but not the whole. Some of them put too much faith in self-regulation, assuming that financial institutions would take all necessary precautions to protect their shareholders. But the self-regulatory brakes that would normally restrain financial institutions were not applied.

New financial instruments have knitted financial institutions into a complex network. This generates systemic risk (even as it may dilute the idiosyncratic risks faced by individual firms) because distress in one institution may be swiftly transmitted far and wide. It also hides this risk, because the indirect links between institutions are disguised by several degrees of separation, and the data available to track the interconnections are far from complete. This evolving network is poorly understood, even by those participating in it. Because they are now painfully aware of this fact, they are likely to tread more carefully for a period of time.

This natural conservatism will be reinforced by tighter regulation. As this crisis has reminded us, financial instability has negative external effects. Vulnerabilities in the financial sector represent contingent liabilities for the government and the rest of the economy. The government therefore has a legitimate reason to intervene to see that the taxpayers' interests are safeguarded.

Financial re-regulation should and will emphasize capital, reserve, and margin requirements, seeking to limit the buildup of systemic risk by constraining leverage, insofar as it can be measured. Policy makers should also fill the gaps in regulation, which is both incomplete and fragmented. This should curb regulatory arbitrage, at least within a country's borders. But as long as governments resist international harmonization of their approaches, financial institutions will continue to shop across borders for the friendliest regime. It is also possible that regulators will isolate and further constrain a portion of the banking system, so that the channels of credit intermediation are less prone to complete and simultaneous breakdown.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Relative to the recent past, the cost of capital will increase, debt will be more expensive and less ubiquitous, and risk spreads will not return to the compressed levels that prevailed before the crisis. Asset bubbles will not disappear, but it is less likely that they will be turbocharged by very high leverage. All of this will raise borrowing costs for households and businesses in the advanced economies, especially in America. There are grounds to hope it will have less of an effect on the availability of capital in emerging economies. Prior to the crisis, after all, emerging economies had to compete for foreign capital with over-engineered financial products promising riskless returns. Those products are now discredited. As a result, investors may now look more kindly on emerging economies, where the risks are better known and better compensated by the rewards.

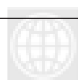
Financial markets are now recovering, but labor markets are still deteriorating. After the typical financial crisis, according to research by the IMF, it takes over a year for output to stop falling, but another 18 months for unemployment to stop rising. Thus joblessness in the advanced economies may not peak until late into 2010. Unemployment may remain high for some time thereafter, which will act as a lingering drain on economic demand.

There are countervailing forces. Some of the fundamental determinants of growth are relatively crisis-proof: demography, for example, or human ingenuity. Wealth has been destroyed, but the stock of knowhow from which developing countries can learn is undiminished. In principle, the potential for "catch-up" growth depends mainly on the gap between the developing country and the technological frontier. What matters is the technology, knowhow, and productivity reflected in the income levels of the advanced countries, not the growth rate of income or its underlying determinants.

The high-growth emerging economies, such as China and India, now account for a larger share of world GDP. That alone will tend to elevate global growth over time (assuming these countries sustain growth after the crisis passes) compared to the past when the mature, industrial countries accounted for the bulk of world output.

On the other hand, these big emerging economies tend to have higher trade barriers on average than the mature, industrial countries. Thus average rates of protectionism in the world economy, weighted by GDP, will increase as these economies grow in prominence, whether or not individual countries raise tariffs.

The growing weight of emerging economies is now making itself felt politically. Responsibility for overseeing the global economy is passing rapidly from the G7/8 to the G20. The G20 accounts for 90 percent of global GDP and two-thirds of the world's population. Its new prominence is highly desirable—indeed, essential. It must remain committed to maintaining as open a trading system as possible, since without this openness, none of the new economic powers would have emerged nearly as quickly.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There is no magic bullet for getting out of the current crisis. The economy should gradually right itself, as financial markets stabilize and the real economy follows, pulling the sea anchor of extended deleveraging along with it. This process will add up to a recession of unusual depth and length, with variations across countries and regions. There are tail risks in this scenario. One potential worry is a disorderly collapse of the dollar, if the holders of U.S. debt lose faith in its commitment to price stability. Another serious danger is broad-based deflation or declining nominal prices. The likelihood of deflation is declining as confidence starts to come back, asset prices stabilize, balance sheets become legible, and various credit and asset markets restart. But the negative consequences are large. Policies are therefore likely to err on the side of running a short-run inflation risk, rather than the reverse.

The best course is to make pragmatic, steady progress at the national and international levels to improve regulations and avoid self-defeating behavior, such as fiscal free-riding or beggar-thy-neighbor protectionism. It is the course we are on. But for now, it is a journey without a clearly defined and widely accepted endpoint.

Box 1: A National Transportation Safety Board for Finance?

Created in 1967, the National Transportation Safety Board (NTSB) has become a highly respected agency, credited with making flying safer in the United States and the world. In testimony before Congress in November 2008, Professor Andy Lo of the Massachusetts Institute of Technology argued that the financial system might benefit from a safety board of its own. His proposal was endorsed by Professor Paul Romer, an adviser to the Growth Commission, during the deliberations for this report.

The NTSB is an independent Federal agency, charged with investigating every civil aviation accident in the United States, as well as significant accidents in other modes of transport—railroad, highway, marine, and pipeline. It also issues safety recommendations aimed at preventing future accidents. But its primary mission is backward looking, to assess the causes of accidents. Over its 40 years of existence, the NTSB has investigated more than 124,000 aviation accidents.

The NTSB does not regulate airlines or equipment makers. It does not initiate punishments for negligence. Nor can it give instructions to the regulatory agencies. Its function is confined to providing knowledge: impartial assessments of the causes of accidents. It has therefore been free to focus on the purely technical aspects of its work. However, because of its reputation for impartiality and thoroughness, it is hugely influential. More than 82 percent of its recommendations have been adopted.

Many safety features incorporated into airplanes, automobiles, trains, pipelines, and marine vessels had their origins in NTSB recommendations. These recommendations span everything from mechanical improvements to better pilot training. In recent years, the NTSB has started investigating accidents that were avoided, giving it a new and important source of information as an input to improving safety regulations.

Would it be useful to have a similar agency to investigate "accidents," and near accidents, in the financial

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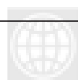
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Box 1 (continued)

system, domestic and global? In the same way that the Security and Exchange Commission was established following the Great Crash of 1929, a "National Financial Safety Board" might be a useful institutional response to the financial crisis of 2008. At present, no agency has as its main mission investigating "accidents" in the financial sector. As a result, learning is not systematic and many of the lessons of experience risk being lost.

In addition, the agencies most knowledgeable about the financial system also have regulatory duties, oversight powers, and some responsibility for financial stability. This creates potential conflicts of interest. In investigating a crisis they are partly investigating themselves. And their findings may also be colored by the knowledge that they will have to implement whatever fixes they recommend.

A "National Financial Safety Board" would have paid close attention to the causes of previous financial crises and near misses. That information and analysis would have been available in the present case to help assess systemic risk in the period prior to 2007. It might perhaps have helped avert the grand implosion of 2008. There were a number of warnings issued over the years leading up to the crisis. But they were not based on a systematic accumulation of knowledge based on past experience, knowledge that is then made widely available to participants, regulators, and the public. As a result these warnings were viewed as outliers and tended to be ignored.

It is important to reiterate that an NFSB, by analogy with the NTSB model, would not have a regulatory function. Nor would it have a macro-prudential mission of monitoring financial stability and proposing responses to instability.

Clearly the influence of such an institution would depend on its credibility, and this credibility would have to be earned over time. But we believe that the idea of having such an institution, with a mission confined to analysis and assessment, is worth considering and debating. In a sense, the recently re-tasked Financial Stability Board is a move in this direction. But it is populated by distinguished members who have other senior positions in major financial and regulatory institutions. The Board therefore fails to cleanly separate analysis of the past from action and responsibility for the present and future.

The reliable information generated by the NTSB in the United States offers significant external benefits to the rest of the world. A financial equivalent should also be of wide benefit. It would be one symbolic way for the advanced countries to make recompense for the damage done to the rest of the world by the crisis originating within their borders.

Those who have considered the idea within and outside the Commission have varying views about the merits of such an institution in the context of the financial sector. Some are quite skeptical, others enthusiastic. Such an institution is untested in the financial sphere, so there is little historical evidence to go on. The proposal will likely be debated and discussed as part of the ongoing process of creating a revised set of regulatory structures. We discuss it briefly here because it is relevant to a challenge (that is widely accepted to be important) of improving our understanding of the origins of financial crises and instability.

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Box 2: The 2008 Financial Crisis: Unprecedented?

Financial crises have been the inseparable and costly companion of market economies for much of their history. There is little reason to believe the future will be different. The 1990s and early years of this decade are remembered for the frequency and severity of crises that shook developing and industrialized countries alike: the United States in the early 1990s, in the wake of the Savings and Loans (S&L) debacle; Japan and Sweden in 1992; Mexico in 1994; Hong Kong, China, Indonesia, Malaysia, the Philippines, and Thailand in 1997–98; Brazil and the Russian Federation in 1999; Turkey in 2000; and Argentina and Uruguay in 2002. The fiscal costs of these crises were simply staggering: about 3 percent of GDP in the case of America's S&L crisis, which was an important cause of the ensuing 1990–91 recession. The costs of bank restructuring reached 50 percent of GDP in Indonesia, 25 percent of GDP in Japan, and one-third of GDP in Thailand and Korea.

The 2008 crisis was largely unforeseen and surprised most observers. It brought the world economy to a halt, and undermined several pillars of the world financial system. It even engendered discussions of the "end of capitalism."

Notwithstanding some unique characteristics, the 2008 crisis follows a pattern seen many times before. The pattern is captured in a five-part model developed by Hyman Minsky. He begins with Keynes's dichotomy between "enterprise" and "speculation." Enterprise, Keynes defined as the "activity of forecasting the prospective yield of assets over their whole life." Speculation, on the other hand, was "the activity of forecasting the psychology of the market."

"In a successful capitalist economy," according to Minsky, "the financial structure abets enterprise." When instead "finance fosters speculation the performance of a capitalist economy falters."[1] Keynes made the same point more poetically. "Speculators do no harm as bubbles on a sea of enterprise. But the position is serious when enterprise becomes the bubble on a whirlpool of speculation. When the capital development of a country becomes the by-product of the activities of a casino, the job is likely to be ill done."

In the second part of the Minsky model, some exogenous event improves the prospects for profits, justifying speculative bets. The 1992 crisis in Japan came in the wake of financial liberalization in the 1980s and the appreciation of the yen. Financial liberalization was also behind the euphoria preceding Sweden's 1992 crisis. In the 1990s in the United States a productivity boom together with a decline in fiscal deficits prompted the Federal Reserve to keep interest rates low in the face of economic expansion. And preceding the 2008 financial crisis there was a significant increase in asset prices, fueled by leverage, low interest rates, and the perception that financial innovation had tamed financial risk.

In the third part of Minsky's model, expectations take off, losing touch with reality. This is possibly the most difficult part of any crisis to explain: the moment at which genuinely good news in the real economy feeds expectations that any hard-headed analyst would recognize are impossible to fulfill. "Euphoria," "optimism," "irrational exuberance," "manias," "bubbles," "blindness to risk," and "animal spirits" are various ways to describe the psychological forces at work.

Rationality is not always absent. JP Morgan analysts decided to exit the market for sub-prime mortgage-backed securities in 2005 once it became evident that the correlation between risks could not be calculated. Nouriel Roubini had for years highlighted the risks inherent in the U.S. "shadow banking system." Robert Shiller, both in his books and his widely known housing index, has called attention to unsustainable levels of housing prices for almost a decade. Raghuram Rajan endured some criticism from his peers at the Jackson Hole symposium hosted by the Kansas City Fed in 2005, when he asked whether financial development had made the world riskier, not least because bankers' pay schemes gave them perverse incentives.

In their recent book *Animal Spirits: How Human Psychology Drives the Economy and Why it Matters for Global Capitalism,* George Akerlof and Shiller explore

1 AEA meeting January 1992.

(Box continues on next page.)

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Box 2 (continued)

the spectrum of psychological forces that motivate investors and entrepreneurs. These animal spirits lead entrepreneurs to take socially valuable risks in the face of uncertainty, thus enabling the extraordinary prosperity brought about by a market system. But at some point, these psychological forces also lead to perverse behaviors of the kind witnessed in Enron in the early 2000s, or in Wall Street more recently.

Their book explores the boundaries between economic rationality and non-economic motivations of economic behavior. It looks at how trust influences the functioning of a market economy; how fairness guides what policy actions are taken; and how human imagination leads to different interpretations, and hence responses, to the reality at hand. These psychological phenomena are now prominent in economics, even if they are not yet understood definitively enough to guide policy discussion. They are also at the heart of Minsky's view of economic crises.

The fourth part of the Minsky model is the credit system. Credit permits highly leveraged investments in the pursuit of socially valuable goals. But it also enables the pursuit of short-term capital gains in real estate, commodities, or financial assets. Borrowers tend to progress through Minsky's well-known trilogy, from hedge finance (where the yield on an asset is sufficient to pay the interest and principal of the loan that financed it) to speculative finance (where it is sufficient to pay only interest) to Ponzi finance, where the borrower is wholly dependent on capital gains.

In the fifth and final part of the model, a negative event triggers a reversal in the cycle. The greater the leverage, the more violent the downward journey. Prices fall and leveraged borrowers are unable to honor their debt. Their distress sales push prices down further, prompting another wave of defaults. The triggers for such a reversal can be many: investors deciding to leave the market after making significant speculative profits, adverse real economy shocks, growing awareness of unsustainable trends, or just gravitational limits to the climb of some asset prices.

According to Kenneth Rogoff and Carmen Reinhart, financial crises are "hardy perennials." Their review of eight centuries of crises (including external defaults, domestic defaults, exchange rate crashes, banking crises, and inflation outbursts) shows that it is generally a mistake to assume that "this time is different."[2] The 2008 crisis has highlighted many exotic and novel features of the financial system ("jingle mail", NINJA loans, CDO-squared products, SIVs, SPIVs, and conduits). It is also distinctive in its global reach. But it nonetheless shares important common features with previous financial crises. Perhaps the most striking similarity was the widespread belief, as the credit boom progressed, that this time was different, when the only thing that made it different was how badly it turned out.

2 Ken Rogoff and Carmen Reinhart, "This Time Is Different: A Panoramic View of Eight Centuries of Financial Crises," April 2008. NBER Working Paper No. 13882.

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PART 3

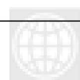
Questioning Growth Strategies

After a shock of this magnitude, there is a natural and healthy inclination to re-examine old certainties and revisit long-held assumptions. It is therefore not surprising that some people are questioning the premises of economic models and growth strategies that have served countries well in the past but have not escaped this crisis unscathed. We ourselves have discussed these issues extensively with each other and with experts in academia, policy making, and the private sector.

The outcome of this period of reflection will have fundamental consequences for the economic strategies countries pursue and the results they achieve. While a crisis is an opportunity for learning, adjustment, and sometimes accelerated reform, it is also an opportunity to make mistakes. The early evidence is that policy makers in emerging economies have resisted hasty reversals of policy. But it is not inconceivable that the baby will be thrown out with the bath water.

What Failed and What Did Not Fail?

No issue in development is more controversial than the proper role of government in economic life. Successful economies have generally found a formula that includes a dynamic and innovative private sector supported by



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government investment in public goods, effective regulation, and redistribution to protect the most vulnerable. That balance varies across countries. It will also typically shift over time as the economy evolves and the private sector grows strong enough to take on new tasks. What is at stake, as President Obama said in his inauguration speech, is not the size of government but its effectiveness.

In the wake of the crisis, many people argue that the line between the market and the state should be redrawn. Some of this advocacy is opportunistic, but much of it is motivated by genuine concerns. Regardless of the origins of this sentiment, it is a political fact of life and needs to be dealt with by leaders and citizens alike.

The nature of this crisis has strengthened the hands of those who prefer a more expansive role for the state. Properly channeled that is not necessarily a bad outcome. But there are ample opportunities to make mistakes or to go too far.

Our conclusion is that the crisis represents a major failure of the financial systems in the advanced countries. In particular, the lightly and incompletely regulated model that was influential in many Western economies is fundamentally flawed and in need of change. However, we have not found any evidence of a more broad-based failure of the market and capitalist economies. While the real economy has been damaged globally, generally, private sector responses have been appropriate to the diminished circumstances.

In our view, the policy debate should be focused where it mainly belongs: on the financial sector's stability and performance, rather than on a more sweeping condemnation of the whole market-based system. To expand government substantially into the broader economy might disrupt the private dynamism that has contributed to all the successful high-growth cases that we know of. That would be a serious mistake.

The government should however do more to protect people in the face of extreme economic turbulence. These safety nets are indispensable to maintain public confidence and support for market-led outcomes. They would complement efforts to achieve greater economic and financial stability.

In response to the crisis, the state has expanded its role, especially in the advanced economies. Quantitative easing, capital injections into the financial sector, bail-outs in a number of other industries, and fiscal stimulus programs have all added to the government's scope and influence. Proponents of *dirigisme* may see an opportunity to turn these emergency expedients into a longer-term expansion of the state's role. Fiscal stimulus programs, for example, can easily lose their temporary status, becoming entrenched. In our view, this would be a mistake. Budget deficits, if left unaddressed, will eventually raise long-term interest rates, making debts even harder to sustain. Governments may be tempted to inflate away the public debt the crisis bequeaths. Such an expedient would be both hugely damaging and

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largely futile, since bond yields would rise in anticipation of the threat. It would also undermine the independence of central banks, squandering the credibility they have painstakingly acquired.

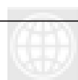
In our view, the state's expansion needs to be reversed as the crisis subsides. Fiscal stimulus packages need to be replaced by medium-term programs to restore fiscal balance, based on realistic (and perhaps diminished) estimates of future growth. Central bank credit needs to be withdrawn as private credit channels return—and the central bank needs to retain the independence to do it. The expanded central bank balance sheets need to shrink through the sale of assets over time to the private sector. This will require patience and good timing. If they show both, the authorities may be able to make a profit from the sales, thereby minimizing the longer-term burden on the public purse.

Governments in developing countries did not have the same freedom to expand their role during the crisis. Few if any of their central banks could double their balance sheets without undermining the currency, and few states in emerging economies can run a double-digit fiscal deficit without upsetting their creditors. Where governments have borrowed heavily, their creditors have often been the international financial institutions, such as the World Bank or the Asian Development Bank, which have been anxious to fill the gap left by foreign capital as it turned tail. In developing economies, the state does not, now, have to retrace the emergency steps it took after the crisis. The bigger danger is that governments will abandon worthwhile reforms set in train before the crisis struck. The early signs, however, are encouraging. Policy makers seem to want to understand the full implications of the crisis, before they draw hasty conclusions about their long-term response to it.

Openness

When the global economy is reasonably stable and open, it is the principal enabler of sustained high growth in developing countries. They can assimilate ideas from the rest of the world and import capital. They can also exploit economies of scale in production, by specializing in what they do best, and importing the rest. The crisis has inflicted dramatic damage on international trade and capital flows. It has also raised the threat of protectionism: a number of governments have added protectionist provisions to their financial rescues and fiscal interventions.

We do not know how long this setback to globalization will last, or how serious it will prove to be. But if protectionism were to grow or persist even after the crisis has subsided, it would hobble an essential driver of growth. It is the openness of the global economy that permits developing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countries to close the gap with advanced countries over several decades. With the exception of the very poorest countries, openness dwarfs aid in its economic impact.

Policy makers appear to understand this. The G20 has twice committed itself to reversing protectionism after the crisis passes. Making good on this pledge will be a political challenge given how hard it is for leaders to reach collective decisions about the world economy. But we expect them to succeed eventually.

Strategies and Outcomes

Events do sometimes embarrass theories. Some crises reveal hidden strengths in previously unfashionable economies, while exposing flaws in countries previously lauded as models for others to follow. In the 1990s, for example, Japan and the United States traded places as leader and laggard. But we see no reason to retreat from the model outlined in *The Growth Report* and exemplified by the post-war success stories. The virtues we highlighted in the original report have not become vices. The shared characteristics of the high-growth economies remain worth emulating. There is no known credible alternative with a track record of success.

The crisis does, however, provide an occasion to review some of the policy ingredients countries may include in their growth strategies. In Part 4 we will review the two ingredients that require the most rethinking: financial reform and export promotion. In light of the financial failures in the West, what kind of financial structure should developing countries cultivate? And if countries can no longer count on America to serve as a buyer of last resort, can the domestic economy provide incremental sources of demand? Having reviewed these amendments to the growth strategy, we will in Part 5 consider some additions. In particular, we will explore how countries can strengthen their resilience to external shocks.

The growth model offered in the original report may still be the best strategy to follow, but that does not mean it will be as rewarding as it was in the recent past. Global growth may be slower in the coming years and the cost of capital may be higher. There may also be a period during which there is a shortfall in global aggregate demand as a result of higher household saving in the United States.[5] And the global economy may suffer further episodes of volatility such as last year's spike in commodity prices.

For several years, then, developing countries may reap lower returns from even the best growth strategies, recording a slower expansion of out-

5 We do not yet know whether higher U.S. saving will be offset by lower saving in countries running big current-account surpluses. We discuss this forward-looking version of global imbalances in more detail below.

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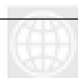
put and a smaller reduction in poverty. We hope the global economy defies this prediction, bouncing back quickly. But although we believe the world will eventually return to a sustainable pattern of respectable growth, we do not know how long it will take. A best guess would be several years, largely because of slower growth in the advanced economies.



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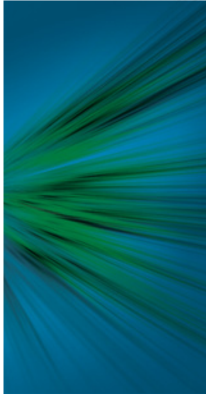

PART 4

Openness and Financial Development

Global Imbalances: Protectionism and Fiscal Deficits

Prior to the crisis, many economists fretted about the unbalanced pattern of demand in the world economy. The United States, and other countries such as Britain, were "living beyond their means," running large current-account deficits, while countries such as China, several other Asian countries, Germany, and the Gulf oil exporters ran correspondingly large surpluses.

The crisis has, however, severely dented the American consumer's appetites. The drop in house prices and share prices has wrecked household balance sheets. (In Europe households held less debt. They were more likely to qualify for defined benefit pensions that transfer asset-price risk to governments or companies. They also benefited from more generous social security and welfare programs.) In response, American consumers are very likely to spend less and save more for an extended period, abandoning the pattern of the last few years. This rise in the household saving rate is one reason why the crisis will not be a mean-reverting event, at least in the medium term. The result could be a shortfall in global aggregate demand, on the order of $700 billion or more, relative to the world economy's productive potential. Over time, this shortfall should be filled by an increase in domestic demand

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in surplus countries. But the longer it takes to fill this gap, the greater the incentive to capture a share of global demand by protectionist means.[6]

These imbalances could be resolved by coordinated efforts to expand demand in surplus countries. If this effort is undertaken jointly, it will remove the temptation to resort to protectionism. It would also make it easier for countries to withdraw their fiscal stimulus and stanch the red ink left behind by the crisis. Put another way, the rapid restoration of global demand will ease deflationary risks, hasten inflationary pressure, and therefore reduce the desirability of deficit spending.

Many developing countries have prospered by serving the global market. They have benefited in particular from America's willingness to act as a consumer of last resort. If America is no longer prepared to sustain a large trade deficit, will developing countries have to rethink their growth strategies?[7]

To grow rapidly, countries must reallocate resources from traditional, low-productivity activities, such as agriculture, to new industries, which allow for rapid gains in productivity that often spill over to the wider economy. These new industries often make tradable goods. Thus as countries make economic progress, their production of tradable goods tends to rise rapidly. Some countries will run trade surpluses, producing more traded goods than they buy.

However, a bumper trade surplus is not the mark of a successful growth strategy. As the original *Growth Report* pointed out, "The goal of an export-led strategy is not to increase reserves or to run a trade surplus." As countries grow, exports will increase as a percentage of GDP. "But that is only one side of the ledger. On the other side, imports can and should also increase."

There is no necessary connection between increasing the share of tradable goods in GDP and running a trade surplus. The two can go together, but they do not have to. In a paper presented at the April workshop, Dani Rodrik of Harvard's Kennedy School of Government showed that trade surpluses do not have any independent, positive effect on growth, once you control for the share of industry in GDP. The share of "industry" captures the importance of non-traditional, high-productivity activities in a country's economy. Countries grow by promoting these activities, not by promoting trade surpluses per se.

6 There has been a tendency, particularly in discussions involving the advanced countries and China, to focus on the exchange rate as the key variable governing the excess of savings over investment. It is important to recognize that the exchange rate is one of many variables and policies that can be used to bring savings and investment into line. To restore global aggregate demand, the focus should be on the surpluses and not on one of many instruments that influence it. The exchange rate is a strategic variable for developing countries, and the choice of an exchange-rate regime is a complex and controversial topic. For a fuller discussion, see *The Growth Report*.

7 This important question was posed by Professor Dani Rodrik in his paper on "Growth after the Crisis," which was presented at the April 2009 Growth Commission workshop at Harvard University. Available at: www.growthcommission.org/storage/cgdev/documents/financial_crisis/rodrikafterthecrisis.pdf.

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Thus the outward-looking strategy advocated in the original *Growth Report* is still feasible in the "new normal." It is compatible with a narrower American trade deficit and a more balanced global pattern of demand.

Nonetheless, given the slowdown in world trade and the sharp contraction in American imports, developing countries should not neglect alternative sources of demand. At the margin, the home market may be worth cultivating as an incremental source of growth.

Domestic demand is not a perfect substitute for global demand. In serving world markets, countries can specialize in a narrow range of products, reaping economies of scale. But if they must cater more to domestic demand, countries will need to produce a broader range of products, so as not to saturate any particular local market niche. Therefore the limits to specialization are tighter and depend on the evolving composition of domestic demand.

Nonetheless, countries should not ignore or suppress the domestic market. At the margin, it can provide a useful incremental addition to demand. The point holds most strongly for the larger and richer developing economies, which offer a deep and varied market. China's policy makers appear to recognize this. In February, President Hu Jintao called for "more powerful and efficient measures to increase domestic demand, consumer demand in particular."

In some countries internal integration is as urgent as global integration. Goods, services, capital, and labor do not always flow smoothly within national economies, let alone between them. The fragmentation of the internal market can reflect difficult geography or burdensome regulation, especially within large, federal countries. Overcoming these obstacles is one powerful and efficient measure to increase domestic demand.

Deficit Spending, Sustainability, and the U.S. Dollar as a Reserve Currency

For the moment, the United States is more worried about its jobs deficit than its trade deficit. To revive demand it is undertaking a bold fiscal expansion. This fiscal stimulus benefits the United States' trading partners, but also raises some qualms among its creditors. There is a growing concern that America's deficits, on the order of 12 percent of GDP in 2009, will be maintained for too long, without a credible plan to restore fiscal temperance. Whether this turns out to be a major issue is too soon to know. According to knowledgeable analysts, the bond markets have recently signaled some degree of concern about U.S. deficits and the longer-term inflationary outlook.

America's red ink represents a significant global risk because of the status of the U.S. dollar as a reserve currency. If U.S. creditors lose faith in its fiscal resolve, they may conclude that the United States will try to dilute its obli-

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gations through high inflation. That in turn could provoke an exodus from the dollar by the major holders of foreign-exchange reserves. If this exodus were to occur rapidly, the dollar would depreciate sharply and longer-term interest rates would rise quickly. Asset prices more broadly would fall, damaging balance sheets and reversing any progress in their repair. Depending on when it happened, it could make a deep recession worse.

To mitigate these risks, the United States should lay out a credible plan to restore fiscal balance without compromising price stability—sooner rather than later.

Financial Sector Development

Because the crisis had its origins in advanced country financial systems, these systems are now subject to the severest scrutiny and most searching reappraisal. But what lessons does the crisis hold for financial systems in developing countries?

In *The Growth Report*, we laid out the contributions the financial system makes to growth. It provides a vehicle for saving; perhaps best described as safe savings channels. It broadens access to credit. And it directs capital to its best uses. Ideally, the financial system should co-evolve with the "real," non-financial economy, growing in response to the economy's needs, and not getting too far ahead of them.

But because the financial system is so interwoven with the rest of the economy, when finance fails, it can bring down the rest of the economy with it. This is a lesson we tend to learn and forget with some regularity. The crisis showed that financial institutions sometimes neglect to take full account of the risks they shoulder themselves, let alone the risks they impose on the rest of the economy. Financial sector regulation should place a very high emphasis on stability and resilience in the face of external and internal shocks. Having the whole system fail at the same time, as happened in the advanced countries in this crisis, has a very high cost.

There remains the question of what the financial sector should look like in a developing country. Before the Asian financial crises of 1997–98, advanced countries told their developing-country counterparts, in effect, "You should look like us." The Asian financial crisis made the case for gradualism. The new advice was, therefore, "You should look like us, eventually." Countries should not remove capital controls precipitously. They should be judicious in introducing foreign competition and sophisticated financial products. But even if countries plotted a slow and cautious route to financial development, their destination was always fairly clear: they would converge on some version of the advanced country financial system with open capital accounts, a floating exchange rate, and a sophisticated set of instruments to price risk and redistribute it.

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The financial models of the advanced countries are now in some disrepute. What will replace them is still up for grabs. For poorer countries, seeking to develop their financial systems, that means the destination is no longer clear and will not be for some time. That anchor has been removed and will not be replaced until a new system is in place and has functioned for long enough to earn confidence.

While we do not know at this point what the "new" advanced-country financial systems will look like, many believe they should end up with a different composition. Deep, wide, and liquid financial markets are desirable to promote savings and investment. But it is not clear that the growing trading superstructure adds enough social value (other than to its participants) to justify its costs and dangers. The balance probably needs to shift back toward the essential functions of the financial system: safe savings channels, credit provision to various sectors of the economy, and a means to spread risk to those best placed to bear it.

In some ways, the less sophisticated financial systems in developing countries weathered the crisis better than their more elaborate counterparts in the West. Developing countries do not have shadow banking systems of any size.[8] Their banks did not hold complex, toxic assets. This was partly due to self-restraint—domestic banks eschewed products they did not trust or understand. But it was also due to regulatory constraints, which restricted the assets domestic institutions could hold, and the products foreign entrants could sell. Several countries, including Brazil, India, and China, make heavy use of regulatory restrictions to dampen their banks' enthusiasm. China imposes different restrictions depending on the kind of assets banks hold, thereby influencing the direction of credit as well as its quantity.

In the advanced countries, almost all the channels for intermediating credit failed simultaneously, a scenario for a depression.[9] It was prevented by rapid and massive intervention by central banks, which created liquidity and established alternative emergency channels for credit provision. Such a rescue effort may be beyond most developing countries, because it would run the risk of destabilizing the finances of the central bank and the government. Their best defense, therefore, is prevention.

To this end, the Commission weighed the merits of a "utility model" of banking. Under this model, a portion of the banking system is segregated and heavily regulated. Utility banks offer a limited range of services, such as deposit and savings accounts, and hold a restricted range of safe assets.

8 The shadow banking system is a set of markets and institutions through which credit is provided without bank intermediation. Generally tradable assets are issued by borrowers as in the case of commercial paper, or assets are securitized and then sold. This system in the United States accounted for about half the flow of credit. Much of this system simply shut down at the start of the crisis.

9 The reason is that all the major banks, investment banks, and a few insurance companies suffered massive balance sheet damage, putting their solvency into question. Interbank lending dried up and the payments system started to fail to operate.

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This creates a bulwark in the financial system, ensuring that at least some channels of credit remain open, even if the rest of the system goes under.

The utility model is worth considering, although it did not command a consensus within the Commission. Utility banks do not have to be natural monopolies, nor do they have to be government-owned, although in many developing countries, large state-owned banks already operate in much the same way. These state-owned banks often lag behind their private competitors in boom times, but come into their own during bad times. They provide a layer of reassurance, which might even encourage more liberal regulation of the rest of the system.

Developing countries should also ensure that some banks remain domestically owned, even if they are not owned by the state. In crises, the government becomes a major participant in the financial system, as well as a regulator and referee. It supplies capital and acquires a considerable say in what the private-sector institutions do. Private banks become the government's working partners in dealing with the crisis. The government's focus is quite understandably on the domestic economy. But foreign entities will have divided loyalties at best. Some may be wholly preoccupied with events in their home countries. Therefore a country needs major domestic players, which can participate in implementing a crisis response.

Developing countries should also curb financial products they may be ill equipped to handle. It is useful to remember that in the present crisis, some securities were poorly understood by even the most sophisticated banks. Regulators also failed to see the systemic risk these products created. If this kind of under-estimation of risk can occur in the financial centers of advanced countries it can also occur in those of developing countries.

There are, of course, many details to work through in safeguarding financial stability. Policy makers must pick a sensible combination of regulation, government guarantees and, in some cases, government ownership. Their choices will have trade-offs: conservative regulation limits the chances of a crisis, but also increases the cost of capital and retards growth. Likewise, government ownership ensures that credit is available at all times, but it also tends to restrict competition and innovation. Heavy-handed state ownership risks directing credit to the politically powerful instead of the entrepreneurially minded.

The original *Growth Report* argued that countries should deepen their domestic capital markets before they throw open the doors to global finance. Some countries are also pursuing regional initiatives as a halfway-house between the national and the global. The Asian Bond Market Initiative, for example, aims to promote debt markets in the region. It hopes to avoid the maturity and currency mismatches that contributed to the Asian financial crisis. These markets should help mobilize the region's abundant savings and channel them to long-term projects, including infrastructure, without any detour through Wall Street or the City of London.

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None of this is inconsistent with the presumption that over time, as financial markets deepen, countries can ease capital controls and relax constraints on some financial products. For example, securitization, despite the recent excesses, is a very useful instrument for allocating capital and reallocating risk. Properly regulated, it is quite likely to become a part of developing country financial systems as they mature. But it takes time to build the infrastructure to support these markets, including origination capability, legal support, regulatory standards, and disclosure requirements.[10]

To summarize, financial instability imposes large costs on the real economy. Regulators should, therefore, lean towards conservatism. They should also retain substantial domestic ownership of financial intermediaries, if only so that the government has someone to work with when fighting a crisis. A utility model of banking is worth considering, but should not impede the development over time of properly regulated markets in securitized assets and derivatives. Policy makers should also see what emerges from the re-regulation debate in the advanced countries. A number of developing countries are now members of the Financial Stability Board, which recently replaced the Financial Stability Forum. From that perch, they are actively participating in the global effort to rethink financial regulation. A lot will be learned from this debate and the subsequent experience.

Finally, financial regulators need to take a panoramic view, rather than focusing on subsets of variables. They must oversee the stability of the whole system, not just inflation or growth or capital requirements. Since we do not at this stage have a widely accepted theory that tells us when a financial system is out of balance or becoming unstable, we will have to exercise judgment. Using judgment implies sometimes making mistakes. This is an unfamiliar notion in the advanced countries, where policy makers have put too much faith in efficient markets and simple policy rules. But in developing countries, policy makers are quite familiar with the necessity of exercising judgment, even when it is fallible.

10 In their annual publication "Mapping Global Capital Markets," the McKinsey Global Institute shows that as per capita income rises, the role of banking diminishes, and capital is increasingly allocated through markets, including markets for securitized assets.

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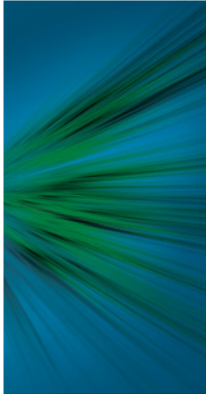

PART 5
Resilience

Developing countries could do little to prevent the financial crisis, which had its origins far from their shores. But they can better prepare themselves to withstand such shocks and to minimize the damage they inflict on households. This resilience should be woven into a growth strategy. With the benefit of hindsight, it should have been a more prominent feature of *The Growth Report*.

Resilience is not a free good. It will have to be purchased at some cost. An analogy may help. Highly efficient systems like networks lack redundancy. But systems with redundancy are more resilient in the face of failures in subcomponents. Redundancy is acquired at a cost. The same is true of resilience in growth and development. It may entail higher capital requirements in banking, even though some of that capital cushion may appear "redundant." It may entail tighter fiscal policy in good times, even though the budget surpluses may seem excessive. And it may require countries to set aside a sizeable stock of foreign-exchange reserves, despite the opportunity costs involved.

One can think of these costs as an insurance premium, which one pays to mitigate the more catastrophic costs of a crisis. How much insurance one wants to buy depends on the risks. The crisis has raised most assessments of the risks in the global economy. This suggests that policy makers will amend their growth strategies to place a higher priority on configuring the economy to withstand shocks.

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Countercyclical Policies

Resilience is partly a question of macroeconomic policy. The crisis was a severe test of countries' foreign-exchange cover, fiscal strength, and monetary reflexes.

When a crisis strikes, countries holding ample foreign-exchange reserves can offset the effects of the reversal of capital flows.[11] Countries that have kept their fiscal power dry, carrying a low burden of public debt, can also undertake countercyclical stimulus measures without jeopardizing the public finances. Credible central banks, backed by a sound fiscal policy, can also expand their balance sheets to offset a tightening of credit.

Timing matters. Countries need to relieve credit constraints quickly, otherwise viable businesses will fail. Some of this damage is irreversible. An unanticipated, extended credit lock-up is the financial equivalent of closing food-stores for weeks without prior warning.

Fiscal expansion is meant to limit the drop in aggregate demand and employment, partly by restoring confidence, so that the collective fears of consumers do not become a self-fulfilling prophecy. Here again the speed of the response matters. Governments need the resources, of course, but also the ability to spend them quickly, without too many political impediments. Indeed, countercyclical fiscal policies ask a lot of a country's political system. Governments must have the self-discipline to resist dipping into budget surpluses during economic upswings. They must also have the credibility to convince their creditors that the deficits they run during downturns will be reversed when the economy recovers.[12]

The crisis has reminded emerging economies that foreign capital can be fickle, withdrawing for reasons beyond their control. Since many developing countries cannot borrow abroad in their own currency, raising foreign finance also exposes them to currency mismatches. Resilient countries, therefore, tend to have high levels of saving, which allows them to finance investment from domestic sources. This spares a country from the risks of a "sudden stop" of foreign capital. *The Growth Report* pointed out that "there is no case of a sustained high investment path not backed up by high domestic savings." It recommended that countries open up to foreign capital "only in step with their financial-market maturity." The experience of the crisis does not suggest any modification of this prescription.

To position themselves to withstand shocks, therefore, countries should have low public debt (both internal and external), ample foreign-exchange reserves, and high domestic savings. In times of stability and relatively high

11 Allowing a depreciation to occur is not inconsistent given the real economy trade challenges.

12 Many developing countries acquire a credible central bank before they build a credible fiscal framework. That is one reason why they should normally rely on monetary policy to stabilize the economy. But monetary policy loses traction when economies suffer from some variant of a liquidity trap.

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growth, policy should lean in the countercyclical direction. This macroeconomic prudence may weigh on growth in more normal times. But it is compatible with speedy development. After all, among the developing countries, China probably came closest to having this ideal configuration.

Distributional Issues

The pain inflicted by the crisis was not distributed evenly. Job losses, for example, were concentrated on certain industries, such as homebuilding in Spain, electronics assembly in China, or diamond polishing in India. The commodity price-shock that preceded the financial crisis also had malign distributional effects, because the poor devote such a large share of their budgets to food.

It falls to the state to provide social safety nets that can offer some social insurance against these economic misfortunes. The crisis lends new urgency to measures advocated in the original *Growth Report*, which argued that policy makers should endeavor to protect *people*, even as they resist calls to protect industries, firms, or jobs. The report pointed out that the best protections a government can provide are education, which makes it easier to pick up new skills, and a strong rate of job creation, which makes it easy to find new employment. Beyond that, it argued, governments should also establish social safety nets, which provide a source of income to people between jobs. The exact form of these safety nets must vary from country to country depending on their levels of income, the strength of their public administration, their tax-raising powers, and the extent of poverty. In advanced social democracies, a wide array of programs help cushion individuals from economic shocks by redistributing the costs among the population or inter-temporally through the fiscal system. Examples include unemployment insurance, wage subsidies paid to employers to offset cyclical downturns in hiring, and extensive public works, often on infrastructure.

In developing countries, the challenge is greater. Social safety nets are patchy at best, and the poor can draw on only meager savings to offset falls in their income. Often, all they can hope for is some temporary, emergency relief from the government. But some countries have shown that it is possible to devise more permanent programs that can serve the economy both in good times and bad, expanding during crises to meet sudden spikes in need. In Brazil and Mexico, for example, existing conditional cash transfers to families can be made more generous relatively easily when needed. In India, the government has increased the resources devoted to its national employment guarantee act, without having to create a whole new program.

In theory, given limited resources, these programs should be finely targeted to those in need. However, the narrower the coverage of these

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programs, the less political support they earn. Distinguished economists, including Larry Summers and Ravi Kanbur, have argued that there are advantages to "leaky" safety nets, in that their "leakiness" buys political support. Broader coverage may be the political price we have to pay for a well-supported safety net.

It takes time to weave new safety nets. By the time a crisis arrives, it is already a little late. In response to rising food prices, for example, countries resorted to blunt measures, such as controlling prices and banning food exports, because they had no prebuilt mechanisms in place to cope with the problem. Hastily arranged public works are also unlikely to produce assets of lasting value. Therefore, countries should prepare an inventory of well-designed projects that can be taken "off the shelf" when the need arises.

International Agenda

The international response to the financial crisis was somewhat tardy compared with the domestic interventions. At the onset of the crisis, the world lacked the institutional wherewithal to co-ordinate a swift global response. The IMF, for example, was short of both resources and legitimacy. It did not have enough funds to help every country that might have benefited from a loan. At the same time, many countries that might have benefited from its help remained deeply reluctant to seek it.

The world economy needs standing arrangements to cope with financial crises of this kind. These international lines of defense might include IMF facilities, such as the new Flexible Credit Line, which provides substantial sums to well-run countries that qualify in advance, with no further strings attached. But these defenses need not all fall under the IMF's purview. The Federal Reserve's swap lines with Korea and Mexico, for example, were also valuable efforts to bolster confidence in those countries. What matters is the efficacy of these defenses, not the institution that houses them.

The G20 has now agreed to bolster the IMF's funds, but only after a 9-month delay. In the future, the IMF's resources must be equal to the crises it faces, as and when they occur. And the lingering doubts about the Fund's governance need to be resolved so that the institution can act authoritatively and speedily. Resources and reform go hand in hand. Developing countries should be given a greater say in the institution, commensurate with their new prominence in the world economy. The members of the euro area should participate as a unit with a weight equal to the bloc's economic size. In the future, a country's share of the IMF's votes should adjust periodically and automatically to reflect its changing weight in the world economy. No one doubts the difficulties of reforming a multilateral organization like the IMF, with over 180 sovereign members. The bigger question

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is whether fixing the IMF is harder than creating alternative arrangements from scratch.

On the fiscal side, the best response to the crisis would have been a joint fiscal expansion, free of protectionist measures, so that each country benefited from its neighbors' policies, even as its neighbors benefited from its efforts. Unfortunately, such coordination is nearly impossible to achieve. Some countries would rather free ride on their trading partners' stimulus spending, enjoying the boost to their exports without incurring the extra public debt. But this makes it harder for policy makers to justify spending liberally, because the benefits "leak" overseas.

This free-riding is difficult to police. Given the differences between countries, it is hard to say whether a government is "doing its bit" to restore global aggregate demand. In Europe, for example, generous welfare systems provide some countercyclical demand, quite apart from any discretionary stimulus the government of the day might decree. European countries also spend a larger share of their income on imports, often from other European countries, than America does. Their stimulus spending is therefore more likely to leak abroad, squandered on foreign rather than domestic production. The end result is a set of stimulus packages with some additional protectionist measures to minimize these "leakages." This can be thought of as a second-best response that is still better than no action at all.

The Poorer Developing Countries

The G20 represents over 90 percent of the world's GDP and about two-thirds of its population. If you add a few countries that will likely join the group in the next few years, like Nigeria and Egypt, you have most of the mass of the global economy. But the group still leaves out numerous small countries, many of them poor, with a combined population of about 2.2 billion people.

These countries are often at a particular disadvantage in responding to the crisis. Generally speaking, they lack the savings required to fund high-growth investment, leaving them somewhat dependent on foreign financing. They do not have a cushion of foreign-exchange reserves. Their "quotas" at the IMF are small, limiting the amount they can borrow easily from the Fund. They are inescapably dependent on international trade, because the domestic market is not big enough, or varied enough, to compensate for external demand. There is, therefore, little they can do to cushion the blows of the crisis. Such countries need outside help in dealing with a shock of this magnitude.

The eight members of the Eastern Caribbean currency union, for example, have suffered dramatic declines in tourist arrivals and a steep fall in for-

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eign-direct investment, especially in the second homes that Americans and Britons used to enjoy. They have also suffered declines in the remittances on which many families rely. These problems arrived hard on the heels of the dramatic increase in the prices of food, fuel, and building materials in 2007 and 2008, which strained the members' balance of payments even before the financial crisis struck with full force.

Some of the world's poorer countries have only recently adopted fledgling growth-oriented policies. The consensus in favor of these policies was somewhat fragile going into the crisis and may break down as a result of it. If so, then it may be the poorer, small countries that suffer the most lasting consequences of the crisis.

Their future depends greatly on developments beyond their borders, on how quickly foreign financing returns, and how soon their export markets revive. It would be morally unacceptable to leave these countries stranded by a crisis that was caused elsewhere.

The Growth Report of May 2008 argued strongly that inclusiveness (in its several dimensions) is an integral part of a growth strategy, and not simply an ethically attractive add-on. The absence of inclusiveness may derail the growth process, by undermining political support or even jeopardizing social order.

Similar considerations apply globally. An international system that cannot protect the most vulnerable people and countries will be challenged by those it excludes. Surely one of the lessons of the crisis is that the global system needs a well-developed set of insurance systems and safety nets that are crisis-ready and do not have to be built from scratch each time. Building these systems should be high on the G20's agenda.

Bad Ideas: Part 2

The Commission's original *Growth Report* contained a list of "Bad Ideas" that policy makers should avoid (see *The Growth Report,* pp. 68–69). This was one of the most read sections of the report. Here we add to the list.

1. Assume the crisis is a "mean–reverting" event and that we will return to a pre-crisis pattern of growth, capital costs, trade, and capital flows.
2. Interpret the need for better regulation and government oversight of the financial sector as a reason for micromanagement of the financial sector.
3. Abandon the outward-looking, market-driven growth strategy because of financial failures in the advanced countries.
4. Allow medium-term worries about the public debt to inhibit a short-term fiscal response to the crisis.

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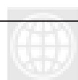
5. Adopt counter-cyclical fiscal policies without concern for the returns on public spending, and without a plan to restore the public finances to a sustainable path over time, once the crisis is past.
6. Ignore the need for more equitable distribution of gains and losses in periods of prosperity as well as in crisis.
7. Continue with energy subsidies on the assumption that commodity prices will not rebound after the crisis.
8. Treat the financial industry like any other, ignoring its external effects on the rest of the economy.
9. Focus monetary policy on "flow" variables like inflation, job creation, and growth, ignoring potential sources of instability from the balance sheet (asset prices, leverage, derivatives exposure).
10. Buy assets whose risk characteristics are hard to understand. The high returns are likely to reflect higher risk even though the latter may be hidden from view. In a crisis, they will saleable, if at all, only at distressed prices. Things that seem too good to be true, probably are.



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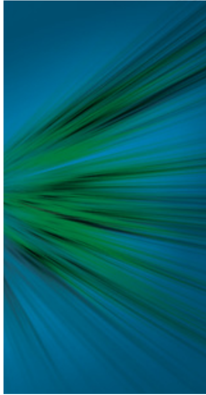

Concluding Thoughts

The crisis that we are probably exiting originated in the financial systems of the advanced countries. But it ended up inflicting a huge blow to the global economy. It will have long-lasting effects, and it could have been much worse. Rapid, large-scale, and unconventional responses by central banks and Treasuries, sometimes with and often without broad-based political backing, averted a global depression. It is important to remember the risks the world ran, even if the worst outcomes did not materialize, and to sustain the momentum for reform.

In keeping with the spirit of this report, we collectively need to deepen our knowledge of the crisis, and then strengthen our response to it. We need to improve our understanding of the sources of instability in the financial sector, disentangling the combination of informational gaps, perverse incentives, and regulatory lapses that contributed to the meltdown.

And then we need to take action, both within countries and in the international system. We need to act on several fronts, all of them important. One is to reform regulation so as to reduce the likelihood of destructive financial instability. To this end, responsibility for oversight of the system needs to be assigned clearly to institutions that have the information and the tools they need. Regulators must also find ways to protect the critical financial functions of providing safe savings channels, extending credit, allocating capital to its best uses, and efficiently spreading risk. On a sec-

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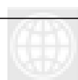
ond front, we must recognize that volatility (if not on this scale) is likely to recur. It follows that we should increase the resilience of our economies so that they can withstand shocks. One crucial part of this is to attend to the distributional effects of the crisis.

Financial breakdown inflicts a large amount of collateral damage on the rest of the economy, domestically and globally. Ultimately, the costs often fall on the taxpayer. This damage must be contained. Taking on risk is an inherent part of any well-functioning financial system, but it should not extend to gambling with other peoples' money.

Responding to these challenges will not be easy. But it is important. The global economy has provided opportunities for advancement for vast numbers of people all over the world. Learning how to manage an open economy, so as to retain the benefits and limit the downside risks, is the task ahead in the post-crisis world.



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Statistical Appendix

1. THE HEART ATTACK

On September 15, 2008, the day Lehman Brothers collapsed, the world financial system suffered a heart attack. A mortgage crisis circumscribed in scope and size morphed into a credit freeze that spread from the United States and the United Kingdom to the rest of the world. It destroyed the balance sheets of some of the world's most venerable financial institutions, threatened payments systems, and inflicted damage on the real economy from which the world has yet to recover.

Figures 1.1, 1.2, and 1.3 decompose short-term interest rates into the "risk-free" rate and the premium, or spread, lenders require to compensate them for the perceived risk of default. The TED spread in Figure 1.1 measures the spread between 90-day U.S. Treasury Bills, which are free of default risk, and the 90-day LIBOR, one standard measure of the interest rates that banks are charging each other. It is an indicator of the perceived risk in the general economy. From a moderate level at the beginning of the 2000s, the spread declined throughout the middle of the decade. It then rose abruptly from 2006 onwards to peak in September 2008 at an unprecedented level. The spread has declined since then, but remains elevated by historical standards.

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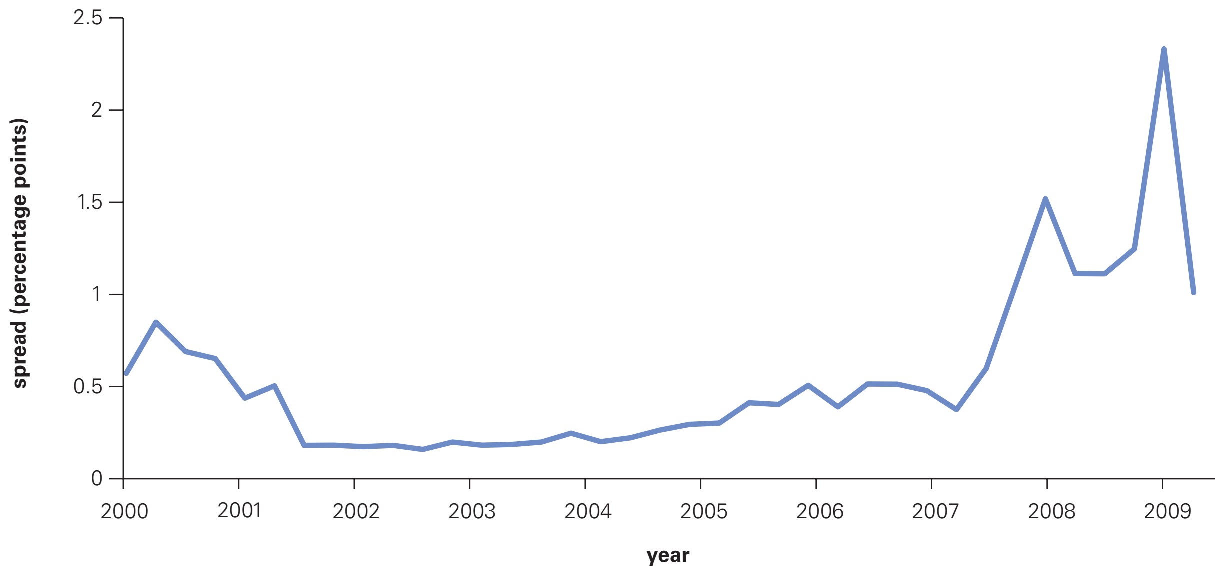
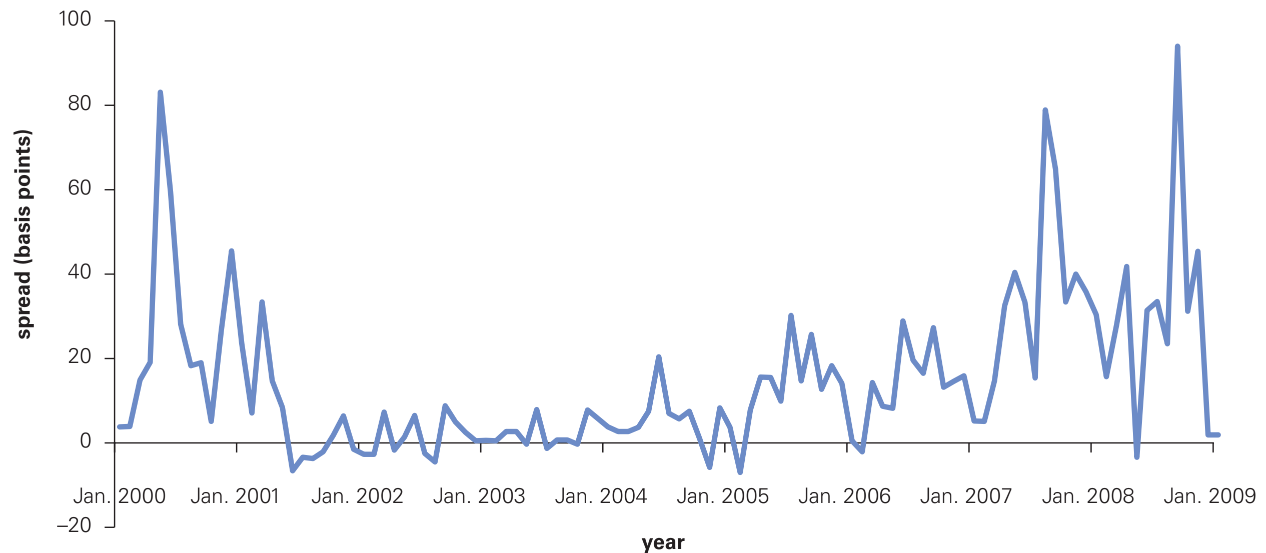
Figure 1.1 United States: TED Spread between LIBOR and 3-Month T-Bill Rates



Source: Haver Analytics.

Figure 1.2 provides another measure of risk: the spread between yields on a three-month U.S. Treasury Repo and a three-month U.S. Treasury Bill. It provides an indication of the counterparty risk in the banking system. The spread reached 80 basis points in the immediate aftermath of the Dot Com bust. For the next seven years, it remained below 50 basis points but started rising after 2006 as fears of default intensified. It also reached an unprecedented level in 2008.

Figure 1.2 Spread between Yields on 3-Month U.S. Treasury Repo and 3-Month U.S. Treasury Bill



Source: Global Financial Stability Report, IMF (April 2009).

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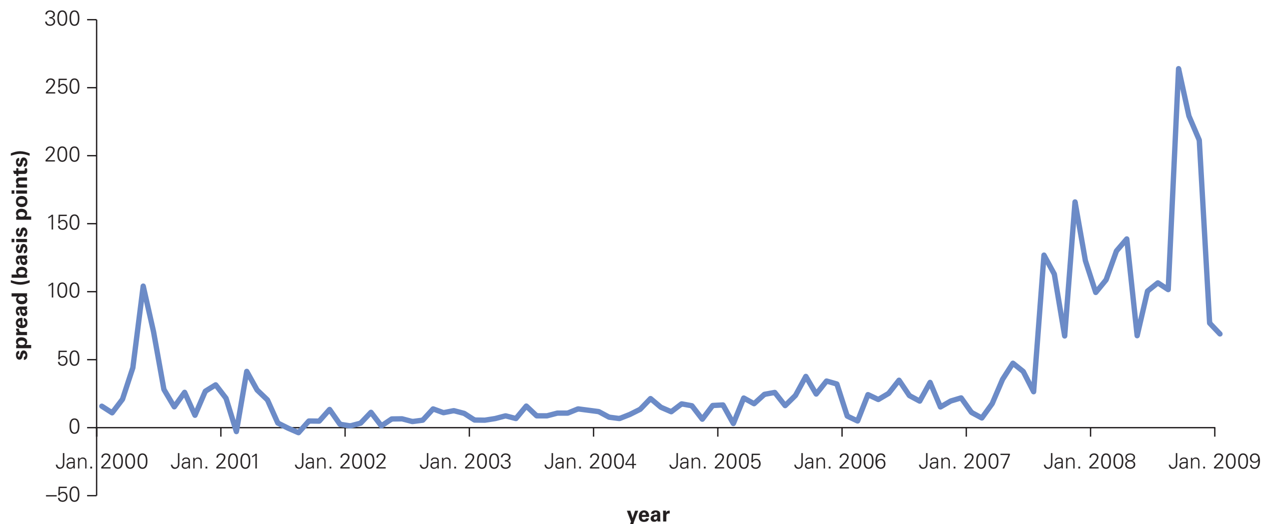
Another indicator of financial market conditions is the spread between AAA-rated commercial paper and the U.S. three-month Treasury Bill, given in Figure 1.3. The spread measures the perceived risk of default by investment-grade companies in the United States. It started rising from 2007, to peak at 270 basis points at the height of the crisis.

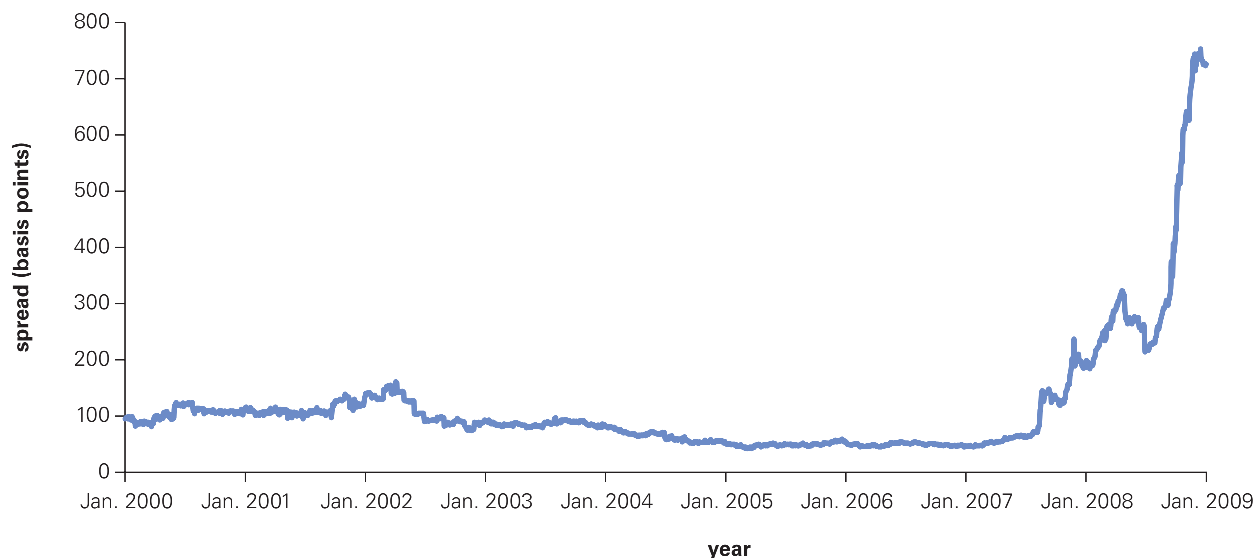
Figure 1.3 Spread between Yields on 90-day Investment-Grade Commercial Paper and the 3-Month U.S. Treasury Bill



Source: Global Financial Stability Report, IMF (April 2009).

Finally, Figure 1.4 shows the evolution of the spread on asset-backed securities (ABS). It was at relatively low levels for most of the decade, hence contributing to the overvaluation of securities. The exponential rise in the ABS spread in the aftermath of the crisis reflects the extent of this undervaluation of risk.

Figure 1.4 ABS Spread



Source: Global Financial Stability Report, IMF (April 2009).

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As credit dried up, financial institutions withdrew funds from developing countries to shore up their balance sheets at home. Table 1.5a shows sharp slowdowns or outright reversals in the flow of portfolio capital to all major developing countries except China, where inflows continued to rise. Foreign direct investment (Table 1.5b) is less liquid and more difficult to reverse.

Table 1.5a Net Capital Inflows: Select Developing Countries (Portfolio Investment in US$ Billion)

Years	Brazil	Korea, Rep. of	India	China	South Africa	Turkey
1997	10.1	14.4	2.6	6.9	6.7	1.6
1998	18.4	–1.2	–0.6	–3.7	4.3	–6.7
1999	3.8	9.2	2.3	–11.2	8.7	3.4
2000	7.0	12.2	2.4	–4.0	–1.9	1.0
2001	0.1	6.7	2.9	–19.4	–8.3	–4.5
2002	–5.1	0.4	1.0	–10.3	–0.4	–0.6
2003	5.3	18.3	8.2	11.4	0.7	2.5
2004	–4.8	8.5	9.0	19.7	6.4	8.0
2005	4.9	0.0	12.1	–4.9	4.8	13.4
2006	9.6	–18.9	9.6	–67.6	19.6	7.4
2007	48.4	–24.6	35.0	18.7	10.2	0.7
2008	1.1	–15.4	–2.0	39.0	–14.0	–4.8

Source: International Finance Statistics, IMF.

Table 1.5b Net Capital Inflows: Select Developing Countries (Direct Investment in US$ Billion)

Years	Brazil	Korea, Rep. of	India	China	South Africa	Turkey
1997	18.6	–1.6	3.5	41.7	1.5	0.6
1998	29.2	0.7	2.6	41.1	–1.1	0.6
1999	26.9	5.1	2.1	37.0	–0.1	0.1
2000	30.5	4.3	3.1	37.5	0.7	0.1
2001	24.7	1.1	4.1	37.4	10.8	2.9
2002	14.1	–0.2	4.0	46.8	1.9	1.0
2003	9.9	0.1	2.4	47.2	0.2	1.3
2004	8.7	4.6	3.6	53.1	–0.6	2.0
2005	12.6	2.0	4.2	67.8	5.6	9.0
2006	–9.4	–4.5	7.8	56.9	–6.1	19.1
2007	27.5	–13.7	8.0	121.4	2.8	20.1
2008	24.6	–10.6	20.0	173.0	11.9	15.6

Source: International Finance Statistics, IMF.

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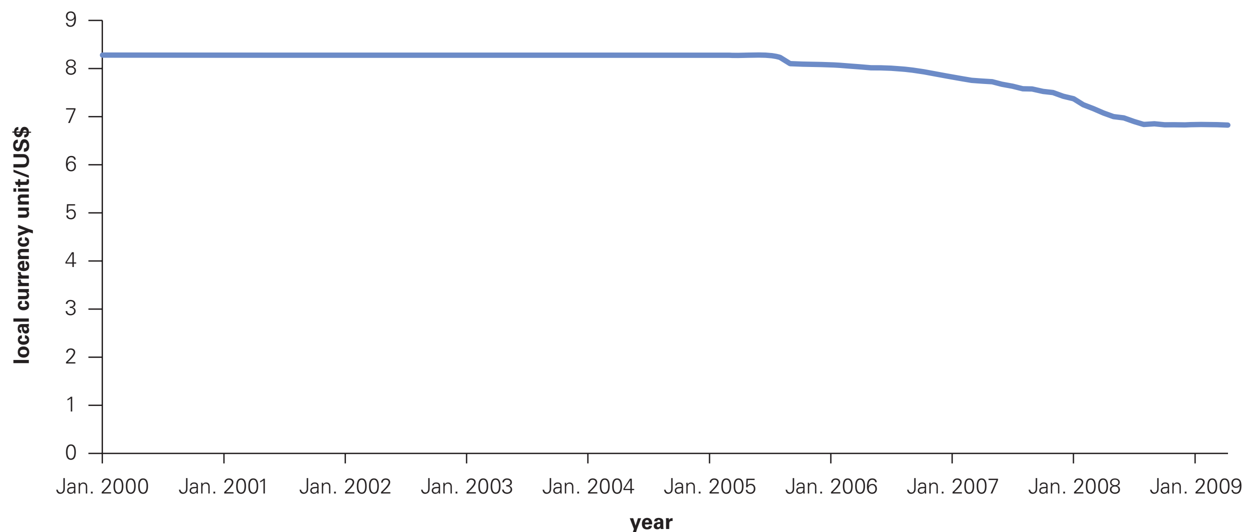
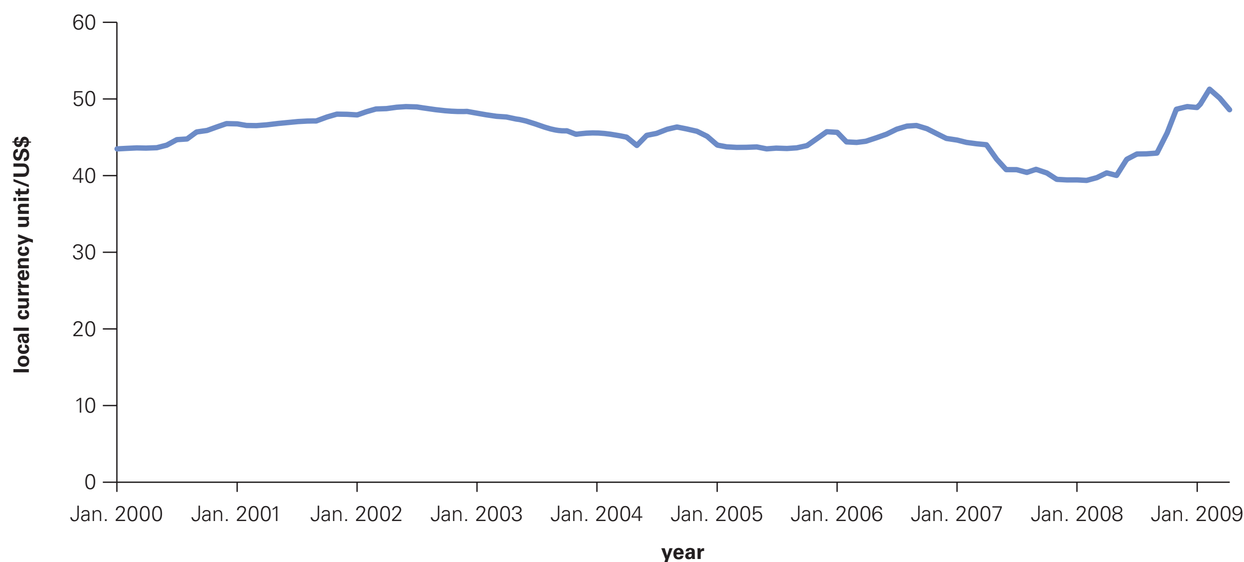
Capital outflows from developing countries put downward pressure on their exchange rates (Figures 1.6a-d) and slowed, or reversed, their accumulation of reserves (Figure 1.7). Once again, China is the exception in that its exchange rate appreciated slightly—thereby contributing to real devaluations elsewhere and to global stability. Developing countries in general managed the situation remarkably well. In most cases, they did not defend their exchange rates, letting them gradually depreciate. This was rendered easier by large stocks of foreign-exchange reserves built over the years, which helped ensure soft landings for their currencies. In a few cases, emergency support from the International Monetary Fund and currency-swap arrangements with the U.S. Federal Reserve provided additional help.

Figure 1.6a Exchange Rate: Chinese Yuan



Source: Global Economic Monitor, World Bank.

Figure 1.6b Exchange Rate: Indian Rupee



Source: Global Economic Monitor, World Bank.

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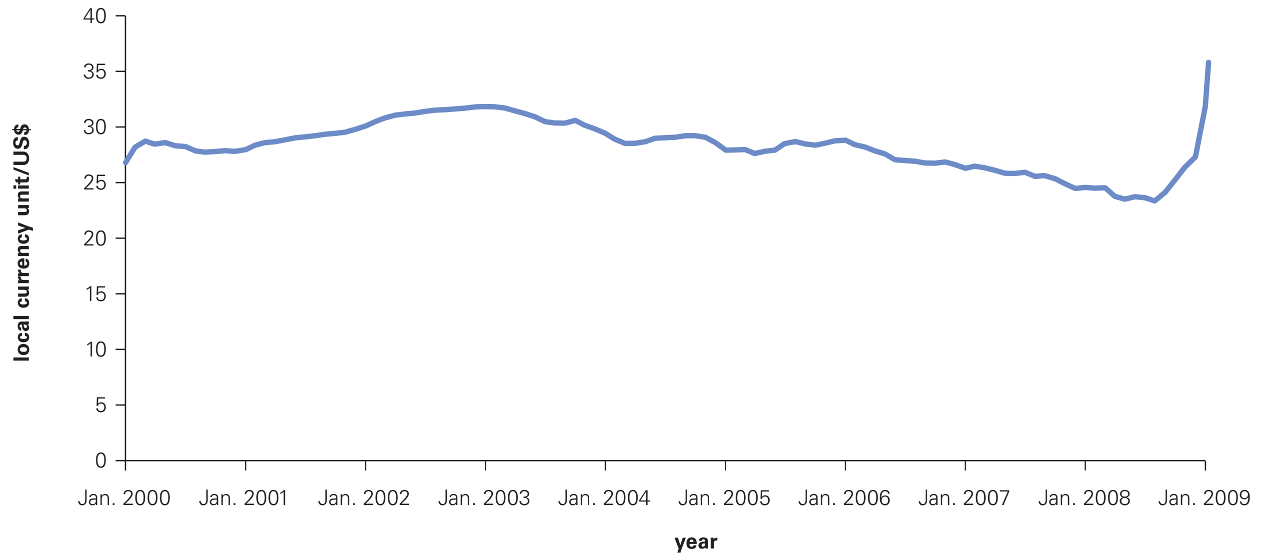
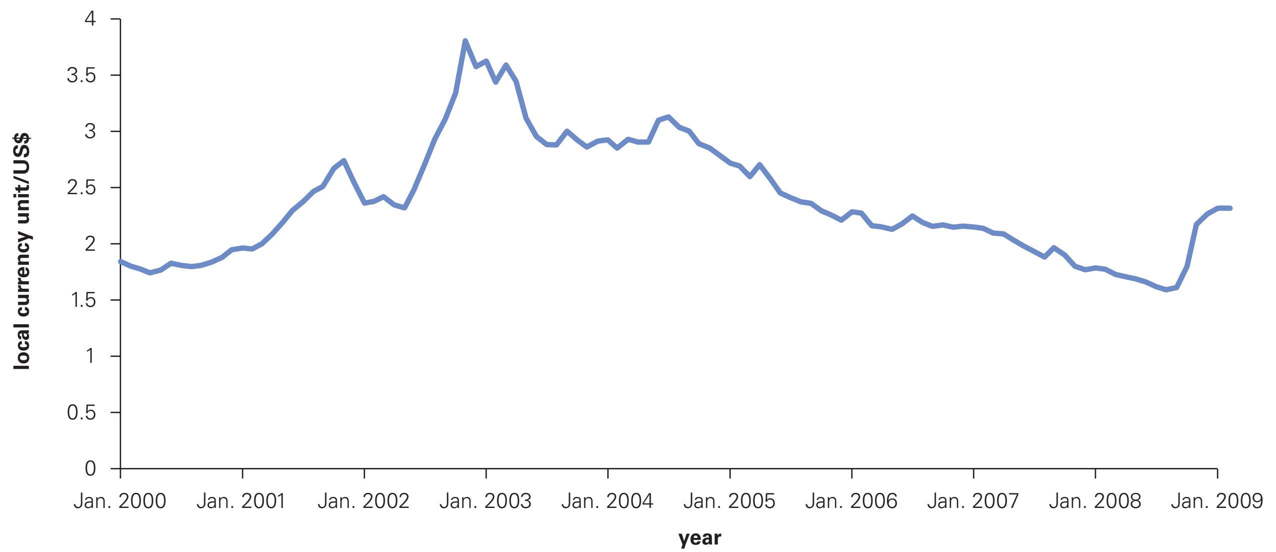
Figure 1.6c Exchange Rate: Russian Ruble



Source: Global Economic Monitor, World Bank.

Figure 1.6d Exchange Rate: Brazilian Real



Source: Global Economic Monitor, World Bank.

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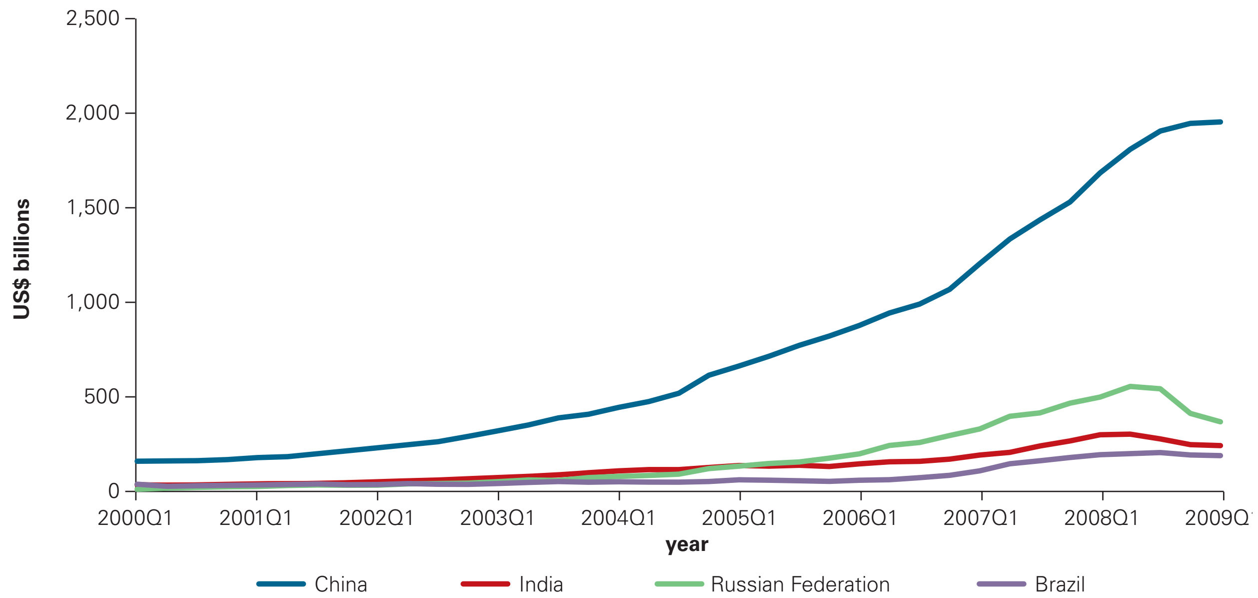
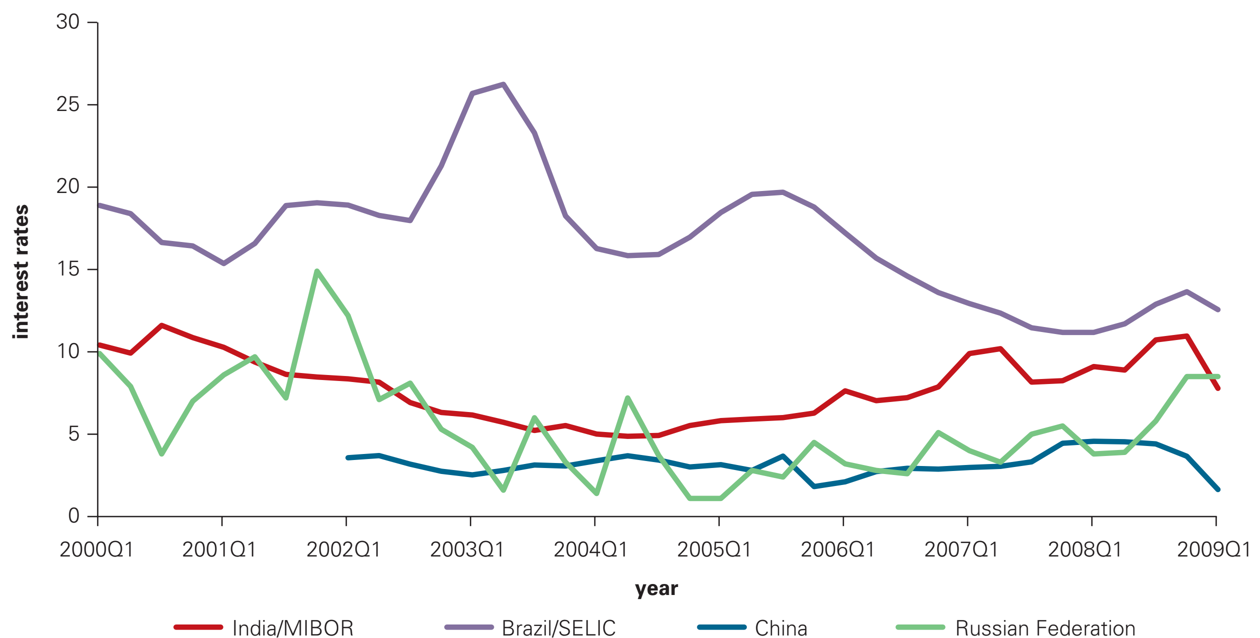
Figure 1.7 Total Foreign-Exchange Reserves in the BRICs (minus gold)



Source: International Finance Statistics, IMF, and People's Bank of China.

As was the case in industrialized countries, however, credit did dry up (Figure 1.8) causing interbank rates to increase in the major developing countries, followed by declines as central banks injected liquidity to moderate these increases (Figure 1.9). Again in this case, China is the exception in that the initial increases in interest rates were modest.

Figure 1.8 Select Interbank Rates for BRIC Nations



Source: Haver Analytics/ National Stock Exchange India.

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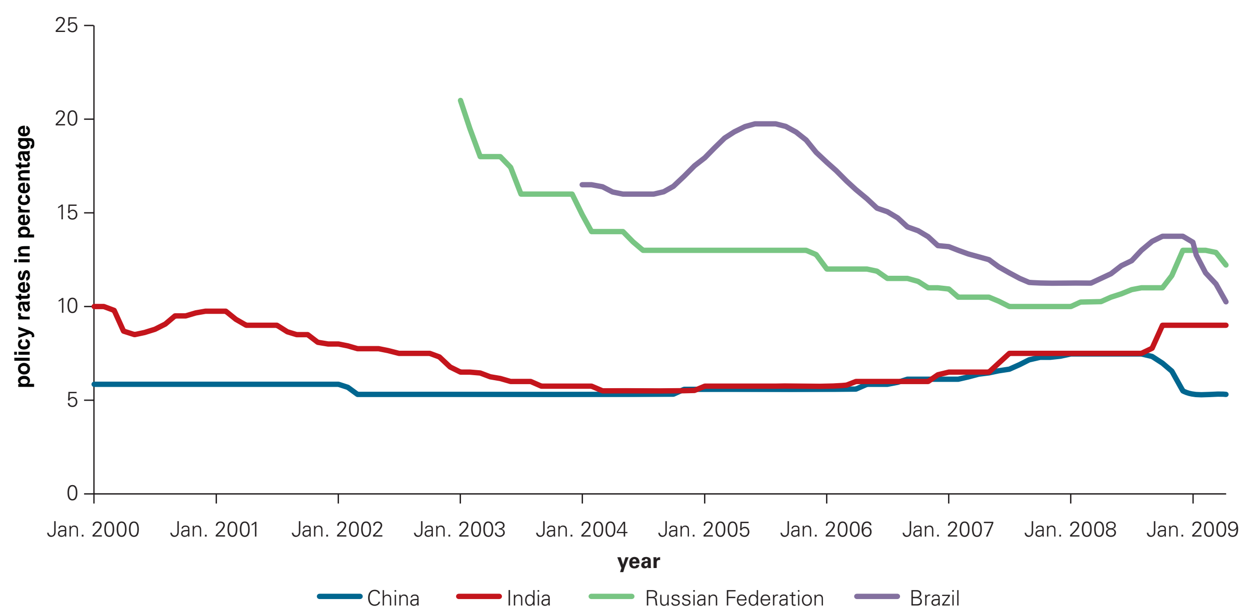
Figure 1.9 Interest Rates in Developing Nations: Policy Rates



Source: *Global Economic Monitor,* World Bank.

More recently, lending conditions remain delicately poised, despite a perceptible thaw since the worst months of the crisis. In the United States and Europe there has been a decline in the LIBOR-OIS spread although lending surveys continue to indicate a relatively tight credit market. In the United States, there has also been a narrowing of option-adjusted spreads (OAS) on high-quality corporate bonds and those mortgage-backed securities issued by Fannie Mae and other government-sponsored agencies.

In parallel with frozen credit markets, stock markets declined abruptly across the G7 industrialized economies. The falls were all the more painful because they were preceded by massive rallies. Many indices had touched all-time highs, generating inflated asset valuations for financial institutions. In many economies, stock indices trebled from their trough early in the decade to their pre-crisis peaks. The BRICs saw phenomenal gains. In retrospect, it is clear there was an undervaluation of underlying systemic risk. This tale of world-wide rise and collapse is eloquently told in Figures 1.11 to 1.17.

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Table 1.10 Credit Conditions

	2007Q1	2008Q4	Mar. 2009	Sep. 2009
United States				
Three-month LIBOR-OIS spread (basis points)	8	123	99	15
Commercial paper issuance (billions of U.S. dollars)	2,005	1,612	1,422	1,159
Lending survey (percent tightening)	11	70	61	
Investment-grade corporate OAS (basis points)	90	604	545	
Agency-backed MBS OAS (basis points)	68	120	80	
Euro Area				
Three-month LIBOR-OIS spread (basis points)	6	160	82	36
Commercial paper issuance (billions of U.S. dollars)	756	647	687	
Lending survey (percent tightening)	0	65	64	
Investment-grade corporate OAS (basis points)	47	397	413	
United Kingdom				
Three-month LIBOR-OIS spread (basis points)	11	165	120	31
Commercial paper issuance (billions of U.S. dollars)	132	158	167	36
Lending survey (percent tightening)	2	–28	8	
Investment-grade corporate OAS (basis points)	78	492	570	
Japan				
Three-month LIBOR-OIS spread (basis points)	16	73	49	39
Commercial paper issuance (billions of U.S. dollars)	164	825	348	
Lending survey (percent tightening)	9	43	13	
Investment-grade corporate OAS (basis points)	20	86	104	

Source: GFSR April 2009 and Central Banks.

http://www.federalreserve.gov/releases/h15/Current/.

http://www.reuters.com/article/usDollarRpt/idUSL763418820090910.

United States figures from U.S. Federal Reserve Statistics.

United Kingdom figures from Thomson datastream.

Japan figures from Bank of Japan releases.

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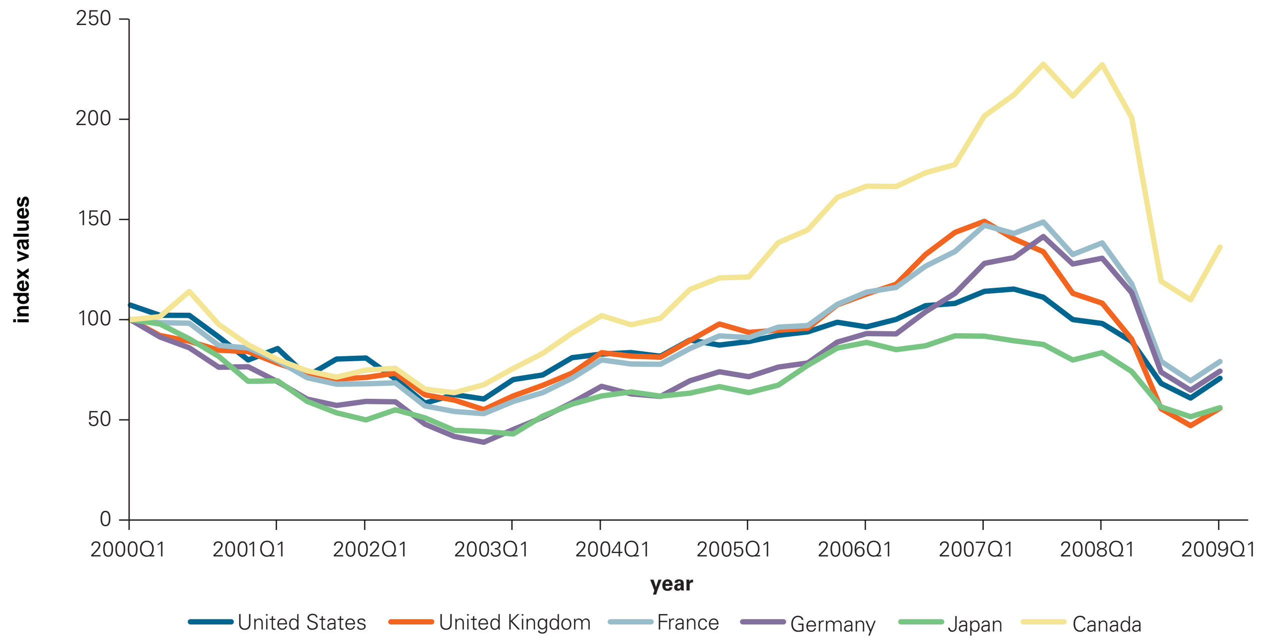
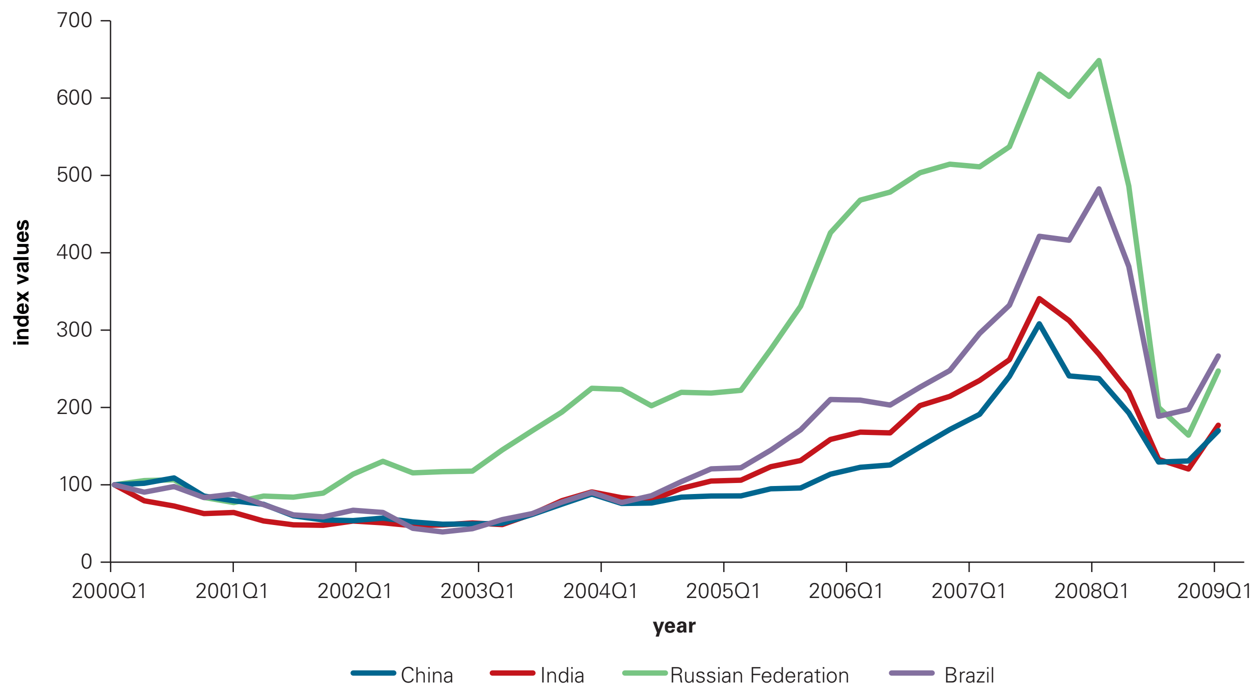
Figure 1.11 Asset-Price Inflation: the Rise of Stock Indices in Industrialized Economies



Source: *Global Economic Monitor,* World Bank.

Figure 1.12 Asset-Price Inflation: The Rise of Stock Indices in the BRICs



Source: *Global Economic Monitor,* World Bank.

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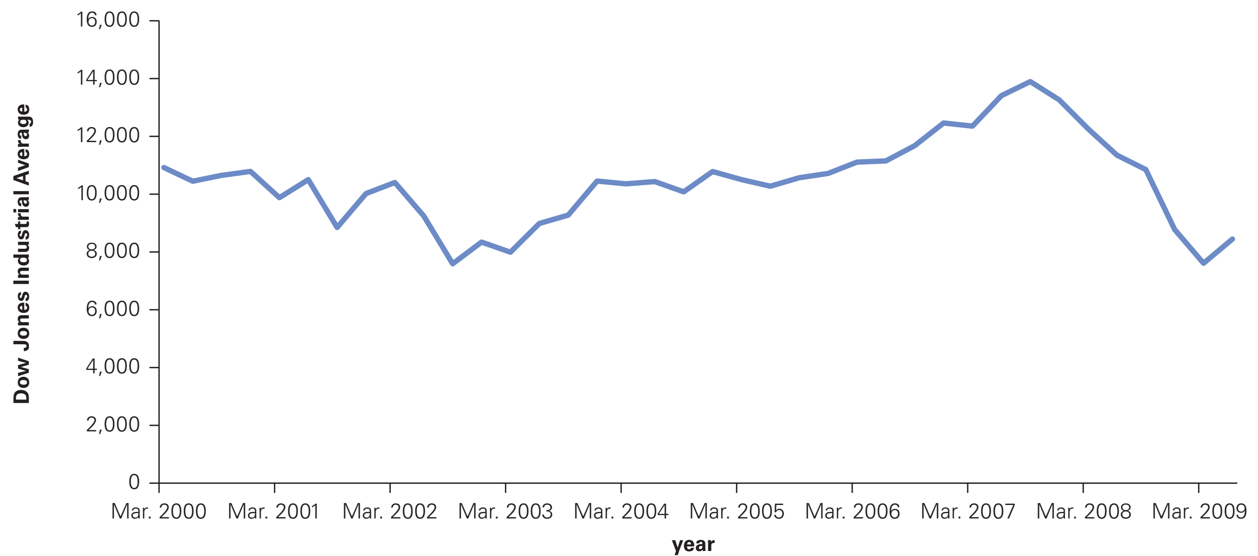
Figure 1.13 Dow Jones Global 150

Source: Dow Jones Index Services.

Figure 1.14 Dow Jones Industrial Average



Source: Dow Jones Index Services.

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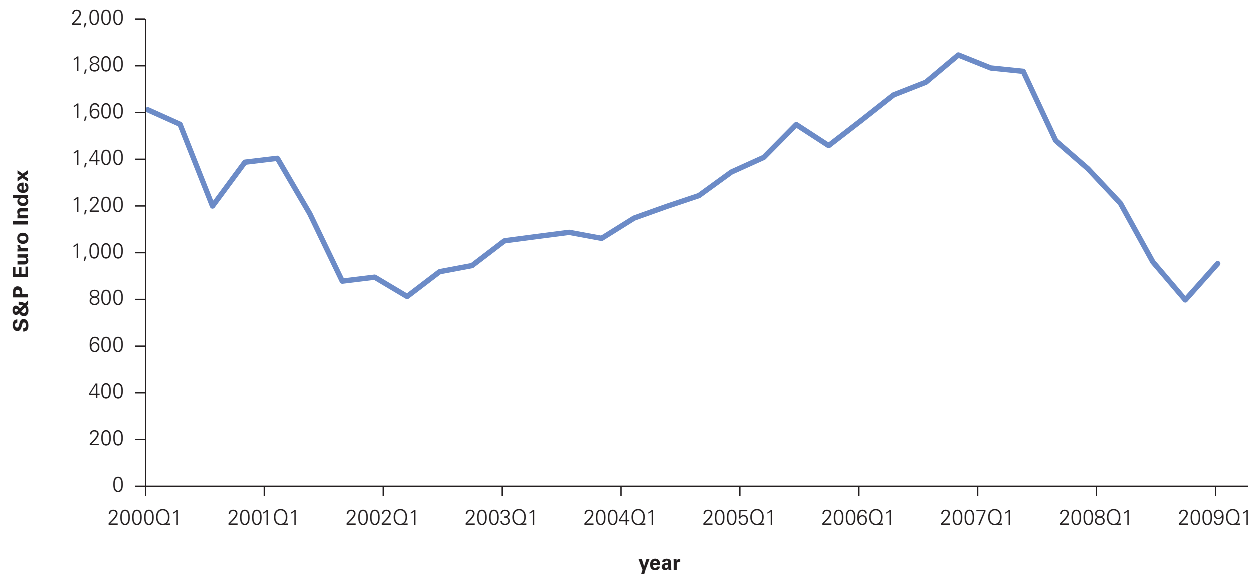
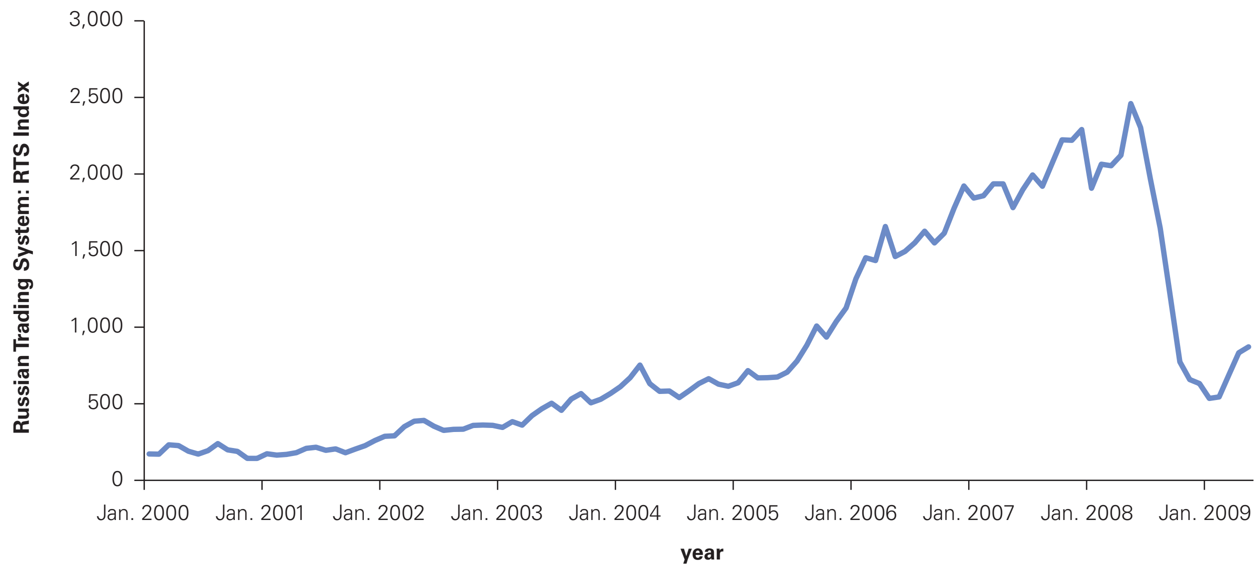
Figure 1.15 S&P Euro Index



Source: Standard and Poor's Index Services.

Figure 1.16 Russian Trading System: RTS Index



Source: Russian Trading System (RTS) Indices.

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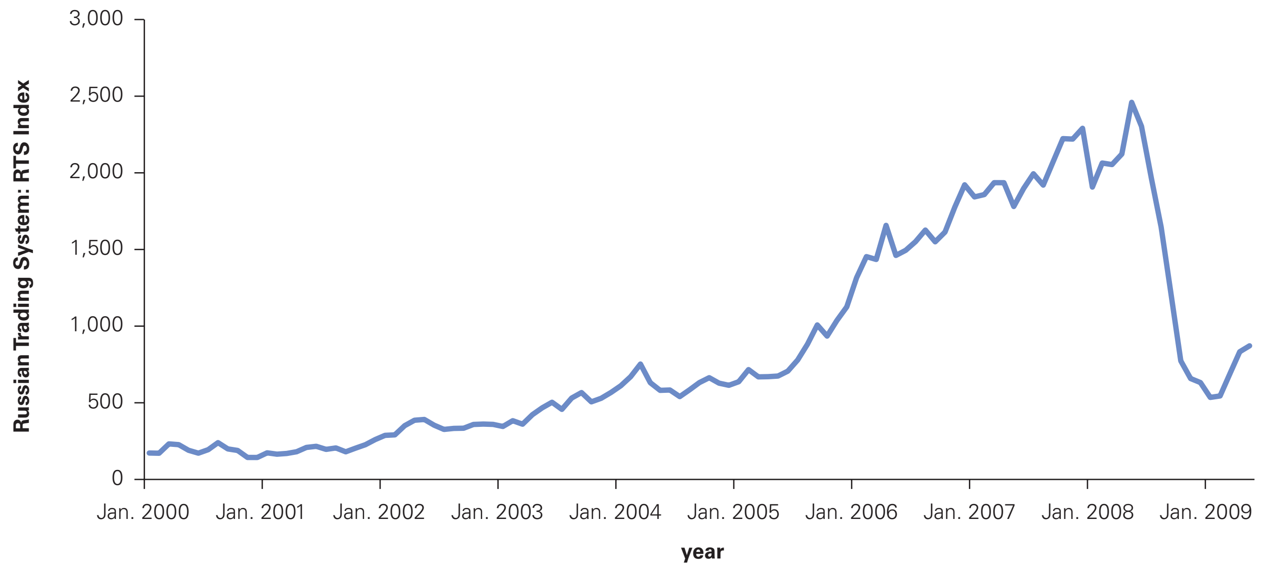
Figure 1.17 S&P Nifty-India



Source: National Stock Exchange (NSE) India.

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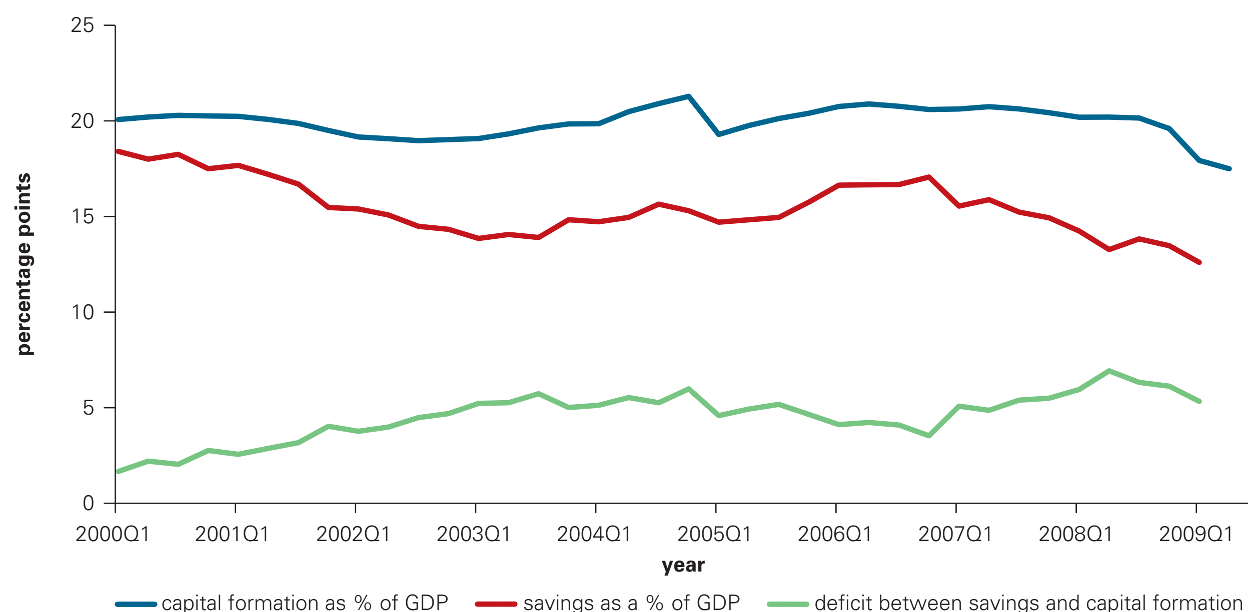
2. UNDERLYING CONDITION FOR THE CRISIS

The crisis did not arrive out of a clear blue sky. Clouds had accumulated for several years, but warning voices were either silenced or unheard. All the main elements preceding previous crises were present in this one as well. A sustained credit boom led to inflation of asset prices, aided and abetted by leveraged financial institutions. Once the collapse of the housing market shook the system, it led to a vicious circle of falling asset prices, margin calls, distress sales, and further asset-price declines. If there was a difference from previous crises, it was in the complexity of the instruments involved and the tangled web of exposures that made institutions vulnerable to each other. For example, banks were exposed to financial conduits, like structured investment vehicles (SIVs), which were not reflected on the banks' balance sheets, and complex financial instruments were traded over the counter, rather than on organized exchanges. This complexity is one reason why what started out as a housing market collapse abruptly became a systemic crisis.

Severe macro imbalances in the United States preceded the crisis (Figure 2.1). The U.S. current-account deficit prompted extensive discussions in academia and policy circles about its origins and implications. Were American imbalances the counterpart of China's high saving rates (the "saving glut," see Figure 2.2), or the result of U.S. fiscal profligacy? Were they a matter of concern, or a tribute to U.S. financial sophistication, which attracted savings from countries that could not fruitfully invest them at home? Would their resolution be orderly or chaotic? While many saw in these imbalances the portent of a severe crisis, others thought a soft landing was likely. Academics will continue debating this issue for several years to come. But it seems unlikely that imbalances alone caused the 2008 crisis. Less leverage, more disclosure, and more adequate capital to back up exotic financial instruments would surely have generated a very different outcome.

Figure 2.1 Rising U.S. Investment-Savings Imbalances



Source: International Finance Statistics, IMF.

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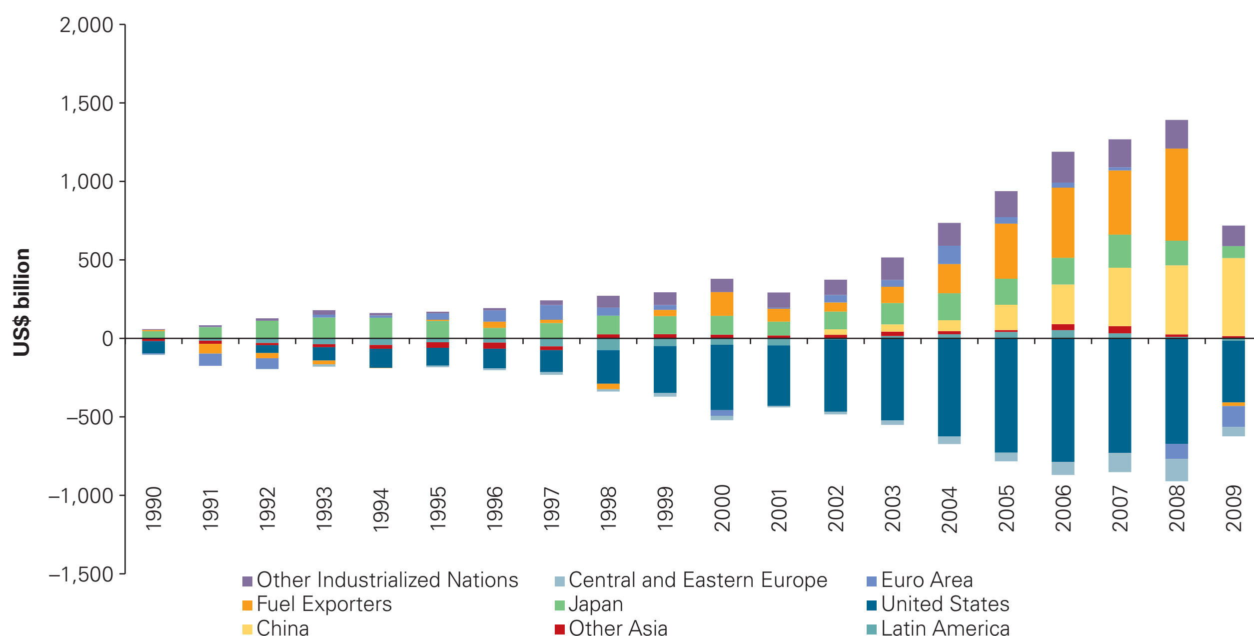
Figure 2.2 Current Account Positions (1990-2009; annual data, in $US billion)



Source: World Economic Outlook 2009, IMF.

The risks taken in the financial sector may have been exacerbated by the expansion in liquidity. Figures 2.3 and 2.4 show the growth rates of liquidity in the years preceding the crisis. The availability of credit helped the rise in housing prices (Figure 2.5), which in turn helped indebtedness to rise (Figure 2.6).

Figure 2.3 Liquidity: M2 Money Supply Growth Rates for Selected Countries

Source: International Finance Statistics, IMF.

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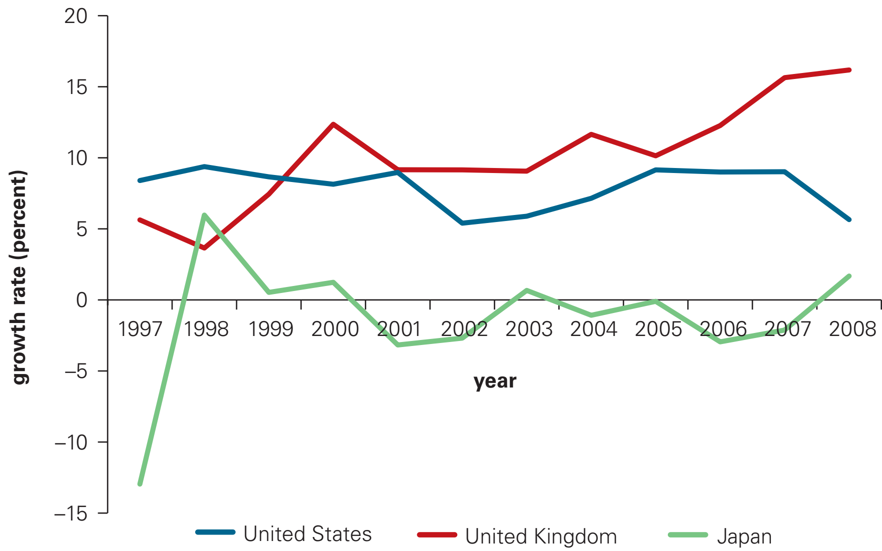
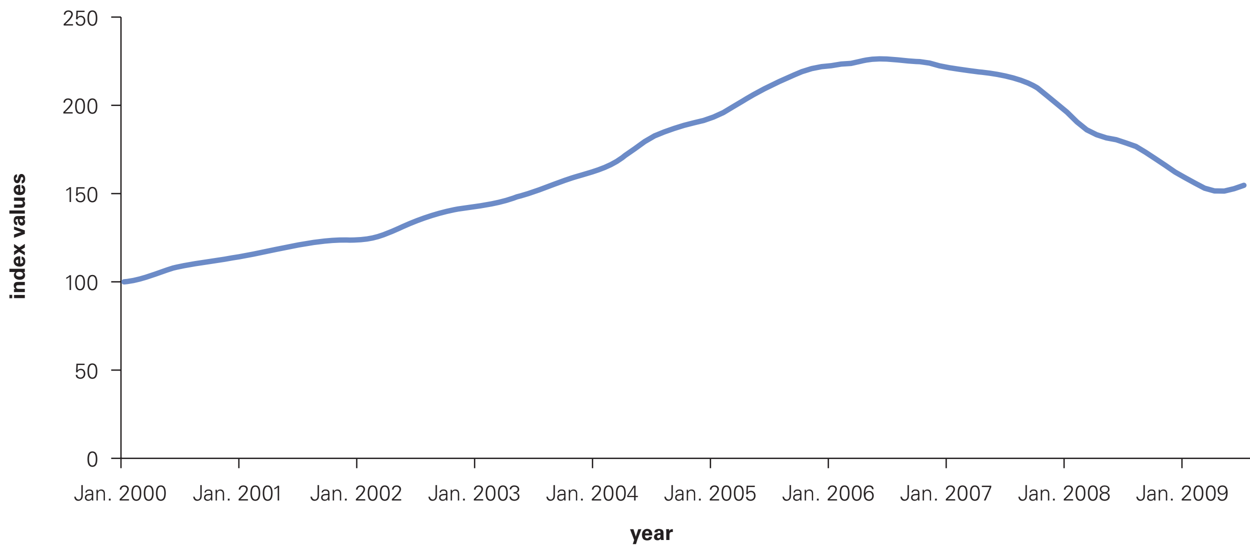
Figure 2.4 Liquidity: Credit Growth in Select Countries (Annual)



Source: International Finance Statistics, IMF.

Figure 2.5 Asset-Price Inflation: Case-Shiller Composite 10-City Housing Price Index



Source: Standard and Poor's Index Services.

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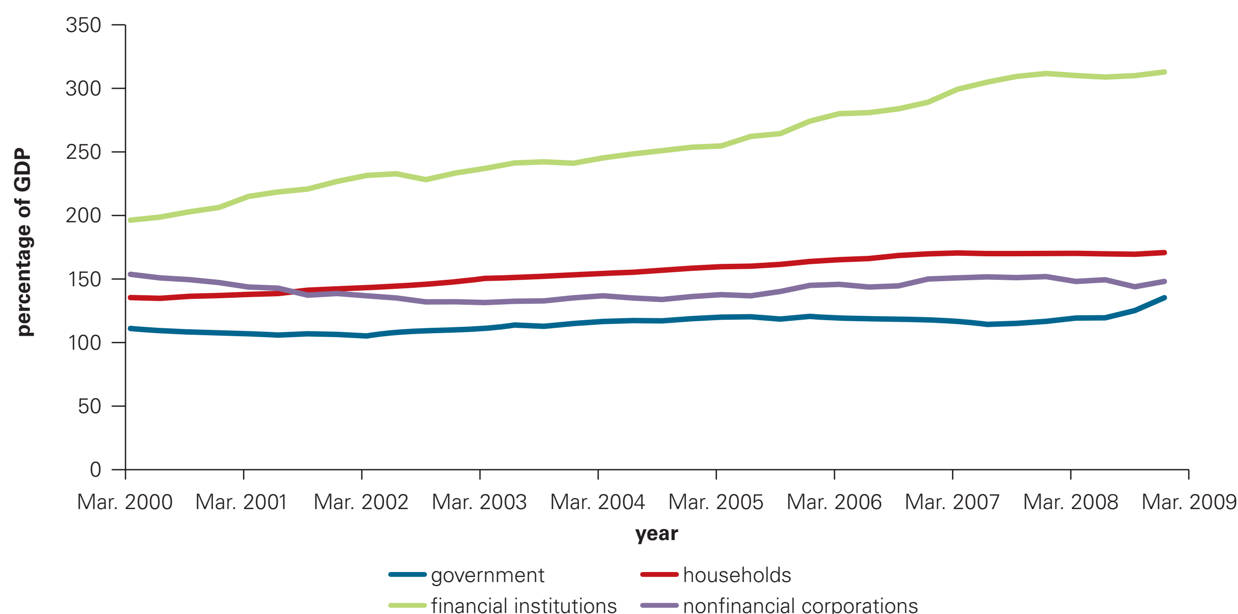
Figure 2.6 Ratio of Debt to GDP among Select Advanced Economies



Source: Global Financial Stability Report, IMF (April 2009).

Table 2.7 gives another indication of rising indebtedness. Collateralized Debt Obligations (CDOs) tripled between 1999 and 2006. And asset-backed securities in the category "other" rose at an extremely high rate as well.

Table 2.7 United States: Asset Backed Securities, Total Amount Outstanding (in billions of U.S. dollars)

Year	Automobile	Credit card	Home equity	Student loan	CBO/CDO	Other
1995	59.5	153.1	33.1	3.7	1.2	65.7
1996	71.4	180.7	51.6	10.1	1.4	89.2
1997	77.0	214.5	90.2	18.3	19.0	116.8
1998	86.9	236.7	124.2	25.0	47.6	211.1
1999	114.1	257.9	141.9	36.4	84.6	265.9
2000	133.1	306.3	151.5	41.1	124.5	315.3
2001	187.9	361.9	185.1	60.2	167.1	319.0
2002	221.7	397.9	286.5	74.4	234.5	328.2
2003	234.5	401.9	346.0	99.2	250.9	361.2
2004	232.1	390.7	454.0	115.2	264.9	370.9
2005	219.7	356.7	551.1	153.2	289.5	385.0
2006	202.4	339.9	581.2	183.6	296.9	526.4
2007	198.5	347.8	585.6	243.9	..	1,096.6
2008	137.7	314.1	395.5	239.5	..	1,585.0
2009 Q2	132.0	307.5	354.7	241.5	..	1,497.9

Source: *Global Financial Stability Report*, IMF (October 2009).

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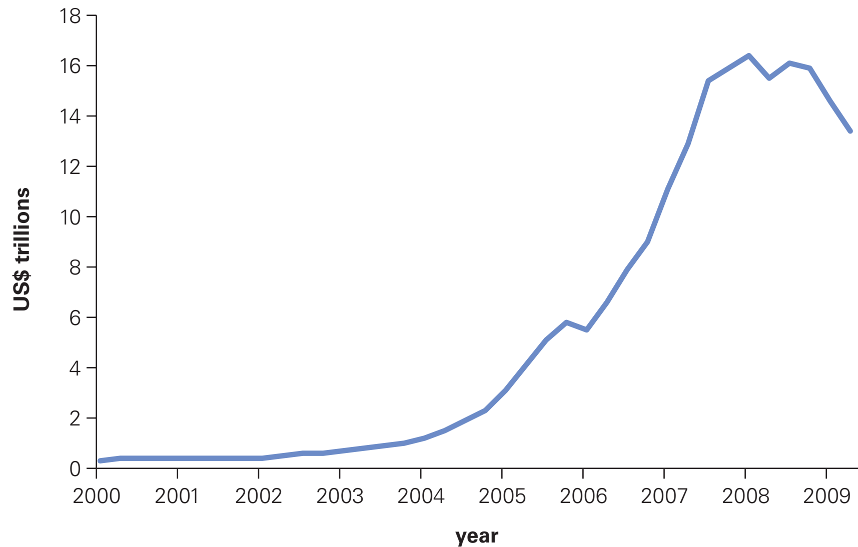
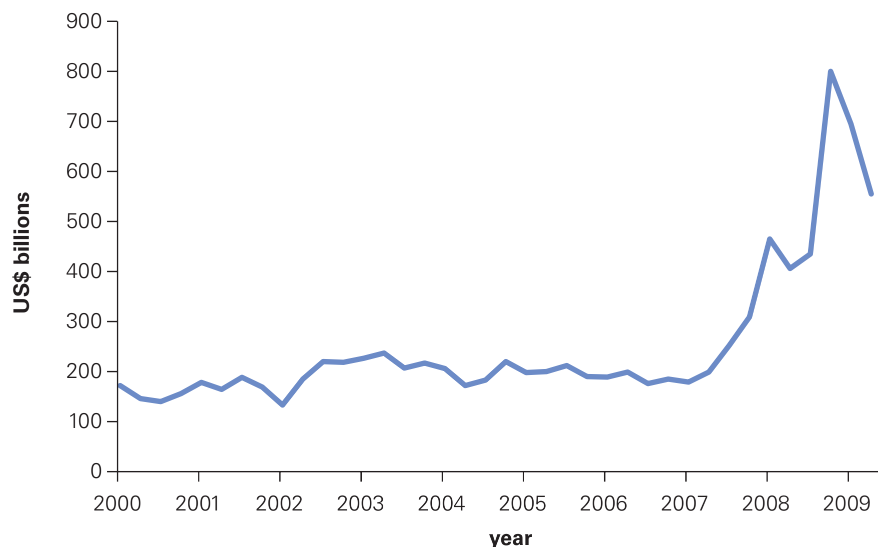
The growth of financial derivatives was also striking. Derivative holdings rose from $0.3 trillion in Q1 2000 to $16.1 trillion in Q3 2008 (Figure 2.8), according to the Office of the Comptroller of the Currency's quarterly reports. From 2007, there was a dramatic rise in the risk of counterparty defaults by banks on these derivatives, as measured by Net Current Credit Exposure (Figure 2.9).

Figure 2.8 Increase in Derivatives



Source: United States, Office of the Comptroller of the Currency, Quarterly Reports on Bank Derivatives Activities.

Figure 2.9 Huge Rise in Netted Current Credit Exposure (Counterparty Risk) for Stock of Derivatives with Commercial Banks



Source: United States, Office of the Comptroller of the Currency, Quarterly Reports on Bank Derivatives Activities.

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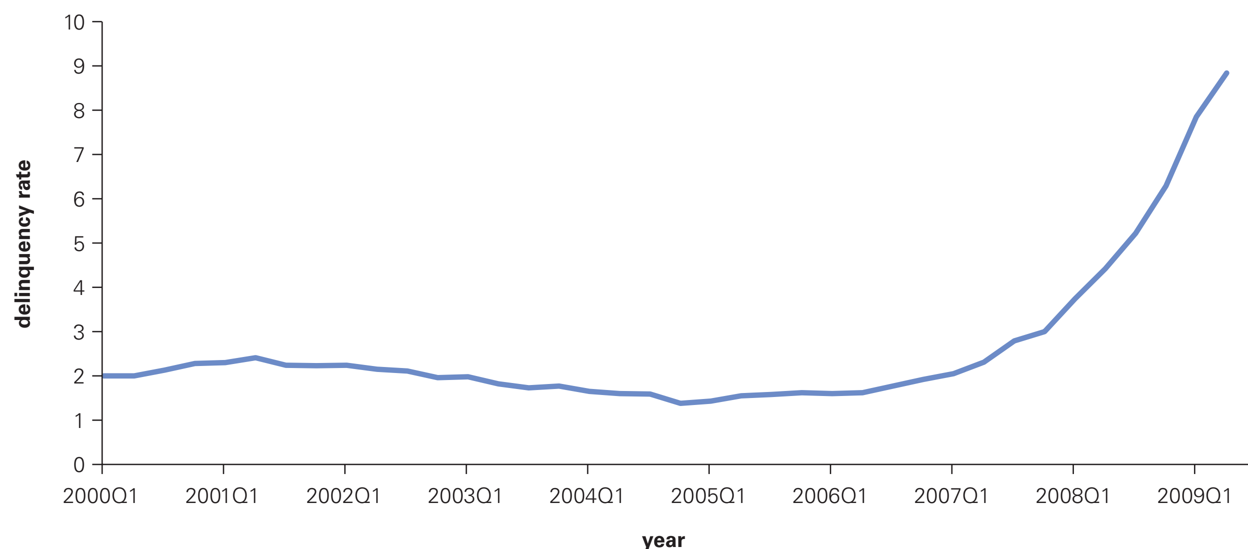
As credit expanded at high rates, quality deteriorated. U.S. mortgage delinquency rates for single families started to rise in 2006 (Figure 2.10). As Table 2.11 shows, the deterioration in credit quality was at first confined to mortgages and to the United States. Elsewhere, poor performing loans remained at modest levels. But as a liquidity crisis morphed into an economic crisis, balance sheets were destroyed. The IMF estimated in its *Global Financial Stability Report* of April 2009 that U.S. and European banks will see their charge-offs and writedowns exceed their (pre-provision) earnings until 2010. The total writedowns by the U.S. and European banking industry for the year 2008 were $845 billion and the total estimated writedowns for the time period 2008–10 are $2,600 billion—a staggering $2.6 trillion over 3 years. Figures 2.12 to 2.14 illustrate this.

Figure 2.10 United States: Delinquency Rates on One-Family Residential Mortgages



Source: U.S. Federal Reserve.

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Table 2.11. Bank Nonperforming Loans to Total Loans (in percent)

Country	2003	2004	2005	2006	2007	2008	2009	Latest
Western Europe								
Austria	3.0	2.7	2.6	2.1	2.2	2.0	2.2	March
Belgium	2.6	2.3	2.0	1.7	1.1	1.7	2.1	June
Denmark	0.8	0.7	0.4	0.3	0.3	…	…	December
Finland	0.5	0.4	0.3	0.3	0.3	0.4	…	June
France	4.8	4.2	3.5	3.0	2.7	2.8	…	December
Germany	5.2	4.9	4.0	3.4	2.7	…	…	December
Greece	7.0	7.0	6.3	5.4	4.5	5.0	…	December
Iceland	2.1	0.9	1.1	0.8	…	…	…	December
Ireland	0.9	0.8	0.7	0.7	0.8	2.6	3.7	March
Italy	6.7	6.6	5.3	4.9	4.6	4.9	5.5	March
Luxembourg	0.5	0.3	0.2	0.2	0.2	…	…	December
Malta	…	6.5	3.9	2.8	1.8	1.6	…	December
Netherlands	2.0	1.5	1.2	0.8	…	…	…	December
Norway	1.6	1.0	0.7	0.6	0.5	0.8	1.1	June
Portugal	2.4	2.0	1.5	1.2	1.3	2.0	…	December
Spain	1.0	0.8	0.8	0.7	0.9	3.4	4.6	June
Sweden	1.9	1.1	0.8	0.8	0.6	1.0	…	December
Switzerland	1.3	0.9	0.5	0.3	0.3	0.5	…	December
United Kingdom	2.5	1.9	1.0	0.9	0.9	1.6	…	December
Asia								
Bangladesh	22.1	17.5	13.2	12.8	14.5	11.2	…	June
China	20.4	13.2	8.6	7.1	6.2	2.4	1.8	June
Hong Kong, China	3.9	2.3	1.4	1.1	0.8	0.9	…	June
India	8.8	7.2	5.2	3.3	2.5	2.3	…	March
Indonesia	6.8	4.5	7.6	6.1	4.1	3.2	4.1	April
Korea, Rep. of	2.6	1.9	1.2	0.8	0.7	1.1	1.5	March
Malaysia	13.9	11.7	9.6	8.5	6.5	4.8	4.6	April
Philippines	16.1	14.4	10.3	7.5	5.8	4.5	4.7	March
Singapore	6.7	5.0	3.8	2.8	1.5	1.4	…	September
Thailand	13.5	11.9	9.1	8.4	7.9	5.7	…	December
Other								
Australia	0.3	0.2	0.2	0.2	0.2	0.5	1	March
Canada	1.2	0.7	0.5	0.4	0.7	1.1	0.9	March
Japan	5.2	2.9	1.8	1.5	1.4	1.7	…	March
United States	1.1	0.8	0.7	0.8	1.4	3.0	3.8	March

Source: *Global Financial Stability Report,* IMF (October 2009).

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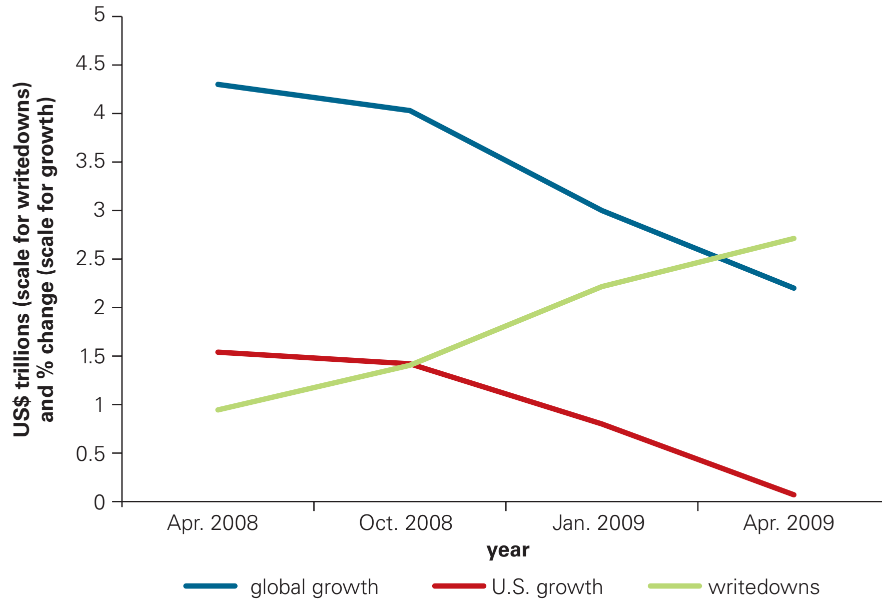
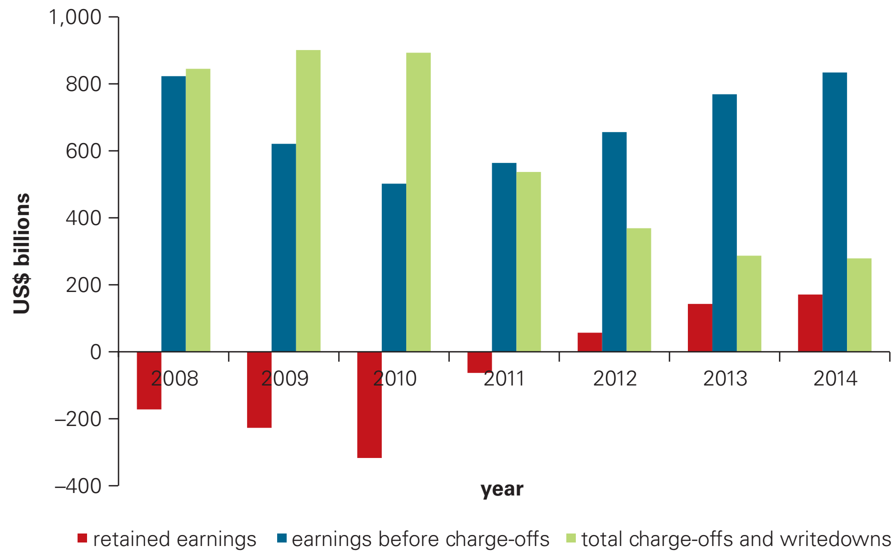
Figure 2.12 Estimates of Economic Growth and Financial-Sector Writedowns



Source: Global Financial Stability Report, IMF (April 2009).

Figure 2.13 U.S. and European Bank Earnings and Writedowns



Source: Global Financial Stability Report, IMF (April 2009).

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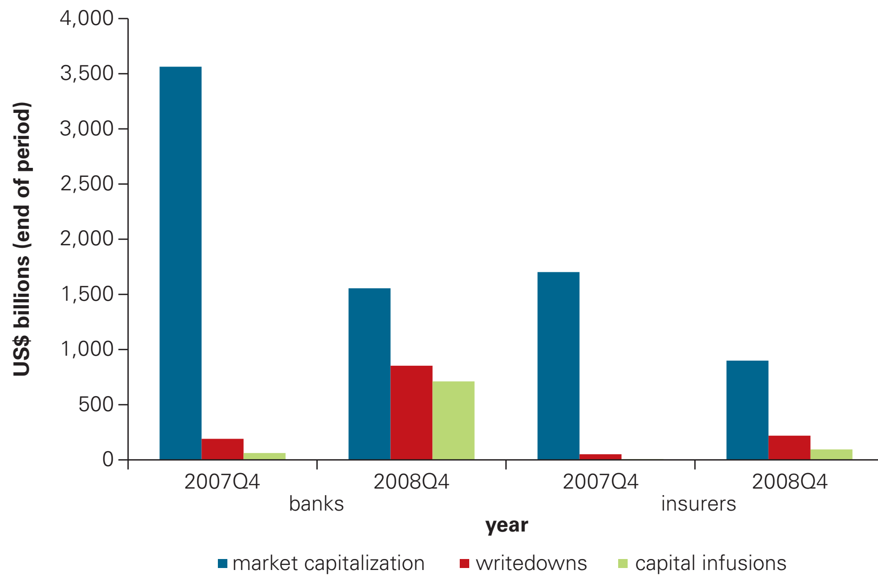
Figure 2.14 Market Capitalization, Writedowns, and Capital Infusions in U.S. and European Banking and Insurance



Source: Global Financial Stability Report, IMF (April 2009).

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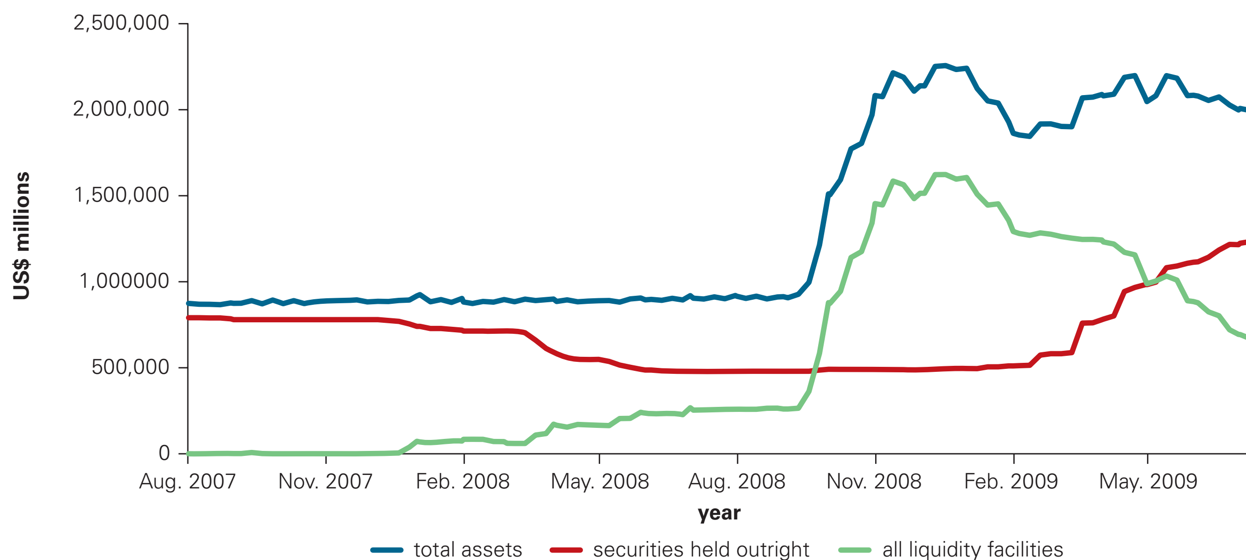
3. THE EMERGENCY ROOM

Perhaps the most remarkable feature of the government responses to the 2008 crisis has been pragmatism. Policy makers made extraordinary efforts to avoid the costly experience of the 1930s by preventing the collapse of the banking system and the money supply. The lessons of history, it seems, had been heeded. Led by the U.S. Federal Reserve (the Fed), there was an extraordinary injection of liquidity by central banks around the world. Central-bank balance sheets grew rapidly as a result. The U.S. Fed's assets of $900 billion in August 2007 became $1 trillion in August 2008 and exceeded $3 trillion one year later. Fiscal responses were more modest. The figures in this section describe this evolution.

Figure 3.1 Selected Assets of U.S. Federal Reserve



Source: U.S. Federal Reserve.

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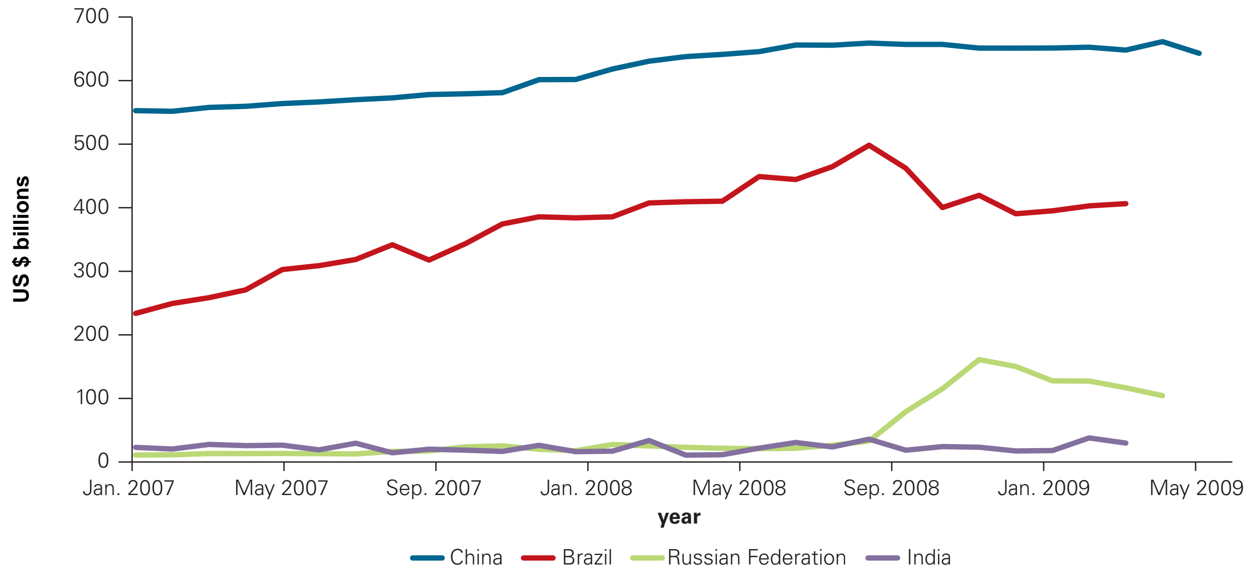
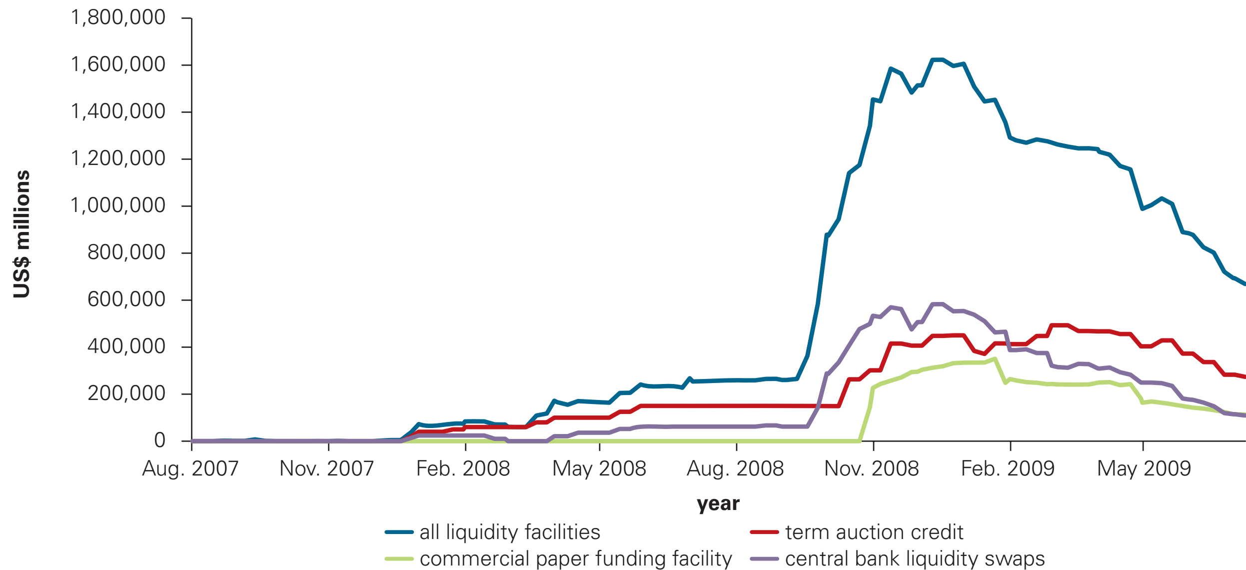
Figure 3.2 BRIC Central Banks: Total Assets



Source: People's Bank of China, IMF, Central Bank of Russia, and Central Bank of Brazil.

Figure 3.3 U.S. Federal Reserve: Liquidity Facilities



Source: U.S. Federal Reserve.

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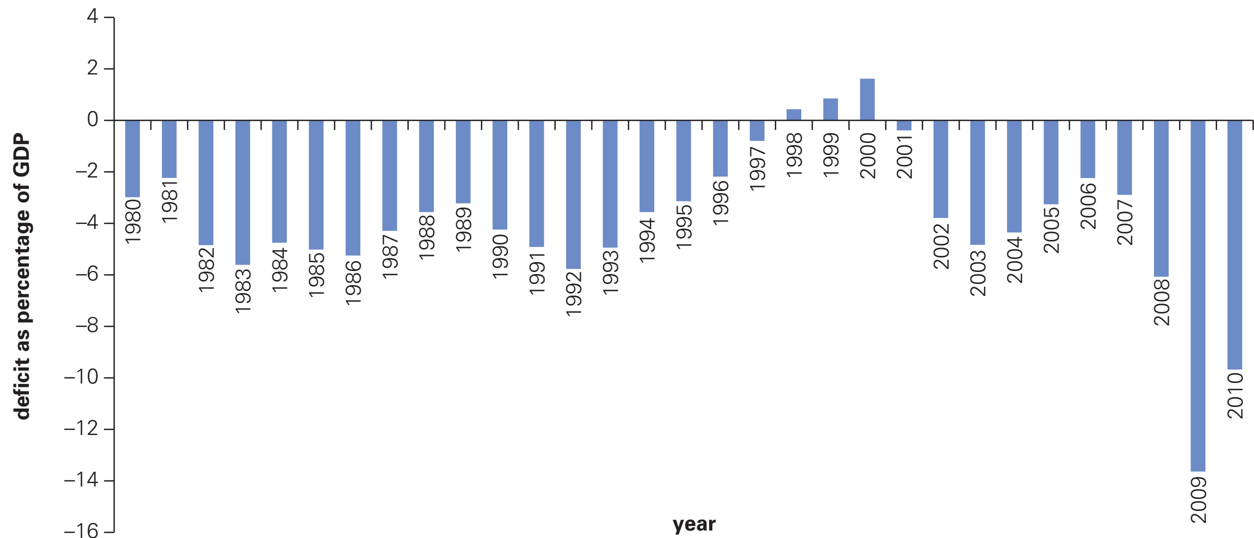
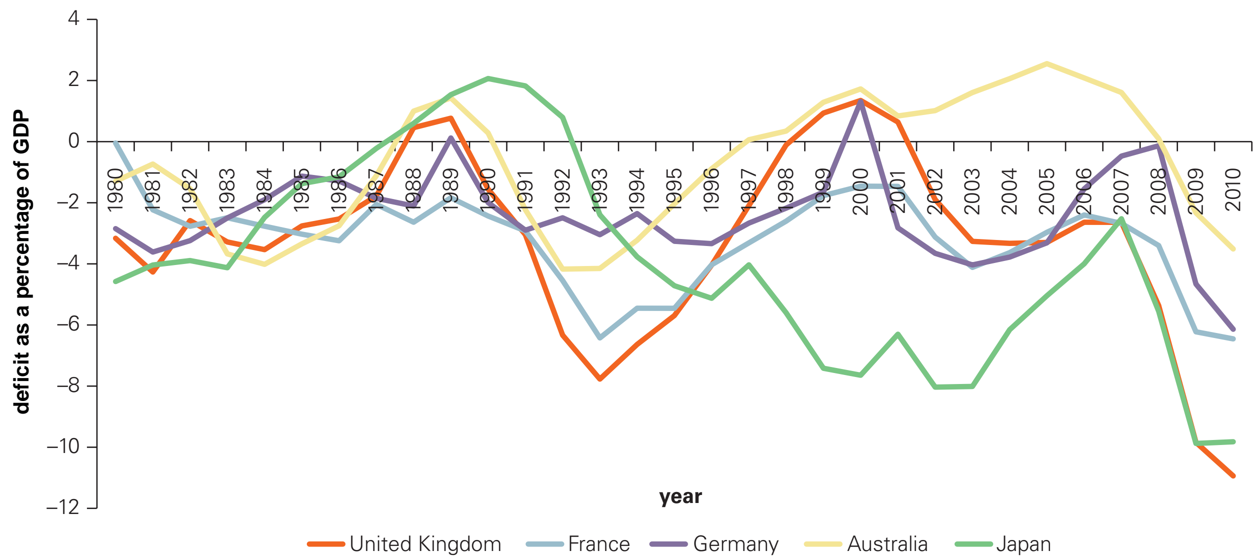
Figure 3.4 U.S. General Government Balance



Source: World Economic Outlook 2009, IMF.

Figure 3.5 Select OECD Economies General Government Balance



Source: World Economic Outlook 2009, IMF.

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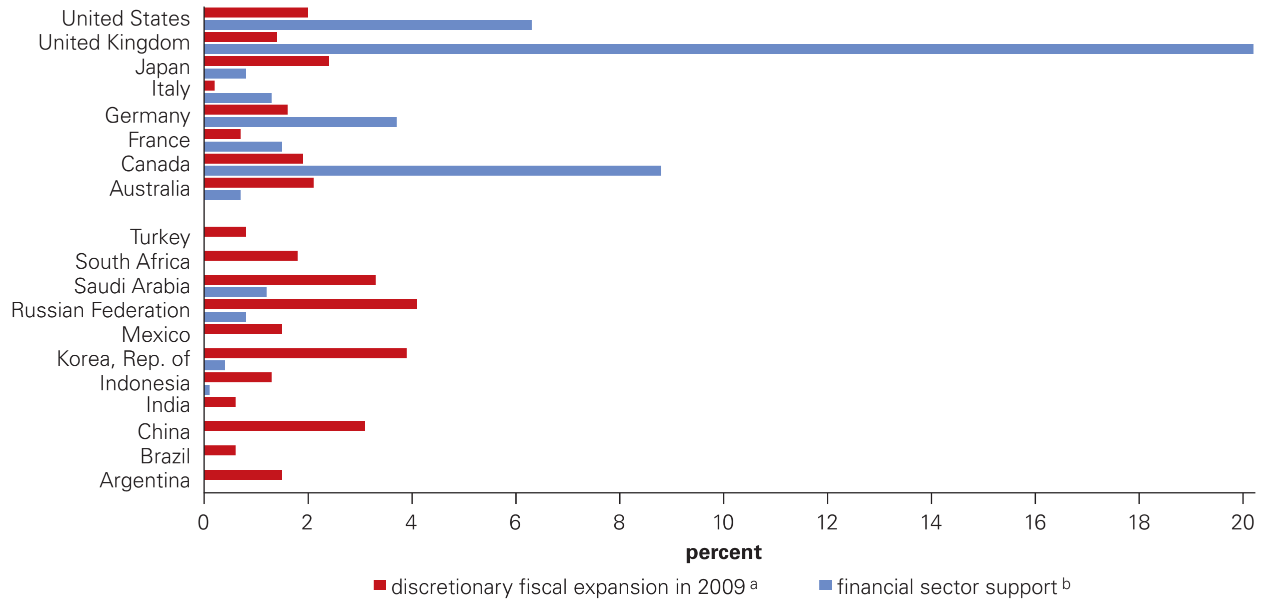
Figure 3.6 Fiscal Stimulus and Financial Sector Support



Source: World Bank and IMF staff.

a. Percent of 2009 GDP. Excludes below-the-line operations that involve acquisition of assets.

b. As of April 15, 2009, in percent of 2008 GDP. Consists of capital injection, purchase of assets and lending by Treasury, and central bank support provided with Treasury backing.

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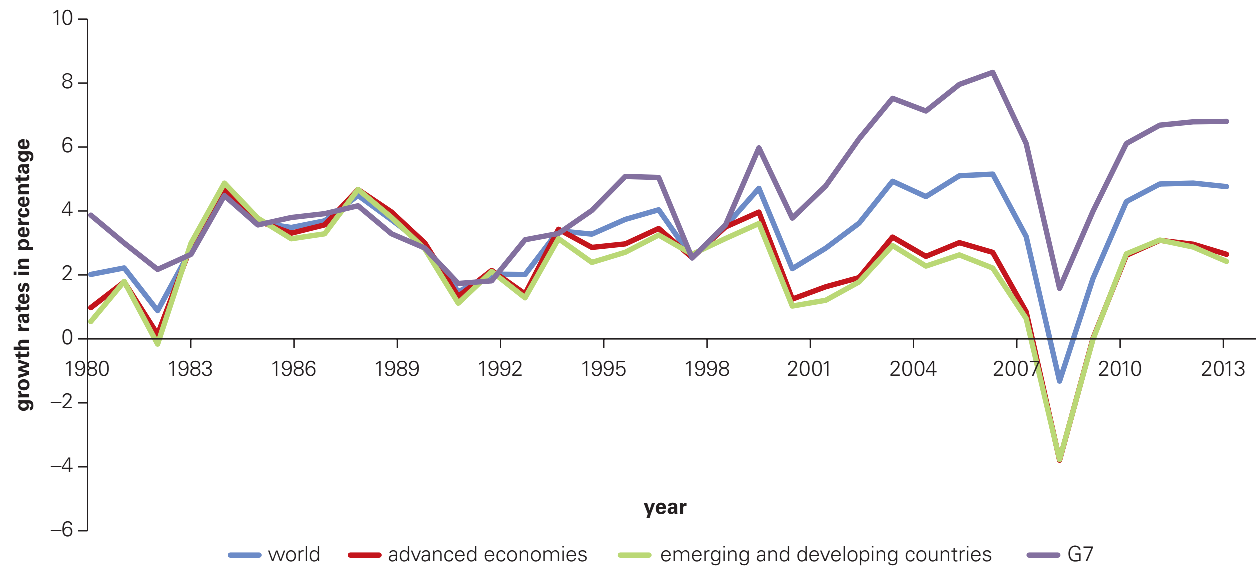
4. THE REAL ECONOMY IMPACT

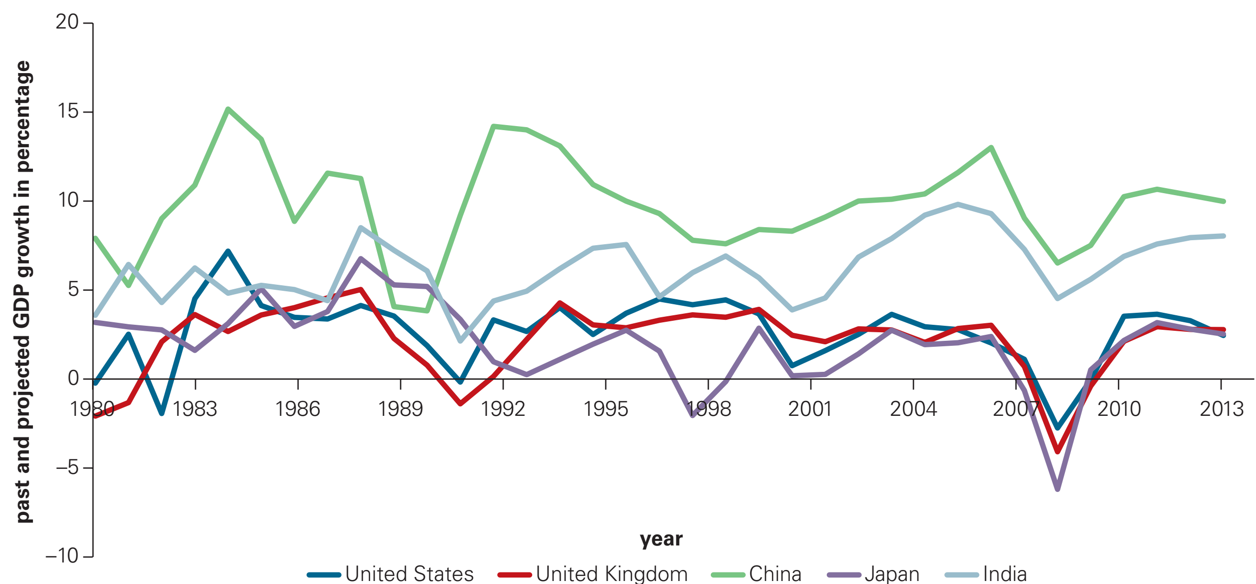
The financial crisis in the United States, the United Kingdom, and the rest of the industrialized world quickly spilled over to the real economy. Having grown by 5 percent in 2006 and 2007, the world economy is now expected to contract by 1.3 percent in 2009—the most severe contraction since WWII. The G7 economies are expected to shrink by 4 percent whereas growth in emerging economies will fall from 8 percent in 2007 to 4 percent in 2009.

Figure 4.1 World Growth Prospects



Source: World Economic Outlook 2009, IMF.

Figure 4.2 Growth in Select Major Economies



Source: World Economic Outlook 2009, IMF.

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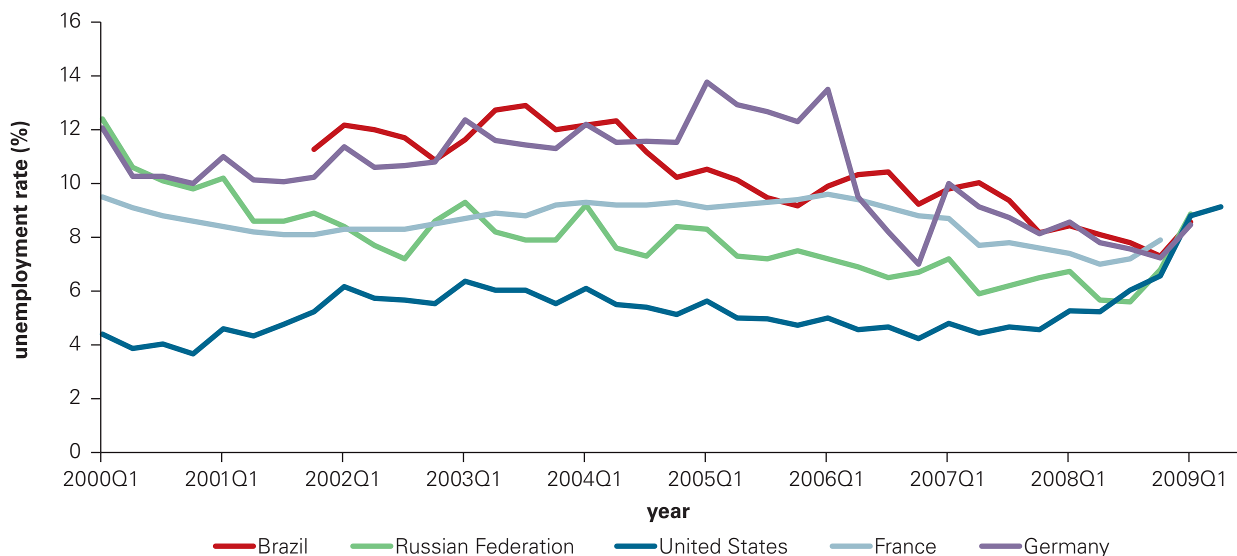
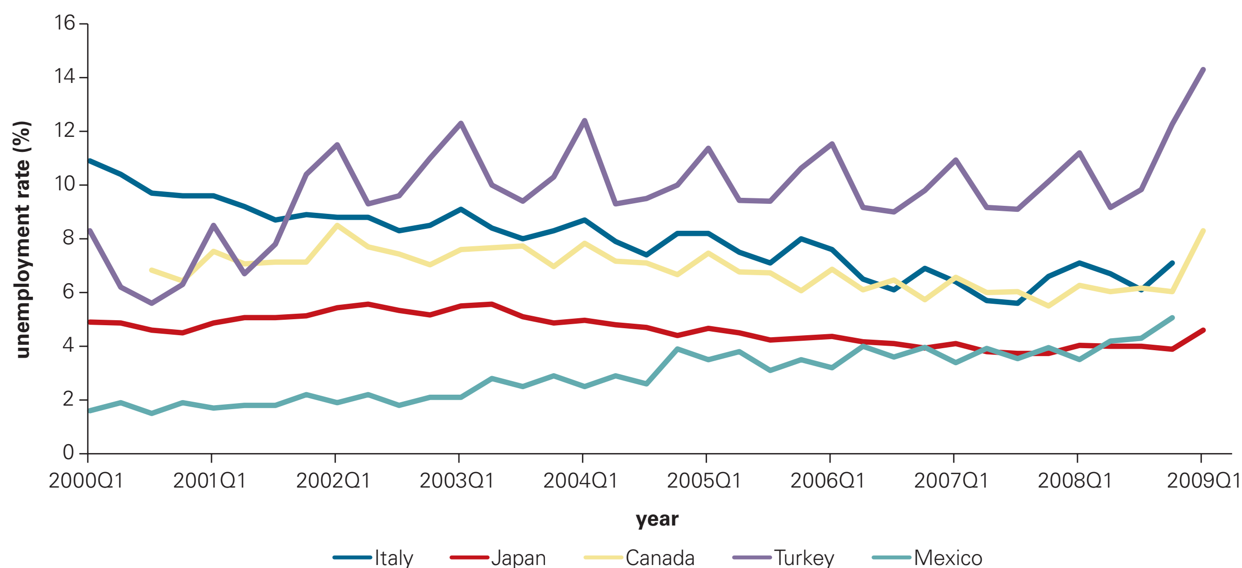
Unemployment rates have followed different paths in the countries of the G20. Germany, France, and Brazil, for example, saw a relatively modest rise in unemployment after persistent declines since the mid 2000s. In the United States, on the other hand, almost a decade of relatively low unemployment rates of 4–6 percent has given way to a sudden and steep rise in joblessness from late 2008 onwards. Similarly, Japan, Canada, and Italy have seen a rise in their unemployment rates after a period of relatively stable or declining rates for the past four years. Turkey has had a particularly steep rise in its unemployment rate. In Mexico, the rise in unemployment is large when compared with historical trends although the rise has been much more gradual than in the United States.

Figure 4.3 Unemployment Rates: Select G20 Countries



Source: International Finance Statistics, IMF.

Figure 4.4 Unemployment Rates: Select G20 Countries



Source: International Finance Statistics, IMF.

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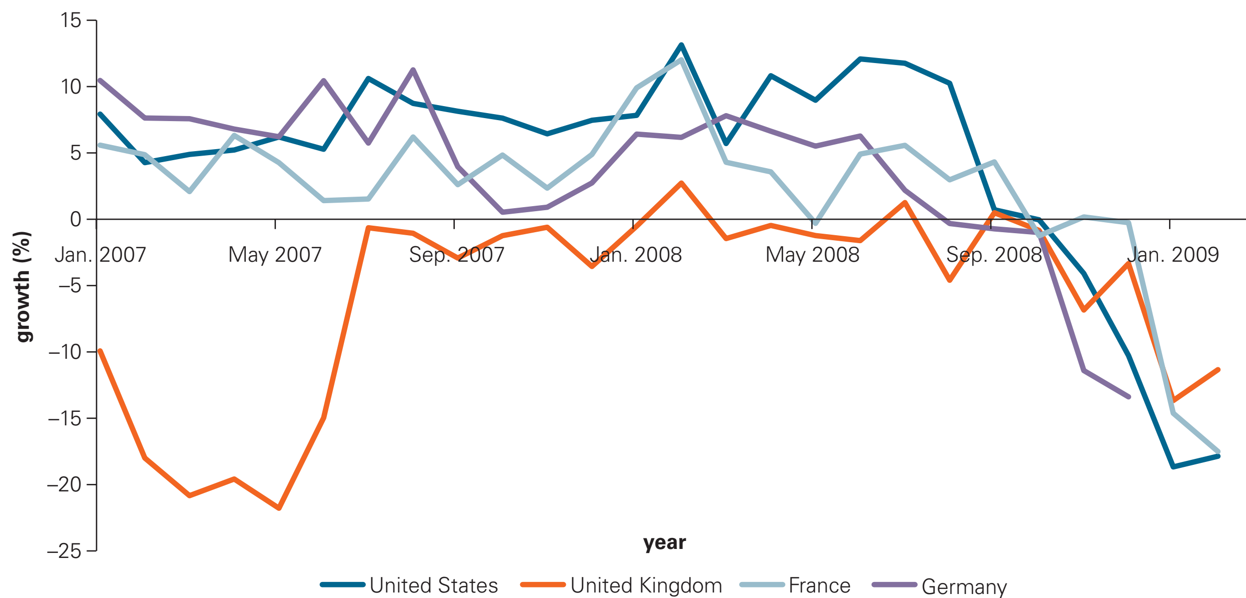
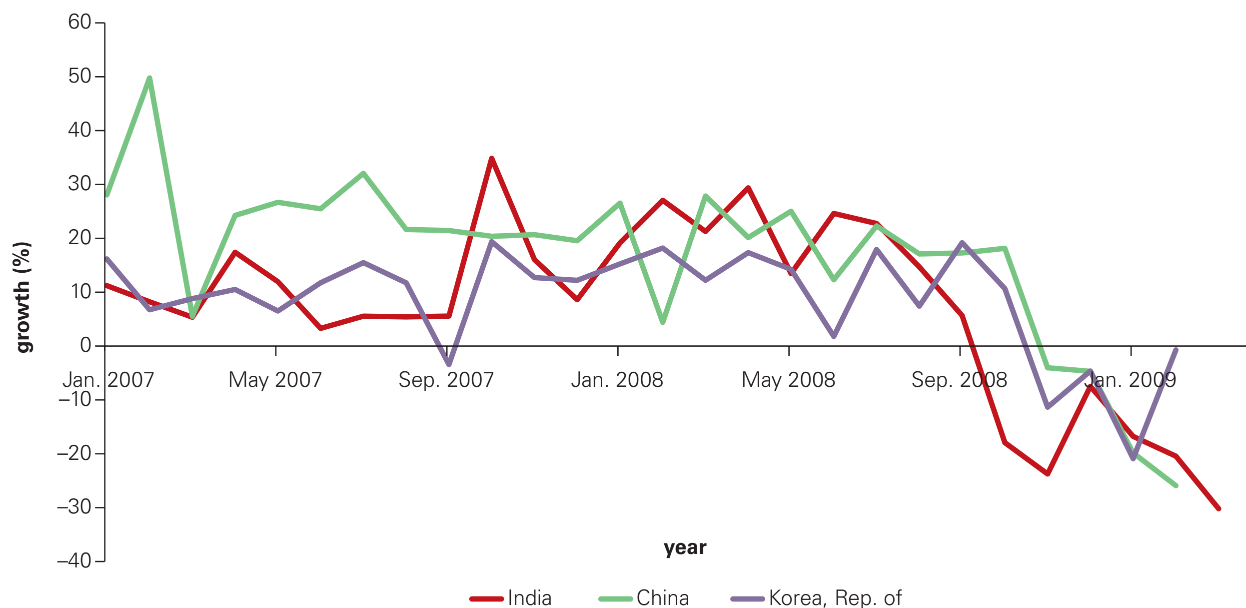
All countries suffered falls in exports after September 2008. Exports from the United Kingdom and United States displayed a partial recovery in early 2009, although they are the exception among the G20. The exporters hardest hit are in the fast-growing emerging markets of Asia like India, China,a and Korea. With corresponding declines in imports, the volume of global trade will probably decline by more than 10 percent in 2009, after a decade of rapid growth.

Figure 4.5 Real Exports



Source: Global Economic Monitor, World Bank.

Figure 4.6 Real Exports



Source: Global Economic Monitor, World Bank.

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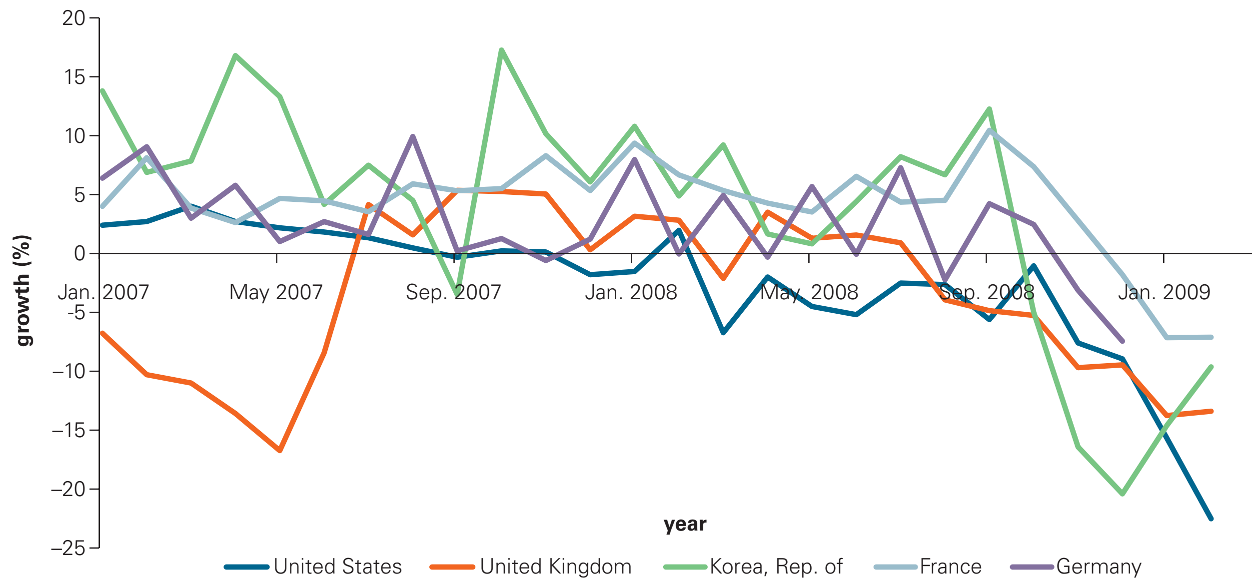
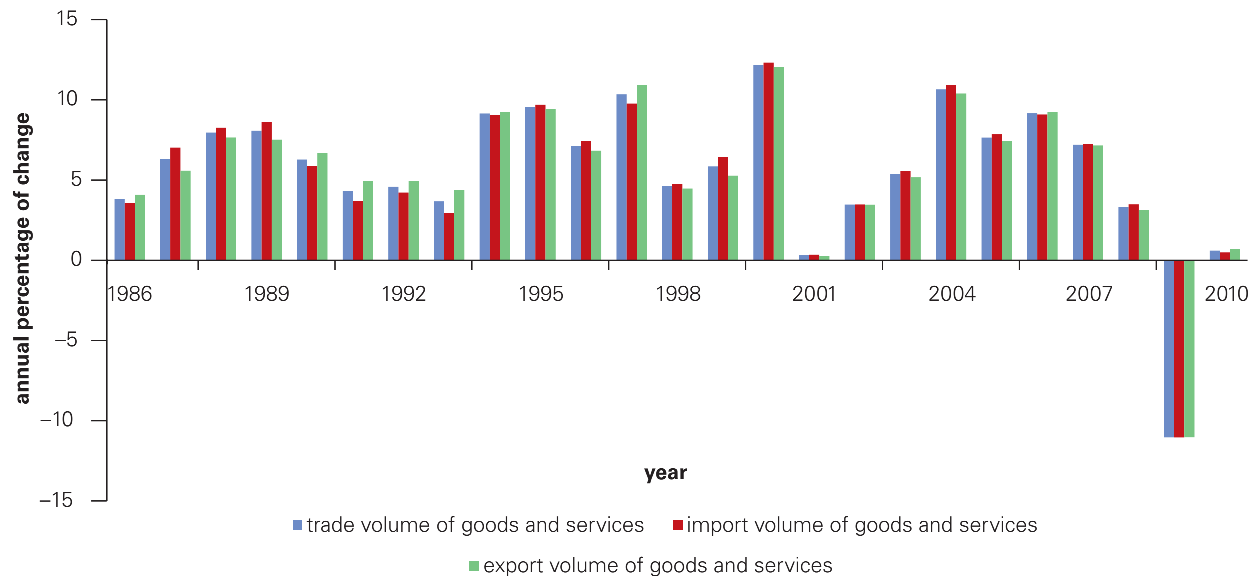
Figure 4.7 Real Imports



Source: Global Economic Monitor, World Bank.

Figure 4.8 World Trade Volume



Source: Global Economic Monitor, World Bank.

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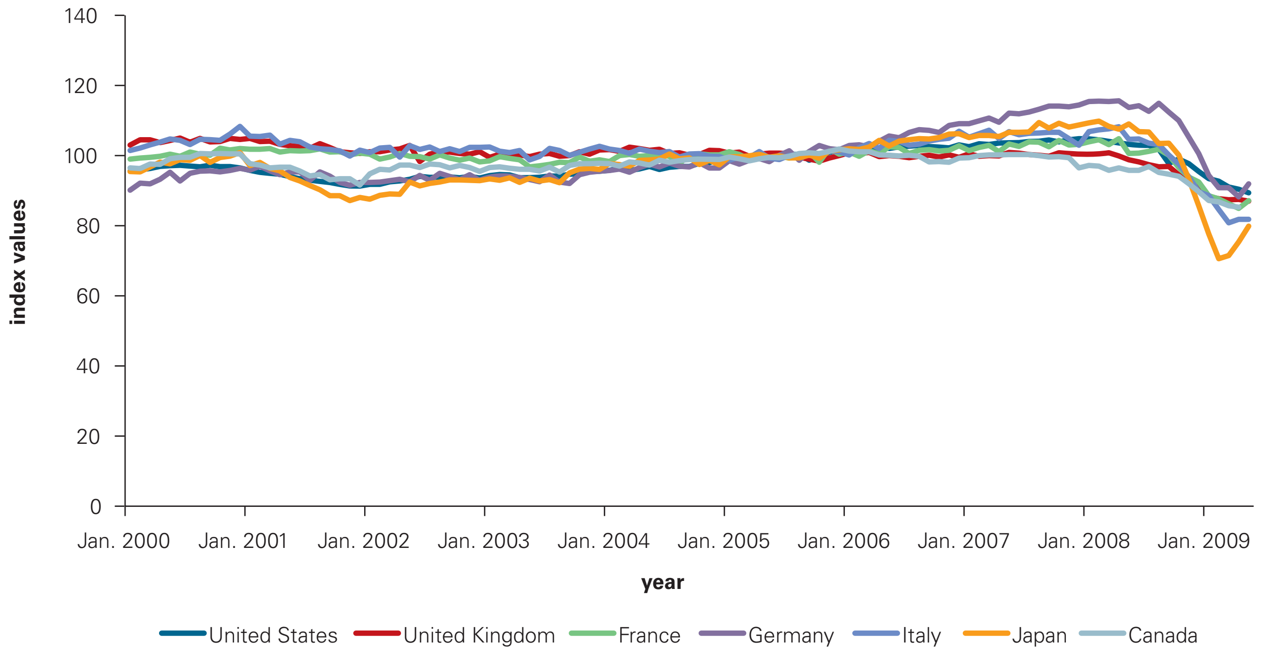
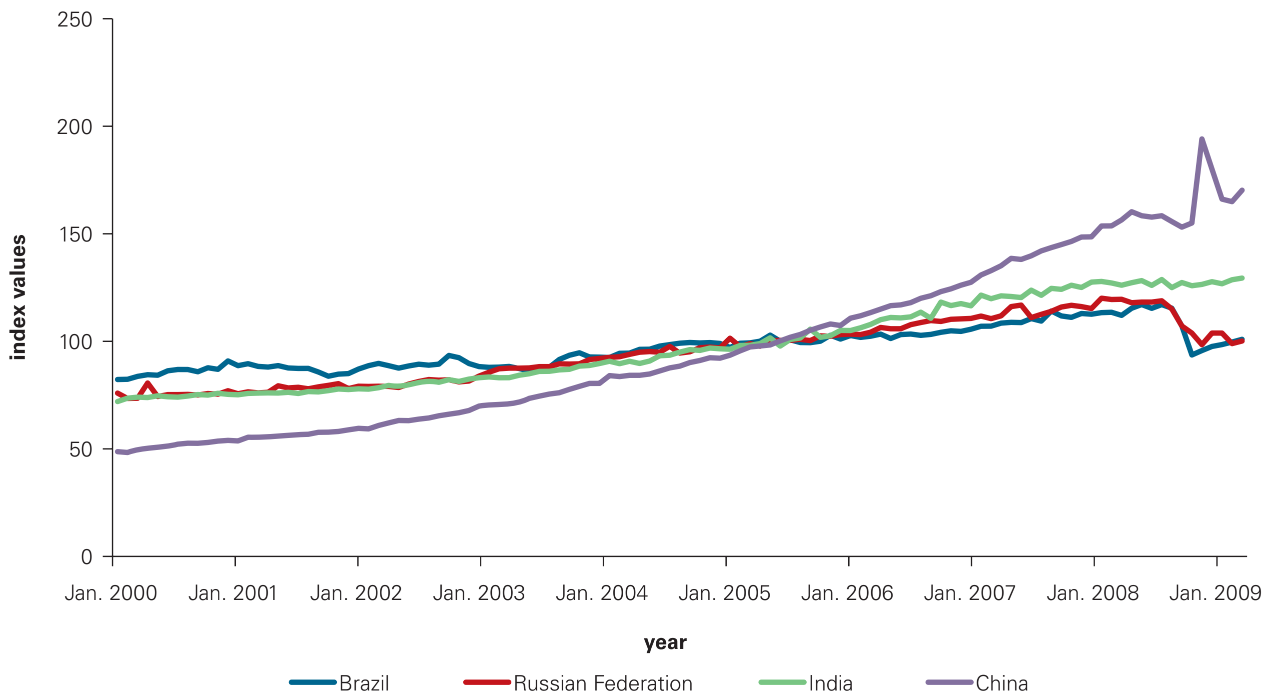
Figure 4.9 Index of Industrial Production: G7 Nations



Source: Global Economic Monitor, World Bank.

Figure 4.10 Index of Industrial Production: BRICs



Source: Global Economic Monitor, World Bank.

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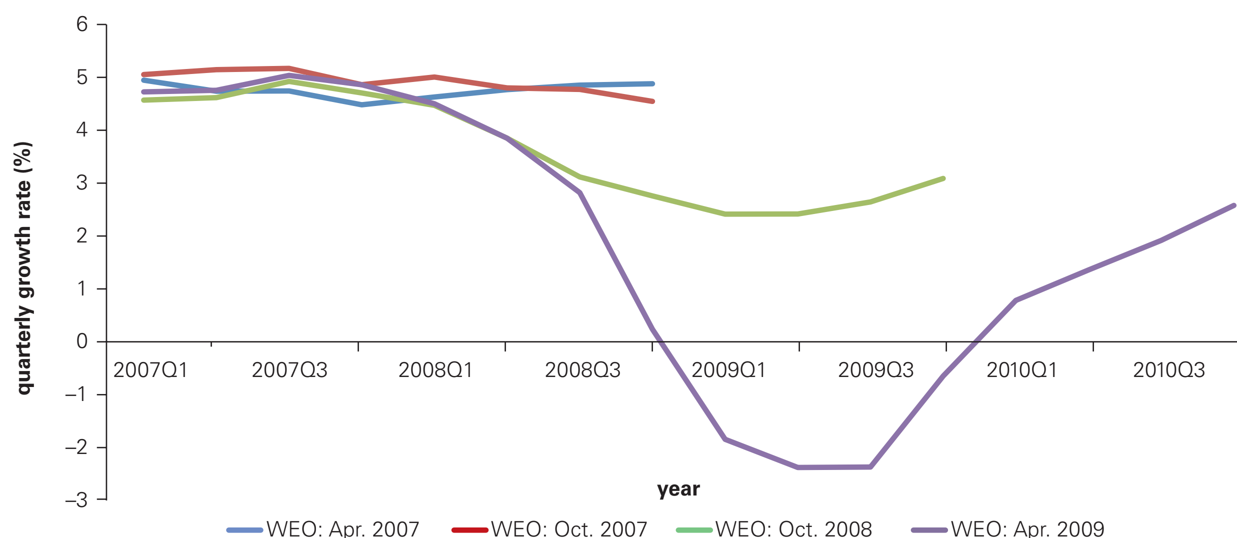
It took some time for the world to become aware of the severity of the crisis that was to unfold. Already in the spring of 2007 there was widespread realization of the subprime problem. But there was no awareness of the nature and extent of major financial institutions' exposure to instruments built on subprime mortgages. As a result, mainstream forecasts did not anticipate the broader economic consequences. Forecasts lagged behind events as shown in the figures below.

Table 4.11a World Economic Growth Estimates

Quarters	Apr. 2007	Oct. 2007	Oct. 2008	Apr. 2009
2007Q1	4.95	5.05	4.57	4.73
2007Q2	4.74	5.15	4.62	4.76
2007Q3	4.74	5.17	4.92	5.04
2007Q4	4.48	4.86	4.71	4.86
2008Q1	4.63	5.01	4.47	4.50
2008Q2	4.77	4.80	3.85	3.85
2008Q3	4.85	4.77	3.12	2.82
2008Q4	4.88	4.55	2.76	0.24
2009Q1			2.41	–1.84
2009Q2			2.42	–2.38
2009Q3			2.64	–2.37
2009Q4			3.09	–0.65
2010Q1				0.78
2010Q2				1.36
2010Q3				1.92
2010Q4				2.58

Source: World Economic Outlook Reports, IMF.

Figure 4.11b World Economic Growth: Declining Estimates



Source: World Economic Outlook Reports, IMF.

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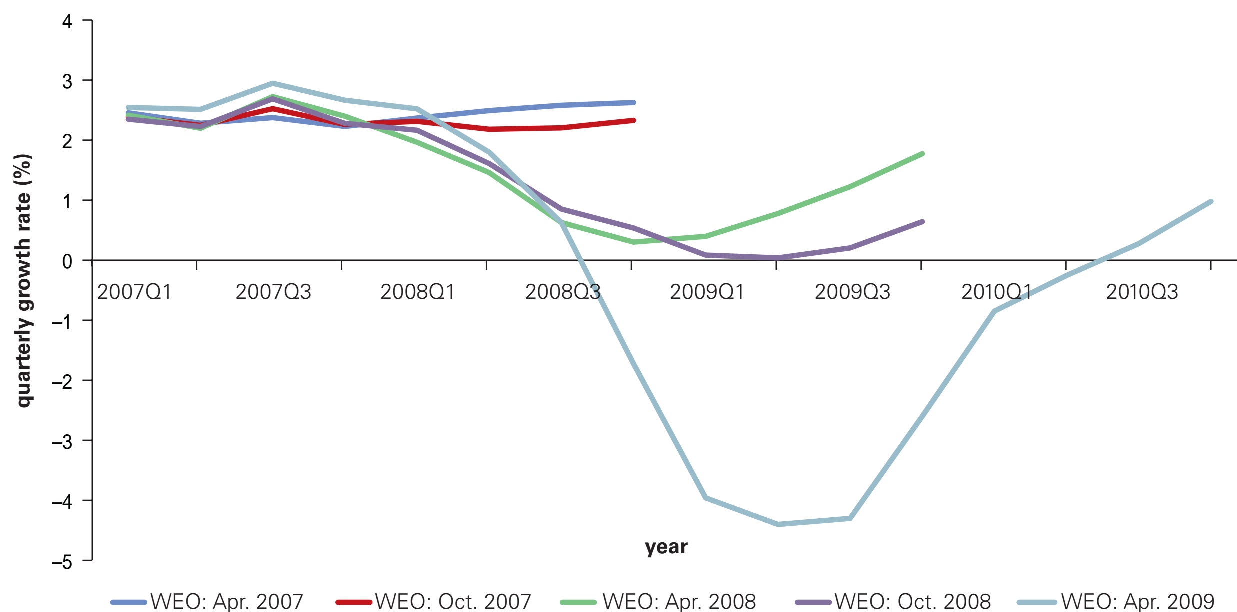
Table 4.12a Industrialized Countries Growth Estimates

Quarters	Apr. 2007	Oct. 2007	Apr. 2008	Oct. 2008	Apr. 2009
2007Q1	2.45	2.39	2.41	2.35	2.54
2007Q2	2.28	2.25	2.20	2.23	2.51
2007Q3	2.37	2.52	2.72	2.69	2.95
2007Q4	2.23	2.26	2.40	2.28	2.66
2008Q1	2.37	2.31	1.96	2.16	2.52
2008Q2	2.49	2.18	1.46	1.61	1.80
2008Q3	2.58	2.20	0.63	0.85	0.63
2008Q4	2.63	2.33	0.30	0.54	–1.72
2009Q1			0.40	0.08	–3.96
2009Q2			0.78	0.04	–4.40
2009Q3			1.22	0.20	–4.30
2009Q4			1.77	0.64	–2.60
2010Q1					–0.85
2010Q2					–0.25
2010Q3					0.28
2010Q4					0.98

Source: World Economic Outlook Reports, IMF..

Figure 4.12b Industrialized Economies: Declining Growth Estimates



Source: World Economic Outlook Reports, IMF.

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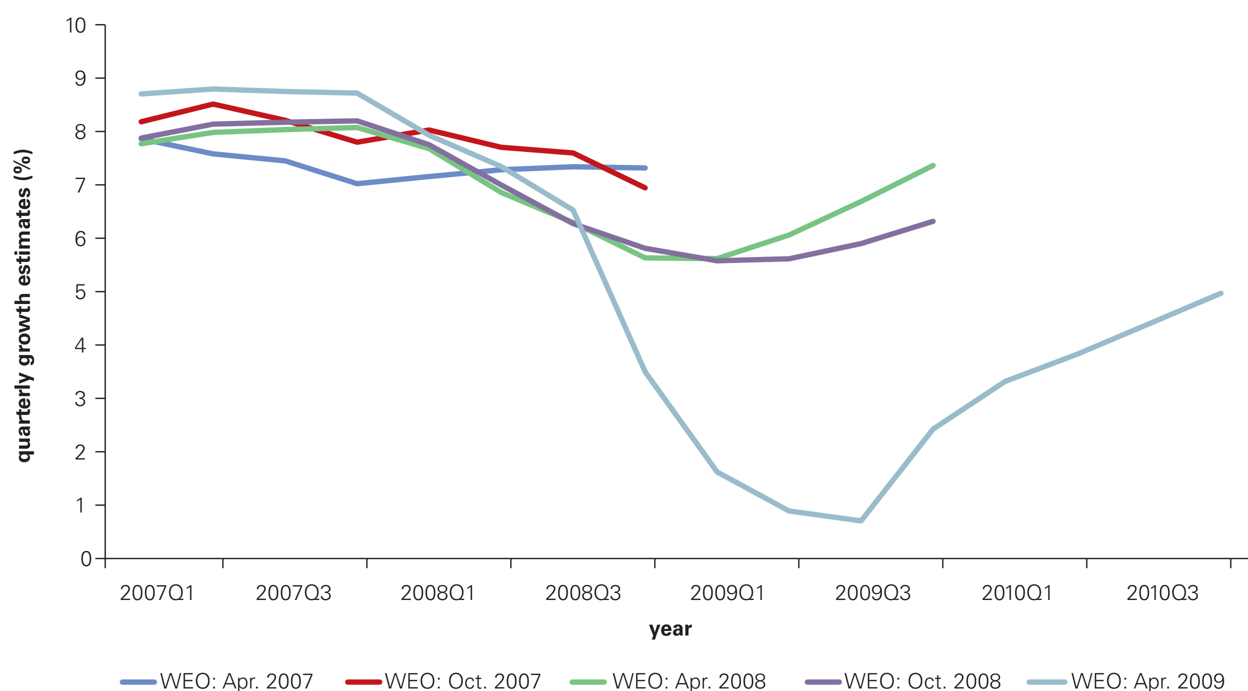
Figure 4.13a Developing Countries Economic Growth Estimates

Quarters	Apr. 2007	Oct. 2007	Apr. 2008	Oct. 2008	Apr. 2009
2007Q1	7.86	8.18	7.77	7.88	8.70
2007Q2	7.58	8.51	7.98	8.14	8.80
2007Q3	7.45	8.21	8.04	8.17	8.75
2007Q4	7.02	7.80	8.07	8.20	8.72
2008Q1	7.16	8.03	7.68	7.75	7.93
2008Q2	7.28	7.70	6.86	7.00	7.34
2008Q3	7.34	7.60	6.29	6.27	6.53
2008Q4	7.32	6.94	5.63	5.81	3.50
2009Q1			5.62	5.58	1.62
2009Q2			6.06	5.61	0.89
2009Q3			6.69	5.90	0.71
2009Q4			7.36	6.32	2.42
2010Q1					3.32
2010Q2					3.83
2010Q3					4.40
2010Q4					4.97

Source: World Economic Outlook Reports, IMF.

Figure 4.13b Emerging Economies: Declining Growth Estimates



Source: World Economic Outlook Reports, IMF.

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5. THE CRISES OF 1929 AND 2008

Many economists and policy makers have compared the crises of 1929 and 2008, hoping to stop the latter repeating the catastrophic trajectory of the former. Barry Eichengreen and Kevin O'Rourke have undertaken an interesting comparison of the two crises in "A Tale of Two Depressions".[1] They plot the evolution of key macro indicators on a month-by-month basis since the beginning of each crisis. The figures below show that the two crises follow a remarkably similar pattern, with one exception: monetary aggregates did not collapse in the 2008 crisis as they had in the 1929 one. The World Industrial Output indices for the Great Depression of the 1930s and current crisis follow similar trajectories, except that the drop in industrial production following the 2008 crisis was slightly steeper than the corresponding drop during the Great Depression.

1. B. Eichengreen and K. O'Rourke, "A Tale of Two Depressions," VoxEU 2009; online at www.VoxEU.org.

Figure 5.1 World Industrial Production, Then and Now

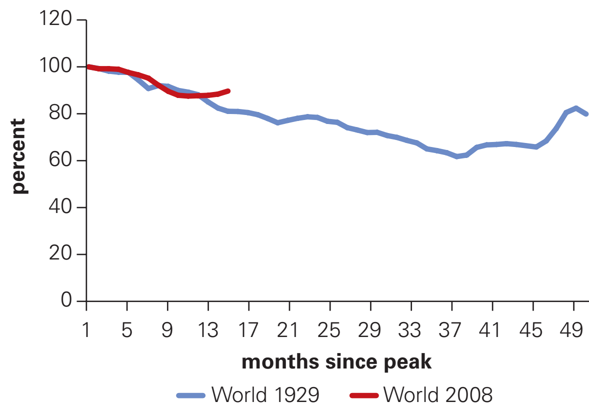
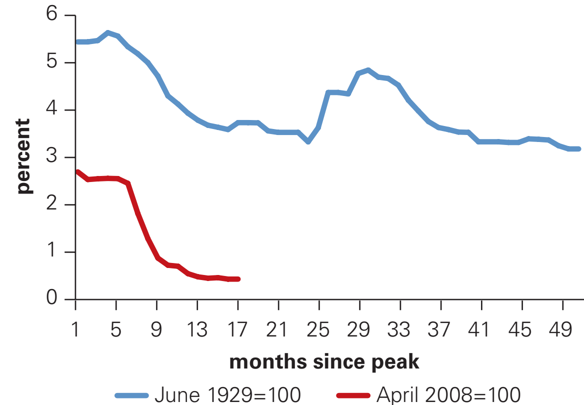
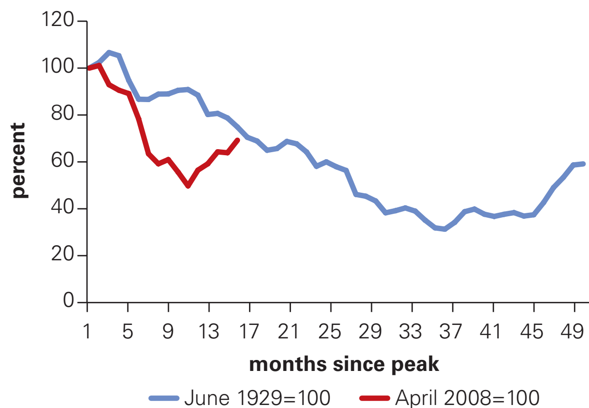


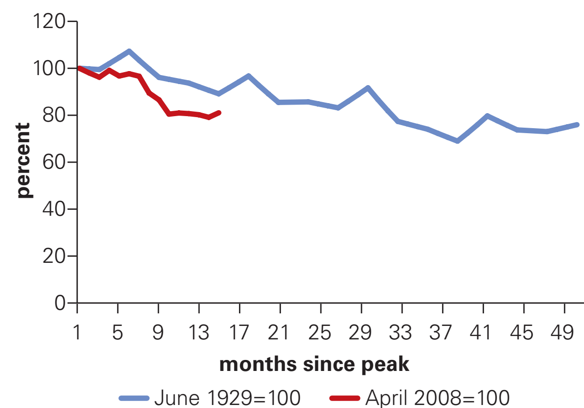
Figure 5.2 Central Bank Discount Rates, Then and Now



5.3 World Stock Markets, Then and Now



5.4 Volume of World Trade, Then and Now



Source: B. Eichengreen and K. O'Rourke, "A Tale of Two Depressions," VoxEU 2009; online at www.VoxEU.org.

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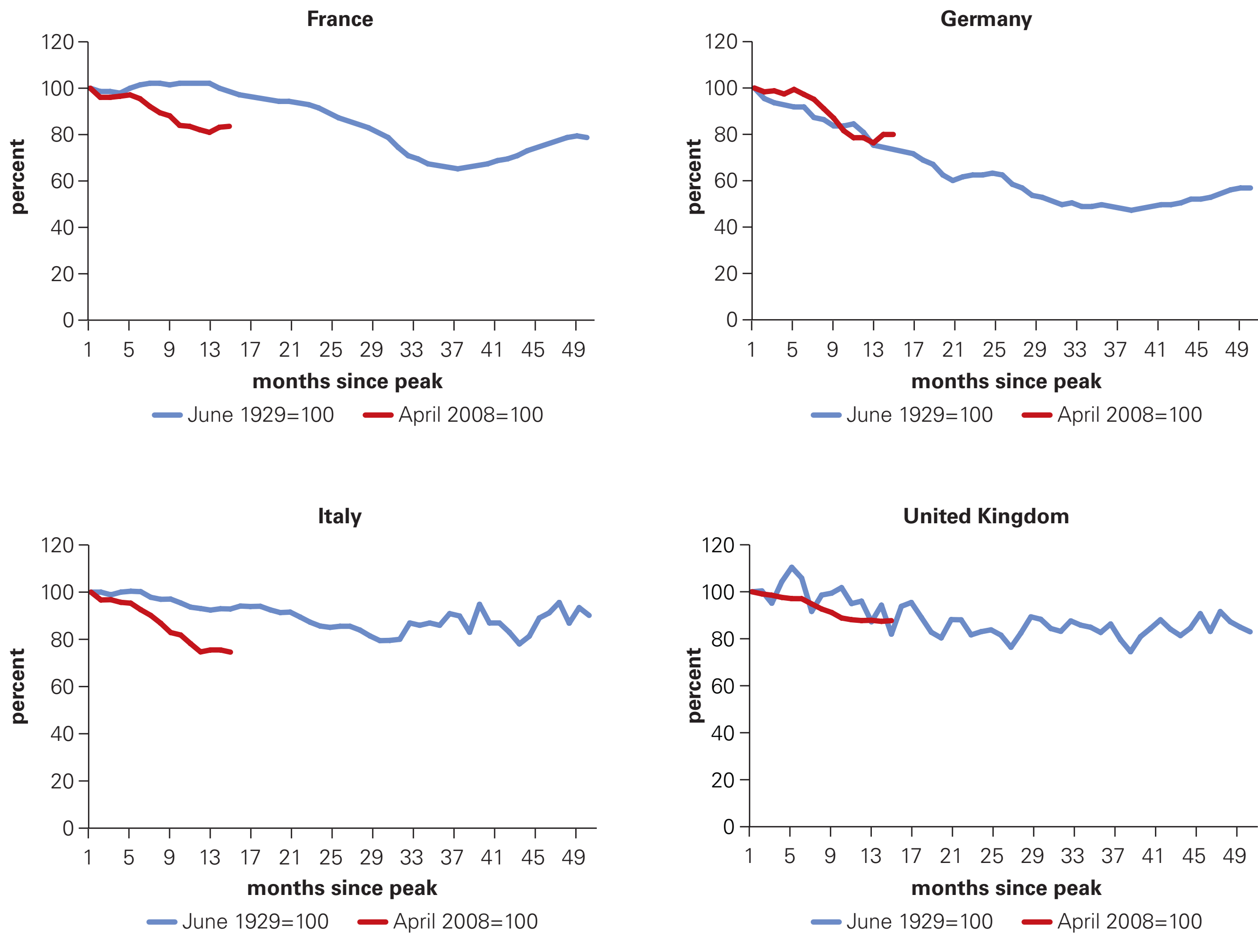
Figure 5.5 Industrial Output, Four Big Europeans, Then and Now



Source: B. Eichengreen and K. O'Rourke, "A Tale of Two Depressions," VoxEU 2009; online at www.VoxEU.org.

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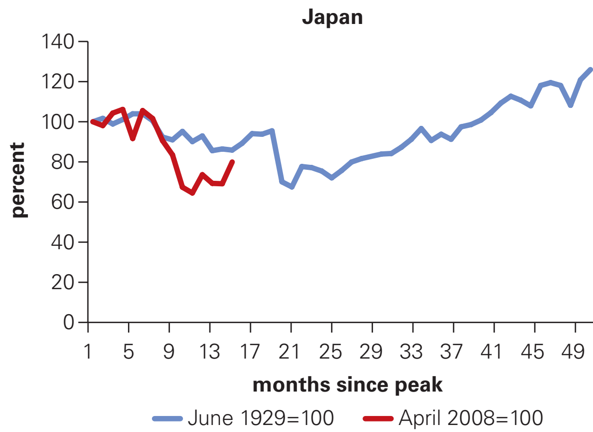
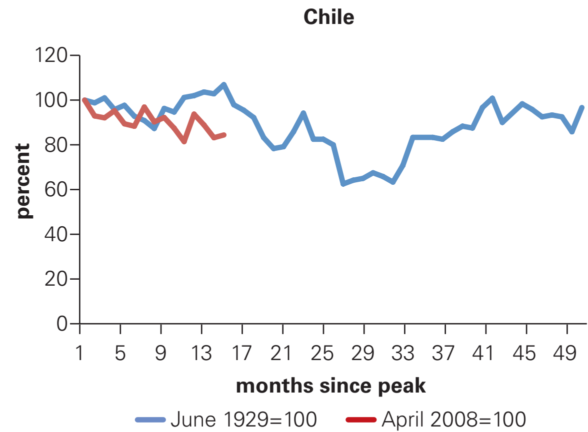
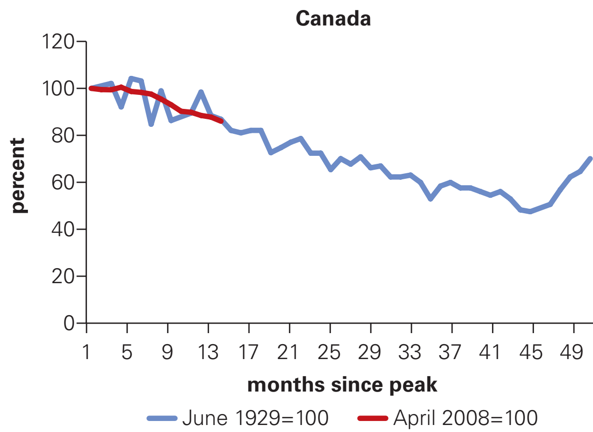
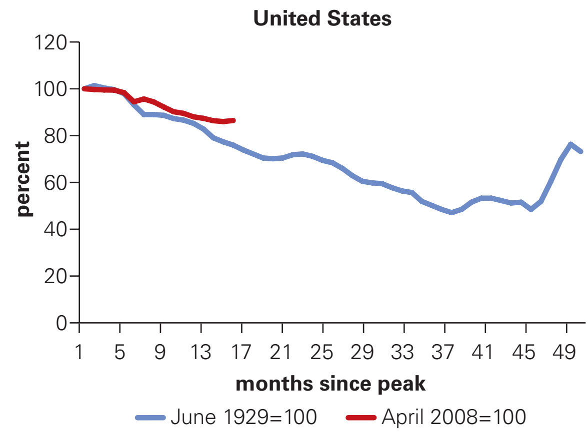
5.6 Industrial Output, Four Non-Europeans, Then and Now









Source: B. Eichengreen and K. O'Rourke, "A Tale of Two Depressions," VoxEU 2009; online at www.VoxEU.org.

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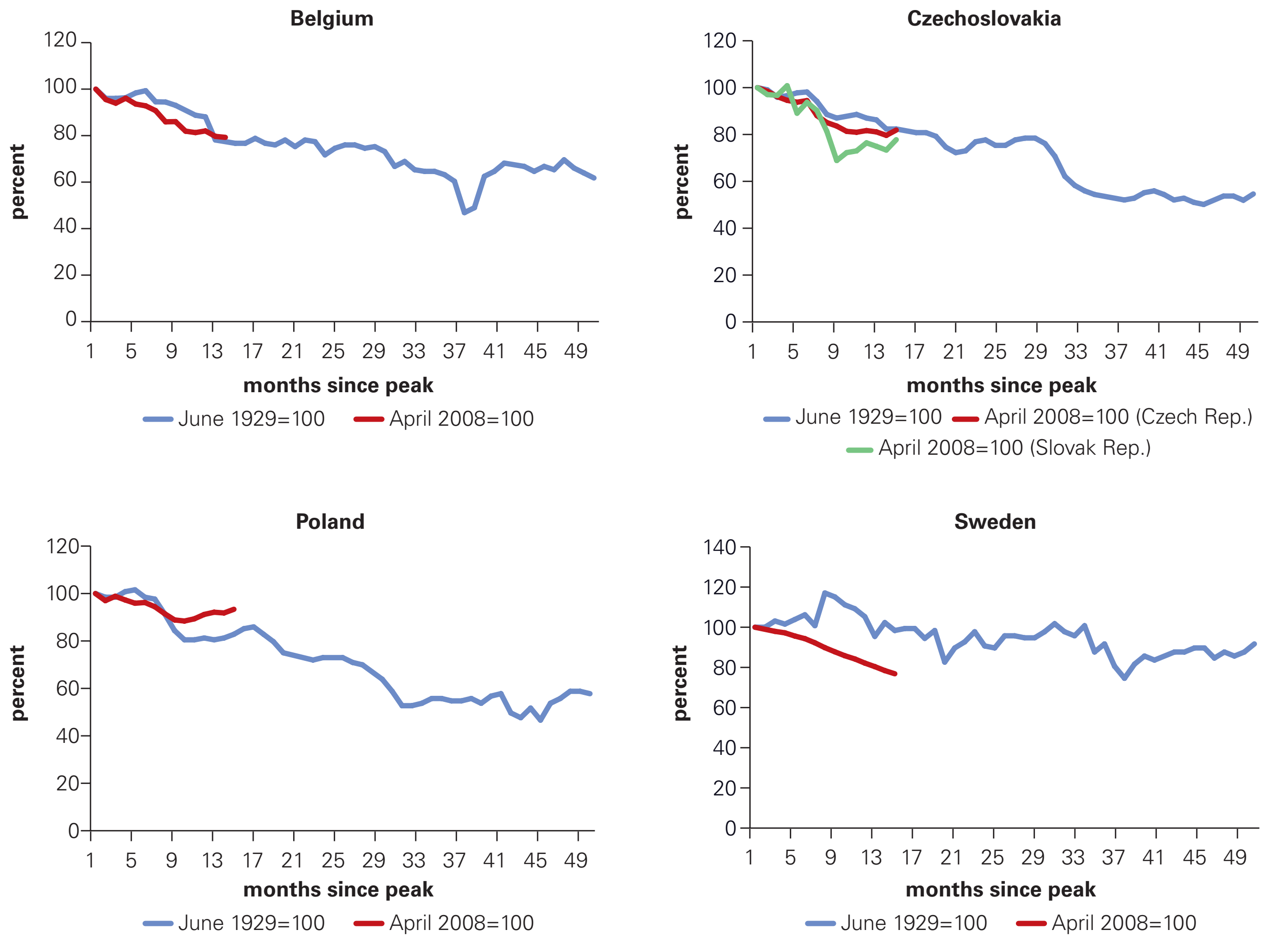
Figure 5.7 Industrial Output, Four Small Europeans, Then and Now



Source: B. Eichengreen and K. O'Rourke, "A Tale of Two Depressions," VOXEU 2009; online at www.VoxEU.org.

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