Introduction

JUSTIN YIFU LIN AND BORIS PLESKOVIC

The Annual Bank Conference on Development Economics (ABCDE) brings together leading policy makers, academics, and researchers to advance the debate on key problems on development. The 2010 ABCDE was held in Seoul, Republic of Korea (June 22–24, 2009), in the midst of the deepest and longest world recession since the Great Depression.

This year's ABCDE included sessions on the following themes: industrial policy and development; social capital, institutions, and development; financial crisis and regulation; the road to a sustainable global economic system; and innovation and competition. In light of the global financial crisis, speakers touched on fundamental questions: What caused the current crisis, and how can the world economy recover? Are the standard prescriptions of development economics adequate to the task? Should developing countries alter their basic growth strategies? What is the proper role of the state? Should developing countries reexamine their commitment to free trade? How can global imbalances be rectified (especially between China and the United States)? Within the globalized financial system, how can regulation be improved? In attempting to answer these questions, many of the speakers searched for solutions in the lessons offered by the experience of Korea and other East Asian countries, which reacted with varying degrees of success to the financial crisis of the late 1990s.

This volume includes selected papers from the conference as well as keynote addresses by Il SaKong, chairman of the Korean G-20 Summit Coordinating Committee, and two distinguished economists: Anne Krueger, Stanford University and Johns Hopkins University, and Simon Johnson, Massachusetts Institute of Technology.

Justin Yifu Lin is senior vice president and chief economist of the World Bank. Boris Pleskovic was (at the time of the conference) research manager for development economics at the World Bank.

Annual World Bank Conference on Development Economics 2010, Global
© 2011 The International Bank for Reconstruction and Development / The World Bank

In their opening remarks *Jeung-Hyun Yoon,* minister of strategy and finance of the Republic of Korea, and *Justin Yifu Lin,* senior vice president and chief economist of the World Bank, emphasize the development experience of East Asia, especially Korea's rapid growth over the past half century.

Yoon underscores that the global economy is still in the midst of crisis and that at this historic moment it is imperative to set a new direction for the world economy. Yoon recalls a crucial lesson of the Great Depression: international coordination is of the highest importance in overcoming a global financial crisis. He states that the two recent G-20 summits were a turning point in facing the challenges posed by the current crisis, and next year, when Korea assumes the chair of the G-20, his country will continue to solidify the G-20 framework.

Yoon maintains that to sustain long-term growth—within the context of rising population, climate change, protectionism, and poverty—"green growth" must become the engine of global growth. At the same time, in spite of the crisis, he emphasizes that we must not give up the grand principle of free trade and retreat into protectionism.

Yoon adds that, regardless of the urgency of rescuing the global financial system, the industrial countries must not lose sight of their obligation to reduce poverty and income inequality around the world. He believes that Korea, given its rapid rise from profound poverty to advanced development, has a special role to play as a bridge between the developing and advanced countries. In addition, he states that Korea will expand its knowledge-sharing programs and triple official development assistance by 2015.

Lin notes some signs of recovery, but also many troubling indications that the crisis is far from over. In particular, he observes that unemployment is likely to remain a severe problem for quite some time, especially in developing countries. The crisis, he says, has shaken confidence in the general premise that markets deliver socially superior outcomes, and he encourages economists to take this as an opportunity to rethink the fundamentals of economic development. Lin states that some of the main themes of the ABCDE—the role of institutions and the boundaries between markets and the state—will be at the center of the debate in development economics for years to come.

Turning to the economic history of the East Asian countries, Lin draws a few general lessons for development as well as lessons for the crisis. He notes that East Asia was at the same level of development as Africa and South Asia in the 1950s, but since then has grown far more rapidly than any other region in the world. Korea; Taiwan, China; Hong Kong, China; and Singapore have maintained an annual growth rate of 10 percent over two or three decades—an unprecedented explosion of economic growth. Market mechanisms, according to Lin, were the foundation of this long period of sustained rapid growth, but government has also played an active role in the economy. Lin observes that these countries did not simply follow the prescriptions of standard development theory, but they did follow strategies that were consistent with their comparative advantage and they let the market allocate resources. Lin concludes that the experience of East Asia suggests the need to formulate a new approach to

development, with the government facilitating industrial progress through information, infrastructure, and incubation of new industries.

The East Asian financial crisis of the late 1990s provides a number of broadly relevant lessons, but the most valuable may be that carefully crafted unorthodox policies may work better than the standard prescriptions of development economics. Lin observes that during its "lost decade" of the 1990s, Japan enacted conventional measures, while China made major investments in transportation infrastructure in line with the concept of "bottleneck-releasing projects." China's plan proved much more successful, and its success, according to Lin, shows not only that a well-designed stimulus can enhance growth but also that this type of growth-enhancing, bottleneck-releasing investment can lead to sustainable growth, higher fiscal revenue, and lower debt. Lin concludes that the best path for developing countries may be to release bottlenecks, while in developed countries it may be to stimulate the "green economy" and address climate change, as Korea has pledged to do.

Keynote Addresses

Il SaKong, chairman of Korea's G-20 Summit Coordinating Committee, delivered the first keynote address. SaKong outlines the major causes of the crisis, the global community's response, and the role that Korea may play. He calls for reform of the Bretton Woods institutions and suggests agenda items for the next G-20 summit, to be held in Pittsburgh in September 2009.

Many factors contributed to the global financial crisis, he says, but clearly it began in the United States. The U.S. government took the initial steps to deal with the crisis, but when it became clear that the crisis would require a global response, the leaders of 20 nations convened in Washington to coordinate that response. SaKong maintains that this meeting reflected the historical shift in economic power that had taken place in the previous two decades, and he identifies the G-20 meeting as an event of historical importance for global governance.

At that meeting and a subsequent summit in London, G-20 leaders agreed upon bold fiscal measures to stimulate demand and to resist protectionism. According to SaKong, Korea played a special role with respect to emerging and developing countries in two ways: (1) having known within living memory severe poverty and recognizing the importance of trade for development, Korea worked as an intermediary between the developed and developing countries; and (2) Korea, along with the United Kingdom, emphasized concrete deliverables and brought in the International Monetary Fund (IMF) and the World Trade Organization (WTO).

The next G-20 summit will be held in Pittsburgh. It is too early to talk of exit strategies, SaKong warns: declaring victory prematurely, as the United States did during the Great Depression and Japan did in the 1990s, could make the crisis much worse. SaKong emphasizes the importance of following through on the London agreements and devoting special attention to the developing and emerging economies. Finally, SaKong affirms that the work of the international financial institutions must be

improved and the voices of emerging economies strengthened. He notes that eight of 24 seats on the IMF's board are held by Europe, which does not correspond to Europe's economic weight today.

Anne Krueger asserts that the efficiency of the financial system is a critical determinant of economic growth. While the international financial system and regulatory framework need to be strengthened, she warns that to fundamentally alter development policy would be wrong. In making her argument, Krueger examines the role of the financial system, the outlook for the global economy, how different countries have been affected by the crisis, and lessons for the future.

Historically, the financial system has played a vital positive function alongside the real economy, and Krueger emphasizes that this should not be forgotten when pondering how the international financial architecture might be modified. Nor should we forget, according to Krueger, that in the long term, countries that have experienced financial crises have grown more rapidly than those that have not.

Krueger reviews the causes of the current crisis and notes that low interest rates certainly contributed to the problems of the U.S. housing sector. She argues, however, that interest rates were low in part as a result of global imbalances, especially the imbalance between U.S. current account deficits and Chinese surpluses. In addition to stronger financial regulation, Krueger insists that the world also needs to create a system to prevent or mitigate unsustainable global imbalances.

Krueger notes that the crisis has turned out to be much broader and deeper than expected, yet the effects on developing countries, while very serious, have been far less serious than they might have been. Many developing countries were in much better shape to face this crisis than previous ones. Many had grown rapidly in the years before the crisis and in many cases had established effective fiscal policies. As a rule, Krueger observes, the larger the initial fiscal deficits and debt and the more dependent the countries on exports of primary commodities, the greater has been the impact of the current economic slowdown. One of the lessons for the future, Krueger says, is that developing countries should adopt structural fiscal rules to minimize the impact of global slowdowns.

Turning to the global outlook, Krueger forecasts slower growth than in recent years, with higher real interest rates and possibly smaller global imbalances. Krueger notes that public debt in the industrial countries is increasing rapidly and the aging of the population will put increasing pressure on government spending. The result, she says, will be higher interest rates and scarcer capital in developing countries. This situation will favor countries that have abundant unskilled labor and those that have invested in human capital.

Krueger observes that no developing country has sustained a successful long-term development strategy without opening to international markets. On that basis, she concludes that strengthening the open multilateral trading system should remain a priority. Krueger also advocates having more developing countries formally enter the WTO: too many are free riders. During the crisis, countries that had not formally joined the WTO were able to raise tariffs. Since it is easier to raise tariffs than to lower them, Krueger expects this step to damage these countries in the

long term. As the Korean experience shows, the opportunity to use international markets is vitally important for rapid economic growth, especially in the early stages of development.

Simon Johnson states that, while confidence is returning to the financial markets, the underlying problems remain and indeed are getting worse. Johnson maintains that the gargantuan financial sectors of the United States and Western Europe have endangered the entire global economic system and that the U.S. government's financial injections into the U.S. banking system are making the global system even more vulnerable.

According to Johnson, the top U.S. economic officials in the Obama administration portray the current crisis as a "once in a century" event that requires a massive macroeconomic policy response, but only a minimal regulatory response. Johnson says that this response reduces the chances of bank failure and thereby stabilizes the sector, but it represents an enormous, unconditional subsidy for the banking system.

Johnson maintains that a major political and economic structural change has been under way in the United States since the 1980s, and this change was mirrored, even exaggerated, in Western Europe. Johnson puts this into a larger historical context, observing generally that powerful groups inevitably rise up during long economic booms. These groups, he says, accumulate disproportionate political power, which they use for their own benefit and often to the detriment of society as a whole. Johnson cites historical cycles of deregulation and reregulation in the United States, such as Andrew Jackson's battle against big banks in the 1830s, Teddy Roosevelt's "busting" of the big railroad trusts at the end of the nineteenth century, and financial reorganization following the crash of 1929.

In today's crisis situation, the big American banks, according to Johnson, are able to extract enormous subsidies from the U.S. government. Some might call this phenomenon regulatory capture, but Johnson says it might be more accurate to call it "state capture" or "oligarchy." Indeed, it might be termed "intellectual capture" inasmuch as the powerful U.S. financial sector over the past three decades has persuaded people (including those serving in the Senate and House of Representatives) that unfettered finance benefits the economy as a whole.

According to Johnson, at the same time the U.S. financial sector was accumulating inordinate political power and undermining political institutions during the last few decades, emerging markets opened to capital flows on a much larger scale than ever before. This has turned the crisis in the U.S. and European financial sectors into a worldwide crisis.

Johnson asks, what, if anything, can break a crisis that has been built upon the concentration of political and economic power? The obvious answer is the bankruptcy of oligarchic enterprises. This solution, Johnson says, is easy in economic terms, but very difficult in political terms. Such solutions come about fairly often in developing countries, but in the U.S. context, the situation is entirely different: resources are sufficient for a bailout and the IMF will not be called in. He concludes that in the United States the big bankers have won for now, but they are unlikely to win in the long run. Due to their lack of restraint, Johnson argues, bankers will

inevitably overreach to a point that ignites popular outrage. Johnson is confident that ultimately this will lead to a breakup of the banks so that they are no longer "too big to fail."

Industrial Policy and Development

James Robinson argues on the basis of both theory and empirical evidence that industrial policy can, at least under certain circumstances, stimulate growth and development. But in actual practice, he says, more often than not industrial policy seems to impede growth. Industrial policy has succeeded in a few places, most notably in Korea and Taiwan, China, but in other places, especially Latin America and Sub-Saharan Africa, it has failed spectacularly. Robinson contends that we are in sore need of a positive theory of industrial policy to explain why industrial policy has worked in some countries but failed in others, and he begins to outline the framework of such a theory.

Robinson argues that the success or failure of industrial policy in any given country depends on the political equilibrium in that country. To develop a positive theory of industrial policy, Robinson says, we need to analyze such policy as an equilibrium outcome, using the methods of political economy. Robinson contends that industrial development is not a question of proposing good policies—economists have been doing that for decades. Instead, he argues, industrialization is promoted (or hindered) by the political choices made by any given society, and it is promoted if and only if it is aligned with the interests and institutions of those in power. Robinson insists that economists and international institutions have to take this fundamental fact into consideration when trying to promote industrialization and either formulate policy in such a way that it provides incentives for those in power or alter the political equilibrium in such a way that it favors industrialization.

Reviewing the cases of Ghana, Zambia, and other countries, Robinson argues that the most important differences between the cases of unsuccessful and successful industrial policy are political rather than economic or administrative. Political decisions, he says, in many cases lead to uneconomic allocations of capital investment. He presents a series of examples from Africa and Latin America and concludes that allocation in those cases was fundamentally driven by political criteria with little regard for economic criteria. He emphasizes that what was different in the East Asian "miracle" economies was that the state bureaucracy was allowed to develop policies based more on rational economics than on political motivations. Ultimately, he says, the difference really lies in the institutions implementing the policy: it is the distribution of political power in society—both de jure (institutional) and de facto—that determines the choice of institutions and policies.

Robinson argues further that those with power seek not only to maximize their income today but also to maintain their power. For this reason, Robinson says, even policies that would increase the incomes of today's elite will not be chosen if they undermine the elite's grip on power. Those who stand to benefit only indirectly from industrialization may not have a sufficient incentive to advance it, since it inevitably brings social change and undermines the political status quo.

Based on his review of political economy, Robinson concludes that economists and policy makers must change the way they think about industrial policy. To give advice that would foster industry, one has to understand the political equilibrium at work within a country and either change it or work within it. The successful industrial policy of East Asian countries, he says, reflects the very different political equilibrium that emerged in that part of the world.

Ha-Joon Chang takes up industrial policy and attempts to lay out the positions of both its opponents and proponents, highlighting the areas in which there is substantial agreement and suggesting ways to advance the debate constructively.

He begins with a brief review of the history of debate on industrial policy, looking more broadly at historical experience than is usual, so as to provide a larger framework for understanding industrial policy. He takes the broad view in order to establish a minimum common empirical understanding: specifically that industrial policy can work, sometimes spectacularly well, although it can also fail, sometimes spectacularly.

Chang begins his review of the general debate in the 1970s, following the rise of Japan. But he also looks further back in history and points out other examples of apparently successful industrial policy: postwar France, Finland, Norway, Austria; Britain in the eighteenth and nineteenth centuries; the United States, Germany, and Sweden in the late nineteenth and early twentieth centuries; and so on. Chang concludes from these cases, and the more recent East Asian cases, that industrial policy has been at least partly responsible for the remarkable economic growth that took place in these countries. He further states that regardless of whether there is absolute proof that industrial policy contributes decisively to growth, it is still possible to discuss constructively how to strengthen its positive effects.

In that spirit, in the main part of his paper, Chang critically examines some of the key issues in the debate on industrial policy. He first looks at two issues commonly brought up on a theoretical basis—targeting and the ability of government bureaucrats to "beat the market." In regard to targeting, Chang argues that some degree of targeting is an inevitable part of industrial policy. In regard to whether the state can "beat the market," Chang enumerates several examples in which governments made investment decisions that seemed to run counter to the market and yet proved to be some of the most successful investments in history. Chang does not believe that the government officials who made these investments knew more or were smarter than businessmen; it is more likely, he says, that government officials were in a position to look at things from a longer-term national point of view, which proved advantageous in certain cases.

In looking at political economy, Chang identifies the main factor leading to success as the government's willingness and ability to impose discipline on the industries it supports. He also asserts generally that good export performance is critically important to economic development. Chang observes that the advocates of industrial policy often do not fully appreciate how critical export performance is, while many opponents do not fully appreciate that export success also requires industrial policy.

In conclusion, Chang urges adversaries in the debate on industrial policy to take a more pragmatic approach and focus on practical issues and the vast middle ground that they share. He cautions policy makers and development economists not to let the

lack of consensus on industrial policy be an excuse for inaction. Many success stories, he says, were based on measures that were not perfect, but were "good enough."

Social Capital, Institutions, and Development

The conferees in the session on social capital, institutions, and development agree that the concept of "social capital" has a powerful intuitive appeal and has come to be seen as a crucial economic factor, yet it is extremely difficult to measure and there is not a precise understanding of how and to what extent it leads to economic progress. The papers presented in the session take a game-theoretic approach to examine the concept in an attempt to advance understanding of how social capital works.

Partha Dasgupta observes that scholars have looked at social capital in different ways, but they all place social capital in the space between the individual and the state. Dasgupta argues that the concept of social capital should be understood as interpersonal networks, where members develop and maintain trust in one another to keep their promises by the device of "mutual enforcement" of agreements. He observes that it is not the interpersonal networks themselves that lead to economic progress, but, at a more fundamental level, the trust among people who act within networks. Dasgupta maintains that social capital is a means of creating trust—the underpinning of interpersonal networks and impersonal institutions alike.

Dasgupta analyzes trust through a series of thought-experiments applying the techniques of game theory. In his analysis, he classifies four types of social environments in which the promises people make to one another are credible: mutual affection (exemplified by the household), pro-social disposition (exemplified by common understandings of citizenship or personal integrity), external enforcement (exemplified by the rule of law), and mutual enforcement (exemplified by social norms or Nash equilibrium rules of behavior). In examining the last of these four classes of social environments, Dasgupta finds that social norms are able to sustain trust and cooperation only so long as people have reason to value the future benefits of cooperation; however, he goes on to describe conditions under which mutual enforcement breaks down, in some cases even where there is no "real" change, only a change in certain beliefs held in society.

Dasgupta examines also the workings of interpersonal networks, whether inherited or created, to examine how they contribute to economic well-being. He makes some general observations about social networks—for example, that they take effort to maintain or create but the cost declines the more they are used and trust grows. He also highlights the findings of other scholars—for example, that membership in social networks is an important component of human capital and that even weak network ties are important and beneficial.

Completing his analysis, Dasgupta describes various externalities arising from social networks as well as ways in which social networks complement markets and ways in which they can work in opposition to markets.

In an interesting appendix, Dasgupta argues that the best way to try to quantify social capital is through examination of total factor productivity, and he demonstrates how an increase in trust among people results in an increase in the economy's wealth.

Masahiko Aoki examines the concept of "social capital" and how it might be useful in understanding economic performance. In attempting to answer these questions, Aoki posits a social-exchange game as the central theoretical concept of his analysis and describes social capital as an individual investment owned by individuals. He observes that social exchange shares many of the characteristics of economic exchange; however, unlike economic exchange, social exchange can be performed without an explicit agreement: unspecified obligations of reciprocity suffice. Aoki's line of reasoning leads him to define social capital as "the present value sum of the agent's expected social payoffs over time." He sees an individual's social capital as the object of individual investment, but notes that it depends not only on the individual's actions but also on a system of beliefs regarding one another's actions. He examines how individuals invest in their own social capital and theorizes how certain social networks or patterns of behavior arise from that.

But how are noneconomic social-exchange games linked to economic games, and how is social capital related to economic outcomes? Aoki observes that economic and noneconomic games may share players (individuals and groups), and norms may evolve through interactions within the two games. Thus individual social capital may be directly relevant to the understanding of economic performance. Aoki observes that the social capital of each agent in a social-exchange game can be used as incentive for cooperative behavior in the economic games. Thus he argues that economic and social-exchange games are often linked and that social beliefs do not evolve independently of economics. Aoki gives illustrations from distant history as well as contemporary Wall Street and modern high-tech industries. He maintains that corporate social capital may contribute to the prospects of long-term profitability.

Financial Crisis and Regulation

Yung Chul Park analyzes the causes and consequences of the global financial crisis, particularly with respect to reserve currency liquidity in East Asia, and makes suggestions for the reform agenda. Park traces with concern the growth of maturity mismatches and currency mismatches in East Asian economies. These twin mismatches pose a threat to the financial sector and ultimately could trigger a currency crisis.

Park observes that capital flows into East Asia have dropped precipitously as a result of the global financial crisis. Since East Asian countries use dollars and euros as reserve currencies, the crisis has squeezed reserve currency liquidity drastically. East Asian countries do not have sufficient foreign assets to alleviate the crunch.

A major cause of the liquidity crisis, according to Park, has been the mismatch between the maturities of foreign assets and liabilities on bank balance sheets. Park states that mismatches of this sort cannot be avoided entirely, since they arise from

normal banking operations. But Park says that such mismatches are dangerous, since they can lead to banks increasingly financing local currency loans with foreign currency. Thus the twin mismatches can easily lead to depreciation of the local currency. This, in turn, exacerbates the problem of currency mismatching and can lead to a currency crisis.

Park contends that currency mismatches were a prominent feature of the Asian crisis of 1997–98. They are not as prominent—at least so far—in the current crisis, but the current crisis is far from over. Although East Asian governments put in place domestic national regulation following the 1997–98 crisis, none of the measures is entirely reliable, and East Asia has not been shielded in this case. So far, according to Park, the danger of a currency crisis is limited to Korea, Indonesia, and Singapore. But he cites other economists who have identified maturity mismatch as one of the main sources of financial instability in the current crisis.

Park observes, as others at the conference have, that global financial integration has brought additional instability to emerging economies, and he contends that what is really needed is a set of new global financial institutions to provide effective supervision and regulation and serve as a global lender of last resort. In addition, he says, more prudent regulation of capital movements in emerging countries is needed.

Looking at past efforts to improve global financial regulation, however, Park does not see reason to hope that a global system will come together quickly, if at all. East Asia, he says, would be wiser to look at regional regulatory collaboration as the second-best and more realistic option. There is already a regional liquidity support system called the Chiang Mai Initiative Multilateralization, which might be the nucleus of a future regional regulatory and supervisory coordinator.

Joshua Aizenman notes two opposite tendencies driving the financial regulatory cycle: underregulation when times are good, and overregulation as a reaction to crisis. Aizenman describes the cycle or paradox of financial regulation this way: effective regulation leads to complacency, reducing demand for financial regulation; reduced demand leads to underregulation and eventually crisis; financial crisis leads to overregulation. This, according to Aizenman, is precisely what happened in the United States and the Organisation for Economic Co-operation and Development countries in the run-up to the present crisis.

Aizenman claims that asymmetric information is at the root of this paradox: crises that have been avoided are imperceptible and hence not part of the political discourse; projects and entrepreneurs who do not receive financing during periods of overregulation are similarly invisible and not part of the political discourse.

Aizenman presents a model showing the imbalance between individual demand for regulation and the socially optimal level. In conclusion, Aizenman outlines a regulatory structure that would mitigate the above-mentioned concerns. He advocates above all greater centralization and transparency, arguing that this would mitigate the problems of asymmetric information. With better, more up-to-date information, regulators, he believes, would be able to monitor and assess systemic risk in real time. He argues in addition that greater regulatory independence would reduce the ten-

dency to underregulate in good times, as would adoption of global standards of minimum prudential regulations and information disclosure.

The Road Ahead to a Sustainable Global Economic System

Stijn Claessens reviews the causes of the current global financial crisis—those that are familiar from previous crises as well as those peculiar to this crisis: the use of complicated, opaque financial instruments, integration of financial markets both nationally and internationally, highly leveraged financial institutions, and the prominent role of overextended households, especially in the United States.

The global crisis has evoked large-scale government intervention, which, Claessens states, appears to have been effective in stabilizing financial systems and restoring basic confidence. But Claessens observes that massive government intervention also introduces distortions into the market—direct distortions, such as propping up specific financial markets and providing financial guarantees for the banking sector, and indirect distortions, such as government support programs for automobile manufacturers and other firms large and small. These domestic interventions, Claessens notes, also affect international capital flows and financial intermediation. Although these interventions may have been needed, governments should begin planning how to reverse the distortions. Claessens observes that international coordination is important in this respect, but extremely difficult as a practical matter.

Based on this analysis and noting that the crisis is still evolving, Claessens then draws lessons for national and international financial reform as well as lessons for emerging markets and developing countries. In regard to macroeconomic policy, he says that monetary policy should seek to address macrofinancial stability, not just price stability; governments should take advantage of boom years to reduce budget deficits; and tax systems should be adjusted so that they are no longer overly biased toward debt financing through deductibility of interest payments.

In regard to national financial architecture, Claessens specifies several key principles for strengthening regulation: it should address systemic risk and proactively identify and repair gaps in oversight and information; market discipline and supervision should complement one another; and in redesigning systems, policy makers need to be aware of the inherent limitations of financial regulation and supervision and seek to overcome them.

In regard to the international financial architecture, Claessens believes that financial information needs to be better organized and timelier. It is also important, he points out, to include non-bank financial institutions. Systems of macro-financial analysis, risk assessment, early-warning systems, and cross-border banking resolution must also be improved.

The good news of the crisis, Claessens states, is that many emerging markets and developing countries entered the crisis with more policy options at their disposal than in previous crises, since they had better fiscal health, stronger financial sectors, and better financial frameworks than ever before. Nevertheless, he says, because capital

inflows dried up abruptly at the same time as export demand collapsed, these countries still need external financing to support macroeconomic policy and social protection. In most countries, Claessens says, monetary policy should be eased and the exchange rate adjusted to absorb the pressure. He recommends that countries in a relatively strong fiscal position pursue an expansionary fiscal policy and that all countries prepare contingency plans for dealing with financial turmoil and bank failures.

Giovanni Zanalda examines two historical cases to throw light on the current crisis. These two cases—the Kingdom of Naples in the seventeenth century and the Great Depression of the twentieth—demonstrate, according to Zanalda, the importance of addressing the structure of the real economy, not just the financial factors.

In his discussion of seventeenth-century Naples, Zanalda highlights the views of Antonio Serra, a contemporary Neapolitan physician, whose writings urged the government to support the real economy rather than the monetary side—the opposite of what the kingdom was doing and continued to do in spite of Serra's urging. In his discussion of the Great Depression, Zanalda highlights the fateful lack of coordination among nations. In the 1930s, many countries dealt with the crisis by abandoning the gold standard; however, because nations acted unilaterally without coordination, improvements in the economy of one country came at the expense of the economy in other countries.

Fortunately, says Zanalda, the current crisis is being met with broad coordination—at least so far—through the G-20, the IMF, and other means. History tells us, according to Zanalda, that governments should consider the crisis as an opportunity to implement structural reforms. It is also important to address the problems that have emerged in the financial sectors in the United States and Europe. Zanalda suggests that countries in East and South Asia, where much of the world's economic growth has occurred over the last two decades, have a special role to play in the reform process, emphasizing the need for the government to play a greater role in the economy, maintain stricter control on private finance, and favor the real economy over the financial sector.

Innovation and Competition

Philip R. Lane examines how international financial integration affects productivity and innovation. Lane's focus is on innovation in developing countries and adaptation of existing technologies developed elsewhere. Lane claims that the connection between financial globalization and productivity holds critically important potential. The greatest benefit of financial integration, according to Lane, is that it can raise total factor productivity. He cites other research showing that without an increase in productivity, the welfare benefit of international financial integration is minimal.

Lane observes that economic studies emphasize the importance of financial development in determining the intensity and effectiveness of innovation. But recent studies emphasize that gains from financial globalization usually depend on the level of development and that financial globalization is not helpful if the domestic economy

is not sufficiently developed. Accordingly, Lane sets his sights on whether threshold effects are present in determining the relation between international financial integration and the level of innovation activity.

Lane says that developing countries naturally concentrate on adopting advanced technology developed abroad rather than attempting to develop new technologies themselves. Lane contends that purposeful R&D investment is required not only to develop new technology, but also to adopt existing technology. And adaptation of technology requires other things as well: human capital, institutions, and integration into the global trading system. Lane cites the work of Aghion in demonstrating that a threshold level of financial development is needed in order to finance the innovation required to absorb new technologies.

Lane reviews recent studies examining empirically the link between financial globalization and productivity, concluding that the studies—whether using firm-level, sector-level, or country-level data—show a positive relation between international financial integration and the level of productivity. Lane goes on to demonstrate, based on an econometric analysis of a collection of several data sets, that financial globalization can raise the level of innovation activity, which in turn boosts long-term productivity. Lane cautions, however, that much more research will be required to establish firmly his provisional finding.

The challenge for policy makers in developing countries, according to Lane, is to embrace financial globalization in a phased way that recognizes the interplay between domestic institutional development and greater openness to international investment flows. In terms of sequencing, the evidence that Lane provides suggests that international equity integration offers greater benefits for lower-income countries, whereas the gains from international debt integration are concentrated at higher income levels. In conclusion, Lane notes the need for internationally coordinated actions to improve the stability of the global financial system.

Sungchul Chung examines technological innovation in Korea—one of the generally recognized ingredients to the country's astounding economic progress over the past 40 years. Chung notes that Korea's educational preparation laid the foundation for its success as an innovator, and in the 1960s, at the beginning of the country's rapid economic rise, educational attainment in Korea was roughly that which would be expected of a country twice as rich. Korea's development path would not have been possible without a base of human resources capable of absorbing and improving upon the technologies transferred. Korea's technological advance has been remarkable, but to continue to advance, it now has to strengthen basic scientific research capability and take other steps to improve innovation.

In tracing Korean innovation over the last 40 years, Chung highlights that Korean industries acquired most of their technology through informal rather than formal channels; in contradistinction to most other developing countries, foreign direct investment and licensing played only a small role in Korea. Informal channels proved much less costly and prevented Korea from falling under the dominance of multinational corporations. Chung states that the country's industrial policy in the 1960s and 1970s essentially represented a means of learning how to absorb and improve foreign

technologies. Korea took long-term loans to finance massive importation of foreign capital goods and turnkey plants in select industries. According to Chung, Korean industries then reverse-engineered the imported capital goods in order to acquire and master new technology. In the 1970s, Korea shifted its development strategy and invested massively in the machinery and chemical industries. To help adopt the new technologies, the government created state research and development institutes, which worked with private industries to build the technological foundation for Korea's industrial development.

Chung presents data showing that large numbers of research and development (R&D) centers sprung up in Korea in the 1980s, and Korea moved from the stage of technology learning to technology development. The government launched a national program to promote private R&D, providing tax breaks, state investments, and other incentives. By the early 1990s Korean industries had shifted their mode of technology acquisition radically from borrowing and learning from foreign sources to indigenous R&D. Investment in research and development has continued to climb, increasing more than 60 times between 1981 and 2007.

The financial crisis of 1997 hit R&D hard: R&D expenditures dropped 10 percent and R&D employment dropped 15 percent. The sector was able to recover within two years, but the financial crisis brought about two lasting changes: (1) many displaced R&D personnel established small-scale technology firms, making small and medium enterprises much more important in Korea's R&D sector, and (2) foreign direct investment increased sharply due to the favorable investment environment created by the depreciation in local currency and asset values.

Chung states that the positive contributions of Korean R&D are undeniable, but he nevertheless enumerates several shortcomings: Korea still lags far behind the advanced industrial countries; the country does not have a well-developed university research capacity and remains weak in basic sciences; Korean R&D is highly reliant on private industry and consequently too sensitive to economic ups and downs; and Korean researchers interact only rarely with foreign scientists and institutions.