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Imbalances and Growth

Anders Åslund and Marek Dabrowski, Editors

PETERSON INSTITUTE FOR INTERNATIONAL ECONOMICS

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Preface

Globalization is a great force of our time. The last three decades of economic, social, and political achievements of globalization have been nothing short of spectacular. After its defeat in World War II, Japan rose to become a great economic power. The next group of fast-growing economies was the East Asian Tigers—Hong Kong, Singapore, Taiwan, and South Korea. After three decades of tremendous economic growth—thanks to Deng Xiaoping's reforms of 1978—China's rise continues unabated. India started growing at a similar speed in the early 1990s. The former Soviet bloc has joined in the growth feat of East and South Asia with a vengeance, reaching an annual average growth rate of 9 percent in recent years.

However, one of the greatest global booms ever is now ending following the eruption of a financial crisis that began in the United States and may spread to other regions. Exceedingly accommodative monetary policy and loose regulation have caused the current US financial crisis and global overheating, which has resulted in surging commodity prices and global inflation. In many countries, reform fatigue has followed the reform impetus of the 1990s. The current round of multilateral trade negotiations in the World Trade Organization, the Doha Round, is paralyzed.

A major macroeconomic concern derives from the inordinate imbalances in international payments. China, Japan, Russia, and East Asian and oil-exporting countries have accumulated huge international reserves, while the United States has run a large and persistent current account deficit. Most countries in Central and Eastern Europe also have large current account deficits. Another worry is that many advantages of globalization are not genuine and that inequality appears to have increased in the last two decades within virtually all countries.

This book, edited by Anders Åslund and Marek Dabrowski, addresses the growing macroeconomic imbalances and the challenges of globalization and long-term economic growth, with a focus on Europe and Asia.

Various aspects of the macroeconomic imbalances are the theme of the first six chapters. The second part of the book discusses how the capitalist model of economic development, which has delivered all this growth, is developing or should evolve. The last two chapters consider options available to European policymakers to compete with and adjust to the rapidly growing East Asian Tigers and China.

This book is based on the CASE 2007 International Conference on Winds of Change: The Impact of Globalization on Europe and Asia held in Kyiv, Ukraine, on March 23–24, 2007. The conference was organized by CASE (Center for Social and Economic Research), a Warsaw-based international think tank, and CASE Ukraine in Kyiv. The conference included 40 panelists drawn from the International Monetary Fund, European Commission, United Nations Economic Commission for Europe, various governments, leading Washington- and Brussels-based think tanks, and universities across the world. The panelists were organized into six sessions, which focused on the Asian challenge to Europe, global imbalances, migration, aid and trade, governance and economic development, and EU enlargement. This book features ten of the most interesting papers presented at the conference. CASE thanks System Capital Management and its main shareholder Rinat Akhmetov for being the main sponsor of this conference and the German Marshall Fund for additional support.

The Peter G. Peterson Institute for International Economics is a private, nonprofit institution for the study and discussion of international economic policy. Its purpose is to analyze important issues in that area and to develop and communicate practical new approaches for dealing with them. The Institute is completely nonpartisan.

The Institute is funded by a highly diversified group of philanthropic foundations, private corporations, and interested individuals. About 30 percent of the Institute's resources in our latest fiscal year were provided by contributors outside the United States, including about 12 percent from Japan. The Victor Pinchuk Foundation provided generous support for the publication of this volume.

The Institute's Board of Directors bears overall responsibilities for the Institute and gives general guidance and approval to its research program, including the identification of topics that are likely to become important over the medium run (one to three years) and that should be addressed by the Institute. The director, working closely with the staff and outside Advisory Committee, is responsible for the development of particular projects and makes the final decision to publish an individual study.

The Institute hopes that its studies and other activities will contribute to building a stronger foundation for international economic policy around the world. We invite readers of these publications to let us know how they think we can best accomplish this objective.

C. FRED BERGSTEN
Director
May 2008

Acknowledgments

This volume presents the most interesting papers from the CASE 2007 International Conference on Winds of Change: The Impact of Globalization on Europe and Asia held in Kyiv, Ukraine, on March 23–24, 2007. The conference was organized by the Center for Social and Economic Research (CASE), a Warsaw-based international think tank dealing with the problems of European integration, the global economy and post-transition development. It has an extensive network of daughter and associated organizations in Central and Eastern Europe and the former Soviet Union, as well as close partnerships with many US and Western European research organizations. The practical arrangements were ably carried out by CASE Ukraine in Kyiv.

Four previous biannual international CASE conferences concentrated on the problems of economic and political transition in the former Soviet bloc plus some broader development issues such as sources of economic growth, monetary and exchange rate regimes, tax reform, social and pension reforms, privatization, corporate governance, and migration. The four conferences were Economic Scenarios for Poland, January 18, 1997; Years After: Transition and Growth in Post-Communist Countries, October 15–16, 1999; Beyond Transition: Development Perspectives and Dilemmas, April 12–13, 2002; and Europe after the Enlargement, April 8–9, 2005. All these conferences were held in Warsaw.

European integration and Europe's economic and social future were the main topics in the 2005 conference. The 2007 conference broadened to deal with globalization, with the main focus on Europe and Asia. Six thematic sessions and three keynote addresses involved 200 of the best economists and political scientists from more than 30 countries. The relevant international organizations were represented as well. The debate concen-

trated on long-term challenges of globalization rather than short-term problems of individual countries. This volume contains 10 major contributions selected out of 36 delivered during the conference. For the book, we have chosen to focus on two themes: global macroeconomic imbalances and growth.

We are greatly indebted to System Capital Management and its main shareholder Rinat Akhmetov, who was the main sponsor of this conference. We also want to thank the German Marshall Fund for additional support.

We are also grateful to the organizing team including Joanna Binienda, Elena Kozarzewska, Tatyana Sulima, Vyacheslav Herasimovich, Dmytro Boyarchuk, Vitaliy Vavryshchuk, Anna Tsarenko, and several other CASE and CASE Ukraine individuals who worked hard for almost one year to prepare this important event.

Both the authors and editors of this volume express their gratitude to conference participants who gave numerous valuable comments and remarks, which we have tried to incorporate. The cases of substantial merit contribution are admitted in footnotes of individual chapters. The editors also want to commend Julija Remeikaite and Olesya Favorska for their great assistance in preparing the manuscript for this volume.

ANDERS ÅSLUND & MAREK DABROWSKI
Washington, DC and Warsaw
April 2008

Introduction: Challenges of Globalization

ANDERS ÅSLUND and MAREK DABROWSKI

The world economy has never been wealthier than it is today. Yet many wonder about what can go wrong. This introduction discusses three relevant areas. The first section provides a brief overview of the great economic, social, and political achievements of globalization in the last three decades, one of the greatest booms in world history. Now, however, the world is experiencing an abrupt end to this period of achievement following the eruption of a financial crisis that began in the United States and may spread to other regions. Worry dominates. The second section discusses the underlying macroeconomic imbalances in the world economy and how they contributed to the current crisis. Various aspects of these imbalances are the theme of six of the ten chapters of this book. Globalization arouses anxiety, whereas capitalism in one country is much less controversial. The third section of this introduction and the last four chapters of the book discuss how the economic model that has improved economic welfare is developing or should evolve.

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A Golden Period of Global Growth

The years 2003–07 represented a golden period of growth and wealth for the world economy, which had not grown so fast since the early 1970s. The World Bank reported that, thanks to the economic boom in China and India, not only the share but also the absolute number of poor in the world diminished (Chen and Ravallion 2007).

Until World War II, the United States and Western Europe completely dominated the world economy. Ironically, after Japan's defeat in World War II, that country rose to become a great economic power, and by 1990 people talked about the next century as dominated by Japan—until its economy just stopped growing.

The next wave of fast-growing economies were the East Asian Tigers—Hong Kong, Singapore, Taiwan, and South Korea. The Asian financial crisis in 1997–98 slowed their growth somewhat, but their march forward remains impressive.

When Deng Xiaoping launched China's economic reforms in 1978, the country was miserably poor. After three decades of tremendous economic growth, China's GDP per capita in current dollars is still one-quarter of Russia's, which in turn is less than one-quarter of the US level, but China's rise continues unabated. India started growing at a similar speed beginning around 1990. Indeed, most of the countries in East and South Asia have gained dynamism, and, led by China and India, now appear to be the prime growth engines of the world: Since 2000, nearly the whole of Eurasia, from China via India to the Baltics, has maintained an average economic growth of 7 to 11 percent a year.

After the fall of the Berlin Wall in 1989, it took almost a decade before the former Soviet bloc could join the growth feat of East and South Asia, but it has done so with a vengeance, reaching an average growth rate of 9 percent a year in recent years.

Meanwhile, Latin America has stabilized and achieved a moderate but steady economic growth of 4 percent a year. The real surprise has been Africa, which in the last few years generated 6 percent growth. The Middle East has also been quite dynamic because of large oil rents, but it remains arguably the least reformed part of the world economy, with relatively overregulated and state-dominated economies (Noland and Pack 2007).

Because of high growth in many less developed countries, the world is seeing a stark economic convergence, which has become a dominant theme in the global economy (Balcerowicz and Fischer 2006, Gaidar 2005). The focus is now on the largest emerging economies of Brazil, Russia, India, and China—the so-called BRICs. Goldman Sachs forecasts that by 2039 the BRIC economies will together be larger than the G-6 economies (France, Germany, Italy, Japan, the United Kingdom, and the United States; Wilson and Purushothaman 2003).

Economic growth does not come alone. It raises society as a whole, accompanied by extraordinary social achievements. Poverty has fallen sharply, not only in the share of the world population that is poor but also in absolute terms, even if the World Bank still estimates that about one billion people live in absolute poverty (Chen and Ravallion 2007). The major indicators of global health are improving, and impressively so. The average life expectancy in the world increased from 63 in 1980 to 68 in 2005. In the same period, global infant mortality declined from 79 per 1,000 live deaths to 52. The world's healthier and wealthier people have invested in their human capital, so that global literacy has risen from 76 percent in 1990 to 82 percent in 2005 (World Bank 2007).

The economic and social improvements have also been accompanied by an expansion of democracy. What Samuel Huntington (1991) called the "Third Wave" of democratization, which started in Spain and Portugal in the mid-1970s, has increased the number of democracies in the world from 41 in 1974 to 123 in 2007 (Freedom House 2007, Diamond 2008). For the first time in world history, most people live in democratic countries. At the same time, there are fewer military conflicts and fewer deaths in armed conflict than ever before in recorded history (SIPRI 2007).

Thus the last three decades of economic, social, and political development in the world have been nothing short of spectacular, doubtless the finest ever. As a result, for the first time, we can seriously talk about the end of poverty. In 1989, when Francis Fukuyama wrote about the end of history, suggesting that the whole world was about to become democratic, he was widely ridiculed. Twenty years later, such a perspective appears less utopian (Diamond 2008), although still far from being achieved.

Two very different kinds of queries arise in the midst of this plenty. A first and natural worry is that the situation is too good to last. Time and again, the world has been hit by financial crises and depressions. The recent episode of rapid growth for almost the entire world economy resulted from the coincidence of numerous supportive factors, which will not necessarily endure at least to the same degree.

First and foremost among these factors, the world economy benefited from comprehensive and far-reaching policy reforms in a number of important countries and regions in the 1990s and early 2000s, the subject of analysis in many chapters of this volume. Second, after two or more decades of macroeconomic turbulence caused by weak, and sometimes openly populist, macroeconomic policies, the vast majority of less developed countries adopted a more prudent stance. This resulted in an impressive worldwide disinflation, a rapid increase in international reserves, and a substantial improvement in fiscal balances. Third, the successful completion of the Uruguay Round in the mid-1990s helped, with a certain time lag, to liberalize the world's manufacturing trade and, partly, trade in the service sector. Fourth, an accommodative monetary policy of the largest central banks in the early 2000s, in the aftermath of the so-called

dotcom bubble burst and the 9/11 terrorist attack, resulted in a strong and positive demand shock for most of the less developed countries and strengthened their economic boom.

Unfortunately, the near-term global prospects look less optimistic now, and it is not clear how the world economy and individual countries will adjust to the new, less favorable environment. Some of the factors that contributed to the recent boom are definitely over, at least for the time being. The reform impetus of the 1990s has been followed by reform fatigue in many countries. The next World Trade Organization (WTO) global trade liberalization round, the Doha Round, is paralyzed. And the accommodative monetary policy of the major central banks caused the current financial crisis in the United States and global overheating. The latter is evident in rapidly growing commodity prices and the surge in global inflation, among other indices.

A major macroeconomic concern derives from the inordinate imbalances in international payments. China, Japan, Russia, and generally East Asian and oil-exporting countries have accumulated huge international reserves, while the United States has run a large and persistent current account deficit. Most countries in Central and Eastern Europe also have large current account deficits. The first part of this book is devoted to questions concerning these deficits.

A second and very different group of worries about globalization is that its many advantages are not genuine or that other values are more important. The most obvious concern is that inequality appears to have increased in the last two decades in virtually all countries (Milanovic 2005), although Sadhir Anand and Paul Segal (2008) find no firm evidence that inequality among *individuals* in the world as a whole has increased during the last three decades. The very rich, however, are both more numerous and wealthier than at any other time in world history. Is this a problem? The sanguine argument contends that the flood raises all ships. As long as the poor receive more, the rise in the share accumulated by the very rich is not really troublesome. But a radical concern is that the rich are buying society lock, stock, and barrel—their wealth jeopardizes democracy by leading to the rule of the wealthy, whose goal is to make more wealth. Naomi Klein (2007) has taken this argument to its extreme by claiming that the driving force behind capitalist ideology is war and exploitation to make the richest even richer. A less radical criticism of globalization focuses on its increasing pace of social change, resulting in the frequent closure of enterprises and the transfer of jobs to other places and countries.

Notwithstanding these criticisms, the markets for goods, services, and capital, but not for labor, are arguably freer than at any other time in the world, and global economic integration is greater than it has been at any time since World War I. During the two decades before the Great War, the world saw a similar degree of international economic integration. The economic dynamism of that time was extraordinary, but this early phase

of globalization ended with World War I, which started seven decades of protectionism and state management of national economies. The upshot was not an economic but a political failure as the old more or less authoritarian monarchies and empires were unable to keep up with the freedoms of capitalism.

We argue that the rising criticism of globalization is a function of the inherent self-destructive forces of capitalism. In itself, capitalism is not stable. Business cycles are inevitable, and we do not know whether true depressions can be avoided in the future. People must nonetheless believe in its just existence if capitalism is to survive. However absurd communism appeared toward its end, it represented a clear, anticapitalist logic, which might reemerge when the evils of communism have been sufficiently forgotten. The public rarely appreciates private ownership of large enterprises and huge fortunes. Other dangers are populism and chauvinism, which can manifest themselves in ways quite similar to leftwing radicalism.

The second part of the book, therefore, concerns the institutions of capitalism. What are they? How can they be defended? How are they evolving?

How Severe and Dangerous Are Global Imbalances?

The last serious global financial crisis was caused by the combined effects of the East Asian, Russian, and Brazilian crises in 1997–99 and the Long-Term Capital Management (LTCM) failure in the United States at the end of 1998. Argentina and Turkey faced serious crises somewhat later, but they were confined within their national boundaries. Since then, the world has seen a period of unusual macroeconomic calm and discipline, especially in emerging markets and most of all among those that were hit by the crises of 1997–99. These countries have excelled with budget surpluses (or small deficits), many with current account surpluses, and many have paid off their foreign debts, most notably Russia. As a result, China, Japan, and Russia have accumulated the largest international currency reserves in the world, amounting to a total of $3 trillion. Sharply rising oil prices since 2004 have also led to increased reserves in the oil-producing countries, which appear to have learned their lesson from the 1970s, when they squandered their (temporary) fortunes in the belief that they were permanent.

If properly accounted for, total current account surpluses must be balanced by a sum of corresponding current account deficits. The anomaly of the last decade has been that the United States has been the largest net debtor to the rest of the world economy. Another region that has experienced lasting and sustained current account deficits is Central and Eastern Europe. Six chapters in this book focus on current account imbalances, how to interpret them, and what to do about them, if anything.

In chapter 1, Susan Schadler, former deputy director of the European Department of the International Monetary Fund, asks "Are Large External

Imbalances in Central Europe Sustainable?" A number of countries in this region have had lasting and large current account deficits, and seven (Bulgaria, Estonia, Hungary, Latvia, Lithuania, Romania, and Slovakia) averaged 7 to 12 percent of GDP in 2001–06. In 2007 these deficits grew even further, with Latvia's deficit rising to as much as 24 percent of GDP, Romania's to 14 percent, and Bulgaria's to 21 percent (Marrese 2008, EBRD 2008). In the late 1990s, the rule of thumb was that a current account deficit of more than 5 percent of GDP was worrisome (Summers 1996).

Schadler acknowledges that "By conventional standards, the external imbalances of many of the Central and Eastern European countries are indeed large enough to justify serious concerns" and proceeds to analyze standard factors of vulnerability. In this region, exchange rate policies arouse few concerns. The Central European countries have hardly any discretionary official intervention. The Baltic states and Bulgaria have currency boards, and the others are inflation targeters with floating exchange rates. Public debt is no major concern because capital inflows focus on the private sector, going primarily to real investment. This high economic growth arises from very dynamic total factor productivity, both of which should attract foreign investment. The underlying factors are these countries' recent accession to the European Union and their prior depression of the communist system and its collapse. Indeed, most of the current account deficits are actually covered by foreign direct investment. To that should be added some stock purchases and short-term loans from foreign banks to their subsidiaries in Central Europe.

These factors dispatch most of the conventional concerns, but not all. In some countries, the external deficits are just too large. Latvia stands out, though its small size and deep integration with the Nordic economy might save it from a hard landing. Another country with a large deficit that is only partially financed with foreign direct investment is Romania. A different concern is excessive private borrowing from abroad, which was the prime cause of the East Asian crisis. In this regard, several countries (notably Estonia and Latvia) appear vulnerable.

A further worry is currency mismatch. The governments have reduced their currency risks by increasingly selling bonds in their local currencies. Currency risks have instead landed in the consumer sector. In Hungary, half of all home mortgages are in Swiss francs. Thus, the dominant picture is one of a historic shift of savings from a region where productivity grows slowly to a more dynamic region. Yet, rather than abating, the current account deficits have ballooned, increasing fears of financial crisis.

In chapter 2 Alan Ahearne, Birgit Schmitz, and Jürgen von Hagen discuss "Current Account Imbalances in the Euro Area." Their initial observation is that current account imbalances have widened markedly over the past one and a half decades and that these imbalances have been aggravated since the creation of the Economic and Monetary Union (EMU). The salient point is that the three poorest euro economies, Greece, Portu-

gal, and Spain, had current account deficits on the order of 9 percent of GDP in 2006, and these were financed by rich euro countries. The authors argue that this increased dispersion of current account positions reflects shifts in relative competitiveness in the euro area. As always, the source of financing is crucial, and a worrisome observation is that the large current account deficits of Greece, Portugal, and Spain are financed to a large extent through bank loans. An alternative interpretation of the current account imbalances is that they reflect capital flows in line with neoclassical growth theory.

The authors proceed to an econometric test and find that the EMU has changed the pattern of capital flows in Europe, increasing capital flows from rich to poor countries. Thus the current account development reflects an adjustment to capital flows rather than any flaw in macroeconomic management. The authors' message to new EU members is that they should expect even larger capital inflows—and current account deficits—when they finally adopt the euro. Yet the question remains: How much is too much? Countries that join the EMU will face a serious challenge in managing capital inflows.

Marek Dabrowski takes this argument further in chapter 3, "Rethinking Balance of Payments Constraints in a Globalized World." His aim is to confront the traditional framework of analysis for balance of payments with the new realities of a highly integrated world economy with great capital mobility. He finds many weaknesses in the simplifications of traditional analysis: It distinguishes transactions as "foreign" or "domestic," but in this day and age many asset owners easily alter residency or jurisdiction. All transactions, both public and private, are summarized in balance of payments, but their purposes and utility vary greatly. Dabrowski also points out that in a world of largely unrestricted capital flows, investors seek the highest expected return regardless of national boundaries, and the movement of capital is particularly easy in a monetary union. Much of the current account deficit of the new EU members may be seen as a reflection of the new member states offering a higher rate of return on capital. Because they attract capital inflows, they have a current account deficit. But in fact, these deficits bear witness to a favorable business climate. As a consequence, Dabrowski warns against the use of stereotypical warning signals, such as the "5 percent doctrine," as a standardized share of GDP in current account deficit.

Instead, Dabrowski proposes an alternative analytical framework. Capital movements are not restricted but free, and major sources of capital have no country of origin. Investors represent the private sector, and they seek the highest rate of return regardless of place or duration of investment. Finally, if a country has a better investment climate than others, there is no necessary diminishing rate of return in that country. Such an alternative analysis could have far-reaching policy implications. Deficit countries would fall into two categories, those with sovereign currencies

and those belonging to a monetary union, notably the EMU. In general, many large deficits become acceptable, but certainly not all. A much more differentiated, nuanced, and profound analysis of capital flows becomes necessary.

In chapter 4, "A World Out of Balance?" Daniel Gros broadens the picture to external imbalances in the world economy. His starting point is the US current account deficit that increased steadily to 6 percent of GDP in 2006. This external deficit was underpinned by rapidly rising housing prices in the United States and permissive credit markets with historically low risk premiums. Gros argues that the US external deficit was not caused by higher US growth but by the maintenance of domestic demand through foreign borrowing. The US current account deficit corresponds to the difference between US saving and investment.

Today, emerging economies maintain a savings glut, while US household savings have fallen to nil. The US external deficit has been financed by emerging-market economies, among which the biggest surplus country is China, which seems determined to maintain its export-led growth model. The other financiers of the US deficit are the oil-producing states; rising oil prices have led to substantial savings surpluses in these countries. Further oil price increases should aggravate the already great global imbalances: Gros sees the large savings of the oil-producing countries as the cause of low interest rates in the face of sharply rising oil prices.

Gros summarizes three views of the key cause of the excessive global imbalances. Washington blames China for underconsumption and manipulation of its exchange rate in order to promote exports, Europeans complain about the US fiscal deficit and the loose monetary policy of the Federal Reserve, and Asians accuse the United States of overconsumption while themselves seeing a competitive exchange rate as a necessary element of an export-led growth strategy. As China has amassed $1.7 trillion of reserves through huge surpluses vis-à-vis both the United States and Europe, a transatlantic consensus has been formed in favor of a revaluation of the Chinese renminbi. However, Gros argues that China is only one large source of global savings; the other is the oil-producing countries. He advocates that the Unites States accept a prolonged period of weaker growth in order to achieve a gradual adjustment of its external deficit, but he worries that US policymakers will try to escape an economic slowdown by cutting interest rates aggressively, which would cause the dollar to plummet. If the United States adjusts primarily through devaluation, the European economy will also decelerate, and the slowdown might become global. Gros concludes that the United States and some European economies have been overheated because of housing inflation, which has been financed internationally—a problem that should be resolved.

In chapter 5 Ray Barrell, Dawn Holland, and Ian Hurst discuss "Sustainable Adjustment of Global Imbalances." They focus on the US current account deficit of 6 percent of GDP, which has led to a negative US net

asset position of 20 percent of GDP. They argue that the deficit may be due partly to misaligned exchange rates and partly to excessive domestic absorption and that a simple devaluation would have no long-term effect on the current account. The underlying forces must be adjusted. The higher oil price since 2004 has boosted the current account deficit, but the reduction of the US effective exchange rate from 2003 to 2005 brought about a slightly larger improvement of 2 percent of GDP.

These authors argue that mere exchange rate changes driven by monetary policy would only temporarily improve the US current account. If a sustained change is to take place, the real economy must change. They advocate adjustment through a combination of actions. Critically, domestic absorption needs to fall in the United States and increase elsewhere. The authors prefer a market adjustment through a change in the risk premium on US assets. As a consequence, the US exchange rate would experience a 20 percent real depreciation. The rise in the risk premium would increase US real interest rates by over 1 percentage point from early 2007 to 2010. Then the current account balance would be 3.5 percent of GDP better than the baseline. Such a combination of exchange rate adjustments and improved current account balance would increase the US net asset position by 24 percent of GDP by 2015.

In chapter 6, "Meeting the China Challenge Is Meeting the Challenge of Comprehensive Engagement and Multilateralism," Wing Thye Woo brings China into the discussion. He begins with the US animosity to Chinese trade surpluses with the United States, which he considers misdirected. He sees the US concern as one of increased job insecurity that derives both from enhanced globalization (not only from trade with China) and from rapid technological innovation. Rather than wanting to stop either of these forces, Woo calls for a better social safety net in the United States.

Turning to China, Woo finds that the main cause of the Chinese current account surplus is the country's dysfunctional financial system. Total savings exceed investment expenditures, and this savings glut is the cause of the current account surplus. Simply put, China invests its savings surplus in foreign assets such as US treasuries. One reason for the savings glut is that all the banks are state-owned and the state needs to regulate their lending to keep them responsible. The Chinese people save a lot because of the poor social safety net. Because of inadequate financial intermediation, the financial system fails to reduce savings that are induced by uncertainty, forcing investors to finance more of their investment with savings than they would like.

Woo argues that the problem is complex and therefore its solution must have many parts. The United States ought to improve its fiscal balance and reinforce the dwindling Trade Adjustment Assistance program, retraining support, and medical insurance to enhance people's sense of security. China primarily ought to speed up the renminbi appreciation that

started in 2005, not least to contain inflation, accelerate import liberalization, and pursue a more expansionary fiscal policy to soak up excess savings. Together, the United States and China should pursue multilateral trade liberalization leading to the successful conclusion of the WTO Doha Round.

In August 2007, after these chapters were written, a financial crisis erupted globally originating in the United States. Although the problems of global imbalances had been evident for a long time, as these chapters show, the dominant one was the US current account deficit, which had been growing larger until 2006. By that time, there was no doubt that it was unsustainable. The fate of the large current account deficits of small and less well-off countries in Europe is uncertain, but the old rule appears to prevail that they may have sustainable deficits for quite some time, and eventually some will grow too large and will require readjustment when the credit flow suddenly stops.

Europeans especially have long blamed loose American credit policy, which has been geared to overconsumption, for the US current account deficit. Federal Reserve Chairman Ben Bernanke has instead famously blamed the "savings glut" in the rest of the world, while others have emphasized the more attractive returns of financial investment in the United States.

The financial crisis that erupted in August 2007 also put the spotlight on poor regulatory standards evident in the acceptance of poor credits called subprime mortgages, which were packaged as securities and given excessively high credit ratings. In the wake of the mortgage crisis, the United States has landed in a housing crisis, and both have brought about an economic slowdown that is reducing growth in the rest of the world as well. Readjustment is under way, but it is guided by fear rather than an orderly process.

The long-desired realignment of exchange rates began in early 2003, and the financial crisis in 2007 gave it new impetus. The US dollar has fallen as low as anybody would have desired (Williamson 2007), while the euro and the yen have surged. Most East Asian currencies, including the Chinese renminbi, are set to rise further (Goldstein and Lardy 2008). How far the exchange rate changes will overshoot in the midst of the crisis is still to be determined. Obviously, an earlier and more orderly realignment of the exchange rates would have been preferable, as John Williamson (2007) in particular has long argued.

What will be the long-term implications of the current abrupt depreciation of the US dollar for its role as the only truly global currency and for global macroeconomic and financial stability? We foresee three impacts. First, central banks that target their exchange rates to the US dollar (even partially or in a soft way) must abandon the dollar peg immediately if they want to avoid importing an inflationary impulse via the weakened US currency. This dilemma concerns many central banks in Asia (most no-

tably China and India), oil-exporting countries (especially those in the Gulf region), the Commonwealth of Independent States (Russia, Ukraine, Kazakhstan, and others), and some countries in Latin America and Africa.

Second, the dollar is the global unit of accounting and statistical reporting, the dominant currency of trade and financial transactions, and a means of storing financial wealth, including the international reserves of central banks. All who use the dollar as an accounting unit will report rapidly increasing sale prices and revenues as well as dollar-denominated profits. This may create an illusion of money and wealth in the short term, which could lead to overly optimistic financial and investment plans if adjustments are not made for the declining international value of US currency. The same may happen on a macro level, especially in countries that continue to peg their currencies to the US dollar; they may face the illusion of increasing tax revenues, for example, as in the case of rent-type taxes linked to dollar-denominated export prices, or growing international reserves.

Third, holders of US dollar-denominated assets will lose and holders of dollar-denominated liabilities will gain. Central banks with large dollar-denominated reserves will be the major losers. Sovereign wealth funds created by oil exporters and some Asian countries in order to sterilize excessive foreign exchange inflows will be the next victims. Numerous private holders of dollar-denominated financial assets worldwide will also suffer exchange rate losses and inflation tax. On the other hand, the US private sector (especially households) and US government, the two largest debtors in US currency, will be major beneficiaries. Similar gains will be shared by all other holders of dollar-denominated liabilities. This may not be the best lesson for potential borrowers in less developed countries as it may increase their appetite for future foreign-currency borrowing.

The key question, however, is whether holders of dollar-denominated assets will quietly stay put or start a run on the US currency. Until very recently, the prevailing opinion was that, assuming a modest and gradual dollar depreciation, there would be no dramatic recomposition of at least official assets. However, this assumption may not hold true any longer, leading to further dramatic exchange rate readjustment.

Looking ahead, we must ask whether the US dollar will sustain its role as the most important global currency. If not, which currency will take over that role? Today, the euro seems the most likely successor, but whether EMU member countries and the European Central Bank would be happy with such an outcome is debatable. And a disruption of the current dollar-based trade and financial transaction system may harm global trade and capital flows.

In summary, the rising and persistent US current account imbalance proved unsustainable, and because little had been done to contain it earlier, the adjustment was sudden and abrupt following a serious financial crisis with unknown global consequences (at least at the time of this writing). As

always, an earlier adjustment would certainly have been desirable—and not impossible, as there had been clear warning signals for years.

Where does this leave the case for globalization? An immediate and broad reaction is that globalization is in danger. If even the United States, the heart of capitalism, can enter such a destabilizing crisis, what can be said in defense of globalization? Yet capitalism was considered moribund in Russia in August 1998 and in Argentina a few years later, but it rebounded with a vengeance and globalization proceeded. After all, the problem with the United States has not been capitalist orthodoxy but the leadership's failure to abide by its dogmas. The political response will require both intellectual clarity and persuasive power.

Capitalism: A Model of Economic Growth

Curiously, the capitalist model of economic development appears less questioned today than globalization. Since the collapse of communism, there does not seem to be much of an alternative either in theory or in practice. The pillars of capitalism—reasonably free trade and prices, private ownership of the means of production, and stable money—are widely accepted. The issues are limited to how large public redistribution should be, how much regulation of various markets is optimal, and how the difficult public functions can best be organized.

In chapter 7 Leszek Balcerowicz discusses "Institutional Systems and Economic Growth." As the title suggests, this is a broad philosophical approach to long-term economic growth as one of the most fundamental issues of empirical economics. Balcerowicz singles out innovation-based growth as potentially lasting and universal, while other forms of growth are merely transitional. Innovation-based growth must be founded in a country's institutional system, but it can be blocked by either an information barrier or an incentive barrier. The latter is in effect when the expected utility an individual derives from a new system does not correspond to the utility to society of his or her act. Either investment is hampered or the individual returns of an investment are in danger because of official or private predation. With few exceptions, in countries where incentive barriers prevail, long-term economic growth requires a substantial change of the country's institutions through reform.

In a similar vein, Jacek Rostowski (since appointed minister of finance of Poland) and Bogdan Stacescu consider "The Impact of the 'Legal School' versus Recent Colonial Origin on Economic Growth" in chapter 8. The target of their scrutiny is papers by Rafael la Porta and colleagues (1997) arguing that the origin of a country's legal system is decisive for economic growth. Rostowski and Stacescu conduct an econometric test that fails to verify that a legal system based on the English common law system is more conducive to growth than one founded on French civil law. Instead,

their regressions support the view that the problem lies in a wider complex of institutions that are associated with having been a British or a French colony. They find that former British colonies evidence better economic performance than former French colonies. It may be added that this is only a matter of relative performance, not an absolute obstacle; as Raghuram Rajan and Luigi Zingales (2003) noticed, France had a relatively larger stock market capitalization than the United States in 1914.

The last two chapters in this book discuss the possibilities for the European Union to compete and adjust in relation to East Asia's Tigers and China, respectively. In chapter 9, "Does the European Union Emulate the Positive Features of the East Asian Model?" Anders Åslund arrives at a surprisingly positive answer. In a comparison between key features of the East Asian and EU economic models, he finds that East Asia has excelled in four regards: small transfers and public expenditures, low taxes, freer labor markets, and strong education. He focuses on the first three, which are all prominent goals of the EU Lisbon Agenda of 2000.

The Lisbon Agenda has not been very effective, however, because it was a top-down approach. Instead, fiscal and regulatory national competition on the unified European market seems to be doing the trick. Tax competition is pervasive. The average highest personal income tax has fallen by 5 percentage points in Eastern and Central Europe in the last decade and by 4 percentage points in the 15 old EU members. The corporate profit tax has slumped by 11 percentage points in Eastern and Central Europe and by 9 percentage points in the old member countries. These tax cuts have been accompanied by stricter fiscal discipline. Even so, from 1995 to 2000, average public expenditures as a share of GDP declined by almost 6 percentage points, with three countries recording declines of 10 percentage points or more. In addition, labor markets are being deregulated in small steps. Many factors have contributed to this steady liberalization, but the dominant force is competition among the nations belonging to the European Union. This competition has been reinforced with the enlargement of the European Union and the strengthening of competition within the Union.

In chapter 10, "Eight Potential Roadblocks to Smooth EU-China Economic Relations," Jean Pisani-Ferry and André Sapir consider the dilemma of relations with China from a European perspective. Their main concerns are that Europe will not reform fast enough to keep up in the competition and could be squeezed in intensified competition between the United States and China, in which the former would be more innovative and the latter more cost effective.

A number of factors contribute to the challenges for Europe vis-à-vis China. Chinese integration into the world economy may not help but interfere with European integration. Similarly, European privileged trade relations may be destabilized by Chinese competition. China's great demand for energy and other raw materials will boost their prices and affect import-dependent Europe. Dysfunctional European labor markets are a

particular handicap. With regard to policies on climate change, Europe and China take opposing positions, which may harm control of greenhouse gas emissions and cause trade disputes. At present, the euro has shot up, while the rate of the renminbi is lingering (as a consequence of its continuous peg to the US dollar), further squeezing EU trade. And ultimately, China's rise in economic power will reduce Europe's weight not only in the world economy but also in international organizations.

But along with these international shifts and concerns, something curious is happening. Globalization, rather than capitalism, is being questioned because of its huge force that does not seem sufficiently well managed by existing governmental institutions. At the same time, capitalism is developing ever further in most countries. Deregulation, privatization, and the reduction of state financial intermediation are proceeding in line with the Washington Consensus (Williamson 1990). Public expenditures are declining and converging, possibly toward one-third of GDP as Vito Tanzi and Ludger Schuknecht (2000) advocated. Similarly, democratization is proceeding with economic modernization, as Seymour Martin Lipset (1959) taught us.

The exceptions to this increasing adherence to the rules of normal capitalism are few, essentially some of the most resource-rich countries (such as Russia and Venezuela), which can afford poor economic policies as long as the oil price keeps reaching new peaks.

Yet the victorious Washington Consensus is not popular. It has even become a bad word in populist leftwing discourse (Klein 2007; Stiglitz 2002, 2006). The situation is somewhat reminiscent of the 1960s. As the world improves in almost all conceivable regards, tolerance of the few elements that are not improving—inequality and security—is steadily declining. The economic success of capitalism and globalization may appear to be as good as anybody could have hoped, but capitalism also has to be politically sustainable, which is an important topic for another book.

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1

Are Large External Imbalances in Central Europe Sustainable?

SUSAN SCHADLER

Even in a world of remarkably large global imbalances, the Central and Eastern European countries (CEECs) stand out.[1] During 2001–06, these countries recorded some of the largest external current account deficits (relative to the size of their economies) of any emerging-market countries (figure 1.1). Because these deficits tended to reflect rather low domestic saving rates alongside high domestic investment rates, the CEECs were dependent on large inflows of foreign capital, often with sizable accumulations of external debt. Granted, not all have experienced such developments—both the Czech Republic and Poland have seen average current account deficits below 5 percent of GDP—but of the ten CEECs considered here, seven had average investment-savings (or equivalently external current account) imbalances in excess of 7 percent of GDP during 2001–06.

Should red flags go up? In general, the CEECs have engaged in little if any discretionary official foreign exchange intervention—almost all are inflation targeters with either floating exchange rates or actual or de facto currency boards with nondiscretionary, unsterilized intervention only. Therefore, concerns that apply to other countries about unsustainable manipulations of exchange markets (for example, by discretionary sales or

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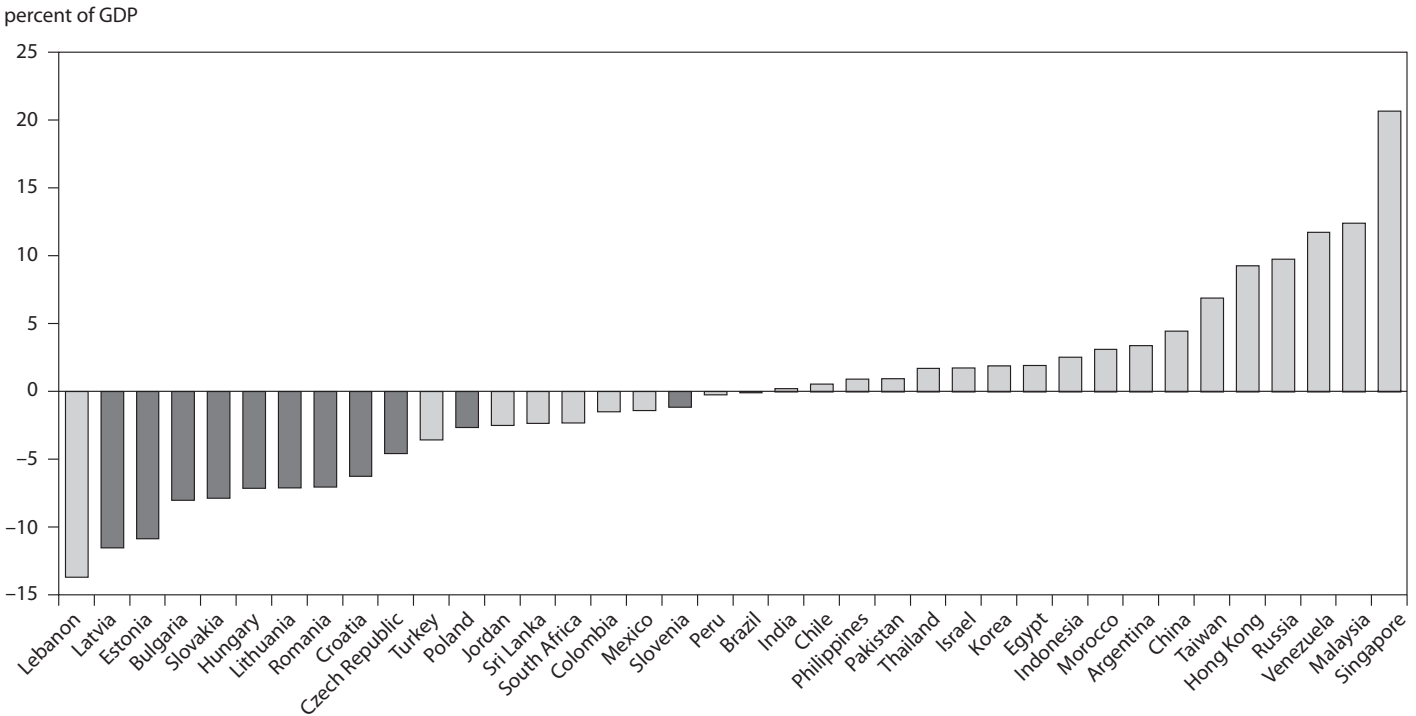
1. The CEECs are Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, and Slovakia. All of these countries were centrally planned economies until 1990 and have now (with the exception of Croatia) acceded to the European Union, but they have not yet replaced their currencies with the euro.

Figure 1.1 Current account positions of emerging-market countries, 2001–06 average



Note: Dark bars indicate the Central and Eastern European countries.

Source: International Monetary Fund, *World Economic Outlook.*

purchases of foreign exchange to finance current account imbalances) are virtually nonexistent for the CEECs. Nevertheless, questions are growing as to whether the large imbalances leave these countries excessively vulnerable to sudden stops or reversals in capital inflows, and whether markets are being lulled into complacency by expectations that the European Union will come to the rescue should problems develop, that the EU Stability and Growth Pact will ensure sustainable policies, or that eventual euro adoption will provide a safe haven.

The aim of this chapter is to understand the origins and risks of large imbalances in the CEECs. The analysis indicates that such an understanding requires a broad perspective on the countries' adjustments to the pretransition distortions in their economies, their (at least implicit) strategies for catching up to Western European per capita income levels, and the dynamics of both these processes in countries with open markets in close proximity to wealthy Western European countries. In effect, the outcomes as they have evolved were inevitable, imbalances are likely to remain large or (in countries where they have been small) to widen, and governments formulating policies need to understand and take into account the risks of their adopted growth strategy.

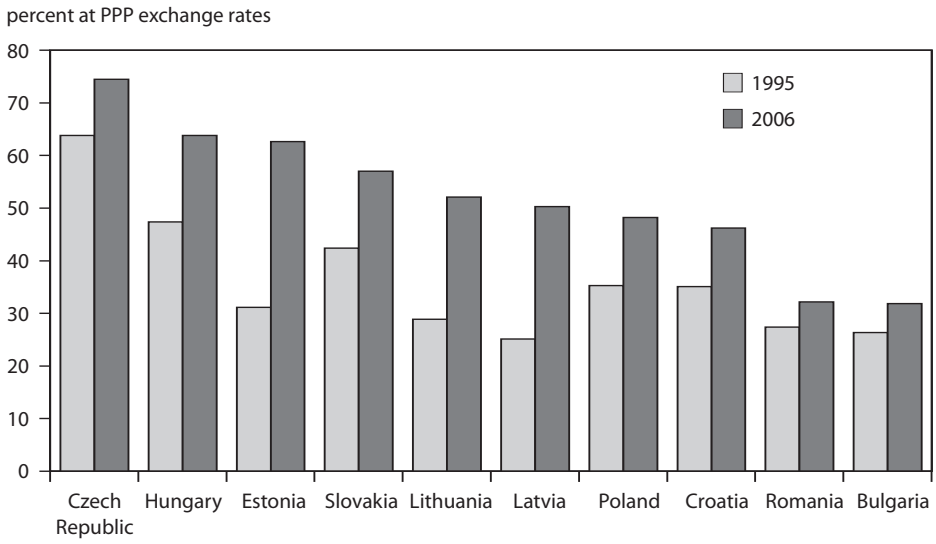
This chapter is organized in five sections. The first reviews the stylized facts surrounding the emergence of external imbalances (typically accompanied by rapid output growth) in the CEECs and examines their resemblances to and differences from the experiences of other emerging-market countries. The second reports on the results of estimating a model examining the determinants of output growth. Building on this analysis, the third section examines the interaction between growth and current account imbalances to help establish whether the large-scale use of foreign savings is producing adequate returns in terms of higher output growth. And the fourth considers how markets view the risks of large current account imbalances. The final section presents conclusions.

Large Imbalances and Income Catch-Up: Stylized Facts

Emerging from the era of central planning, the CEECs had a formidable task to catch up with the income levels of their Western European neighbors. By 1995, when the worst of the posttransition shock had subsided, the range of per capita GDP (at purchasing power parity, or PPP, exchange rates) was 25 to 63 percent of the average level of the EU-12 (figure 1.2).[2] As daunting as such a catch-up may seem, it was a smaller gap than in most other emerging-market countries (see box 1.1 for a list of the 38

2. Throughout the chapter, catch-up potential is measured relative to the 12 members of the euro area as of 2006 (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain).

Figure 1.2 Per capita income gaps of 10 CEECs relative to the euro area



PPP = purchasing power parity

Source: International Monetary Fund, *World Economic Outlook*.

countries designated in this chapter as emerging-market countries). In fact, even in 1995, all but two (Bulgaria and Latvia) of the CEECs were in the most affluent half of the emerging markets, and three (the Czech Republic, Hungary, and Slovakia) were in the most affluent quarter.

Has output growth (and by extension the pace of catch-up) in fact been rapid, especially if viewed against the generally strong performance since 1995 of other emerging markets with a substantial catch-up challenge? Much depends on how the data are sliced. Looking at the period 1995–2006, the CEECs have seen growth spread over the higher half of emerging-market performance, with Poland and Estonia at the top of the spectrum and the (richer) Czech Republic and (poorer) Bulgaria at the bottom (figure 1.3). But for no country has growth been steady over the period. Rather, some countries (Poland and Hungary) were early rebounders but later laggards, and others (Bulgaria, Latvia, and Romania) struggled to escape the transition shock but rebounded strongly in the latter part of the period.[3]

The sources of growth—labor input, capital input, or total factor productivity (TFP)—have been similar among CEECs, but their pattern has been quite different from that of other emerging-market countries (figure 1.4). Broadly, with massive labor shedding in almost all the CEECs, at least

3. All per capita GDP data are measured at PPP exchange rates to ensure comparability across countries. See Schadler et al. (2006) for an explanation of this measurement.

Box 1.1 Emerging-market countries

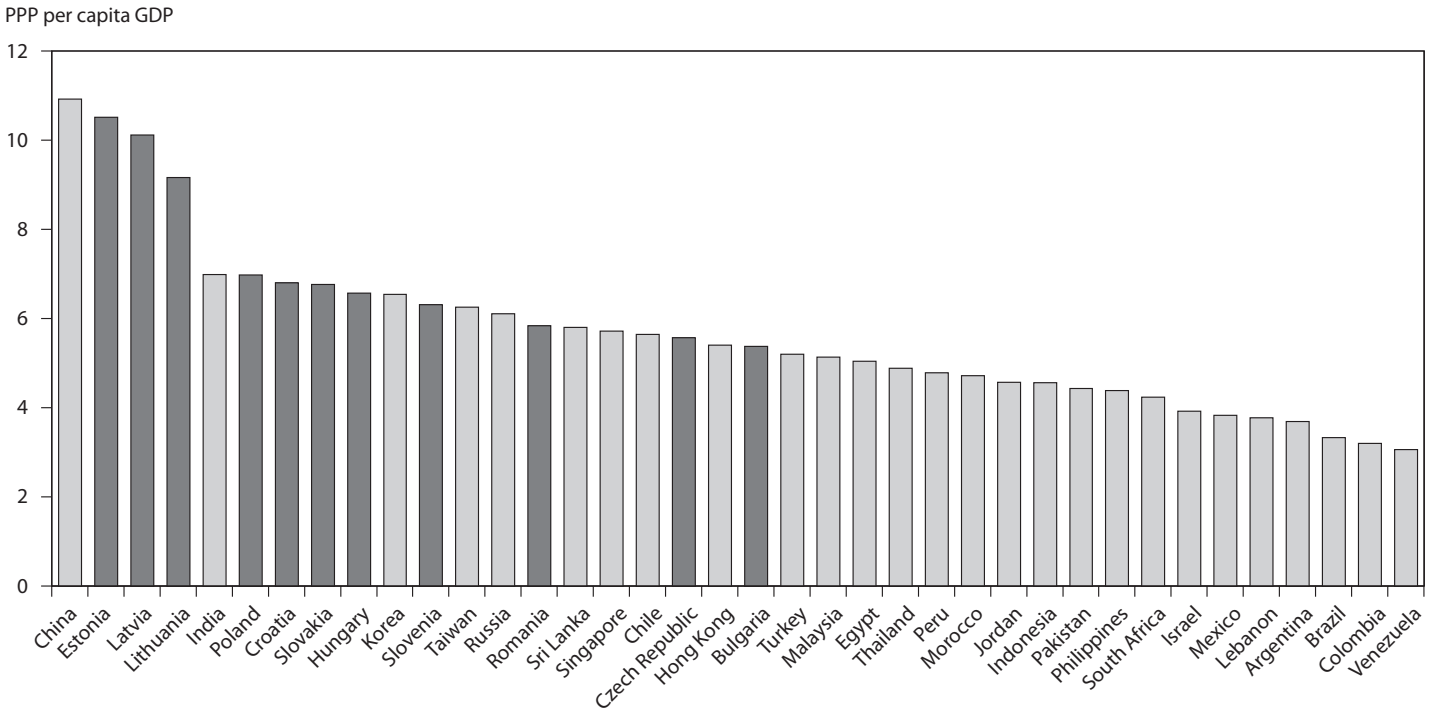
Region	Countries
Central and Eastern Europe	Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia
East Asia	China, Hong Kong, Indonesia, South Korea, Malaysia, Philippines, Singapore, Taiwan, and Thailand
Latin America	Argentina, Brazil, Chile, Mexico, Peru, and Venezuela
Other	Egypt, India, Israel, Jordan, Lebanon, Morocco, Pakistan, Russia, South Africa, Sri Lanka, and Turkey

during the 1990s, the contribution of labor input to growth was substantially smaller in the CEECs than in other emerging-market countries. Although it is not possible to precisely measure the capital stock in countries where a large share of capital has been discarded as obsolete, the calculations that are available suggest that the contribution of capital to growth in the CEECs was more or less in line with that in other emerging-market countries—in the most recent five-year period (2001–05), greater than the average in Latin American emerging-market countries but smaller than the average in Asian emerging-market countries. What stands out for the CEECs is the contribution of TFP, which ranged from an extraordinary 6 percentage points in the late 1990s in the Baltic countries to a low of 2 percentage points in the four Visegrad countries (the Czech Republic, Hungary, Poland, and Slovakia) during 2000–2004. In no other group of emerging-market countries was this contribution so persistently large.

Notwithstanding the sizable contributions of capital and TFP to CEEC growth since 1995, gaps vis-à-vis the euro area countries in capital-labor ratios and levels of TFP remain large. Although employment rates in most of the CEECs were by 2004 roughly comparable to the (admittedly low) rates in the euro area, capital-labor ratios and especially TFP levels in the CEECs were still substantially lower than in the euro area. Available calculations suggest that average capital-labor ratios in the CEECs (excluding Bulgaria, Croatia, and Romania) were 15 to 44 percent and levels of TFP 36 to 64 percent of those in the EU-12.[4] These gaps, even after 15 years of convergence, reflected the enormous legacy of distortions—resource

4. See Schadler et al. (2006, 15) for a classification of income gaps vis-à-vis the euro area in employment, capital, and TFP components.

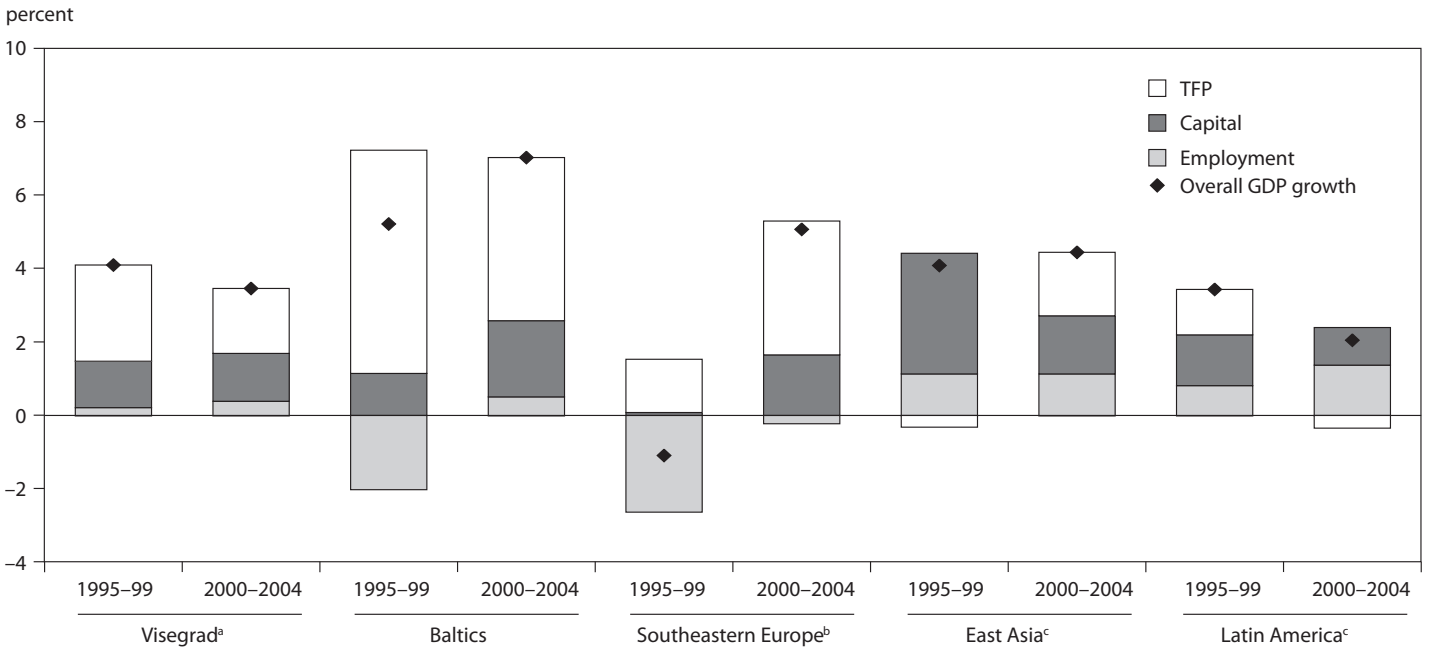
Figure 1.3 Emerging-market growth performance, 1995–2006 (average growth rates)



Note: Dark bars indicate the Central and Eastern European countries.

Source: International Monetary Fund, *World Economic Outlook*.

Figure 1.4 Contributions to average GDP growth in emerging markets, 1995–99 and 2000–2004 averages



TFP = total factor productivity

a. Czech Republic, Hungary, Poland, and Slovakia.
b. Bulgaria and Romania.
c. See box 1.1 for countries included in the East Asia and Latin America groups.

Source: Schadler et al. (2006).

misallocations and poor incentives to invest and work—from the central planning era.[5] Particularly insofar as the CEECs share borders and many cultural characteristics with Western European market economies, the remaining gaps presage a further surge in investment and growth of TFP as Western technology and managerial expertise spill over to the east.

In fact, this is just what has been happening. Investment-to-GDP ratios in the CEECs have been among the highest in emerging-market countries (figure 1.5). How have these been financed? Domestic saving has played a large role, of course. Recall, however, that just as distortions from central planning resulted in misdirected investment, they also thwarted the provision of consumer goods: Thus households' pent-up demand as central planning collapsed was enormous, and the shift to market economies was accompanied by a sharp drop in private savings to low levels by emerging-market standards. In these conditions, large inflows of foreign savings (reflected in current account deficits) were essential if investment rates were to be sustained at the levels necessary to support the closing of the gap in capital-labor ratios. Indeed, in the spectrum of emerging-market countries, large current account deficits in the CEECs stand in sharp contrast to average surpluses of other regional groupings of emerging-market countries. In other words, with expected high returns on investment in the low capital-labor ratio, both domestic residents of CEECs and foreigners saw strong attractions to investment.

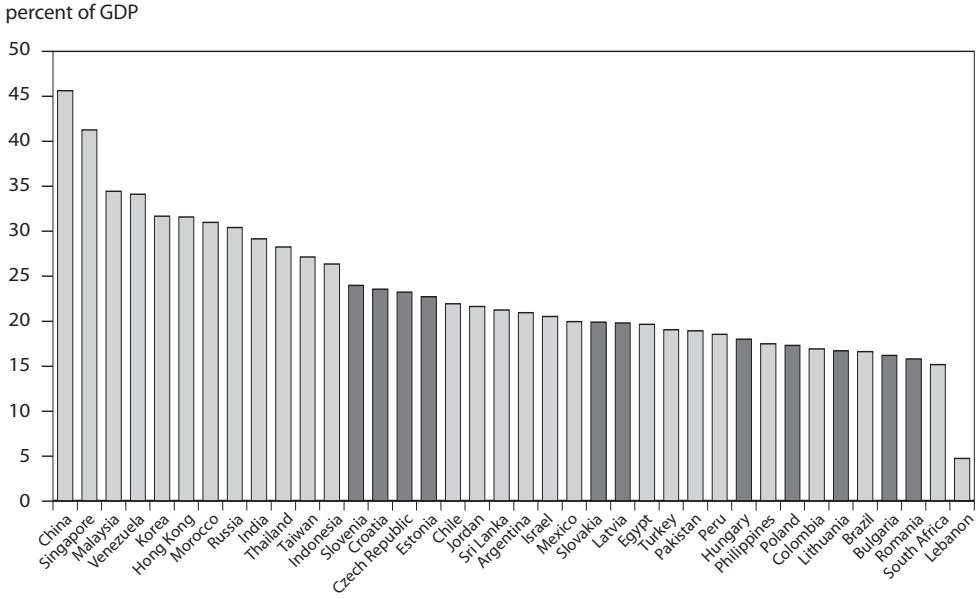
But does such large-scale use of foreign savings create vulnerabilities to sudden stops or changes in market sentiments that make it fundamentally unsustainable? Is the recent record of CEECs a reflection of short-sighted borrowing that will not produce the needed returns for servicing obligations? These broad questions are best broken down into three smaller ones.

First, is it the private or public sector that is generating the investment-savings imbalances? The East Asia crisis taught us that private imbalances are not always safe: The unadorned Lawson Doctrine—investment-saving imbalances of the private sector reflect rational private decisions and are not a domain for public-sector concern or involvement—died. That said, it would be hard to refute—particularly when institutions and transparency are strong—that private imbalances are more likely to produce sustained growth than are public imbalances. And indeed, most current account deficits in CEECs reflect not a fiscal gap but rather private investment-saving gaps (figure 1.6). In other words, with high expected returns from technology transfer and increases in capital-labor ratios toward Western European levels, large capital inflows need not be disequilibrating. In fact, they should be equilibrating—responding to the profound disequilibria from the central planning era.

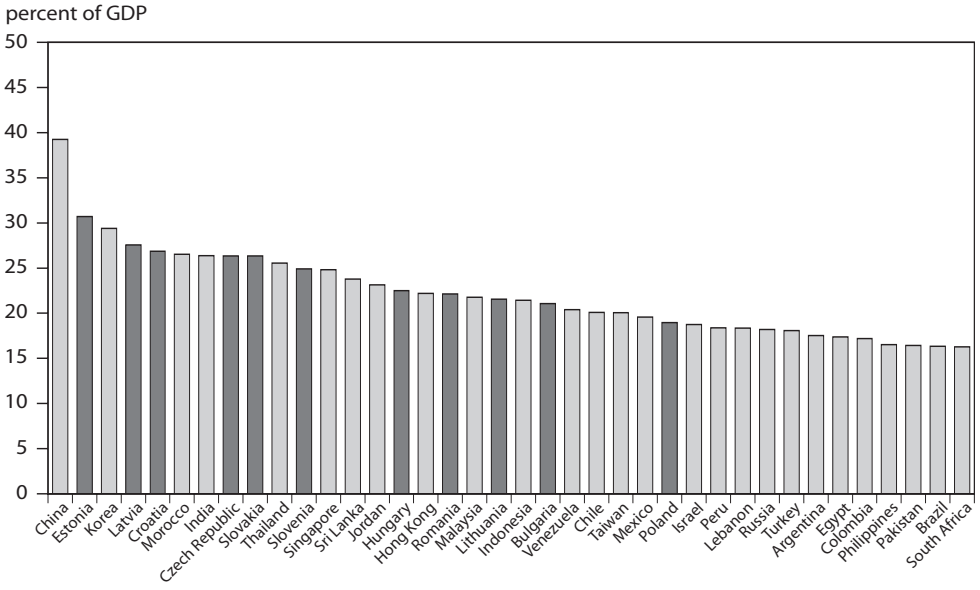
5. Eichengreen (2007) has an excellent account of the extent of the distortions and the contrast in growth performance between Eastern and Western Europe during the postwar/pretransition era.

Figure 1.5 Emerging-market domestic savings and investment, 2001–06 average

a. Domestic savings



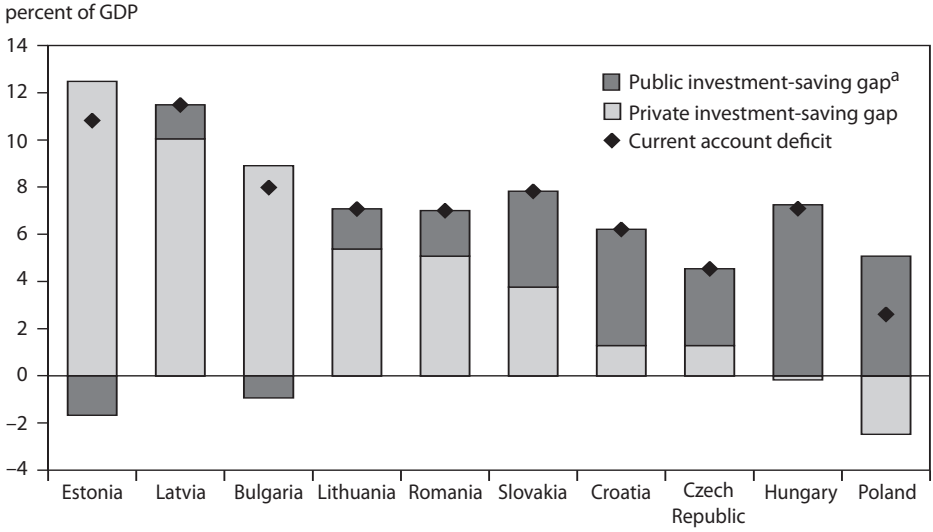
b. Investment



Note: Dark bars indicate the Central and Eastern European countries.

Source: International Monetary Fund, *World Economic Outlook.*

Figure 1.6 Investment-saving gaps and current account deficits, 2001–06 average



a. Negative numbers denote general government surpluses.

Sources: International Monetary Fund, *World Economic Outlook*; author's calculations.

Second, why have *net* private inflows to the CEECs been so much larger than to other emerging-market countries? Are they not all facing broadly similar catch-up challenges? One distinction is key: The CEECs, in the process of rapidly shifting to market mechanisms and meeting the requirements for accession to the European Union, almost fully eliminated restrictions on capital flows. Current account deficits were to a large extent *capital account driven*: They resulted from the perception, particularly among high-saving EU neighbors, that profit opportunities from technology transfer and rising capital-labor ratios would earn large returns. Indeed, in an environment of open capital accounts, large income gaps between the CEECs and their neighbors, and converging institutions, it would be hard to envision anything other than large capital inflows.

Third, who is bearing the foreign exchange risk underlying the large capital inflows? Even with relatively benign macroeconomic policies, such risk (in addition to the standard risks in investment of any sort) typically arises when capital flows across borders of countries with different currencies. Is financing FDI dominated, so that risks are borne largely by foreign investors? Or is it debt creating, so that the preponderance of risks—of lower-than-expected growth, rising interest rates, or exchange rate changes—are borne by domestic borrowers?

The financing story is mixed. FDI is indeed large in the region, for the most part exceeding (relative to GDP) that in other emerging-market countries. But private debt-creating inflows also stand out. Whereas these hover around balance in most other emerging-market groupings, in the CEECs they rose to over 4 percent of GDP by 2005, the last year for which comprehensive data are available. By 2007 they are likely larger still (figure 1.7a).

How are private debt–creating inflows working through the system? To a large degree they—together with domestic savings—are financing rapid credit growth, especially to households (figure 1.7b). Although stocks remain moderate, it is worrisome that for several countries (mainly fixed exchange rate countries) bank credit growth, especially to households, is largely denominated in or indexed to foreign currency. Households are taking on the risks of any weakening of growth and of changes in interest or exchange rates.

The obvious implication of the financing picture is high external debt relative to GDP by emerging-market standards (figure 1.7c). This is true for gross or net indebtedness (that is, adjusting for the accumulation of foreign assets mainly in commercial and central banks). Also, in contrast to most other emerging-market countries, where debt ratios are falling, external indebtedness relative to GDP in most of the CEECs has risen steadily, with only a brief leveling off in 2004.

In further contrast to most other emerging-market countries, official foreign exchange reserves are generally low (figure 1.7d). All of the CEECs have forgone reserve accumulation in the context of floating exchange rate systems or actual or de facto currency boards. While low reserves could be seen as a weakness relative to other emerging-market countries, the transparency of monetary policy frameworks with no discretionary or sterilized intervention in the CEECs is a major strength and probably precludes the need for holding sizable reserves.

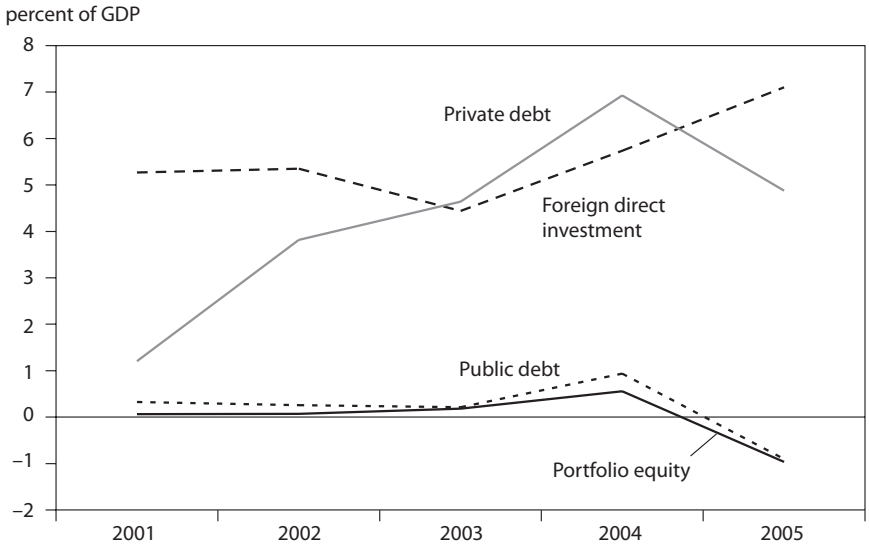
These stylized facts point to the complexity of assessing vulnerabilities stemming from large external imbalances. The principal question underlying such an assessment is whether the CEECs can produce sustained growth, even if not at the high rates of the past few years. This is the subject of the next section.

How Do the Influences on Growth Stack Up to Emerging Markets More Generally?

Understanding the determinants of economic growth remains a highly imperfect science. The growth accounting framework used in the last section reveals the mechanics of growth but does not explain why some

Figure 1.7 Aspects of CEEC financial accounts

a. Net capital flows, 2001–05



b. Private credit, 2006

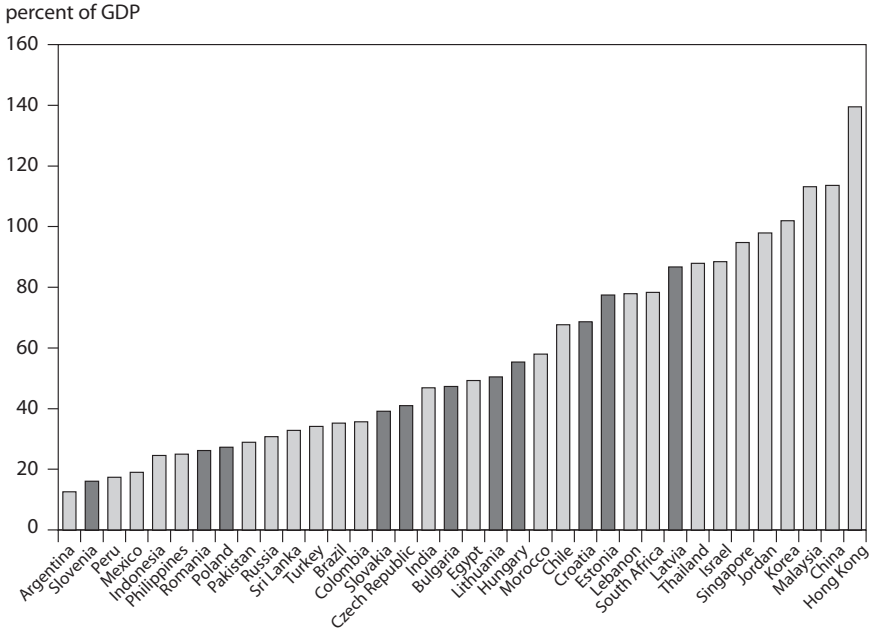
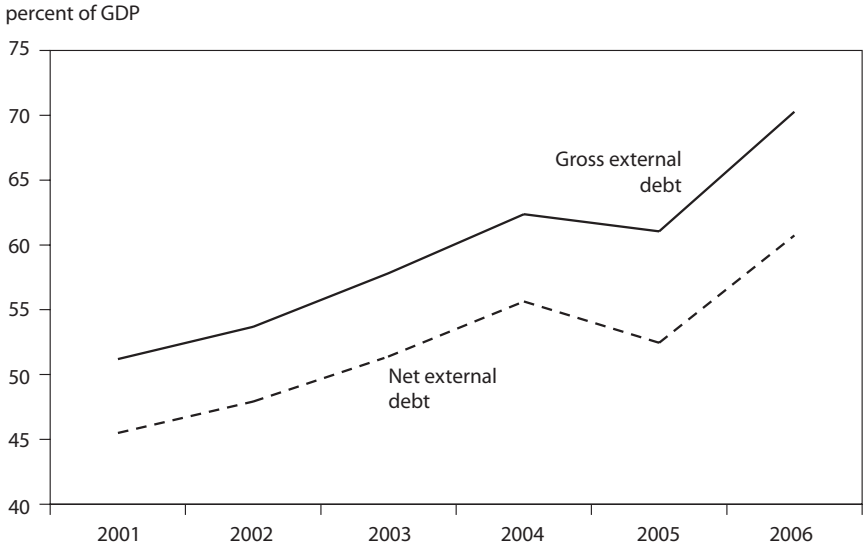
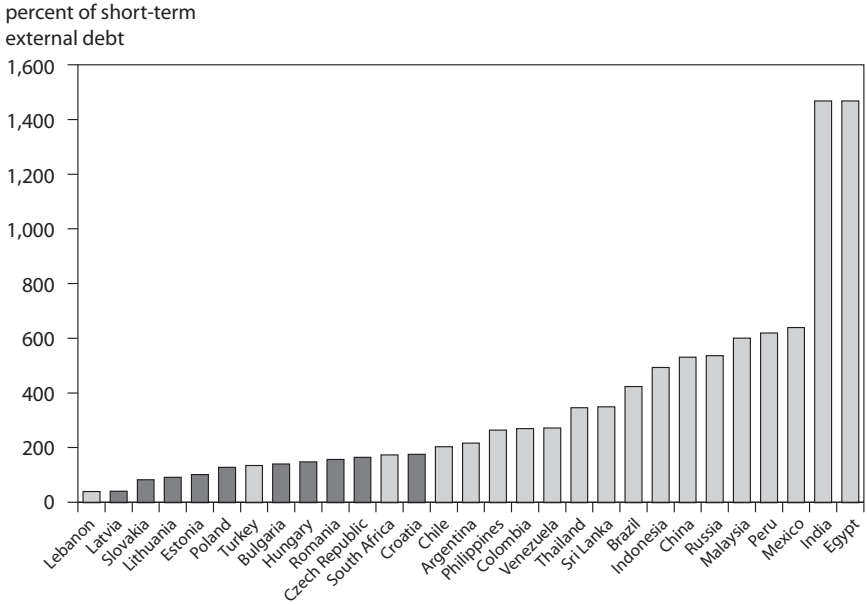


Figure 1.7 *(continued)*

c. External debt, 2001–06



d. International reserves, 2006



Note: Dark bars indicate the Central and Eastern European countries.

Source: International Monetary Fund, *World Economic Outlook;* World Bank, *Global Development Finance* database.

countries grow faster than others. For this information, there are few alternatives to the growth regression literature, which uses the experiences of many countries to indicate through panel data regressions what conditions and policies best support growth. Of course, it is important to recognize the limitation of empirical exercises using panel data.

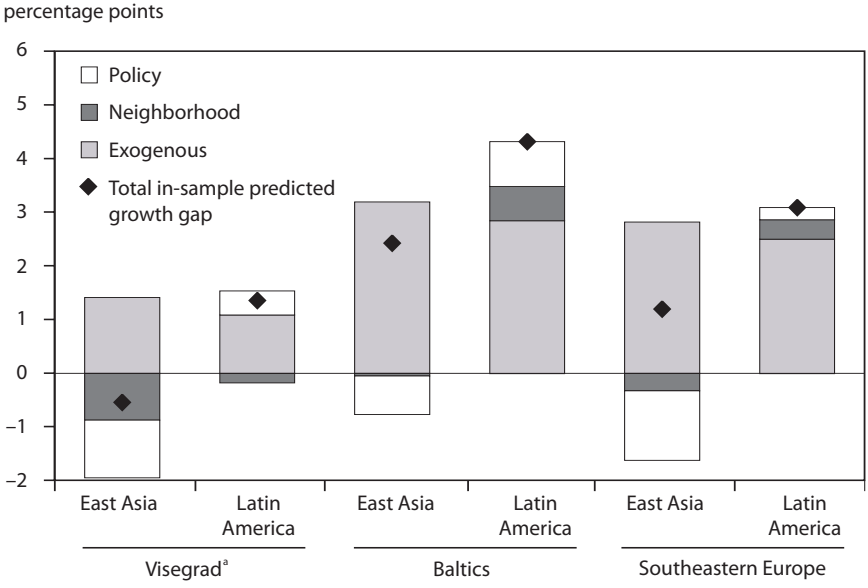
The practical question addressed here is twofold: First, what has contributed to the relative strength of growth in the CEECs, and second, are conditions in the CEECs right for continued strong growth that would support adequate returns to the high investment rates funded by both domestic and foreign savings?[6] Analysis of many previous studies resulted in selection of the sparest list of variables likely to capture the key influences on CEEC growth. Then, estimating parameters using five-year overlapping averages of data from 146 countries (advanced, emerging-market, and low-income) during 1985–2004, the key strengths and weaknesses of the conditions for growth were identified and the results used to examine how growth rates are likely to evolve in the next five years.

Broadly, the results support evidence from other studies that three types of influences play a key role in growth. The first group can be called exogenous variables—historical or demographic variables over which policy has little control except in the very long run; these are initial GDP per capita and population growth, both negatively related to GDP growth. A second key influence is partner country growth: Countries that have trade relationships with faster growing countries tend to grow faster themselves. And a third group comprises policy variables—simple proxies for the cost of investment, labor force education, openness to trade (which provides growth-stimulating competition), the ratio of tax receipts to GDP (after a critical point, larger governments impede efficiency), and institutional quality (assessment of the latter is based on indices compiled for the *International Country Risk Guide* encompassing measures of government stability, democratic accountability, law and order, quality of bureaucracy, and corruption).

The model predicts in-sample growth rates reasonably well (see Schadler et al. 2006 for full reports on estimates and in-sample predictions). More to the point for this chapter, the results indicate a number of strengths and some weaknesses of the CEECs relative to the other groupings of emerging-market countries. Figure 1.8 presents average differences (indicated by the black diamond) between in-sample predictions of growth rates for each of three CEEC groupings and for the East Asian emerging-market group on the one hand and the Latin American emerging-market group on the other. It also classifies each of these differences in growth rates into the three clusters of underlying determinants—exogenous factors shown in light grey, the neighborhood factor shown in dark grey, and policy factors shown in white.

6. The empirical work presented in this section derives from Schadler et al. (2006).

Figure 1.8 Differences in contributions to growth: CEEC groupings relative to Latin America and East Asia, 1999–2004 average



a. Czech Republic, Hungary, Poland, and Slovakia.

Note: Contribution to average growth in CEEC grouping less contribution to East Asia or Latin America as labeled. Positive numbers indicate stronger contributions in CEEC grouping.

The clear message here is that the CEECs generally and the Baltic and Southeastern European countries in particular have experienced a sizable boost to growth since 2000 from exogenous factors—primarily low population growth rates relative to both East Asia and Latin America. The neighborhood effect has been mixed—generally negative relative to the East Asian countries but positive (and in some cases strongly so) relative to Latin America.[7] Differences in the policy environment, while smaller than differences in exogenous influences, are on average positive vis-à-vis Latin America but negative vis-à-vis East Asia. These differences are dominated by size of government (smaller in East Asia than in most of the European countries), openness (East Asian countries tend to be more open than those in Europe), and schooling (European countries have higher levels of educational attainment than Latin America).

7. The much better neighborhood effect since 2000 in the Baltics than in the Visegrad or Southeastern countries reflects the Baltics' important trade relations with the relatively rapidly growing Scandinavian countries and Russia, in contrast to the more important role of the core euro area in the Visegrad countries.

Looking ahead, conditions for continued strong growth in the CEECs are rather good. The out-of-sample predictions suggest that per capita GDP growth through 2009 could range from about 5 percent for the Baltics to about 4 percent for the Visegrad countries. To a large extent, this relatively favorable outlook reflects improvements during the past five years in some policy areas (notably, size of government, openness, relative price of investment, and educational attainment). These improvements broadly offset the reduction in growth prospects stemming from the smaller gap in per capita income in advanced countries—in other words, diminishing catch-up opportunities. Nevertheless, the current policy environment in the CEECs is set to continue to exert a (small) negative effect relative to that in East Asia, indicating the continuing need for more growth-oriented policies (particularly by cutting the size of the government relative to the economy) to narrow the growth gap vis-à-vis emerging Asia.

Are Growth and Current Account Positions in Sync?

This generally reassuring picture of growth in the CEECs has sidestepped the question of whether the relatively heavy reliance on foreign savings to support investment will itself become a negative influence on growth. In other words, will vulnerabilities associated with large current account deficits and rising indebtedness (even if the debt is held by the private sector) constrain growth? There are two related components of this question: First, has the use of foreign savings been inefficient or wasteful so that future growth will not meet the expectations of investors, and second, are there indications that markets might be spooked by large current account deficits and (what might be seen as) associated vulnerabilities? This section addresses the first of these concerns and the second is taken up in the next section.

There is no straightforward method to determine whether the large capital inflows to the CEECs are going to productive or sustainable uses. There is a temptation to assume that FDI is sustainable and even efficient, while flows through the banking systems (at least some of which find their way into borrowing by households and small businesses) are less reliably so. Buying into this assumption of course entails many leaps of faith: that entrepreneurship in the host countries is poor, that consumption-smoothing does not allow adequately for downside risks to income growth, and that accumulation of consumer durables does not have a sufficiently strong effect on productivity, to name a few.

An alternative to such a simplistic approach, taking into account the lack of data for a micro examination of the efficiency of foreign capital–financed spending, is the use of a macro model to examine the link between growth and current account deficits using annual data on all European countries (during 1975–2004 for advanced countries, 1995–2004 for

others; Schadler et al. 2006). The intuition is that European integration may make Europe different from other regions: It may make capital flows more responsive to growth opportunities and, conversely, growth more responsive to capital inflows.

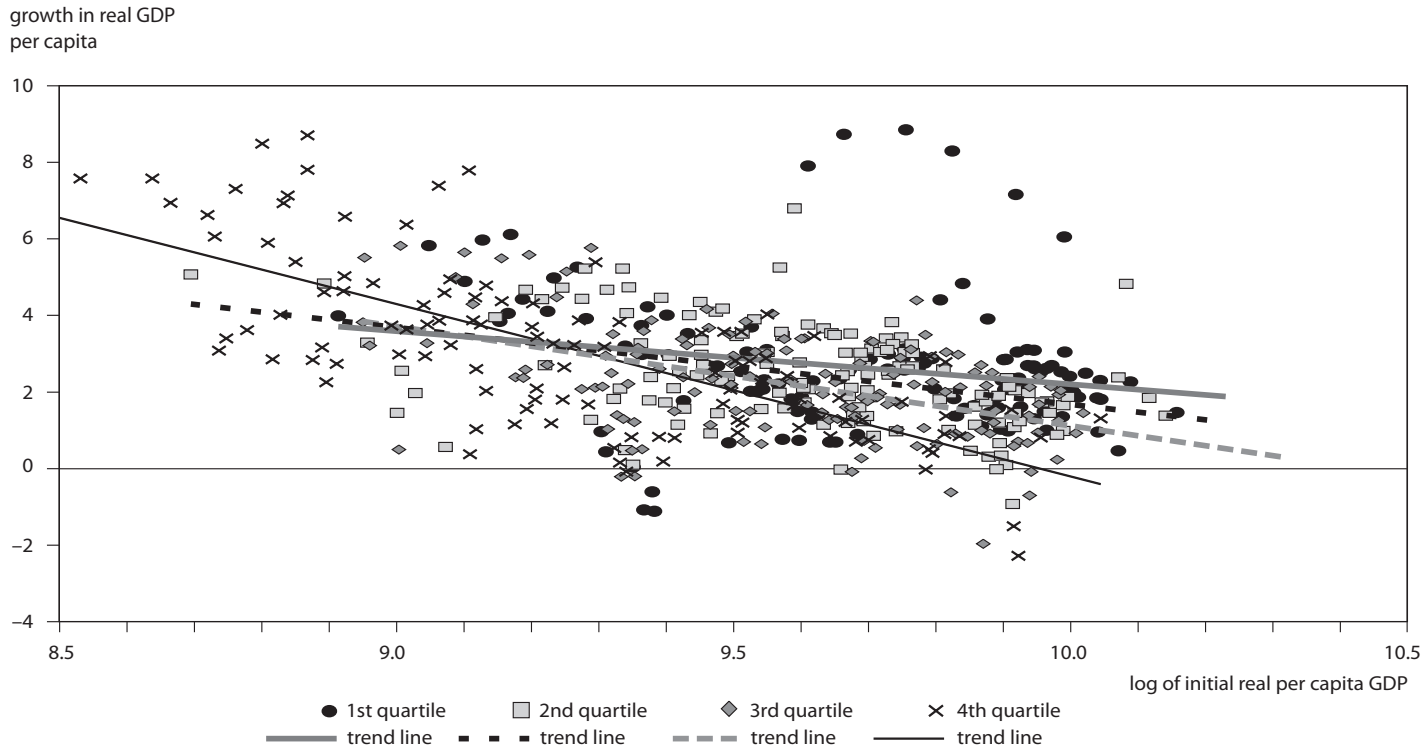
Figure 1.9 provides some evidence for this intuition. It shows the relationship between initial per capita income levels (horizontal axis) and the growth of per capita GDP (vertical axis). The negative relationship represents the familiar empirical regularity that, as they exploit catch-up opportunities, poorer countries grow faster than richer ones. Now the question is, do countries that use foreign savings more have faster growth for any initial income level—in other words, do higher current account deficits make the negative slope steeper? Grouping observations by quartiles of current account deficits (lower quartiles are smaller deficits) suggests they do. In Europe, larger current account deficits produce a steeper downward sloping line, suggesting that over time, foreign savings have indeed fueled growth. In addition, Europe's economic and financial integration is advanced and deepening, and the flow of foreign savings into relatively poor countries (such as the CEECs) seems actually to hasten the speed of the catch-up. Would this heuristic observation hold up in the estimation of a full model—thus providing prima facie evidence of efficient use of foreign savings?

To test this intuition, a stripped-down growth model was augmented by incorporating a term representing the interaction between the current account deficit and the initial per capita GDP along with an equation representing the current account deficit as a function of initial GDP per capita, the growth of GDP per capita, and a demographic variable. Estimating this two-equation system jointly on data from all European countries permitted two inferences from this macro approach: First, within Europe, the use of foreign savings has a positive effect on growth, and second, the effect is stronger the lower the initial level of GDP (table 1.1). Preliminary tests of whether the nature of the inflows (as between FDI and other inflows) makes a significant difference to the growth impact suggest that it does not.

How Do Markets View the Risks?

Thus far, the assessment of vulnerabilities has appealed to macroeconomic principles and models, but in many ways the perceptions and behavior of financial markets are the acid test. No matter what the models say, if financial markets have a different take, theirs will likely prevail. True, financial markets have periods of myopia, but over time they also reflect the views of investors with their money on the line. So this section examines how markets see the high-growth, high-imbalance strategy of CEECs.

Figure 1.9 Current account deficits and speed of convergence in the European Union, 1960–2004



Note: Scatter plot observations are grouped by quartiles of the current account deficit, with the smallest deficits in the lowest quartile.

Source: Schadler et al. (2006).

Table 1.1 Europe: Growth and current account deficit regressions
(using annual data 1975–2004)

Variable	Growth regression	Current account deficit regression
Log of GDP per capita[a]	–4.76 (4.17)***	–10.52 (4.86)***
Schooling	0.25 (2.59)***	
Population growth	–0.06 (0.22)	
Current account deficit	3.68 (3.25)***	
Log of per capita GDP * current account deficit	–0.39 (3.31)***	
Old-age dependency ratio		0.08 (2.02)**
Growth of GDP per capita[a]		0.12 (0.51)
Number of observations	503	503
R-squared	0.49	0.52

a. The coefficients on income and on growth are time-varying. For these variables, the table shows the parameter estimates for 2004.

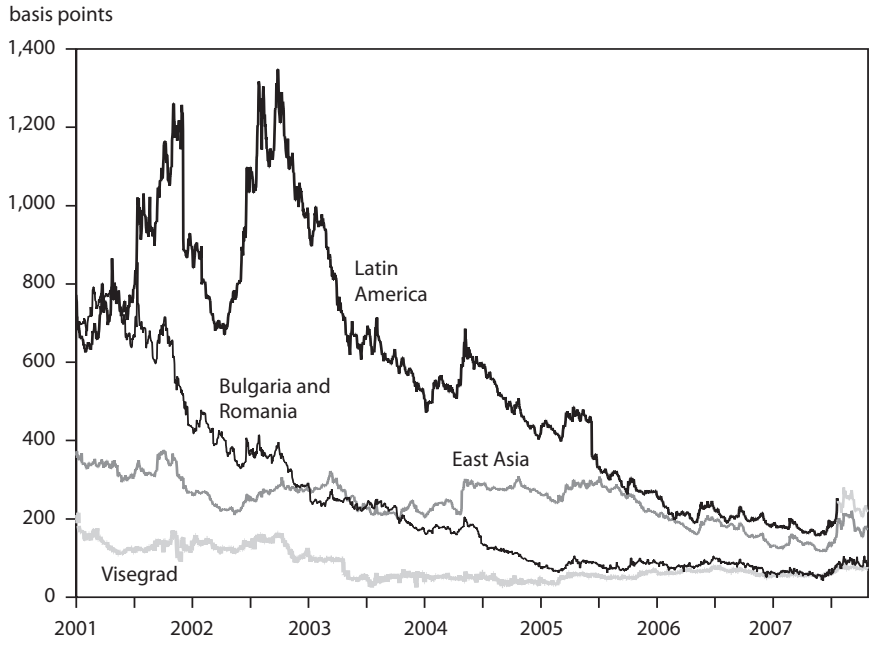
Note: For ease of exposition, the table presents results in terms of the current account deficit rather than the current account balance. Absolute value of *z*-statistics in parentheses. **, *** show significance at the 5 and 1 percent levels, respectively.

Source: See Schadler et al. (2006) for full explanation.

To get a handle on this question, we look at interest rate spreads on sovereign foreign currency–denominated bonds. This measure of the market's perception of risk is reasonably comparable across countries where such issues exist.[8] Over the past few years, spreads on foreign currency sovereign debt have fallen for virtually all emerging-market countries; figure 1.10 shows averages for the regional groupings of countries used earlier in this chapter. Starting in 2001–02 (differing by group), spreads have had a general downward tendency—Latin America quite rapidly from 2003 and East Asia much more gradually. Notably, the Visegrad

8. In fact, only eight of the ten CEECs covered in this chapter have outstanding sovereign bond issues in euros in quantities large enough to constitute a market. Estonia and Latvia have small or no sovereign bond issues.

Figure 1.10 Emerging markets: External sovereign debt spreads, 2001–07 (unweighted average, log scale)



Visegrad = Czech Republic, Hungary, Poland, and Slovakia.

Source: Bloomberg market data.

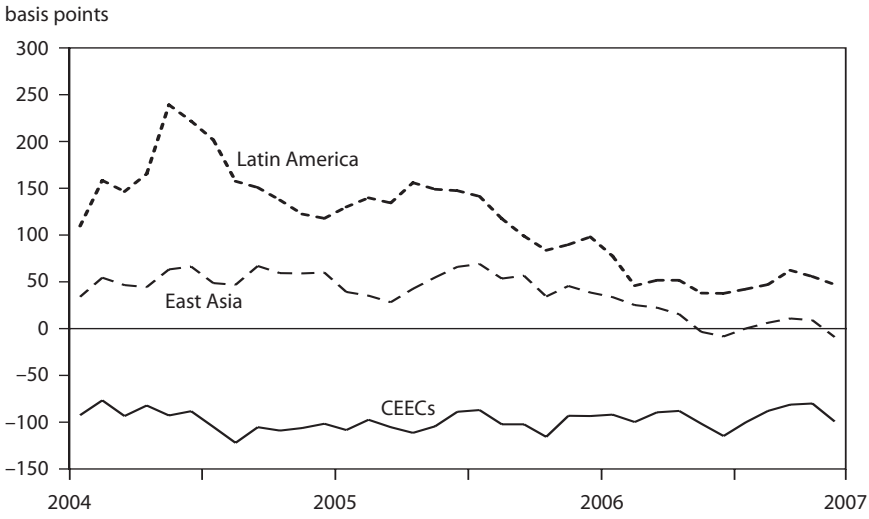
countries have had the lowest spreads among the various groups for several years, while Bulgaria and Romania saw their spreads fall below those of Latin America and East Asia in 2004–06.

How can these differences in the behavior of spreads be explained? The first step is to identify common influences on spreads and see how they differ across countries. The starting block is a panel regression of spreads for all emerging-market countries for which comprehensive data are available for a variety of economic, political, and financial "fundamentals" as well as for proxies of global liquidity conditions.[9] With these estimates, it is possible to separate each country's spread into two components: the part that can be explained by the variables listed above and the part that cannot be explained (equivalent to the country fixed effect and the residual for each observation for each country).

What does this exercise reveal? By and large, the panel regression does a good job of explaining spreads—that is, the part of the spreads not re-

9. Luengnaruemitchai and Schadler (2007) has a full exposition of the empirical work.

Figure 1.11 Emerging markets: Gap between actual and "explained" spreads (residuals including country fixed effects), 2004–07



Source: Luengnaruemitchai and Schadler (2007).

lated to fundamentals tends to be small.[10] The main exceptions since 2004 are Latin America (where more recent debt crises create sizable positive country fixed effects) and the CEECs (where, since approximately 2003, spreads have been 50 to 100 basis points lower than can be predicted on the basis of fundamentals) (figure 1.11). That is, since 2003, markets have viewed the risks in the CEECs as substantially and consistently lower than in other emerging-market countries with comparable fundamentals.

Although it cannot be explained, the coincidence of the drop in the country-specific risk premia and the market's growing perception that the CEECs would enter the European Union in 2004 is striking. In other words, the benefits of integration in the EU may have put the CEECs in a risk class different from that of other emerging-market countries. Several considerations could have influenced the link between EU entry and the reassessment of risk: These range from a possible perception that the European Union would bail out CEECs should they have difficulty servicing their debt to a relatively benign view that greater integration would help growth prospects and motivate better macroeconomic policies. The findings are equally compatible with the conclusion.

10. The panel regression is carried out with daily data for each emerging-market country. Aggregates shown in figure 1.11 are averages of the parts of the spread explained by fundamentals for each group of countries.

Conclusion

By conventional standards, the external imbalances of many of the Central and Eastern European countries are large enough to justify serious concern. While most have substantial FDI financing, most also make use of sizable debt-creating inflows. At the same time, these countries stand out among emerging markets for having relatively small official reserves compared to their short-term external debt.

But the analysis in this chapter suggests that it may also be important to view the implications of these large imbalances in the context of the unusual circumstances of the CEECs. They have all emerged from a long period of distortive central planning and face immense opportunities for catch-up, especially in light of their proximity to Western Europe and rapid absorption of EU institutions and policy frameworks. Indeed, if the large benefits of globalization are to fully rebound to emerging-market countries—with the implied coordination of savings-rich and capital-poor economies—they must be expected to produce the kinds of imbalances seen recently in the CEECs. Obviously there are speed limits on the absorption of foreign savings (and at least Latvia has certainly reached them), but testing the limits on imbalances is likely to be a continuing feature of this unique group of countries.

This pushes to the center of the policy debate the question of how countries should manage the risks in large-scale transfers of saving. Thus far, as shown in this chapter, markets have been quite forgiving in assessing these risks, but this benevolence cannot be taken for granted indefinitely. Periods of greater stress on the markets are sure to occur. In effect, the high-growth/high-imbalance strategy of most CEECs is inherently a risky one and leaves little room for policy mistakes. Policies—macroeconomic, structural, and financial—must be geared toward anticipating the risks of sudden changes in market sentiment. This means that fiscal policy must avoid adding to the national financing burden and even generate net savings so as to make room for private investment and protect against the need for wrenching adjustments in the event of a change in market sentiment; in addition, monetary policy must be cast in a clear and transparent framework that anchors expectations of inflation or the exchange rate and ensures rapid responses of money market conditions in the event of shocks to expectations or market conditions. Structural policies must focus on completing the transition from the distortive legacies of central planning, including large roles for government in the economy and disincentives for workers in restructuring industries to find employment in rising parts of the economy. Financial policies must ensure that banks, which are increasingly intermediating foreign savings, are sound and able to assess and manage risk safely.

While rough patches are inevitable, the historically large shift of savings into the CEECs can be managed to the benefit of overall growth performance—an example for other emerging markets to emulate.

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2

Current Account Imbalances in the Euro Area

ALAN AHEARNE, BIRGIT SCHMITZ, and JÜRGEN VON HAGEN

Rising and persistent global imbalances have been the focus of a lively debate among policymakers and academic economists in recent years. Most of the controversy has concentrated on the large US current account deficit and its main counterpart, the large current account surpluses of countries in Asia. Europe has not attracted much attention in this debate, most likely because European countries and the European Union as a whole have a long tradition of keeping their current accounts relatively close to balance (Ahearne and von Hagen 2005). But current account developments in Europe deserve attention for several reasons. For starters, current account imbalances in EU countries and in particular among those of the Economic and Monetary Union (EMU) have grown considerably in recent years. It is natural to wonder whether these imbalances can be explained by fundamental economic factors or whether they point to a potential unsustainability of the common currency.

This chapter explores the determinants of the current account balances of both the overall euro area and individual EU member countries, and also considers both intra- and extra-European Union current account

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balances. We interpret current account balances as the counterpart of capital flows and ask to what extent they are attributable to economic convergence among countries with different per capita incomes.

After this brief introduction, we show some stylized facts on current account balances in the euro area. Then we present evidence that capital tends to flow from high- to low-income euro area economies and that these flows have increased since the creation of the single currency in Europe. We close with a brief forecast of likely challenges based on our analysis.

Stylized Facts

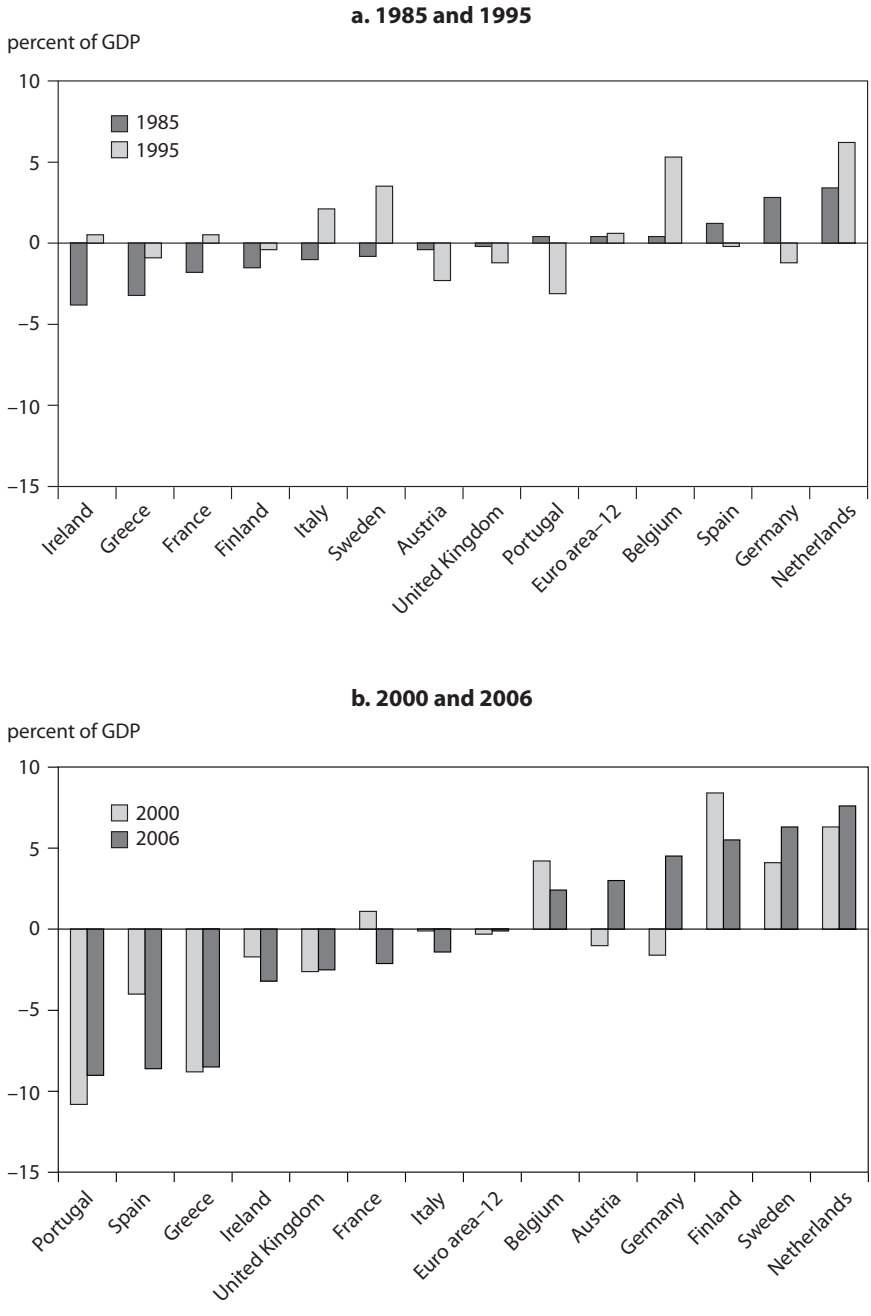
In this section we present some of the main stylized facts about individual EMU member countries' current account balances. Figure 2.1 shows these balances for the euro area as a whole and for individual EU countries in selected years since 1985.

As an aggregate, the euro area tends to be financially self-contained and contributes little to the absorption of current account imbalances in other parts of the world. Current account balances have typically been small over this 20-year period (with 1995 being a noticeable exception), notwithstanding the fact that some EU countries have sizable current account imbalances. Germany, for example, has recorded annual surpluses of around $100 billion in recent years, and its surplus is estimated to have reached 4¼ percent of GDP in 2006. This has brought the country back to its traditional position of surplus, as was the case in 1985. Finland, Sweden, and the Netherlands have run even larger surpluses relative to GDP in the past six years. In contrast, Portugal's current account deficit was nearly 10 percent of GDP in 2006, while deficits in Greece and Spain exceeded 8 percent of GDP. All three countries have had sizable deficits since the start of the EMU.[1]

Figure 2.2 shows the evolution of EMU current account balances. Belgium-Luxembourg, Finland, Germany, and the Netherlands have consistently run surpluses during the past five years. Germany registered small current account deficits averaging about 1 percent of GDP during most of the 1990s before swinging into surplus in 2002, and this surplus has widened steadily over recent years as the country's exports have outpaced its imports. Recent years have also seen a marked increase in the current account surplus of the Netherlands, while Finland's surplus has nearly returned to its level at the beginning of EMU after growing to nearly 10 percent in 2001.

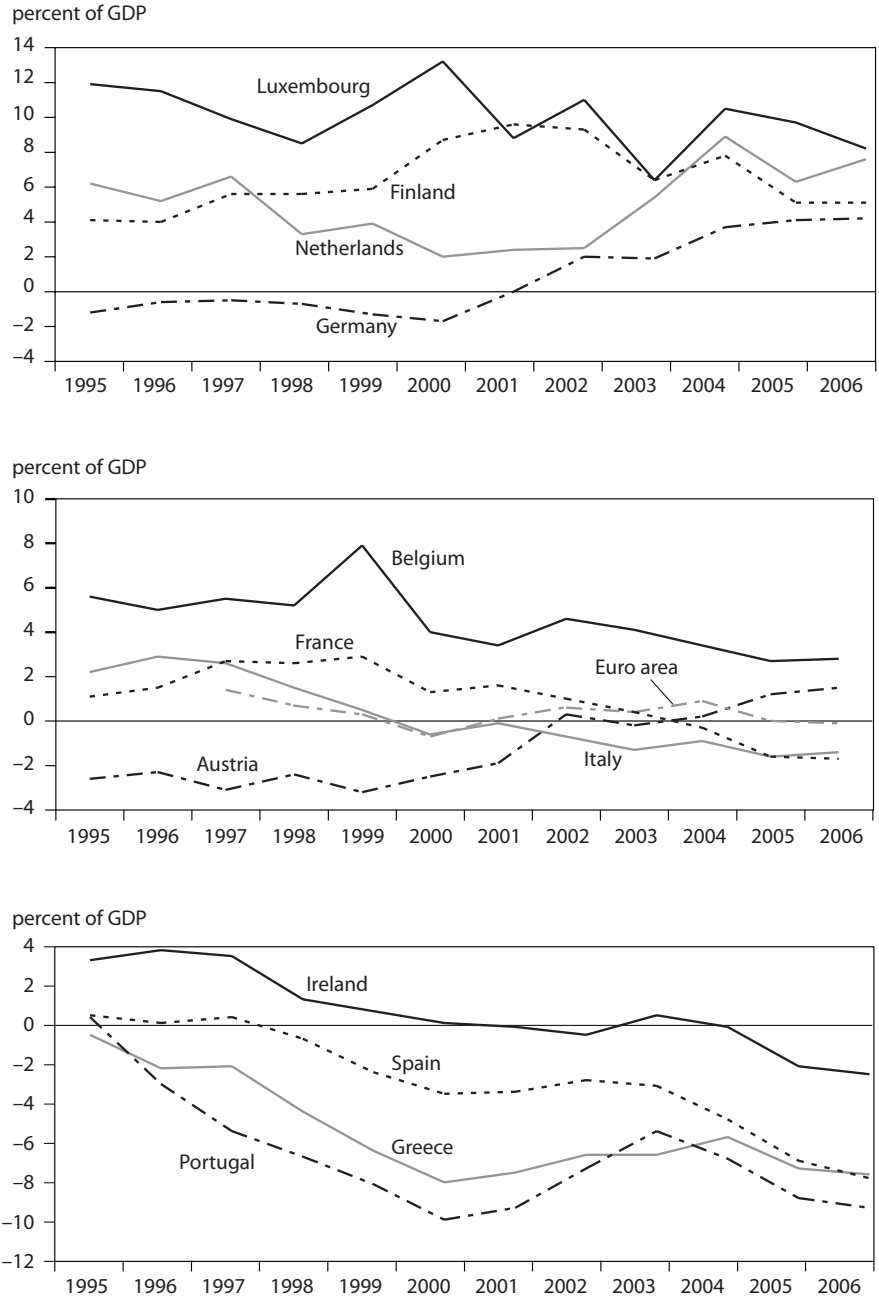
1. See Blanchard and Giavazzi (2002) for a discussion of Greece and Portugal in this regard.

Figure 2.1 European current account balances



Source: International Monetary Fund, *World Economic Outlook,* September 2006.

Figure 2.2 Current account balances under Economic and Monetary Union, 1995–2006



Source: International Monetary Fund, *World Economic Outlook,* September 2006.

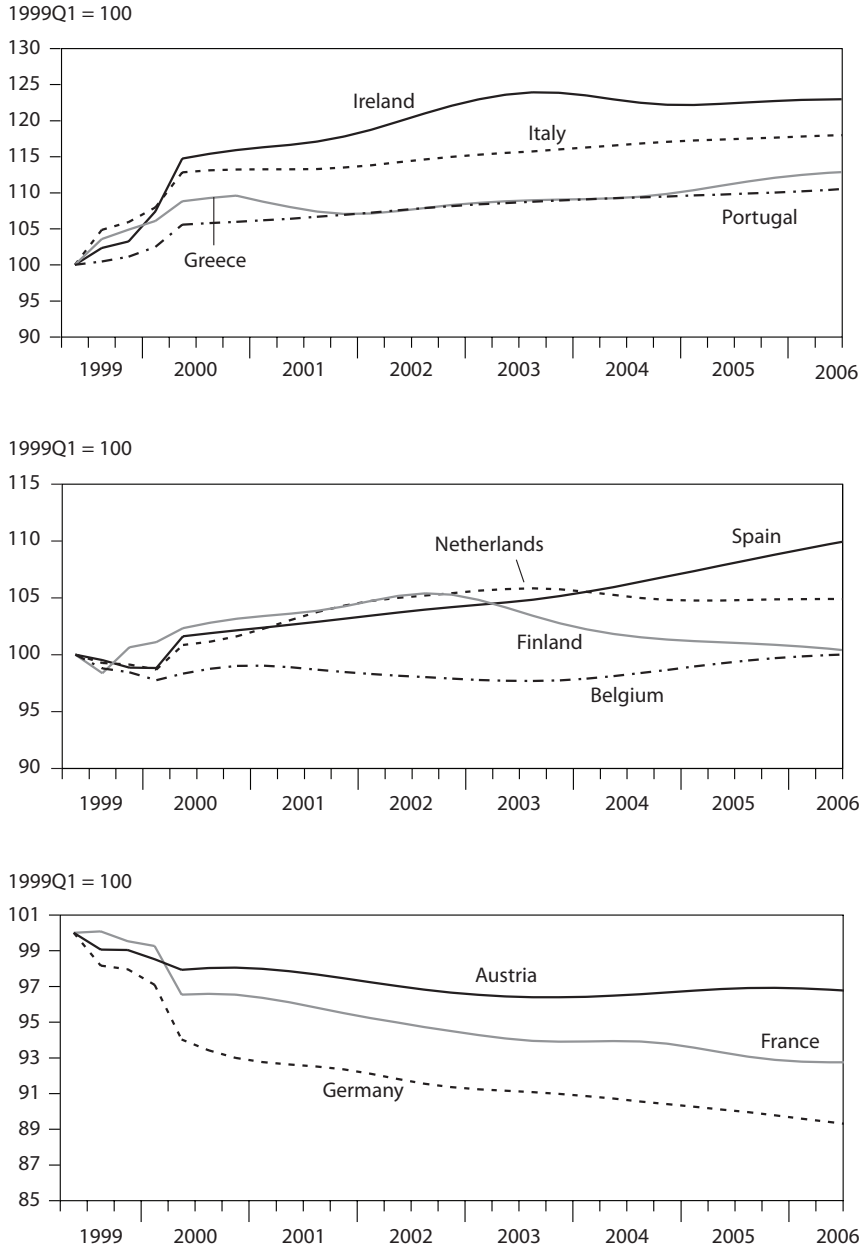
At the other end of the spectrum, Greece, Portugal, and Spain have consistently run current account deficits in the past five years, and their deficits have widened significantly both under EMU and during the run-up to the EMU. All three countries had current account positions close to balance around the mid-1990s. Recent years have seen an especially sharp decline in Spain's current account balance from roughly 3½ percent of GDP in 2003 to an estimated 8¼ percent in 2006.

Current account deficits of the magnitudes now seen in Greece, Portugal, and Spain are unprecedented among euro area countries, with the exception of Ireland in the mid-1980s and Portugal in the 1970s (European Commission 2006). Current account deficits of more than 8 percent of GDP are also large compared with advanced non–euro area economies. Sustained current account deficits accrue to the net international investment position; net external liabilities relative to GDP have soared to nearly 80 percent in Greece, 60 percent in Portugal, and 40 percent in Spain.

One interpretation of the evolution of EMU current account balances is that the increased dispersion of current account positions has been driven by trade flows that reflect shifts in relative competitiveness in the euro area (see, for example, Blanchard 2006b; European Commission 2006; and Wolfgang Münchau, "Why Internal Imbalances in the Euro Area Matter," *Financial Times*, November 8, 2006). On this account, aggregate demand was too strong in some countries and too weak in others, resulting in persistent differences in inflation rates across countries. In fact, the size and persistence of inflation differentials at the national level are the most widely recognized and documented facts relating to the start of the EMU. As a result of persistent differences in inflation across countries, euro area economies have experienced sizable swings in the real exchange rates vis-à-vis their peers, as shown in figure 2.3. In turn, the changes in competitiveness associated with these movements in real exchange rates may have played a role in bringing about the large swings in current account balances. The relationship between real exchange rate developments and current account balances portrayed in figure 2.4 appears to confirm that euro area countries that have gained (lost) competitiveness relative to other euro-area countries during EMU are now running large current account surpluses (deficits).

In particular, Blanchard (2006a) ascribes Portugal's economic boom in the late 1990s to the sharp drop in interest rates and heightened expectations for faster convergence that resulted from participation in the EMU. Rapid economic growth and a decline in unemployment led to an increase in wage growth to a rate substantially above the growth in labor productivity. As a result, competitiveness deteriorated sharply, export growth weakened, and Portugal's trade and current account deficits widened markedly. Ahearne and Pisani-Ferry (2006) document that in 1999–2005, cumulative growth in Portugal's gross exports was as much as 10 percentage points below the euro area average. Greece, Italy, and Spain also experienced relatively sluggish growth in gross exports over this period.

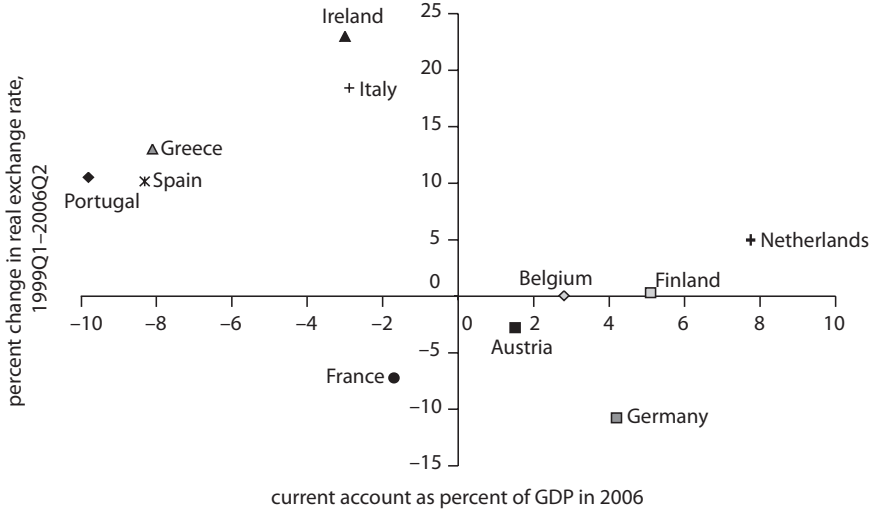
Figure 2.3 Intra–euro area real (CPI) trade-weighted exchange rates, 1999Q1–2006Q2



CPI = consumer price index

Source: Authors' calculations based on European Commission's Eurostat data.

Figure 2.4 Real exchange rates and current account balances



Sources: European Commission, Eurostat database; International Monetary Fund, *World Economic Outlook,* September 2006.

Some commentators have linked the strong performance of German exports in recent years to gains in competitiveness associated with a rate of inflation that has been persistently below the euro area average (Ahearne and Pisani-Ferry 2006; Münchau, *Financial Times,* November 8, 2006). According to this view, wage restraint, facilitated by a decline in unionization in Germany's labor market, has kept growth in unit labor costs well below the euro area average, boosting the competitiveness of German exporters. Revealingly, two-thirds of the 1.2 percent annual average growth in German GDP over the period 1999–2005 came from net exports, with only one-third from growth in domestic demand (Ahearne and Pisani-Ferry 2006).

The policy implication from this perspective is that, in order to achieve internal balance, deficit countries in the euro area need fiscal contractions to slow aggregate demand and that the surplus countries ought to boost aggregate demand. One problem with this prescription, however, is that Germany and the Netherlands until recently had trouble meeting their obligations under the Stability and Growth Pact and have little room for maneuver with regard to fiscal policy. Most of the adjustment would thus have to come from the deficit countries.

An important question is how the large current account deficits in Greece, Portugal, and Spain are being financed. The European Commission (2006) documents that a large part of the net financial inflows into these countries under the EMU took the form of bank loans. For Greece,

net portfolio inflows have also been important. Outflows of foreign direct investment have generally exceeded inflows in all three countries. For example, German banks' lending abroad exceeded their foreign borrowing to the tune of about 2½ percent of GDP annually during 1999–2005. In contrast, in 1992–98, German banks were significant net borrowers from the rest of the world.

One hypothesis is that by eliminating exchange rate risk, the creation of the single currency in Europe has boosted financial flows from high- to low-income countries in the euro area (financial flows from high-income euro area countries to low-income countries outside the euro area have not increased). Of course, the EMU has coincided with other efforts to promote increased financial integration in Europe.

Net Financial Flows and the EMU

In this section we examine in more detail the pattern of net financial flows between the EU-15 countries and other EU countries.[2] According to neoclassical growth theory, current account imbalances reflect capital flows, thus capital should flow from rich countries to poor countries. The latter have lower levels of capital per worker (this explains in part why they are poor) and this scarcity of capital relative to labor should mean that returns to capital are high. Savers in rich countries should therefore consider poor countries profitable places in which to invest.[3]

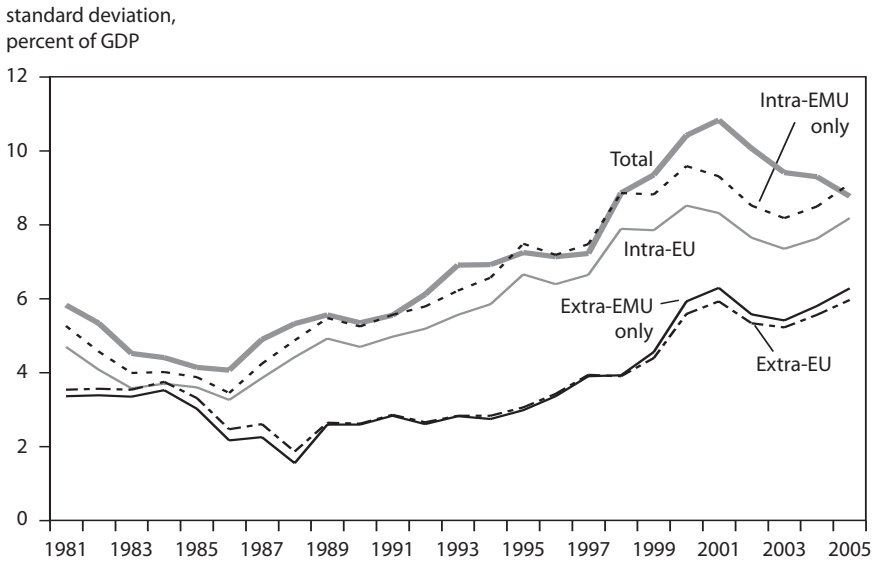
We present some simple econometric evidence on the determinants of capital flows between EU-15 countries and between these and non-EU-15 countries. Ideally, we would use individual country data on intra- and extra-EU-15 current account positions to measure financial flows, but these data are not readily available; as a proxy for current account balances, we use intra- and extra-EU-15 trade balances.[4] Our main aim is to examine whether capital tends to flow from rich to poor EU-15 countries and whether the creation of the single currency in Europe has affected such flows.

2. The EU-15 countries are Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

3. In reality, however, surprisingly little capital flows from rich countries to poor countries (Lucas 1990). Several explanations have been put forward, including differences in human capital between rich and poor countries as well as failures in international capital markets that might account for the lack of flows. However, none of these candidates can come near to explaining quantitatively the observed shortage of capital flows relative to what economic theory would predict.

4. Based on the AMECO data used below, the correlation between total trade balances and current accounts is above 0.91 for all countries except the United Kingdom (0.73) and Ireland (–0.16).

Figure 2.5 Dispersion of trade balances, 1981–2005



EMU = Economic and Monetary Union

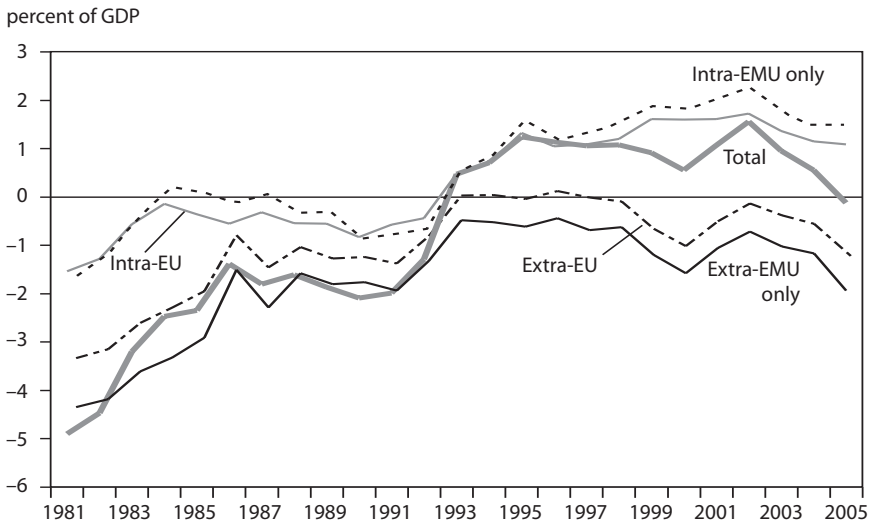
Source: Authors' calculations.

Data

We use annual individual country data on both intra- and extra-EU-15 exports and imports of goods over the period 1981–2005 (we do not include exports and imports of services because of a lack of reliable data). Our sample covers the EU-15 countries (with Belgium and Luxembourg aggregated because of the former monetary union between the two). We consider intra-EU-15 trade balances (calculated as a country's exports to other EU-15 countries less its imports from other EU-15 countries), extra-EU-15 trade balances (a country's exports to non-EU-15 countries less imports from non-EU-15 countries), and total trade balances (the sum of intra- and extra-EU-15 trade balances). We also focus on the subset of EU-15 countries that are members of the euro area (12 countries excluding Denmark, Sweden, and the United Kingdom). All data are from the European Commission's annual macroeconomic (AMECO) database.

Figure 2.5 plots over time the dispersion across countries of each of the five different types of trade balances, defined as the unweighted cross-section standard deviation. The dispersion in trade balances trended upward during the 1990s and then accelerated somewhat after 1999. The observation of widening differences among the current account balances of EU member states is also found in Blanchard (2006b), who compares the

Figure 2.6 Average trade balances, 1981–2005



EMU = Economic and Monetary Union

Source: Authors' calculations based on the European Commission's annual macroeconomic (AMECO) database.

total current account of each country with the rest of the world and shows that the dispersion also increases among OECD countries.

Figure 2.5 shows that the dispersion of intra-EU trade balances is consistently larger than that of extra-EU trade balances and that the former has risen faster than the latter since the mid-1980s. Separating euro and non-euro countries among the EU-15 makes no significant difference.

Figure 2.6 shows the behavior of the (unweighted) average of trade balances over the past 25 years, indicating that the average EU-15 country had a trade surplus against its EU partners since the mid-1990s and a slight deficit against non-EU countries since the start of the EMU. We also counted the number of years in which a country's trade balance against its EU partners had the same or the opposite sign from its trade balance against the rest of the world. Greece had the same sign on both balances in all 25 years, Portugal in 23 years, and Spain in 21 years. In contrast, Germany and the Netherlands had opposite signs on the two balances in all 25 years. Countries consistently running deficits against their EU partners tended to borrow from those and from the rest of the world. In contrast, Germany and the Netherlands tended to borrow from the rest of the world and lend to other EU countries, thus positioning themselves as financial intermediaries in Europe.

Table 2.1 Correlation between intra- and extra-EU trade balances, 1981–2005

Country	1981–2005	1981–98	1999–2005
Belgium and Luxembourg	–0.14	0.09	–0.61
Germany	–0.39**	–0.03	–0.88***
Greece	–0.03	–0.59***	–0.52
Spain	–0.35*	–0.48**	0.77**
France	0.60***	0.68***	0.96***
Ireland	0.67***	0.81***	0.02
Italy	0.79***	0.80***	0.61
Netherlands	–0.96***	–0.84***	–0.85***
Austria	0.14	–0.49**	–0.33
Portugal	–0.55***	–0.47**	0.84**
Finland	0.49***	0.51**	–0.12
Denmark	0.04	0.02	–0.51
Sweden	0.49**	0.65***	–0.83**
United Kingdom	0.16	0.14	–0.65

Note: *, **, *** denote statistical significance at the 10, 5, and 1 percent levels, respectively.

Table 2.1 shows the correlation coefficients between the intra- and extra-EU trade balances for our sample countries. For Germany, Spain, the Netherlands, and Portugal, the correlation is significantly negative—that is, an increasing trade deficit with respect to other EU countries tends to be compensated for by a shrinking deficit with respect to the rest of the world. For the other countries, the correlation is positive.

Table 2.2 reports the results of bivariate causality tests between intra- and extra-EU trade balances. Generally, dynamic correlations between the two are small and insignificant. In Spain and Portugal, we find causality running from the extra- to the intra-EU trade balance, with a negative effect of the former on the latter. In Finland, there is causality in the same direction but with a positive effect. In Spain, Austria, and the United Kingdom, we find causality from the intra- to the extra-EU balance, with a positive effect in the case of Spain and the United Kingdom and a negative effect in the case of Austria.

Trade Balances and Per Capita Income

We run some simple ordinary least squares (OLS) regressions to examine the determinants of trade balances in individual European countries. We are particularly interested in any possible relationship between trade balances (and therefore financial flows) and per capita income. The dependent variable in our regressions is the ratio of the trade balance to GDP.

Table 2.2 Causality tests between intra- and extra-EU trade balances

Country	Intra → extra	Extra → intra
Belgium	0.73	0.55
Germany	0.47	0.19
Greece	0.57	0.24
Spain	0.05	0.01
France	0.89	0.34
Ireland	0.65	0.73
Italy	0.63	0.86
Netherlands	0.33	0.43
Austria	0.03	0.39
Portugal	0.27	0.02
Finland	0.17	0.01
Denmark	0.80	0.23
Sweden	0.35	0.02
United Kingdom	0.06	0.93

Note: Table entries are the p-values of an F-test of the significance of two lags of the potentially causal variable in a regression where two lags of the causal variable are used. All regressions are in first differences.

We consider two variations of the dependent variable, corresponding to the different measures of the trade balance for EU-15 countries discussed above: intra-EU-15 trade balance to GDP and total trade balance to GDP.

The main explanatory variable is real per capita GDP. We also create three dummy variables: The EMU dummy is equal to 1 for EMU member countries after the start of the monetary union;[5] the non-EMU dummy is set to 1 for non–euro area countries from 1999 on; and DKSEUK is 1 for the countries that do not participate in the EMU, Denmark, Sweden, and the United Kingdom. We interact the main explanatory variable with these dummies to see whether the introduction of the euro changed the determinants of net capital flows. (We also included a dummy variable for German unification, but this turned out not to be statistically significant.)

Our results are presented in table 2.3. We report three specifications for each dependent variable. The first specification (shown in column A) uses only the dummies and GDP per capita as explanatory variables. The second (column B) adds the general government balance as a ratio of GDP and the real price of oil in US dollars. The former is motivated by the effect of public-sector deficits on the current account in conventional macro models; the latter is motivated by the fact that EU countries (except the United Kingdom) are dependent on oil imports. The third specification

5. We chose 1999 as the starting date for all euro area members except Greece, which did not join until 2001.

Table 2.3 Determinants of trade balances in European countries

a. Dependent variable: Intra-EU trade balance

Variable	Specification A	Specification B	Specification C
Constant	–9.19***	–6.38***	–8.25***
	(1.22)	(1.74)	(1.38)
Dummy EMU	–13.48***	–14.35***	–2.02
	(2.64)	(2.65)	(1.35)
Dummy non-EMU	–9.36	–8.28	–4.55
	(11.03)	(10.93)	(3.12)
Dummy DKSEUK	5.04	4.30	6.21***
	(3.69)	(3.65)	(1.53)
GDP per capita	0.55***	0.45***	0.58***
	(0.07)	(0.08)	(0.06)
(GDP per capita)*EMU	0.55***	0.58***	0.17***
	(0.12)	(0.12)	(0.06)
(GDP per capita)*non-EMU	0.32	0.27	0.25**
	(0.39)	(0.39)	(0.11)
(GDP per capita)*DKSEUK	–0.40**	–0.37**	–0.47***
	(0.16)	(0.16)	(0.08)
Fiscal balance		0.26***	0.10***
		(0.08)	(0.03)
Real oil price		–0.0001	–0.02***
		(0.004)	(0.01)
Time dummies	No	No	Yes
Method	OLS	OLS	GLS
Adjusted R^2	0.35	0.37	
Number of observations	350	350	350

(table continues next page)

(column C) adds time dummies to the model and uses a generalized least squares (GLS) estimator accounting for panel heteroskedasticity and first-order autocorrelation of the residuals.

Looking at the data in table 2.3a, column A, we find that trade surpluses in the European Union are a positive function of per capita income in the EU-15 and that the relationship is strongly statistically significant. Generally, countries with a larger per capita GDP have larger intra-EU trade balances. Before the start of the EMU, the effect of a rising per capita GDP on a country's intra-EU trade balance was 0.55; afterward this positive coefficient becomes notable and significantly stronger for the euro area countries after the beginning of EMU. Because the effect is significantly weaker for the nonparticipating countries (Denmark, Sweden, and the United

Table 2.3 Determinants of trade balances in European countries *(continued)*

b. Dependent variable: Total trade balance

Variable	Specification A	Specification B	Specification C
Constant	–17.09***	–11.49***	–15.09***
	(1.26)	(1.76)	(1.71)
Dummy EMU	–15.60***	–17.50***	–2.55
	(2.73)	(2.69)	(1.70)
Dummy non-EMU	–13.60	–13.43	–8.13**
	(11.40)	(11.11)	(4.12)
Dummy DKSEUK	7.03*	5.97	12.44***
	(3.81)	(3.71)	(2.30)
GDP per capita	0.91***	0.74***	0.89***
	(0.07)	(0.08)	(0.07)
(GDP per capita)*EMU	0.58***	0.66***	0.15**
	(0.13)	(0.12)	(0.07)
(GDP per capita)*non-EMU	0.41	0.38	0.36***
	(0.40)	(0.39)	(0.14)
(GDP per capita)*DKSEUK	–0.45***	–0.39**	–0.73***
	(0.17)	(0.16)	(0.10)
Fiscal balance		0.35***	0.16***
		(0.09)	(0.04)
Real oil price		–0.01**	–0.03***
		(0.004)	(0.01)
Time dummies	No	No	Yes
Method	OLS	OLS	GLS
R^2	0.53	0.56	
Number of observations	350	350	350

DKSEUK = Denmark, Sweden, and United Kingdom; EMU = Economic and Monetary Union; GLS = generalized least squares; OLS = ordinary least squares

Notes: GLS estimator accounts for heteroskedasticity between countries and country-specific autocorrelation of residuals. Standard errors in parentheses. *, **, *** denote statistical significance at the 10, 5, and 1 percent levels, respectively.

Kingdom), we conclude that it is not merely a general effect for all EU countries. Instead, the estimates indicate that the EMU has significantly changed the direction of capital flows in the euro area. There is thus a marked difference between the EU countries that formed the monetary union and those that decided not to join.

The remaining specifications show that this result is robust. Fiscal balances have a significantly positive effect on the intra-EU trade balance. In the simplest specification, a rise in the fiscal balance by 1 percent of GDP

raises the intra-EU trade balance by 0.26 percent of GDP. The inclusion of time dummies and use of a GLS estimator reduce that effect to 0.10 percent of GDP. Since the government balance might be considered endogenous relative to the trade balance (e.g., because governments might pursue a current account target for fiscal policy), we also estimated models using an instrument for the government balance based on two lags of the government balance and two lags of the total trade balance as well as using the lagged balance as an explanatory variable. In both cases, the government balance retained a positive coefficient, but its marginal significance level dropped below 10 percent.[6]

The real price of oil has a negative impact on the intra-EU trade balance, which is significant only in the GLS estimation in column C. Adding these controls does not change the main result regarding the effects of per capita GDP and the EMU and non-EMU effects.

Table 2.3b confirms the same results for total trade balances: The effect of per capita GDP on total trade balances increases for the euro area countries with the beginning of the EMU, while it decreases for the non–euro area countries. The effect of fiscal balances on total trade balances is positive and significant: A rise in the fiscal balance by 1 percent of GDP raises the trade balance by about 0.2 percent of GDP. This indicates that only about 1 percent of Portugal's trade deficit of 12.6 percent in 2005 can be explained by its general government deficit of 5.6 percent; Spain's trade deficit (8.6 percent of GDP in 2005) would have been even larger had the country not had a government surplus of 1 percent of GDP.[7]

These results suggest that the EMU has increased capital market integration in Europe, with the result that capital flows are now more in line with what neoclassical growth theory predicts. As capital flows from high– to low–per capita GDP countries, these flows can be expected to promote economic convergence among the euro area countries. This means that the allocation of capital is becoming more efficient in Europe and that the observed current account imbalances indicate that the monetary union works well. By implication, a fiscal expansion in the surplus countries would tend to absorb more of their domestic savings and slow capital flows to poorer countries, thus rendering the EMU less efficient.

Given the simplicity of our estimated equations, these results are suggestive rather than definitive. Nonetheless, our reading of the results is that the monetary union seems to have made a difference in that high-

6. We also estimated models using instruments for the government budget balance for the extra-EU trade balance and the total trade balance. The results were similar and are not reported.

7. De Santis and Lührmann (2006) and Chinn and Prasad (2003) find that relative per capita income has a positive effect on the current account balance in a large panel of countries from 1970 to 2003. They also employ squared relative income as a regressor. Following their papers, we used squared per capita income as an additional regressor in the models for the intra-EU, extra-EU, and total balances but did not find a significant effect.

income EMU countries have become lenders to their low-income countries within EMU much more than on a global scale. This shows that monetary union has greatly increased capital market integration among the participating countries. More efficient capital allocation in the region is a major benefit from monetary union.

Conclusion

We have documented a growing dispersion in current account balances among countries in the euro area since the early 1990s. The differences in current account positions widened significantly following the creation of the EMU. We have shown that the union has changed the pattern of capital flows in Europe; specifically, it has increased the tendency of capital to flow from relatively rich to relatively poor countries in the euro area. This trend suggests that the observed current account imbalances are a sign of the proper functioning of the euro area rather than a sign of improper macroeconomic management.

The results also carry an important message for the new member states of the European Union, which have experienced sizable capital inflows over the past decade. Our results suggest that they should expect another significant increase in capital inflows upon adopting the euro, as their per capita incomes are much smaller than those of the incumbent members. Managing large capital inflows will be one of the principal challenges of joining the monetary union for these countries.

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3

Rethinking Balance of Payments Constraints in a Globalized World

MAREK DABROWSKI

In this chapter I confront the traditional balance of payments (BoP) analytical framework (with its focus on the size of a country's current account imbalance and its external liabilities) with the contemporary realities of highly integrated international capital markets and cross-country capital mobility. In so doing I challenge the conventional wisdom about BoP constraints with respect to the individual national economy and offer an alternative approach to this policy dilemma.

I start with a short historical analysis and some stylized facts that illustrate an increasing contradiction between the rigorous and quite schematic treatment of persistent current account deficits and increasing cross-border capital mobility. Then I provide an indepth analysis of the

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conceptual limitations of a traditional BoP analytical framework based on the assumption of fixed residence of capital owners and attempt to make this concept more flexible. In the next section I challenge "home country bias" originating from the Feldstein-Horioka puzzle. Then in the following section I present alternative assumptions reflecting the contemporary realities of a world of unrestricted capital movement and the resulting alternative analytical framework with respect to BoP constraints (including the special case of monetary union). Finally, I discuss the policy implications of the new analytical framework, before offering closing remarks and conclusions.

My analysis concentrates mostly on conceptual issues with only selective reference to empirical evidence provided by other authors. Thus this is a nontechnical and nonformalized policy discussion rather than a standard academic analysis based on rigorous theoretical modeling and quantitative techniques of statistical or econometric verification.

Historical Background: From a Closed Economy to the Globalized World

The economic history of most of the 20th century (after the Great Depression and until at least the beginning of the 1980s) was characterized by far-reaching trade protectionism and capital movement restrictions, the collapse of the gold standard and an increasing number of national fiat currencies (at least partly inconvertible), and the rapidly increasing role of governments in economic life and ownership of productive assets, including the determination of saving and investment decisions. Under these circumstances an analytical framework concentrating on a single national economy, either closed or only partly open, seemed a highly accurate approach.

The assumptions that (1) a particular national economy functions in at least partial isolation from the rest of the world and (2) the national government is fully sovereign in many important economic policy areas affect a large number of theoretical models and practical policy recommendations related, for example, to monetary and fiscal policies, demand management, countercyclical fine-tuning, domestic income redistribution, and external balances. Authors may not articulate or even be aware of these assumptions but rather implicitly accept them or take them as givens. One of the best examples relates to the implicit assumption that a national monetary authority has a full and effective monopoly in issuing money and is able to prevent economic agents from currency substitution, an assumption that has become increasingly irrelevant in the era of globalization (Dabrowski 2001, 2004).

We live in a world of much greater transborder capital mobility than was the case in the 1960s or 1970s, thanks to several factors:

- advancing capital account liberalization, which affected not only developed but also some developing countries;[1]
- liberalization of financial markets and banking systems;
- transnational expansion of large banks and other financial corporations;
- privatization of banks and other financial institutions; and
- rapid progress in information and communication technologies (ICT), which helped to integrate technically discrete financial markets into the single global market, decreased transaction costs in the financial industry, and contributed to several financial sector innovations.

Although the question of whether the world economy has returned to the pre-World War I relative scale of international capital flows remains open, the current level of international capital market integration is definitely closer to that era than to the first three decades after World War II.[2]

In a world of mostly unrestricted capital flows and increasing integration of financial markets, owners of capital are seeking the highest expected rate of return irrespective of national boundaries. As individual economies offer various rates of return (which may be determined by a number of factors such as labor costs, tax burden, regulatory environment, effective protection of property rights, and economic and political risks) and, at the same time, represent various rates of national saving, some countries become savings importers and others savings exporters. Assuming that these differences persist over a longer period of time, the investment-savings imbalances may be sustainable.

This becomes even more obvious in the case of the Economic and Monetary Union (EMU) or any other monetary union where cross-country capital flows can be seen as capital movement between two regions of one country rather than traditional BoP between separate countries. However, such an interpretation of the nature of capital flows and (automatically) resulting current account imbalances contradicts a traditional BoP analytical framework based on the explicit or implicit assumption that today's current account deficit must be compensated by future current account surpluses (i.e., a current account must be balanced at least over the long term). As a consequence, the traditional analytical framework assumes that net capital inflow leads to the accumulation of a country's external liabilities, which (1) cannot grow indefinitely, (2) must be repaid at some point, and (3), as they increase, increase the vulnerability of the country's external position.

1. Among large developing countries, China and India continue capital account restrictions, although on a smaller scale than before.

2. See, for example, Ferguson (2004, 186–93), who claims that the scale of globalization was greater before World War I than now and who associates this historical phenomenon with the existence of the liberal British Empire ("Anglobalization" in the author's terminology).

Table 3.1 Current account deficits in new EU member states and current and potential EU candidates, 1999–2007 (percent of GDP)

Country	1999	2000	2001	2002	2003	2004	2005	2006	2007[a]
Albania	2.2	−3.6	−3.6	−7.1	−5.3	−3.9	−6.5[a]	−5.9[a]	−7.4
Bosnia and Herzegovina	−8.3	−7.5	−13.3	−19.1	−20.9	−19.7	−21.7	−11.5	−15.3
Bulgaria	−5.0	−5.6	−5.6	−2.4	−5.5	−6.6	−12.0	−15.8	−20.3
Croatia	−7.1	−2.5	−3.6	−8.3	−6.1	−5.1	−6.4	−7.8	−8.4
Czech Republic	−2.4	−4.7	−5.3	−5.7	−6.3	−5.2	−1.6	−3.1	−3.4
Estonia	−4.4	−5.4	−5.2	−10.6	−11.3	−12.3	−10.0	−15.5	−16.9
Hungary	−7.8	−8.4	−6.0	−7.0	−7.9	−8.4	−6.8	−6.5	−5.6
Latvia	−8.9	−4.8	−7.6	−6.6	−8.2	−12.9	−12.6	−21.1	−25.3
Lithuania	−11.0	−5.9	−4.7	−5.2	−6.9	−7.7	−7.1	−10.9	−14.0
Macedonia	−2.7	−1.9	−7.2	−9.4	−3.3	−7.7	−1.3	−0.4	−2.8
Malta	−3.7	−12.5	−3.8	2.7	−2.8	−6.3	−8.0	−6.1[a]	−9.4
Poland	−7.4	−5.8	−2.8	−2.5	−2.1	−4.2	−1.7	−2.3	−3.7
Romania	−4.1	−3.7	−5.5	−3.3	−5.8	−8.4	−8.7	−10.3	−13.8
Serbia	n.a.	−1.7	−2.4	−7.9	−7.0	−11.7	−8.5	−11.5[a]	−14.7
Slovakia	−4.8	−3.3	−8.3	−8.0	−6.0	−7.8	−8.6	−8.3	−5.3
Turkey	−0.7	−5.0	2.4	−0.8	−3.3	−5.2	−6.2	−7.9	−7.5

n.a. = not available

a. Estimates.

Source: International Monetary Fund, *World Economic Outlook* database, October 2007, table 31, 259.

The overall attitude toward the European Union new member states (NMS) is the best example of this misconception: EU accession radically improved their reputation and decreased their risk premia compared with other emerging-market economies (see Schadler et al. 2006). For many reasons, NMS offer a higher rate of return and therefore attract a substantial amount of foreign investment. And for those that will join the EMU in the next few years, financial markets consider the exchange rate risk negligible, additionally stimulating capital inflow.[3]

The fastest-growing Baltic countries, which represent the most prudent monetary and fiscal fundamentals and the most flexible and business-friendly microeconomic environment, attracted the largest net capital inflows and ran the highest current account deficits (more than 10 percent of GDP and, in the case of Latvia, more than 20 percent) for many years (see table 3.1). Paradoxically, they are considered externally fragile and

3. Slovenia joined the EMU on January 1, 2007, as the first NMS. Cyprus and Malta joined the EMU on January 1, 2008. Three NMS—Estonia since 1992, Bulgaria since 1997, and Lithuania since 2001—run euro-denominated currency boards, so they already belong (in an economic sense) to the eurozone. The same may be assumed with respect to two non–currency board ERM-2 (Exchange Rate Mechanism, which implies a peg to the euro for candidates to the join the EMU) members, Latvia and Slovakia, where the risk of depreciation seems to be minimal.

vulnerable in several policy analyses, that use the traditional BoP analytical framework (Deutsche Bundesbank 2006, Lane and Milesi-Ferretti 2006, World Bank 2007).

This contradiction between contemporary realities and the conventional instruments for assessing a country's macroeconomic health calls for rethinking the analytical approach with respect to a country's external constraints. As BoP and the related statistical tool of international investment position (IIP) usually play a crucial role in standard analyses of a country's external sustainability, the task of rethinking must start from identifying all explicit and implicit assumptions behind these concepts and understanding their analytical limitations.

BoP and IIP Concepts and Their Limitations

BoP is a statistical concept that can provide a picture of a country's external transactions during a given period of time (usually a quarter or year). BoP illustrates external flows, whereas the related concept of IIP deals with stocks, providing a picture of a country's external assets and liabilities at a given time. Obviously, the accuracy and analytical usefulness of both tools depend very much on the availability and quality of statistical data, which may be a serious problem in many countries for a variety of reasons.

As with any statistical concept, BoP and IIP cannot provide answers to all questions or fit well the specifics of every country in every period; those who wish to use these tools for analytical purposes must be fully aware of their limitations. What are the most frequent simplifications with respect to BoP and IIP analyses?

First, analyses of external transactions may involve different ways of defining what is "foreign" versus "domestic": by residency, by currency, or by jurisdiction. In closed economies with inconvertible currencies, these are almost identical, but this is not the case in the highly integrated global economy.[4] Both BoP and IIP are based on residency, so they do not necessarily provide a correct picture of currency mismatches and vulnerabilities. Because transactions are conducted in various currencies, the same concern applies to the denomination of assets and liabilities. As a result, exchange rate fluctuations may cause (sometimes substantial) valuation differences in assets and liabilities (see, for example, Lane and Milesi-Ferretti 2005 regarding the United States in the early 2000s).

Second, in statistical and analytical practice, BoP and IIP often involve an additional implicit (i.e., not clearly articulated and not always well recognized) assumption that capital ownership residency is fixed (or at least that its change is highly unlikely). This means that investment in country

4. I am very grateful to Christoph B. Rosenberg for drawing my attention to this distinction.

A, financed by savings from country B,[5] will "belong" to the latter, including its right to repatriate a factor income (interest or dividend) and, eventually, the invested capital stock. In subsequent sections of this chapter I challenge this assumption.

Third, BoP summarizes all kinds of external transactions conducted by a country's residents, and IIP covers all their external assets and liabilities. While both statistical tools allow for a broad disaggregation of the analyzed flows and stocks by various categories and subcategories, most analysts limit their efforts to observing and commenting on "crude" aggregates such as a country's current account balance or net investment position, an approach that inevitably leads to simplified judgments and conclusions.

For example, BoP covers both private and government transactions, and IIP both private and public assets and liabilities. Analysis of only the "crude" aggregates assumes implicitly their homogeneous character and a kind of national collective responsibility for all of them. The widely used statistical/analytical methodology, under which private external debt is added to the public (or publicly guaranteed) external debt (IMF 2006, tables 37–41), is the best example here: Each loan obtained by a domestic agent from a foreign creditor is considered a country's liability, even if it does not involve explicit or implicit government guarantees. Such an approach could be justified in the case of centrally planned economies with dominant public ownership and government control of external transactions, but it is not appropriate for market economies fully integrated with the outside world and with a dominant role for private ownership and private transactions.

Fourth, the additional complication comes from the simplified and sometimes confusing terminology common to many analyses.[6] For example, any current account deficit is considered evidence of a country's borrowing, and any foreign liability evidence of its debt. This interpretation disregards various components of capital flows (credit, equity transactions, and transfers) and may lead to serious mistakes in policy conclusions and recommendations, especially as one looks at these indicators mostly from the point of view of the simple external sustainability formulas (see below). For example, countries that offer a favorable business climate and bring in a lot of foreign investments (which usually accompany large current account deficits) may be considered macroeconomically vulnerable (as in the case of the Baltic states described in the previ-

5. For this discussion I assume a very simple model of the global economy consisting of two countries, A and B.

6. For example, Lane and Milesi-Ferretti (2005) frequently use notions of "creditor countries/nations" and "debtor countries/nations," having in mind all kinds of capital account transactions (i.e., not only credit flows). In IMF (2002) the very similar methodology of sustainability analysis has been proposed for both fiscal and current account deficits.

ous section). On the other hand, countries with a poor business climate and resulting sustainable net capital outflow (the example of many countries in the Commonwealth of Independent States and Middle East) enjoy current account surpluses that are usually considered a sign of macroeconomic health.

These analytical simplifications and implicit assumptions have far-reaching consequences for understanding the nature of BoP constraints. Even accepting the existence of investment-saving imbalances (for which there is vast empirical evidence), they will be temporary deviations as a country's IIP is expected to come back to equilibrium over the medium to long term.

Looking for Greater Flexibility in Analyzing BoP Constraints

The phenomenon of large current account imbalances has not gone unnoticed by economic theorists, who over the last two decades have developed several theoretical models of BoP that analyze both causes and consequences of current account imbalances, particularly for countries that are capital importers. Both theory and policy-oriented analytical methodology have demonstrated considerable progress and flexibility in response to the new circumstances.

Regarding the causes of current account imbalances, the emphasis has gradually shifted from an analysis of the demand factors (excessive spending due to lax monetary, fiscal, or income policies leading to a current account deficit that must be financed by external borrowing) toward the "push" or "supply-side" factors (excessive savings that must be invested elsewhere).

Most recently, the role of demand versus supply-side factors has been discussed in the context of the so-called global imbalances (for an analytical overview, see IMF 2005, chapter 2). On the one hand, Bernanke (2005) has offered an interesting concept of the "global savings glut," referring to a phenomenon of persistent current account surpluses in regions such as East Asia and the Middle East. These surpluses must be accommodated by other economies, such as the United States, other Anglo-Saxon developed countries, or the EU NMS (Macfarlane 2005). On the other hand, Gros, Mayer, and Ubide (2006, chapter 4) criticize the hypotheses of "global savings glut" and "global liquidity glut," arguing that the latter caused by the lax monetary policies of the main industrialized countries (primarily the United States and the United Kingdom).

The traditional analytical framework has considered a persistent current account deficit as an unsustainable phenomenon and a serious risk factor that may provoke a speculative attack against a debtor's currency

and cause a currency crisis.[7] There is a large body of analytical literature on so-called early warning indicators, trying to determine both what level of current account deficit and how long a run may signal a currency crisis (Kaminsky, Lizondo, and Reinhart 1998; Milesi-Ferretti and Razin 1998). Such analytical studies became particularly popular and appealing in the second half of the 1990s after the Mexican and Asian crises. In their extreme version they led Lawrence Summers (1996) to warn that *any* current account deficit in excess of 5 percent of GDP should be cause for concern. This declaration gave birth to the "5 Percent Doctrine," adopted by both the IMF and private investors in the late 1990s (some analysts even used the threshold of 4 percent).

However, clear empirical evidence (not every country running a persistent current account deficit becomes a victim of currency crisis, and crises occur in countries whose current account is either in surplus or in balance) has called for a more flexible analytical approach, which has gone in at least two directions.

First, various intertemporal BoP models acknowledge the possibility of a current account deficit as long as imported savings generate a higher rate of investment and a high rate of return from these investments, enabling the repayment of the borrowed money (Obstfeld and Rogoff 1996, chapter 2). Second, FDI and other long-term investments are distinguished from pure borrowing or short-term portfolio flows: The former are considered a more sustainable and less risky source of financing for current account deficits than the latter.

While the above analytical modifications allow for greater flexibility in assessing current account imbalances (particularly the deficits), they do not depart completely from "home country bias," the assumption of fixed character of capital ownership residency. Most of the analyses assume that savings invested abroad will eventually return to the home country, or at least that the negative net investment position will generate an outflow of factor income (i.e., interest or dividends paid to the foreign residents who imported the capital). In the next section I challenge the assumption of "home country bias."

Challenging "Home Country Bias"

The argument in favor of "home country bias" in investing gross national savings originates from a well-known paper by Feldstein and Horioka (1980). The authors presented a strong correlation between incremental

7. Disregarding a residency-based rather than currency-based nature of BoP statistics, which does not necessarily provides a good picture of currency mismatches and vulnerabilities (see the previous section).

investment and saving in OECD member countries in the 1960s and first half of the 1970s.

The Feldstein-Horioka puzzle needs a correct interpretation, however. The authors analyzed investment and saving trends in a world of partly inconvertible currencies[8] and broad restrictions on capital movement, so their empirical results were unavoidable at that time.[9] But the Feldstein-Horioka puzzle cannot be interpreted to mean that "home country bias" is permanently applicable.

Various authors (Roubini 1988, Taylor 1994) subsequently challenged Feldstein and Horioka's (1980) findings, but others (Eichengreen 1992, Jones and Obstfeld 1997) tried to confirm the results in relation to the pre-World War II gold standard era. More recent studies based on 1990s data do not confirm the strong evidence of the Feldstein-Horioka puzzle, at least in relation to EU countries (Blanchard and Giavazzi 2002, Héricourt and Maurel 2005). Nonetheless, Feldstein (2005) himself has tried to defend the contemporary relevance of his earlier findings, at least in relation to large OECD countries.

The world economy has changed radically, and globalization has progressed rapidly since the publication of Feldstein and Horioka's (1980) paper. We now live in a world of substantial and increasing current account imbalances both in individual countries and in their regional groups (figure 3.1). Yet the same has been true in the past. Obstfeld and Rogoff (1995) cite Canada's high (up to 10 percent of GDP or more) and persistent current account deficit, financed mostly by the sustained inflow of British capital for at least three decades, from the 1880s until the beginning of World War I. And Ferguson (2004, 188–89) gives evidence of the persistent character of large-scale capital exports from the United Kingdom to British colonies at the end of the 19th and beginning of the 20th centuries.[10]

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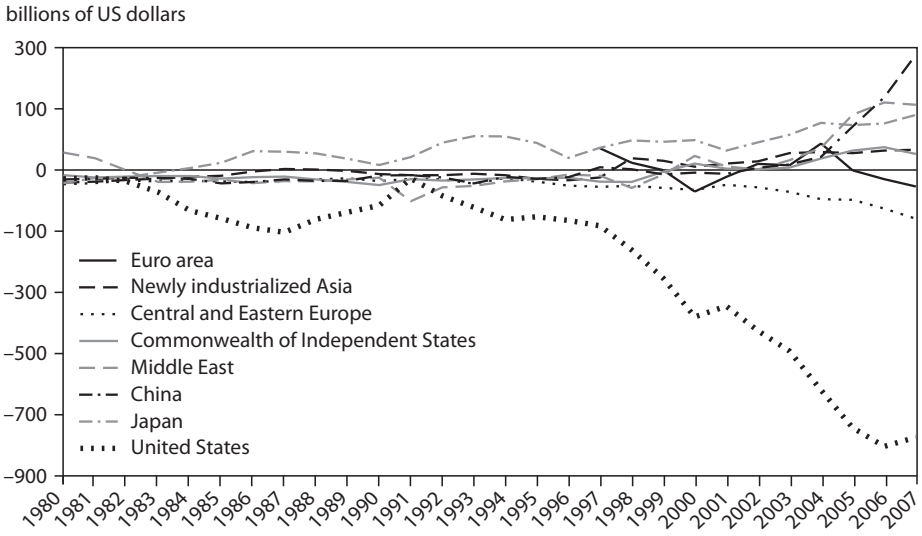
8. In the 1960s and 1970s most currencies were not fully convertible with respect to capital account transactions, and many countries also continued some form of current account restrictions.

9. Feldstein and Horioka (1980, 317) were aware that "with perfect world capital mobility, there should be no relation between domestic saving and domestic investment: saving in each country responds to the worldwide opportunities of investment while investment in that country is financed by the worldwide pool of capital. Conversely, if incremental saving tends to be invested in the country of origin, differences among countries in investment rates should correspond closely to differences in saving rates." They also realized that capital mobility was "limited by institutional barriers and portfolio preferences" (Feldstein and Horioka 1980, 328).

10. Contemporary episodes of persistent current account deficits and surpluses have been analyzed in IMF (2007, chapter 3).

Figure 3.1 World current account imbalances, 1980–2007



Source: International Monetary Fund.

Alternative Analytical Framework

I suggest an alternative analytical framework based on the following assumptions, which seem to reflect more accurately the contemporary world economy:

1. There is unrestricted international capital movement—that is, there are no serious administrative, tax, or quasi-tax restrictions on the movement of savings from one country to another. The lack of restrictions does not necessarily indicate the same tax and regulatory regime in each country or the absence of any cross-border transaction costs. The differences in national tax and regulatory regimes as well as in national macroeconomic policies, political regimes and their stability, and other factors contribute to the expected country risk premium and thus influence the expected rate of return (see assumptions 3 and 4 below). Cross-border transaction costs may also reflect differences in legal and regulatory regimes (with respect to investment decisions, mergers, acquisitions, and the like), transportation and communication costs, and different languages and currencies (including the exchange rate risk; see below). Generally, I do not substantially consider transaction costs other than those associated with exchange rate risk and, for the sake of simplicity, omit them in my further analysis.

2. Major sources of capital do not have a country of origin, largely because of the transnational character of major corporations, financial institutions, and investment funds, even if they invest on behalf of the residents of a specific country. In addition, people (especially the wealthy) can easily change their country of residence along with their accumulated savings.[11]
3. Investors represent the private sector and seek the highest rate of return in their investment/reinvestment decisions, regardless of which country their decisions concern. Each individual rate of return consists of two major components: (1) a country-related component, reflecting a country's tax and regulatory environment, provision of public goods, macroeconomic and political risk premium, and other factors that constitute a country's business or investment climate (see assumption 1 above); and (2) a project-related component.
4. There is not necessarily a diminishing rate of return in relation to a country-related component: Country A may offer a higher rate of return than country B for similar projects for a long period of time due to factors mentioned in assumption 3.[12]

These four assumptions challenge the relevance of a "home country bias" in investment decisions. The higher expected rate of return in the home country (as compared with others) can serve as the only rational explanation of any "home country bias" under the assumptions above.

The practical implications are as follows: The initial investment in country A by a resident of country B does not need to return (be repaid) to country B as long as country A offers a higher rate of return, notwithstanding the form of investment financing (credit or equity). The same applies to factor income from this investment (interest or dividend), which will be reinvested in country A instead of being transferred to country B.

However, if the expected rate of return in country A falls below that of country B for any reason (e.g., because of investment climate improvement in country B or its deterioration in country A), the direction of capital movement will change: Not only will capital that originated in coun-

11. This is not uncommon in world economic history. In the 19th and early 20th centuries, emigration from Europe to North America, Australia, and other colonies and dependent territories also involved capital export to these countries.

12. This particular assumption seems to distinguish my proposal from the Blanchard and Giavazzi (2002) model, which posits that current account position depends on the level of a country's development. Less developed countries (the authors concentrate on Portugal and Greece as less developed members of the eurozone) run current account deficits because they offer a higher rate of return in the process of catch-up growth. Richer countries, by contrast, become capital exporters. This implies an assumption on a diminishing rate of return in relation to a country-related component.

try B go back to this country but also residents of country A will move their capital and factor income to country B.

The new assumptions proposed here do not mean that country A is immunized from the danger of capital outflow (with all the associated negative economic and social consequences). But the danger of such outflow comes from change in the country-related component of the expected rate of return (compared to other countries) rather than from the nonresident origin of the invested capital.

Do the country's current account and net IIP still matter under these assumptions? The answer is partly positive if countries A and B have different currencies and run uncoordinated monetary and fiscal policies. If investors consider the current account deficit of country A too high and the country's liabilities in foreign currency unsustainable, there may be an increase in country A's exchange rate risk premium (the expected depreciation of its currency against that of country B) and a decline in the expected rate of return. Substantial changes in the market perception of exchange rate risk premium may trigger a sudden capital outflow (both "domestic" and "foreign") and currency crisis.[13]

This analysis means that some elements of the traditional BoP analytical approach still hold, although the assumptions specified above somewhat weaken BoP constraints (at least interpreted in an "orthodox" way). In order to eliminate the exchange rate risk and BoP constraints completely, country A must have the same currency as country B or peg its currency to that of country B in a durable and credible way.

Thus, inside the monetary union, BoP constraints between members disappear, and intraunion capital flows resemble capital movement between two regions of one country rather than traditional BoP flows between separate countries. This is particularly true for the EMU, which comprises countries belonging to the European single market characterized by four major freedoms (free movement of goods, services, capital, and people).

Whether the concept of BoP, current account, and IIP of each member country of a monetary union makes analytical sense is an open question for further debate. Continuing the analogy with interregional capital flows in a national economy, it is apparent that most countries do not even compute interregional current account/financial flow statistics.

13. The earlier remarks about the residency-based rather than currency-based character of BoP statistics hold true and explain why I talk about the partial relevance of a current account imbalance alone. However, the dominant financial market sentiments (which consider current account imbalances as having some relevance) cannot be ignored. In addition, in many cases current account imbalances go hand in hand with currency mismatches or other serious vulnerabilities (for example, in the area of monetary or fiscal policy).

Policy Implications of the Alternative Analytical Framework

The alternative analytical framework offered in the previous two sections has broad policy implications for two categories of countries: (1) those that run their own sovereign currencies and (2) those that belong to monetary unions (with a particular emphasis on the EMU). Both categories involve countries that are opened to capital movement and have access to international capital markets. A substantial number of countries (especially less developed ones) either maintain restrictions on capital movement or, if they are formally open, do not have access to international capital markets (i.e., their public authorities and private entities are not able to either borrow or attract FDI and portfolio investment).

With respect to countries in the first category that are open to capital movement, BoP constraints still hold, but their actual meaning differs from the "traditional" (or simplified) approach described above. If international capital markets view the current account imbalance (especially the deficit) of any country or group of countries as sustainable, it may be run for a very long period of time, almost indefinitely, and other countries may become sustainable capital exporters.[14] There is vast empirical evidence—both contemporary (Orsmond 2005) and historical (from the second half of the 19th and beginning of the 20th centuries)—to support the hypothesis of persistent cross-country investment-savings imbalances in the well-integrated global economy.

The market perception of sustainability is based on a country-specific assessment involving several economic and political variables that may be summarized as the expected rate of return in the long run. The exchange rate risk premium is one of the factors influencing the expected rate of return, and under some circumstances it may increase rapidly and trigger a sudden capital outflow. However, it is worth remembering that (1) the increase in exchange rate risk premium and resulting capital outflow may not be determined by the size of, or changes in, a country's current account deficit or IIP but by other factors; and (2) if the exchange rate risk premium and capital outflow do increase, it will affect the behavior of all capital owners, irrespective of their country of residence.

14. The reasons why some countries or group of countries run permanently excessive saving rates (compared with their investment rates) merit a separate discussion as they are outside this chapter's thematic agenda. Here I simply suggest possible hypotheses: poor investment climate diminishing national investment rate and encouraging capital flight; long-term demographic, institutional, and structural characteristics determining high national saving rates; windfall gains generated by fluctuations in commodity prices (the case of oil-producing countries in the early 2000s); systematic central bank interventions to keep exchange rate undervalued; and so forth.

Whether national economic policy can control the current account balance in an economy fully open to capital flows is an additional and very controversial issue. The room for maneuver for national monetary policy in a small open economy is very limited (see Dabrowski 2004). Attempts to target the current account or in any way engineer a current account–motivated exchange rate conflict with the anti-inflation mission of a central bank (Dabrowski 2003) and contradict the direct inflation targeting framework adopted by an increasing number of countries that run sovereign monetary policies (a strategy that requires a floating exchange rate).

The potential of fiscal policy to correct current account imbalances is also questionable. The concept of twin deficits (i.e., a current account deficit resulting from fiscal deficit) can hardly find empirical support in a world of high capital mobility. Fiscal contraction widely considered as one of the measures to diminish current account imbalances may not necessarily bring the expected results due to the "crowding-in" effect (Rostowski 2001). Successful fiscal adjustment is usually perceived by investors as a factor that decreases country risk (by increasing the expected rate of return) and triggers bigger private capital inflow leading to higher account deficits. Obviously, fiscal consolidation is highly recommended for other policy reasons even if it cannot help to improve the current account position.

Regarding the second analyzed category, a common currency eliminates exchange rate risk with respect to capital flows in a monetary union, but there is still exchange rate risk with other currencies. In the eurozone, for example, this concerns capital flows denominated in US dollars, British pounds, Swiss francs, or Japanese yen: The BoP constraints hold for the entire common currency area (i.e., the eurozone) but not for individual member countries. For the latter, the entire analytical concept of BoP seems to lose its importance (Blanchard and Giavazzi 2002 reach a similar conclusion). So blaming the Baltic countries, which are part of the eurozone (but not the EMU), for their supposedly excessive and unsustainable current account deficits (Deutsche Bundesbank 2006, World Bank 2007) misses the point.

This radical conclusion does not mean that entering a monetary union immunizes a country from any macroeconomic or financial risk. Hypothetically, an entire common currency area (such as the eurozone) may become a victim of a BoP/currency crisis. An individual member country can suffer a public debt crisis as a result of irresponsible fiscal policy. It can also experience an unsustainable investment, credit, or asset bubble (and subsequent bust), but this is a matter of prudent lending/investment/financial intermediation rather than a traditional BoP problem. In fact, this kind of crisis can also happen in a national economic area without the participation of foreign investors. True, the impact of a "regional" crisis may affect the entire common currency area depending on the scale of the shock and other circumstances (similar to the impact of a "local" crisis in any individual country).

In addition, if the expected rate of return deteriorates for any reason (as compared to other countries forming a common market), the net direction of capital movement will reverse and the economy will have to adjust. However, this will affect both "foreign" and "domestic" capital, which will seek other investment destinations, and the geographic origin of capital and the previous BoP record will be irrelevant. Again, this can also happen in an individual country (among its regions) and must be addressed by means other than exchange rate adjustment.

Final Remarks and Conclusions

We live in an era of rapid globalization, which particularly affects cross-border capital flows and financial markets. The sovereignty of national economic policies and their ability to control individual economic processes and macroeconomic variables is gradually decreasing, particularly in areas of deeper regional integration like the European Union and EMU.

Several theoretical and analytical concepts elaborated with respect to closed or partly closed national economies have lost much (or all) of their practical relevance. Attempts to continue to use them as analytical tools and as the basis of policy prescriptions may do more harm than good. The traditional BoP concept and current account imbalance as an indicator of a country's macroeconomic health are key examples.

In a world of free capital movement the geographic origin of capital has lost its importance, and capital invested abroad does not need to return to the country of "residence." There is no "home country bias" in investment decisions any more; the expected rate of return is the key parameter determining these decisions. Some countries may offer a higher rate of return for a long period of time, becoming persistent capital importers, while others may offer a surplus saving on a sustainable basis.

If a country has a separate currency and runs its own monetary policy, the exchange rate risk remains and BoP constraints continue to hold some relevance (as one of the factors determining exchange rate risk). However, national economic policy has very limited possibilities to influence current account balance. Entering the monetary union eliminates entirely these constraints, although other kinds of macroeconomic constraints and risks remain in force. Whether these other risks are more severe in the absence of exchange rate risk and balance of payments constraints is another question. However, this question is definitely beyond the scope of this chapter.

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4

A World Out of Balance?

DANIEL GROS

Until the summer of 2007, the global economy was on a dynamic growth path with ever-increasing US current account deficits financed by the surpluses of emerging-market economies. This state of affairs was underpinned by rising housing prices in the United States (and parts of Europe) coupled with permissive credit markets in which the risk premium had fallen to historical lows. These two supporting factors have now gone into reverse, prompting a global credit crisis and a slowing of domestic demand in the United States (table 4.1).

The US external deficit has already fallen from 6 percent of GDP in 2006 to 5 percent of GDP in 2007, largely due to stronger exports, which in turn were made possible by the resilience of the global economy. If this combination of continuing strong growth (especially in emerging markets) and the cooling of the US real estate sector were to continue, global imbalances could be resorbed gradually without a crash of the US dollar.

However, the 2007 year-end surge in oil prices makes a rebalancing of the global economy more difficult. The reason is quite simple: Oil producers tend to save about half of their windfall gains from higher oil prices. If the oil price stayed at about $90 to $100/barrel (about $30 above the 2006 average), oil producers would probably increase their current account surpluses by $200 billion to $300 billion per annum. Other commodity-exporting countries are also saving part of the windfall they earn from the generalized increase in commodity prices. Thus the global supply of savings from commodity-exporting countries might substantially exceed the $300 billion expected from oil exporters alone.

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Table 4.1 Change in current account balances, 2007 relative to 1995–97 (billions of US dollars)

Country/region	2007	1995–97 average	Change
United States	784.34	–126.20	–658.10
Japan	195.90	91.20	104.70
Euro area	–21.20	n.a.	n.a.
United Kingdom	–96.69	–8.40	–88.27
Central and Eastern Europe	–119.20	–15.80	–103.40
Emerging markets	607.39	–75.20	682.60
Commonwealth of Independent States	77.20	0.70	76.50
Middle East	227.00	9.30	217.70
Western Hemisphere	19.50	–47.60	67.10
Newly industrialized countries in Asia	90.89	1.90	89.00
Developing Asia	389.20	–23.10	412.30
Of which: China	379.16	15.27	363.89

n.a. = not available

Sources: International Monetary Fund, *World Economic Outlook*, *International Financial Statistics*, and *Direction of Trade Statistics* databases, December 2005.

The key question will then be, Which countries will be willing and able to run corresponding deficits? Apart from the United States, there are only two regions large enough to contemplate a shift in the external position of this order of magnitude: the euro area and Asia (i.e., Japan and China). The euro area would have no problem running a current account deficit of $200 billion to $300 billion (at the current exchange rate the upper end of the range would amount to €200 billion, around 2½ percent of euro area GDP). In an ideal world, this could be achieved if domestic demand remained strong in the face of a strong euro. However, it seems that domestic demand in Euroland is already weakening and remains rather difficult to influence with either monetary or fiscal policy.

Asia, especially China, seems determined to continue the export-led growth model. The Chinese authorities will not be able to resist a substantial appreciation of the renminbi forever. A real appreciation is already happening via higher inflation in China, but this is a relatively slow process. China might be in a similar situation today as Germany in the late 1960s, when despite explicit controls on capital inflows, market pressure on the exchange could finally no longer be resisted. However, it will be several years before Chinese policymakers throw in the towel on the exchange rate. In the meantime, the most that can be expected from China is a reduction in the pace of increase of the current account surplus.

A combination of the weak US housing sector and high oil prices should lead to a global ex ante savings surplus, which in turn should lead to lower global (real) interest rates and/or higher asset prices, depending on how "petrodollars" are recycled. For example, to the extent that members of the Organization of Petroleum Exporting Countries (OPEC) invest part of their surpluses in US equities (as a proxy for the global market), they will sustain the US stock market. US consumers will then be torn between lower house prices, lower interest rates (but more difficult access to credit), and strong asset valuation outside the housing sector.

The pressure on the euro (and thus on the euro area) will therefore depend to a large extent on the reaction of the US consumer. As the elasticity of consumption with respect to interest rates (and asset prices) is higher in the United States, the counterpart to rising OPEC surpluses might come again from the United States rather than the euro area (or Asia, where interest rates seem to have little influence on consumption). Growth might remain stronger in the United States than in the euro area, which might have difficulties compensating the loss of export demand with stronger domestic demand.

The lower real interest rates resulting from excess OPEC savings should facilitate adjustment to the subprime crisis: The combination of lower nominal interest rates and moderately higher inflation will make it easier for debtors to service the debt built up over the last cycle of permissive credit conditions. The main role of central banks will be simply to influence the slope of the yield curve: If central banks keep short-term interest rates up (because inflation is likely to stay at the upper end of their comfort zone), long-term rates might well fall permanently below them. An inverted yield curve will make life much more difficult for banks, whose main business is after all to finance medium-term credit with short-term deposits. However, lower profits for banks in the current situation of increased capital requirements (due to losses from credit risk that they thought had been eliminated through securitization) increase the risk of a systemic credit crisis. The basic choice for central banks on both sides of the Atlantic is thus now between inflation targeting and financial stability.

I begin by analyzing the US external deficit and explaining that its main cause cannot have been higher US growth, as often argued. Then I consider the US deficit in the context of the global financial system, finding that its global counterpart has recently been concentrated primarily in oil-exporting countries, and go on to briefly explore the relationship between the increase in the price of oil and the future evolution of the demand-supply balance. I bring these factors together in a model-based analysis of how the link between growth and interest rates changes when one takes into account oil-based savings surpluses. In the last section I offer conclusions and questions for further consideration.

Table 4.2 Growth of GDP and domestic demand
(long-term average, percent)

Country/region	1992–98	1999–2006
United States		
GDP growth	3.1	2.8
Domestic demand	3.2	3.2
Euro area–12		
GDP growth	1.8	2.1
Domestic demand	1.5	2.1

Euro area–12 = Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain

Source: European Commission, Directorate General for Economic and Financial Affairs, annual macroeconomic (AMECO) database.

The US External Position: Evolution and Determinants

The most eye-catching imbalance in the world economy today remains the US current account deficit. Its (partial) counterpart, China's surplus, is beginning to get a similar level of attention, but its rationale is much easier to understand than that of the US deficit: China is clearly on a dynamic growth path based on exports. By contrast, it is difficult to see why one of the world's richest economies should also be the world's biggest borrower for more than a decade.

I therefore start with a critical look at developments in the US current account. In this section I look at the US deficit from a purely national point of view, with an emphasis on the question of what distinguishes the US economy from that of the eurozone and thus accounts for the difference in the evolution of the two external accounts.

A first myth to debunk is that the US deficit is due to the country's higher growth. As table 4.2 shows, the average US growth rate since 1999 was 2.8 percent, actually somewhat lower than during the 1990s (3.1 percent). The deficit arose because domestic demand growth did not fall along with GDP growth. While real growth fell (on average) after 1999, domestic demand did not fall commensurately. Table 4.2 shows the rough numbers for the United States and the eurozone for comparison. The difference between US domestic demand and GDP growth might not appear large at first sight (a bit over 0.4 percent), but if this magnitude is cumulated over ten years, it implies an increase in the current account of over 4 percent of GDP.

The US deficit was thus not due to higher growth but rather a continuation of rapid domestic demand (mainly for consumption and residential investment, as discussed below) in the face of declining GDP growth. Another way to illustrate the same phenomenon is to compare the evolution

Figure 4.1 US trade deficit and imports, 1990–2007

Source: US Department of Commerce, Bureau of Economic Analysis.

of the US trade deficit with that of US imports; figure 4.1 shows both as a percentage of GDP. It is apparent that the two lines track each other closely. As a matter of fact, one could predict the US deficit during most of the last decade just by assuming that exports are constant at around 10 percent of GDP. The deficit then varies one to one with imports. This pattern seems to have changed only in 2007, when US exports turned sharply higher.

The role of the dollar exchange rate in these ever-increasing deficits seems to have been limited. In a first phase, from the mid-1990s to about 2000, the dollar appreciated along with an increasing deficit. As concerns about the size of the deficit increased, the dollar then declined by about 15 percent from its peak in trade-weighted terms, but then in 2005, recuperated part of the terrain lost, as US companies repatriated profits to take advantage of the Homeland Investment Act and as negative political news in Europe and Japan reduced the appeal of those currencies. The overall result of these ups and downs is that the US real effective exchange rate (based on unit labor costs) appreciated by only a little (less than 5 percent) between 1997 and 2005. This small change suggests that it is difficult to argue that exchange rate movements have been a major factor behind the massive US deficit. Developments since 2001 (and up to 2006) are particularly difficult to reconcile with the view that the deficit is due to an overly strong dollar given that the US dollar has depreciated considerably in recent years while the US external deficit continued to widen until very recently.

Partly for this reason, it is often argued that the US deficit is due to a growth deficit in the rest of the world. This argument is flawed on both theoretical and empirical grounds. First, if the higher US growth rate were the result of a positive supply shock (i.e., higher US productivity growth), one would expect exports to increase—even at a constant or rising real exchange rate—along with the increase in the potential output. But this has not been the case: Over the last decade, exports from the euro area (supposedly a slow-growth economy) have increased as much as those from the United States. Second, while it is true that growth in the eurozone and Japan has been disappointing, it has been more than compensated for by higher growth in emerging markets. Thus the difference between US and world output growth has not increased over the last decade. Indeed, if one compares the ten years before 1995 with the following decade, one finds that world output growth has actually increased slightly more than US growth (the US growth rate increased by 0.46 percentage points, whereas world output growth, using purchasing power parity [PPP] weights, increased by 0.53 percentage points). Moreover, the US deficit rose most strongly after 2000, when US growth was actually somewhat lower.

For these reasons, it is not easy to explain the continuing widening of the US external deficit with the two main conventional factors, the exchange rate and relative growth rates. The key factor must have been that US policymakers overestimated the country's anticipated growth rate and thus pushed domestic demand above its potential.[1]

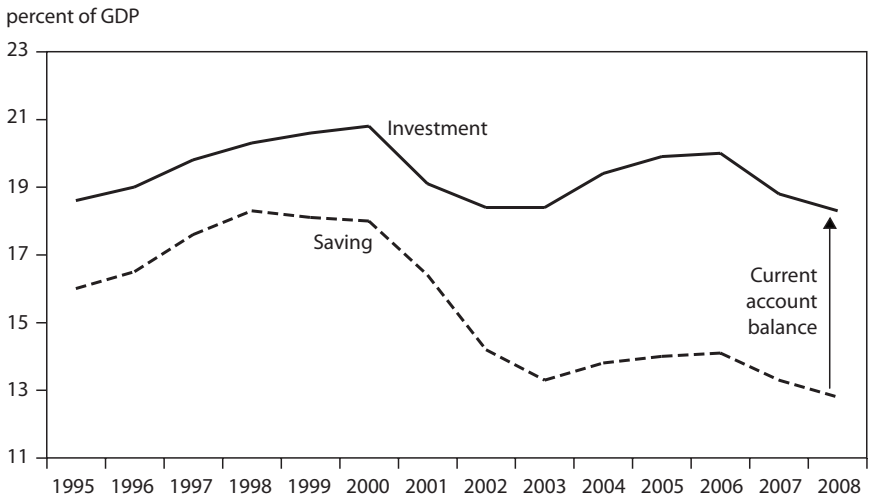
The excess of domestic demand over domestic production can also be seen in the investment-saving balance, which reflects the current account from a different point of view. As shown in figure 4.2, most of the deterioration of the US external balance has been due to a fall in the national saving rate, not an increase in investment.

Changes in Global Financial Markets and the US Current Account Deficit

From the discussion, it may be reasonable to conclude that recent developments in the US current account are unsustainable in the sense that the deficit is due neither to higher US productivity growth nor to an investment boom. But before jumping to any conclusions, it is important to look at the US deficit in the context of the global economy, to get a better view of the genesis of the existing imbalances.

1. This overestimation of the potential growth rate was apparently shared by the major international financial institutions, which explains why they did not anticipate the continuous increase in the deficit (Gros, Mayer, and Ubide 2006).

Figure 4.2 US saving-investment balance as percent of GDP, 1995–2008



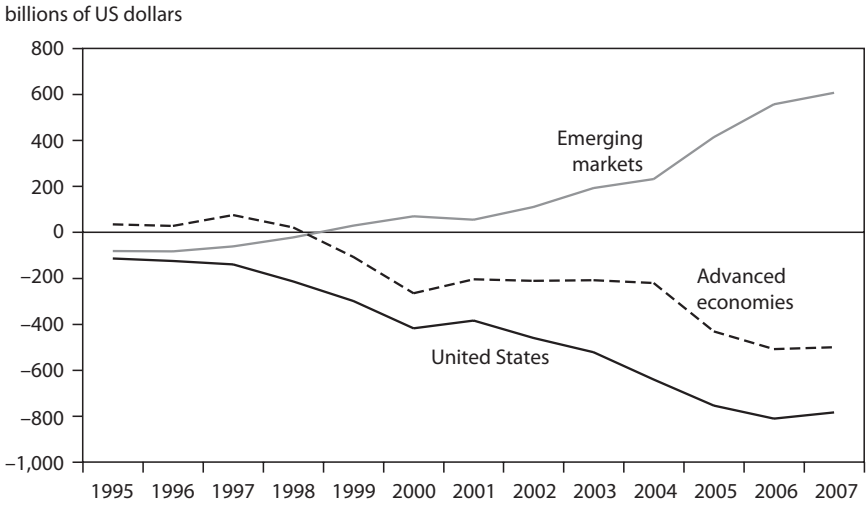
Source: International Monetary Fund, *World Economic Outlook,* October 2007.

Booms and Busts in Emerging Markets as the Initial Driver Behind Increased World Savings

The best starting point for a narrative of the evolution of the US external deficit is the atmosphere of the late 1990s. Equity markets all over the world were booming in the mid-1990s thanks to expectations of intensifying globalization and a revolution in information and communication technologies. At the same time, emerging markets were becoming popular destinations for international investors, particularly as their markets were opening up and offering high-growth potential and attractive rates of return. But the boom experienced in emerging markets came to an abrupt halt in 1997 as a combination of lax fiscal policies, rigid exchange rates, and rapid growth in consumption and investment led to widening current account deficits financed by large short-term capital inflows. Indeed, outside Asia and Eastern Europe, foreign direct investment constituted a small share of the financing of the current account deficits. These were the classic ingredients that provoked the crises that occurred between 1997 and 2002.

The history of crises in emerging markets in the late 1990s and early 2000s is well documented so I won't dwell on it here. My interest is in the adjustment in current account and fiscal balances that followed the crises and its implications for the world real interest rate and for global savings and investment balances. Shut out of international capital markets and

Figure 4.3 Emerging-market economies financing advanced economies: The mirror image in current account balances, 1995–2007



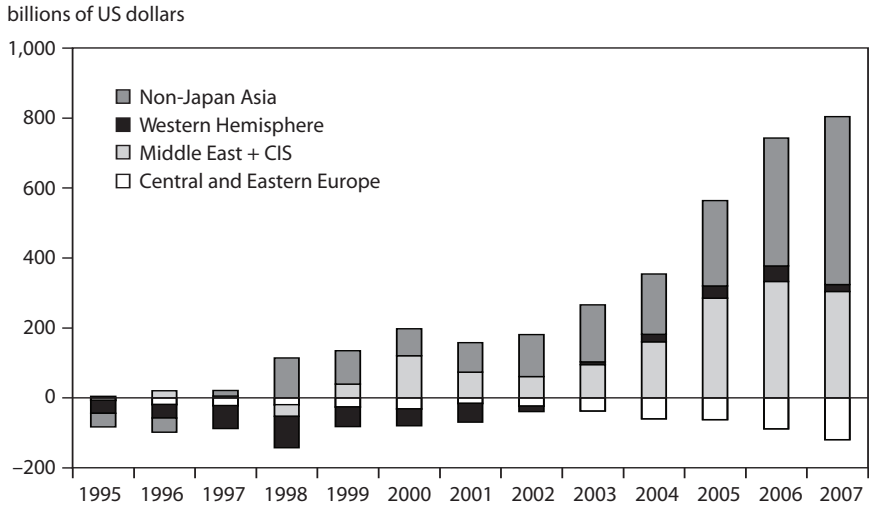
Source: International Monetary Fund, *World Economic Outlook*, October 2007.

forced to embrace tough International Monetary Fund (IMF) medicine and elect more conservative governments, emerging markets began adopting sound economic policies: They abandoned fixed exchange rates, turned current account deficits into surpluses, generated large primary budget surpluses, eliminated short-term external debt, and replenished the depleted stock of international reserves to record levels.

Figures 4.3 and 4.4 show the cumulated current account position of Eastern European, Asian, Middle Eastern, and Latin American emerging-market countries (all those hit by the wave of currency/banking crises that started in East Asia in 1997). This diverse group provides an almost exact mirror image of the current account of the industrialized countries, which in turn closely parallels that of the United States.

During the late 1990s, emerging markets still had a small deficit, which turned into a moderate surplus by the turn of the century. The combination of fiscal and monetary policy tightening improved public and private investment-saving balances by $150 billion. But this turnaround seems modest in the context of changes that began in 2003 with two additional developments: China and high commodity prices allowed emerging markets (as a group) to generate ever-larger current account surpluses, leading the total to exceed $600 billion in 2006. In that year, the current account surplus of emerging markets' fuel producers was close

Figure 4.4 Regional contributions to current account balances of emerging markets, 1995–2007



CIS = Commonwealth of Independent States

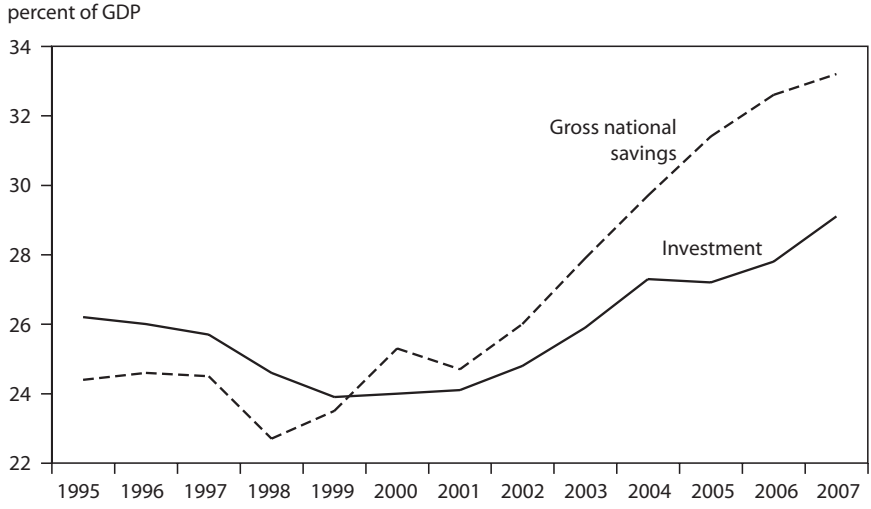
Source: International Monetary Fund, *World Economic Outlook*, October 2007.

to $400 billion—well over half of the total current account surplus of all emerging markets.

Figure 4.5 shows gross national savings and investment relative to GDP for the emerging market countries (the difference between the two series indicates their external balance and thus their net export of savings). As crises in emerging markets unfolded in the second half of the 1990s, these countries slashed their investment spending sharply. In 1998 national savings also fell as a number of countries plunged into severe recession. Thereafter, however, savings recovered under domestic austerity policies, while investment followed with a lag and at a more moderate pace. As of 1999, in a major change from past behavior and against the conventional wisdom of development economics, emerging markets began exporting large and growing amounts of savings to the rest of the world. This export of capital from the poorer part of the world has actually increased as savings were boosted further by rising commodity prices.

The net export of savings was only initially (in the aftermath of the currency crises) related to a fall in investment. Since the turn of the century, investment rates have actually increased in emerging markets (by almost 6 percentage points, to nearly 30 percent of GDP, much higher than in the advanced economies), but savings have increased even more.

Figure 4.5 National saving and investment positions of emerging markets, 1995–2007



Source: International Monetary Fund, *World Economic Outlook*, October 2007.

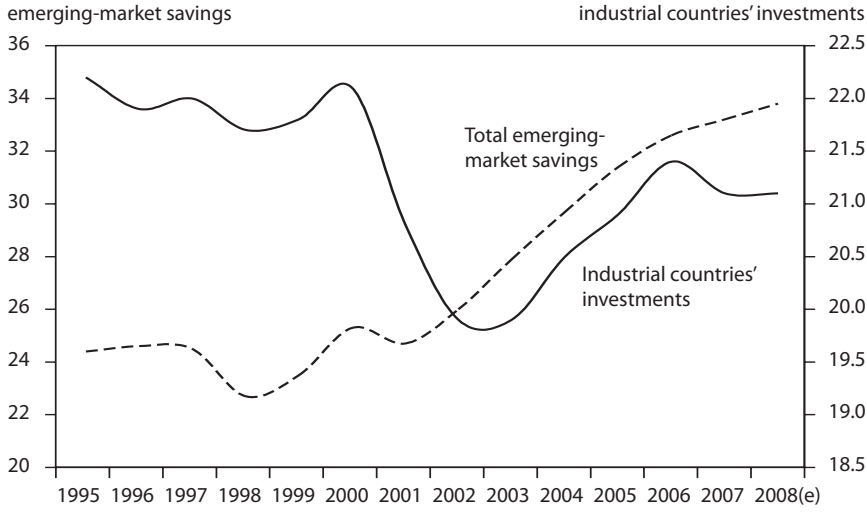
After the Boom, the Investment Bust

While emerging market countries experienced balance of payment crises and stabilization recessions in the second half of the 1990s, industrialized countries enjoyed an economic boom thanks to surging stock markets and euphoria about the benefits of new information and communication technologies. In 2000, however, the boom turned to bust as the valuation of "new economy" equities climbed to irrational highs. In the event, the equity markets' decline triggered a sharp drop in investment, as companies struggled to repair their balance sheets by paying down debt and industrialized economies fell into stagnation or recession.

During the second half of the 1990s, industrialized countries were net importers of international savings, reflecting a rise in investment on the back of the new technology boom that had not been matched by a corresponding rise in domestic saving. After 2000, however, investment in industrialized countries fell, just when emerging-market countries stepped up their export of savings (figure 4.6).

At the beginning of the new millennium, global capital markets were thus suddenly confronted with a rising supply of savings from emerging markets and falling demand for these savings from industrialized countries, which were experiencing an investment recession. There was only

Figure 4.6 Emerging-market savings and industrial countries' investment positions, 1995–2008 (percent of GDP)



(e) = estimate

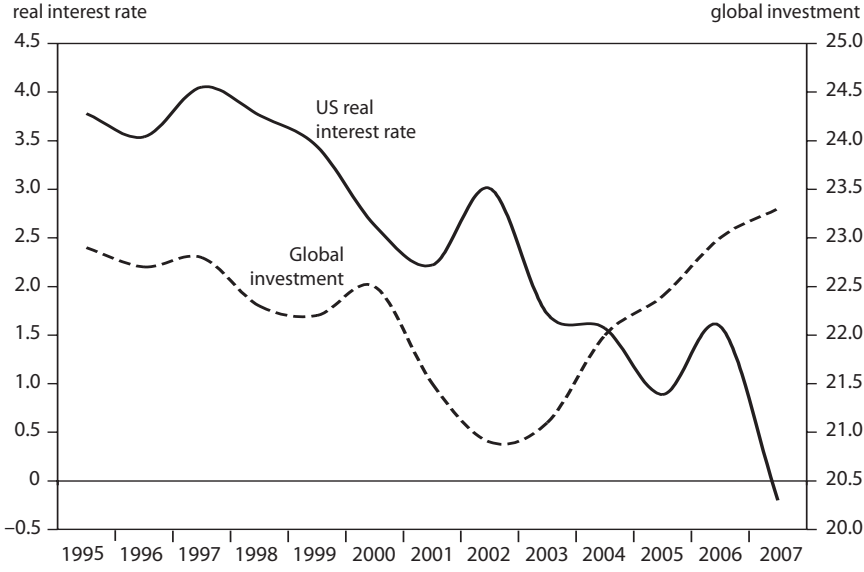
Source: International Monetary Fund, *World Economic Outlook,* October 2007.

one way to equilibrate the global supply of and demand for savings: Global real interest rates had to fall (which then depressed industrialized countries' savings). This is illustrated in figure 4.7, which shows the developments of the ratio of world investment to GDP and real US 10-year government bond yields, which I use here (somewhat loosely) as a proxy for global real interest rates. The drop in investment (relative to GDP) in the industrialized countries (shown in figure 4.6) pushed down the global investment ratio (as the rise in emerging markets' investment was too weak to compensate for the investment weakness elsewhere). As the investment ratio fell, real interest rates fell. As I argue in more detail below, the decline in real interest rates eventually helped turn around the decline in investment. More recently, the real interest rate has even turned negative in the wake of the latest hike in oil prices, a phenomenon that I analyze further in a subsequent section.

Effects on Current Account Balances

A fall in global real interest rates was necessary to equilibrate the global market for savings and enforce the ex post identity of real savings and investment. What was required was a new term structure of interest rates at a lower level, an exercise that involves the adjustment of both market and

Figure 4.7 Global investment and US real interest rates, 1995–2007
(percent)

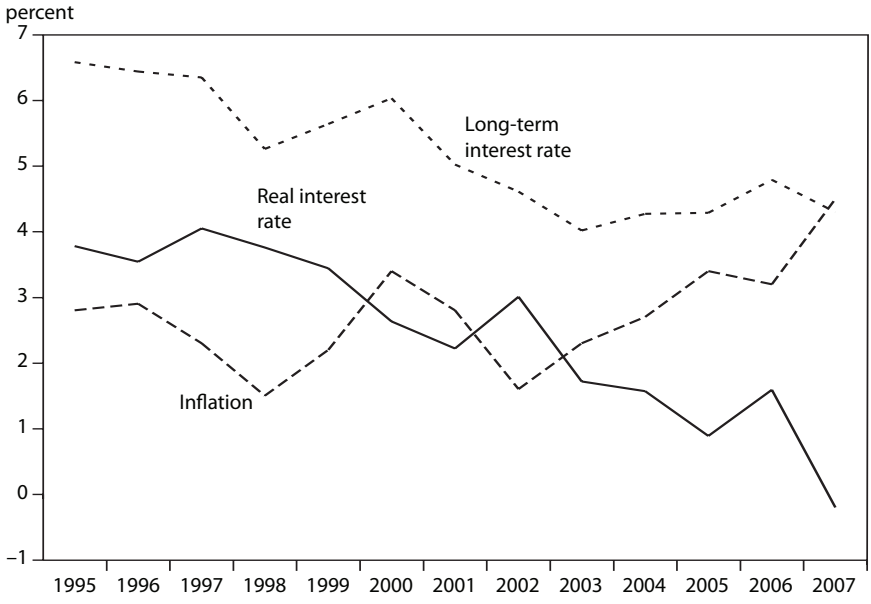


Source: International Monetary Fund, *World Economic Outlook*, October 2007.

policy interest rates in a number of important markets, where exchange rate expectations interact with individual interest rate adjustments. Because interest rate response functions of policy institutions as well as financial market and economic structures differ across countries, the adjustment process evolves with trial and error, occurs at different speeds in different markets, and is occasionally accompanied by considerable market volatility. A full description of this process with all details is impossible here; what is possible, however, is an analysis of a few key adjustment mechanisms and a discussion of the main implications of the interest rate adjustment.

Given their control over the short end of the yield curve, central banks played a key role in bringing real rates lower. Their reaction was prompted by the perceived shortfall of investment and excess supply of savings that threatened the economic outlook and raised the specter of deflation. As central banks experienced these imbalances to different degrees at different times, and as their response functions differed, they adjusted interest rates by different magnitudes and speeds. Nevertheless, their main achievement was to stabilize inflation against the backdrop of the large changes in global savings and investment and, more recently, higher commodity prices. As a result, nominal long-term rates fully reflected the fall in real rates until 2004–05, as shown for the United States in figure 4.8.

Figure 4.8 US nominal and real interest rates and inflation, 1995–2007

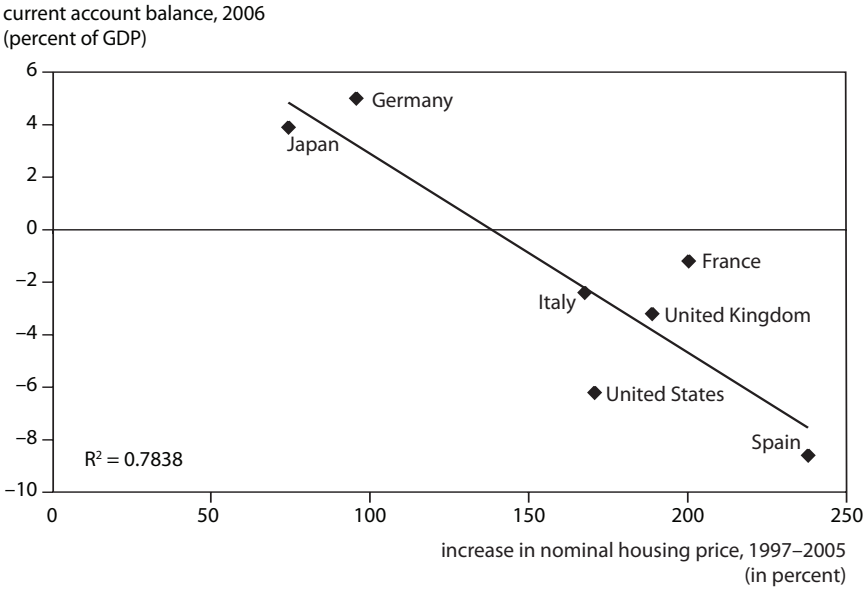


Source: International Monetary Fund, *World Economic Outlook*, October 2007.

While the demand for savings by investors responds directly to changes in real interest rates, real and financial assets are the key channel of transmission for real interest rate changes to affect the supply of savings by private households in the industrialized countries. With the decline in real interest rates raising asset prices, consumers felt wealthier and were inclined to spend their savings.

The speed and magnitude of this link between asset prices and consumption are key determinants of the divergent reactions of domestic demand to the global decline in real interest rates. Real estate markets played the most important role here because housing still represents the most important asset for most families. Figure 4.9 shows how, in countries where housing prices increased strongly, real private consumption also grew strongly. Clearly, while the decline in real interest rates was a global phenomenon, demand and supply conditions in specific real estate markets mattered. For instance, housing prices fell in Japan and Germany, where a supply overhang existed. There are also large regional differences even within countries. This applies a fortiori to the United States, where average value results from a property boom on both coasts while prices seem to have moved relatively little in the middle of the country. Even in European countries (much smaller than the United States), where, on average, housing prices did not increase greatly, there were localized booms,

Figure 4.9 Increase in housing prices and current account balance



Sources: Organization for Economic Cooperation and Development Statistics Portal, 2007; International Monetary Fund, *World Economic Outlook,* October 2007.

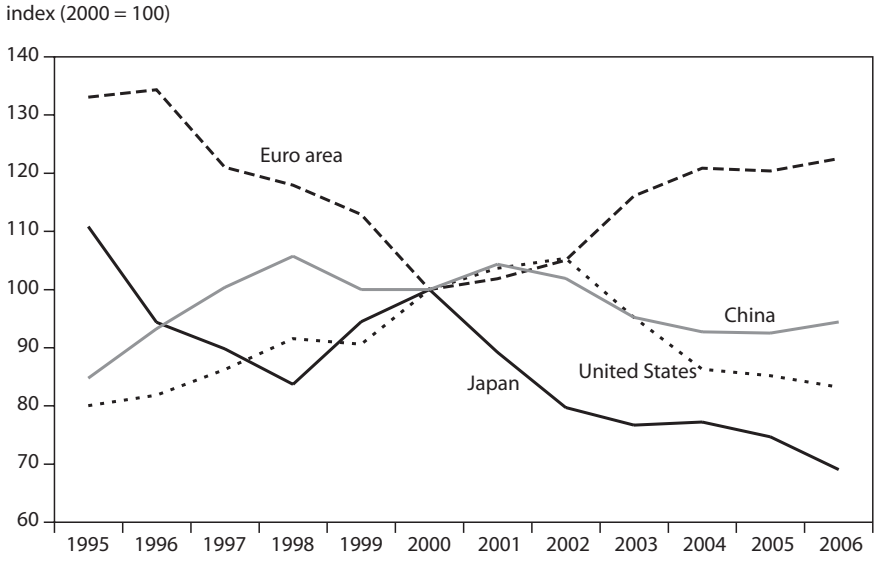
with all the attendant wealth effects. In addition to the differential direct wealth effect of diverging housing price appreciation, differences in the equity extraction mechanisms across countries played an important role. In countries where refinancing is easy and not expensive, as in the United States, or where mortgages are mainly at variable rates, as in the United Kingdom or Spain, the consumption boost from the appreciation of housing prices was magnified, exacerbating the external imbalance.

Through these mechanisms, national savings were eventually reduced in industrialized countries, allowing the latter to absorb the surplus savings of emerging markets at a time of lower investment activity without triggering a major world recession. This was indeed an extraordinary achievement. However, changes in national saving and investment were uneven across countries or country groupings, leaving the world with considerable international current account imbalances.

In sum, the stabilization of the world economy at a time of huge changes in global savings and investment flows was accomplished through a large decline in real interest rates.

It is apparent from figure 4.10 that it is difficult to attribute to exchange rate movements the massive shifts in current account balances that have taken place over the last decade. The United States and China experi-

Figure 4.10 Real effective exchange rates, 1995–2006



Source: International Monetary Fund, December 2007.

enced only marginal changes in their real effective exchange rates, an appreciation of slightly under 1 percent for the United States and 1.6 percent for China. But the picture looks different with 2000 as the starting point: The dollar experiences a devaluation of 16.8 percent and the renminbi of 5.9 percent, while the appreciation of the euro amounts to 22.5 percent.

Oil Prices and the Sudden Emergence of an Important Source of Excess Savings

In this section I explore the implications of high oil prices for the global investment-savings balance. The importance of the price of oil for the global economy is now (again) widely recognized. However, higher oil prices not only distribute income away from the major importers (Organization for Economic Cooperation and Development [OECD] countries plus China), they also have a major impact on the global savings balance. As discussed above, rising surpluses among OPEC countries provided about half of the counterpart to the increasing US surplus up to 2006. Adding the surpluses of other commodity exporters, whose prices have increased across the board, would show that the savings made possible by the commodity price boom of the last several years have financed about two-thirds of the US deficit.

OPEC surpluses are destined to grow even more in the near future as oil prices surged again toward the end of 2007 (after a temporary dip around year-end 2006–07. The reason for the emergence of these surpluses is quite simple: Ever-rising oil prices transfer wealth from oil-consuming countries to oil-producing countries, and the latter have a much higher propensity to save out of current income.

There are at least two reasons why OPEC and other commodity-producing countries are not spending their windfall gains immediately. First, despite the existence of the futures market, there is considerable uncertainty about the future of oil (and other commodity) prices, and thus the marginal propensity to consume may slow in the short run for precautionary reasons. Second, the international financial institutions (IFIs) have constantly been urging governments of commodity-exporting countries to build up stabilization funds, advice that has been at least partially taken. This implies that governments are saving a substantial part of the windfalls that accrue to them in the form of higher royalties in order to raise national savings. These two mechanisms, both of which are based on the uncertainty of future oil prices, are fundamentally very similar. I return to this issue below.

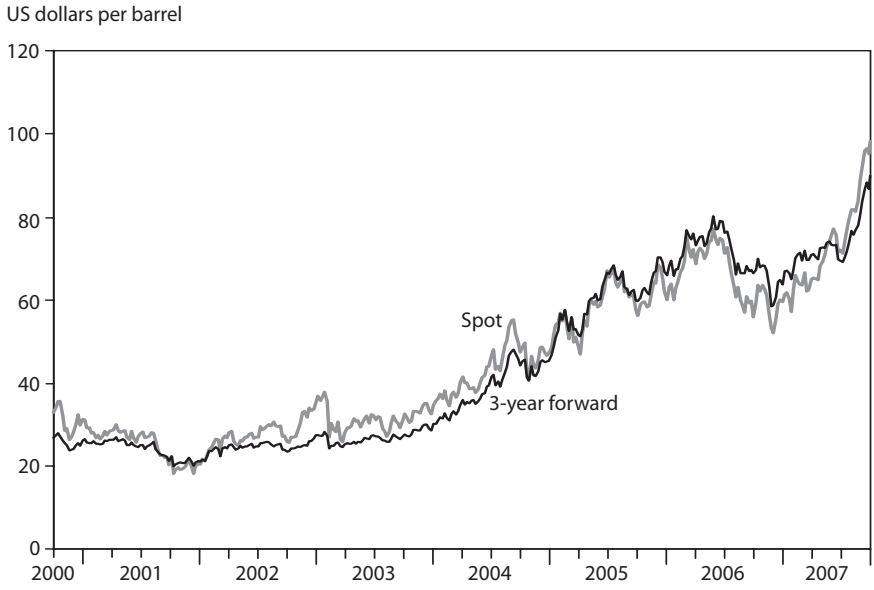
A simple calculation can show that the magnitudes involved are significant. Approximately 50 billion barrels a day are produced by countries that are not themselves big consumers. An oil price increase of $30 a barrel (e.g., from the less than $30 average that prevailed until 2001–02 to the $60 to $65/barrel in 2005–06) implies a transfer to these producers of about $1.5 billion per day, or around $550 billion per annum. In reality, the gain would be even higher since most oil producers (especially Russia) also export natural gas, whose price tends to follow that of oil. Hence the transfer resulting from an increase in the oil price by about $30 would probably be considerably above $600 billion per annum.

If about half of this amount is initially saved, the increase in the oil price up to 2005–06 should have been equivalent to an ex ante increase in global savings of about $300 billion (and for the oil-consuming countries, an equivalent negative demand shock). This alone would equate to a drop in the investment ratio in both the United States and the eurozone of over 1 percent of GDP.

The global economy did absorb the first increase in oil prices (up to 2005–06) without visible negative effects, as the US economy proved willing to absorb the excess savings from OPEC countries. The key question for the world economy is now whether the end-2007 surge in oil prices to close to $100/barrel can also be absorbed, and if so whether it will, if sustained, create another shock of the same magnitude.

A key question for the global economy is thus whether the recent run-up in oil prices will prove to be temporary or permanent.

Figure 4.11 Crude oil spot and forward prices since 2000



Note: Dates are for February, May, August, and November of the years indicated.

Source: Bloomberg market data, 2007, available at www.bloomberg.com.

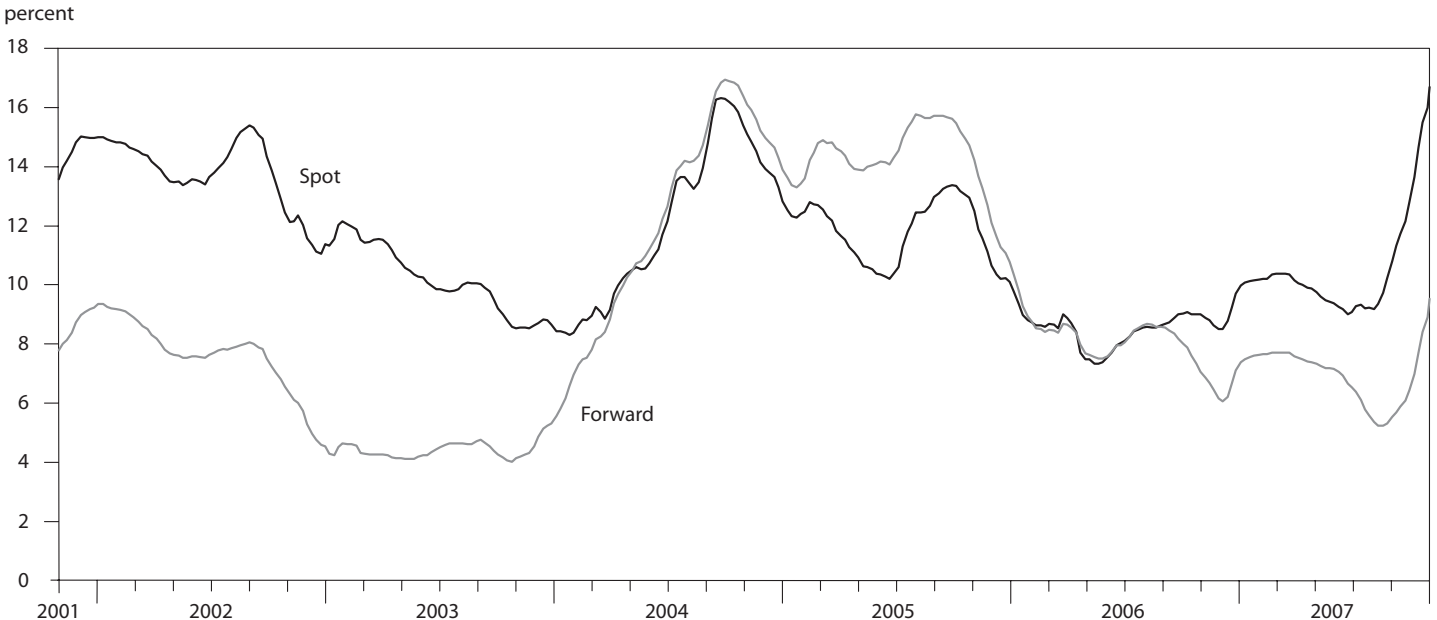
A Strong Demand Shock?

Are higher oil prices here to stay? The oil shock of the last few years does seem to be of a more permanent nature. During the 1990s, spot crude oil prices varied between $10 and $40 a barrel, but futures were stable at around $20 a barrel, signalling stability in the equilibrium price of oil at around this price. This stability of the future price lasted until 2003, then starting in early 2004, there was a sharp acceleration of futures prices toward values fluctuating in 2007 between $60 and over $80 a barrel (see figure 4.11 showing spot and 3-year future contracts).

The futures markets are thus signalling that prices are expected to stay elevated, conferring on this oil price shock a more permanent nature. This can also be deduced from the fact that the coefficient of variation of future prices is (at around 8 percent as of end-2007) only half that of spot prices, as shown in figure 4.12.

To understand the dynamics of recent oil price developments, it is fundamental to disentangle the shocks that led to them. However, this is

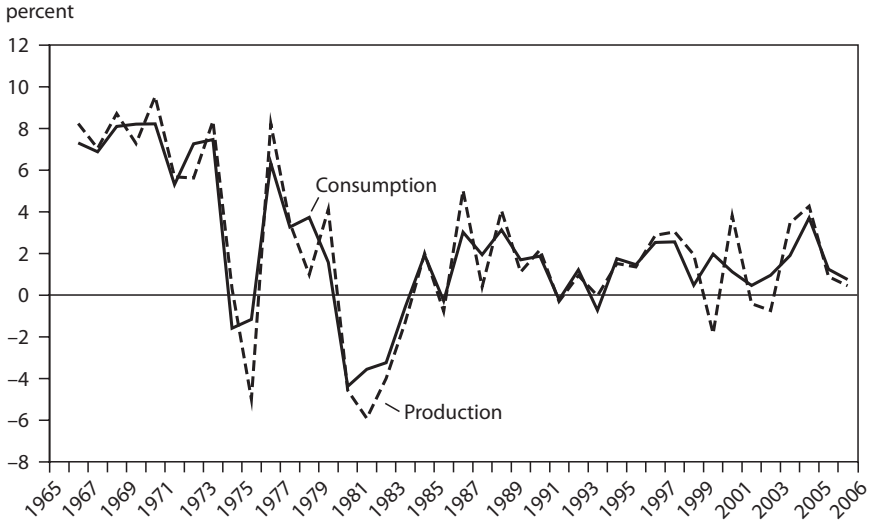
Figure 4.12 Coefficient of variation of spot and forward crude prices, 2001–07 (ratio of standard deviation to mean, rolling 12-month basis)



Note: Dates are for February, April, June, August, October, and December of the years indicated.

Source: British Petroleum, *World Energy Review 2007*.

Figure 4.13 Annual growth rates of world crude oil production and consumption, 1965–2006



Source: British Petroleum, *World Energy Review 2007*.

difficult for the simple reason that one observes only how much oil is produced and consumed. Since stocks amount to a small fraction of consumption (and production), one observes demand and supply at the same time, making it difficult to disentangle the complex combination of supply, demand, and portfolio shocks that all affect oil markets.

Until 2004 it appeared that demand growth was the main driver of higher prices. Projections for demand were constantly revised upward because consumption in emerging markets (especially China, which accounts for more than 40 percent of current demand growth) had been dramatically underestimated. An increase in demand can be expected from a combination of factors, including higher economic growth in emerging economies, a sharp increase in the oil intensity of GDP of these countries as they adopt oil-consuming technologies (such as cars—Asia is projected to add 200 million cars in the next 20 years, a third of them in China), and an increase in strategic demand. The last two points are very important as they represent a permanent shift in the demand curve that is inelastic with respect to prices.

However, since 2004, demand (or rather consumption) has decelerated sharply to annual growth of less than 1 percent. Figure 4.13 illustrates that the 2003–04 surge seems in fact to have been a blip. On average, demand growth has been rather stable over the last two decades if one looks at five-year averages. However, the sharp deceleration in consumption must have been at least partially the result of higher prices. It is thus likely that

the demand curve has indeed shifted but that the quantity actually consumed has not increased because the increase in price (a movement along the new demand curve) has offset the shift in demand.

Figure 4.13 also shows that demand and supply have tended to shadow each other. Over the last two years, growth rates for both have fallen. This is difficult to understand for supply.

A Very Tight Supply Situation

The key mystery in the oil market is that the response of supply to higher prices has been very slow, to say the least. Why would production growth fall when spot and future prices increase sharply? One explanation might be that such a decline represents an attempt by OPEC to increase its monopoly rent. However, this is not borne out by the facts, as OPEC production has in recent years been increasing (albeit slowly), whereas non-OPEC production has been more sluggish.

What is difficult to explain is that non-OPEC production (i.e., supply that either is not subject to a cartel or is managed by market forces) has not responded to higher oil prices. One reason non-OPEC production has not increased is that oil companies have not invested in new capacity in recent years. Given the relatively high forward prices, they can cover themselves against a possible decline of prices for at least five years (after which markets are no longer liquid).

The only other rational explanation is that remaining reserves are significantly costlier to extract than the mature basins the market is now draining. For example, the marginal variable lifting costs of the oil reserves in the US Midwest—comparable in size to those of Saudi Arabia—is about $15/barrel, requiring prices of about $50/barrel to justify the investment needed for extraction. By comparison, the lifting cost of Saudi Arabian oil is about $1.50/barrel. As the time frame over which investment in additional capacity can repay itself is much longer than the longest liquid forward contracts, oil companies might be reluctant to bet on permanently higher prices beyond the next five years or so over which they can cover themselves.

In addition, political turbulence in the areas that contain the cheaper available resources—not only in Saudi Arabia but also in Russia and Venezuela, for example—is redirecting investment toward higher-cost and lower-return areas, compounding the problem.

A few years ago stabilization of prices at about $35/barrel was seen by many companies as a precondition to resume investing. However, developments so far have not borne this out. Oil companies have been returning cash to shareholders through share buybacks (for example, in 2005, Exxon bought back almost $10 billion and BP over $7 billion) rather than invest in new capacity.

Table 4.3 Increase in global energy consumption, 1996–2006

Region	Crude oil	Primary energy
World (millions of tons of oil equivalent)	542.8	2,020.6
Contribution to total (percent)		
Organization for Economic Cooperation and Development	26.6	22.3
United States	18.8	6.7
European Union	6.7	4.5
Emerging markets		
Former Soviet Union	–0.3	4.1
Other emerging-market economies	73.6	73.6

Source: British Petroleum, *World Energy Review 2007*.

The Longer-Term Outlook for Oil Prices

The much higher oil prices along the forward curve can represent an equilibrium only if demand is expected to continue growing strongly despite higher prices and if supply also does not react much to higher prices (there has not recently been any large exogenous shock to supply, apart from temporary events such as the usual spikes in Middle Eastern political uncertainty).

This scenario of continuing tight conditions in the oil market (which is implicit in the forward prices) is difficult to reconcile with the historical record. Over the last 15 years, demand growth has consistently oscillated at an annual value just below 2 percent (if measured over five-year intervals; see figure 4.13). The (spot) price also, until 2004, fluctuated around a stable level of around $30/barrel (in real, inflation-adjusted terms).

Is there any reason to believe that global oil demand growth will suddenly accelerate much above the trend (±2 percent per annum) to which it settled for about two decades after the price gyrations of the two previous oil shocks (1973, 1979)? It is unlikely that global growth will accelerate much over the next few years since global growth was already close to its record in 2004 and 2005. But the weight of the faster growing emerging markets is increasing (their growth rates are already at a record, but their weight increases constantly), and they are growing on the back of fast growth in industry and transportation, which are highly energy intensive. Hence many argue that oil demand will be driven by emerging markets. This is at first sight an attractive hypothesis, since over the last decade (a five-year horizon yields similar results), almost three-quarters of total demand growth (of both oil and overall primary energy) has come from emerging markets (see table 4.3).

However, much of the increased oil (and general energy) demand by emerging markets might simply be due to the fact that manufacturing activity (which is energy intensive) has shifted to them from the OECD countries. Thus, the underlying increase in global oil demand may be lower than commonly estimated once the additions to strategic oil reserves in the United States and China (and possibly elsewhere) are taken into account.

As an aside, one might note that there is indeed a marked difference between the European Union and the United States in terms of oil consumption: The latter has been responsible for about one-quarter of the global increase in oil consumption, against less than 10 percent for the European Union. However, in terms of overall energy consumption (in the long run, different forms of energy are fungible), the difference between the two is much smaller and can be entirely explained by the higher US growth. The image of a "gas-guzzling" United States with its SUVs against a "thrifty" European Union is correct if one looks only at oil, but in terms of overall energy consumption (or even more in terms of marginal energy efficiency of GDP), the difference is much smaller, probably because of the higher share of industry in the EU GDP.

By how much would global oil demand growth have to accelerate so that the current price level represents an equilibrium? As a starting point, one can observe that the end-2007 price of around $100 per barrel represents roughly a threefold increase (in real terms) compared to the previous decade average. In other words, the question is whether a tripling of the price is needed to keep demand and supply in balance over the next decade.

Most studies of the oil market find a long-term elasticity of both demand and supply of between 0.1 and 0.3. Taking a value in the middle would imply that an increase in the (natural) logarithm of the price, a little over one unit ($\ln(3) = 1.1$) should lead to an increase in supply of about 20 percent and a fall in consumption (ceteris paribus) by a similar amount. This calculation suggests that over the long run (e.g., a decade) a gap of around 40 percent should open up between demand and supply, further suggesting that demand growth would need to accelerate to around 4 percent, double the previous medium-term average, for current price levels to be sustained.

Is there any reason to believe that the elasticity of oil demand has declined? The share of energy in general and of oil in particular in GDP has actually fallen in recent decades, and the price of coal, one important substitute for oil (at least in electricity generation), has not increased significantly. The first fact might suggest that the elasticity of demand has fallen, as oil might now be used mainly in transportation, where it is very difficult to substitute. Moreover, a quantum leap is taking place in this area in many emerging markets. However, although transportation is an important part of overall oil demand, it still accounts for only about one-third of the total.

The relative stability of the price of coal points in the opposite direction as it means that the potential to substitute oil for other energy sources

should actually be rather high (at least in emerging markets; the switch to oil has already largely taken place in OECD countries).

There is thus little reason to believe that there will be pressure from demand for oil prices to continue to increase indefinitely.

The key question is whether supply can continue to expand as it has done until recently. What is the outlook for supply? My analysis assumes that supply will continue to be available to meet demand at current price levels (which reduce demand). But there is some question as to whether the world will be able to find enough new capacity at the current level of prices. There are many views on this. Matt Simmons' 2005 *Twilight in the Desert* is the most prominent example of the view that the supply curve is "kinked"—that the years of plentiful and inexpensive oil supplies are over and that the future holds a much more difficult and expensive search for new sources of oil. If one considers, in addition, that likely new sources are in areas of the world with higher geopolitical risk, the view that supply will be available at the same conditions as in the past has to be qualified. I do not wish to take a position on this issue. It is likely that the marginal cost of finding new sources of oil will increase over time, but I doubt that it suddenly doubled in two years after having been roughly constant for decades.

This analysis has two important implications:

- Unexpectedly inelastic supply, rather than runaway demand seems to be the root cause of tight market conditions.
- Increasing oil prices (as opposed to high but stable prices) lead to substantial savings surpluses by OPEC countries, possibly indicating that the increase in oil prices in 2007–08 will result in more global imbalances. (By contrast, at a stable oil price around the 2006–early 2007 level, one would have expected the savings rate of the oil exporters to decline gradually as their consumption caught up to the increase in income.)

Model-Based Analysis of the Intersection of Global Growth, Interest Rates, and Oil Prices

I have argued in the previous section that the evolution of oil prices can have an important, perhaps decisive, impact on the evolution of global imbalances, as the combined surplus of oil-exporting countries is now much larger than that of China. Moreover, it seems that the Chinese surplus is mainly determined by domestic conditions and has stabilized, whereas the OPEC surplus is essentially determined by external conditions, namely the oil price. The latter seems to be determined in the short run by the intersection of an inelastic demand and an equally inelastic

supply curve. As demand for oil is closely related to growth in the major consuming economies, it follows that there should be a link between global growth, oil prices, and the global supply of savings.[2]

It is by now clear that higher oil prices lead to higher OPEC external savings. This suggests a simple explanation of the combination of strong global growth and low interest rates: Strong global growth exerted pressure on oil prices, leading to an ex ante OPEC savings surplus, which in turn kept interest rates low (the "conundrum" as it was called in 2005–06). It is thus possible that stronger global growth could lead to even lower interest rates. Moreover, this effect could also explain why higher oil prices have so far not had a negative impact on global growth: Any shock to oil prices (e.g., because of unexpected shortfalls of supply) would lead to lower interest rates, thus stimulating demand.

This section outlines a simple model to show analytically how global growth, oil prices, and interest interact. The basic building blocks of the model are quite simple.

The key element is the oil market. It seems reasonable to assume that growth in world income and production leads, ceteris paribus, to a proportional increase in the demand for oil and that the price elasticity of demand is rather low. Moreover, in the short run, oil supply is also very inelastic, especially if producers operate close to capacity, so that the market-clearing price must increasingly rise as demand nears the available supply (as mentioned above, the available estimates suggest long-term elasticities in the 0.1 to 0.3 range; the short-run elasticities must thus be even smaller). This seems to represent the situation at the end of 2007, when the price was close to $100 per barrel as stocks fell to a historic low. These two elements imply that when oil producers operate close to capacity, there should be a tight relationship between the price of oil and world output growth.

The next building block is also quite simple. It describes the supply of external savings in two major blocks: the oil-consuming economies (the OECD, proxied by the United States) and OPEC. It is important to distinguish between these two blocks because their savings are influenced by different variables.

For OPEC, the oil price is the key variable. As mentioned above, OPEC member countries tend to save a fraction of their oil revenues, so the supply of external savings from OPEC countries should be a linear function of

2. This approach can of course be regarded as a special case of the "savings glut" hypothesis. In a speech on March 10, 2005, Ben Bernanke, then a member of the Board of Governors of the US Federal Reserve System and now Chairman of the Federal Reserve, pointed to a rising supply of international savings from emerging markets as the counterpart of the US deficit and as the probable cause of persistently low interest rates. However, the "savings glut" hypothesis essentially took emerging-market countries' savings as given. Here I show how savings outside the OECD can actually be a function of global growth.

the oil price. This is in keeping with the facts that OPEC countries' domestic financial markets are underdeveloped and their use of oil revenues is decided mainly by governments. Thus OPEC savings are exogenously determined by governments (the advice of the international financial institutions like the IMF seems to be to save about half the oil revenues). Interest rates therefore do not play a major role in determining OPEC savings.[3]

In contrast, saving by oil-consuming countries (i.e., the OECD) is affected by conventional macroeconomic variables and should depend mainly on income and the (real) interest rate.[4]

The model can be closed by the requirement that in equilibrium, OPEC countries' external savings equal "dissavings" for oil consumers. There is thus a relationship between growth and interest rate that maintains equilibrium on the global market for external savings (and the market for oil). It is apparent that if OPEC had a marginal propensity to save oil revenues equal to zero, higher growth would lead to higher interest rates. However, once OPEC saves a substantial proportion of its income, the sign of the relationship between income and interest could change: Higher growth could lead to lower interest rates. This seemingly surprising result has a simple explanation: As demand for oil nears available supply, prices rise faster and hence OPEC savings increase more than proportionally. This correlation might well describe the situation over the last few years, when higher global growth (especially higher growth in the largest oil consumer, the United States) was not accompanied by higher interest rates. The solution to this "conundrum" of low interest rates might thus be found in the reaction of OPEC (and most other oil-producing nations) to higher oil prices.

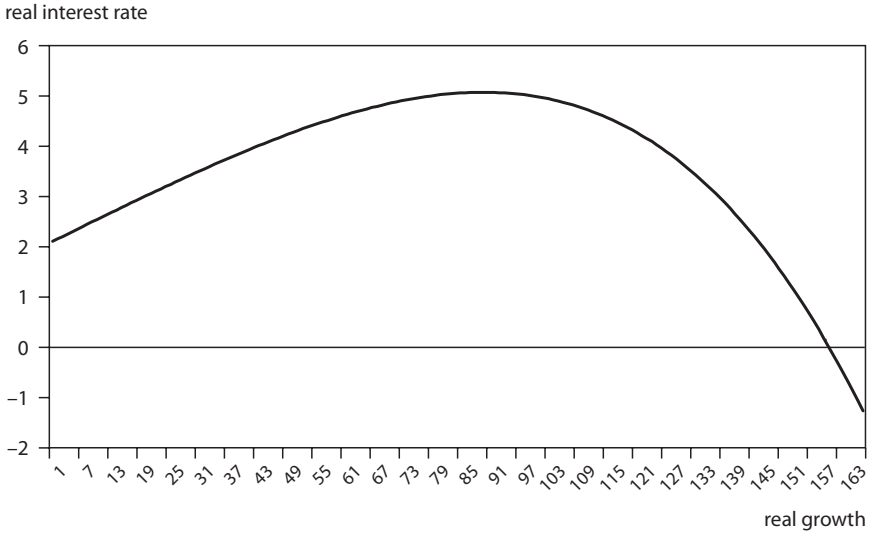
Figure 4.14 illustrates the shape of the global savings equilibrium for a particular numerical combination. The curve is strictly concave and might be called the "OS" curve (the oil-savings relationship). The curve in figure 4.14 represents the combinations of growth and interest rates that satisfy the global savings equilibrium. The shape of the curve is essentially determined by the sum of the (short-run) elasticities of supply and demand for oil. Given the low values for the long-run elasticities, the curve assumes a value of 0.2 for the sum of the two elasticities.

In order to close the model, one can use a standard investment-saving (IS) equation, which links demand to interest rates (again, valid mainly for OECD countries) in a simple, standard way, with higher interest rates leading to lower demand. Putting the IS curve together with the "OS"

3. What role interest rates should play in a perspective of intertemporal optimization of consumption paths is a different question.

4. It is assumed here that OECD consumers do not increase their savings in response to higher oil prices. This assumption could be easily modified, but the essential results would not be affected as long as OPEC's propensity to save is higher than that of the OECD.

Figure 4.14 Shape of global savings equilibrium



Source: Author's calculations.

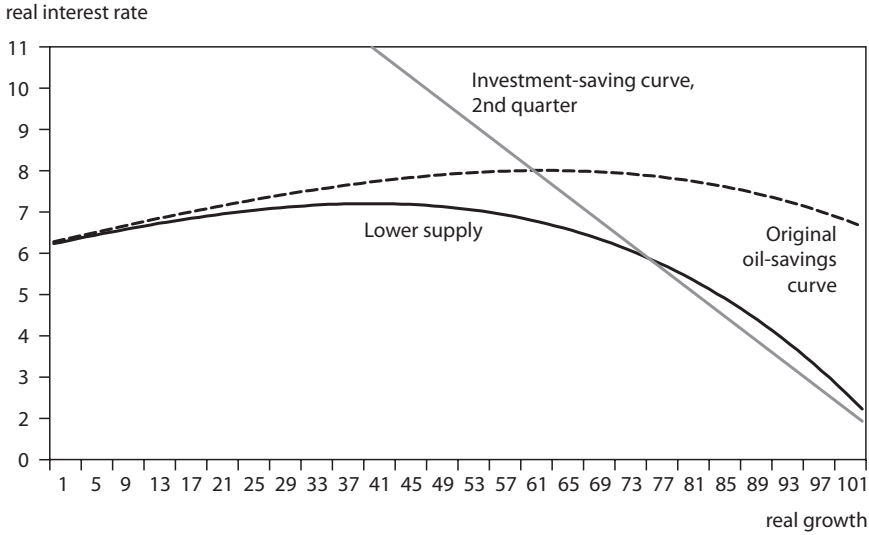
equation gives the combination of growth and interest rates determined by the global equilibrium (internal and external savings in the OECD).[5]

With this model, the usual comparative static exercises can determine how the system reacts to different shocks. The first point to note is that any shift in the OS curve displaces the equilibrium along the IS curve. For example, a negative supply shock would tend to move the OS curve lower but at an increasing rate, with an unchanged IS curve. This would then lead to a combination of higher oil prices but also higher growth in the OECD because of lower interest rates, which stimulate OECD domestic demand and higher current account imbalances (higher OECD deficits and higher OPEC savings), as illustrated in figure 4.15.

However, when the IS curve shifts the sign of the relationship between changes in income and the interest rate depends on whether the IS and OS curves intersect. Consider, for example, a shift of the IS curve to the right (e.g., a fiscal expansion in the OECD or an increase in OECD housing prices, which would lead to higher consumption demand). Growth might then go up, but interest rates fall if the intersection of the IS and OS curves is to the right of the maximum of the OS curve (as in the shift from IS curve second quarter to IS curve fourth quarter in figure 4.16). This might

5. It is apparent that these two curves might have two intersections (two solutions to the model).

Figure 4.15 Global savings equilibrium: Negative supply shock



Source: Author's calculations.

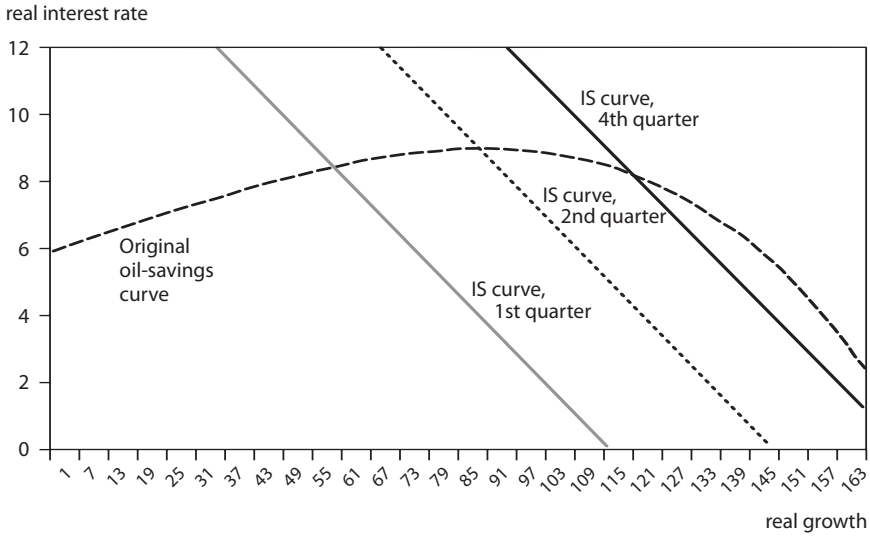
explain what happened when the US economy started to recover in 2004–05 but interest rates stayed very low (the conundrum). This aspect of the model fits the facts particularly well because much of the counterpart to the increasing US current account deficit came from OPEC surpluses until about 2004–05; the current account surplus of China had been quite small (and did not vary much) until about that time.

Concluding Remarks

Until the summer of 2007, the policy debate about the US current account deficit was highly politicized, with a different consensus emerging in each of the affected geographical areas as to the cause of the imbalances:

- the "Washington consensus" blamed China for underconsumption and a beggar-thy-neighbor exchange rate policy,
- the "European consensus" blamed the US fiscal deficit and the Federal Reserve's loose monetary policy, and
- the "Asian consensus" blamed the United States for overconsumption and saw a competitive exchange rate as a necessary element of an export-led growth strategy.

Figure 4.16 Global savings equilibrium and shifts in the investment-saving (IS) curve



Source: Author's calculations.

With the onset of the subprime crisis, perceptions shifted. Both sides of the Atlantic are now converging on the view that the main problem lies in Asia, especially China, whose growing surpluses are considered "unfair." In China it is also becoming apparent that foreign exchange rate intervention has its cost and that keeping the exchange rate pegged de facto to a falling dollar is stoking inflation at home. However, as there is no apparent alternative to export-led growth, the authorities are trying everything to delay the inevitable.

The emerging consensus on the need for a revaluation of the renminbi overlooks the fact that it will be difficult to achieve equilibrium only through price adjustment. There are reasons to doubt that exchange rate changes alone will suffice to restore current account imbalances to more sustainable levels. The existing global imbalances arose in the absence of any clear trend in exchange rates until the end of 2006. The US deficit rose during times of a strong dollar as well as when the dollar was weak. China's surplus started to rise significantly only when the renminbi was allowed to appreciate against the dollar.

The focus on the Chinese surplus and the renminbi has diverted attention from an equally large source of global savings (and hence imbalances), namely oil (and other commodity)–producing countries. Their external savings are climbing along with the oil (and other commodity) prices, with the paradoxical result that strong global growth is coupled with low interest rates.

In this environment, it becomes of course more difficult for central banks to gauge the appropriate stance of monetary policy. Central banks control only short-term interest rates, and a reduction in these rates to stimulate the economy might, if successful, lead to higher oil prices and lower interest rates along the entire yield curve. As a result, one standard indicator of the stance of monetary policy—the yield curve—would give a different signal.

The key condition for the gradual adjustment in the US external deficit to continue is that US policymakers accept a prolonged period of weaker growth; a condition sine qua non for further reductions in the US external deficit to more sustainable levels is a reduction of the growth rate of domestic demand by about 1 percentage point over several years.

However, were US policymakers to try to resist this slowing of domestic demand growth (e.g., with aggressive interest rate cuts), all the adjustment would have to come through the exchange rate channel. The odds of a disorderly adjustment with a massive fall of the dollar would then increase dramatically.

The slowing of US domestic demand necessary for a reduction in the US external deficit should be seen as reversing a process that started around the turn of the century, when a rise in the international supply of savings from emerging-market economies, combined with a postdotcom-bubble fall in investment in OECD countries, pushed real interest rates to record lows. The deflation scare that emerged from the combination of the bursting of the stock market bubble, the shocks that ensued from corporate scandals and geopolitical events (e.g., 9/11), and China's and India's entry in the world trading system all provoked the aggressive lowering of nominal and real interest rates. An initial savings glut thus became a liquidity glut, which also led to an extraordinary easing of credit conditions, most apparent in the US subprime mortgage market. While the fall in real interest rates and the easing of credit conditions was experienced in most OECD countries (and in particular the United States and the eurozone), the impact on domestic demand was asymmetric and consequently, current account imbalances rose.

With the break of the subprime crisis, this cycle stopped. Credit markets tightened and the US real estate sector is starting to contract. Given the extraordinary length of the upswing it is likely that the fall in housing prices could also be long.

How does the story end? A few aspects seem clear.

First, central banks for the time being focus on keeping the banking system alive and credit channels open. Global adjustment, and to a certain extent inflation, has become secondary.

Second, the eurozone has discovered that adjustment in the US deficit might create difficulties in Europe: Either the dollar tumbles, creating difficulties for eurozone exporters, or the US economy slows, and then the slowdown might be global. "Decoupling" seems unlikely in the face of a transatlantic credit market crisis.

In this context, one has to wonder whether the current framework for monetary policies around the globe is adequate. In a world with ever more integrated capital markets and global supply chains, the informational value of traditional domestic indicators of price pressures has declined significantly. Inflation is becoming a global phenomenon, raising the question of whether monetary policy based on domestic Phillips curve considerations is still appropriate. The strong correlation between housing price inflation and current account deficits across developed countries suggests that, in the absence of wage inflation because of global labor arbitrage, overheating is reflected in the external accounts. Under this hypothesis, the US current account deficit and inflated housing markets could just be indications of an overheated economy, probably as a result of an overestimation of potential growth. Thus it looks as if the global imbalance may not be a problem per se but could become one if at the same time high commodity prices fuel emerging-market savings and excessive asset price inflation in the industrialized world turns into deflation, at least in the housing sector.

A number of questions arise: Can a central bank consider its job done if it achieves internal balance at the expense of a large external imbalance? Should monetary policy be redefined as the achievement of financial stability in a way that encompasses internal and external balances as well as asset price stability? Should monetary policy among advanced economies be more coordinated in the face of a large supply of savings from emerging-market countries (whose economies do not respond to the same macroeconomic levers)?

The answers to these questions will provide the key to defining the appropriate policy response, but such answers are not apparent at this stage. By formulating these questions in a (hopefully) clear manner, I hope to improve the chances of finding answers to steer policymakers in the right direction as events unfold.

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5

Sustainable Adjustment of Global Imbalances

RAY BARRELL, DAWN HOLLAND, and IAN HURST

The United States reached a current account deficit of 6 percent of GDP in 2006 and can be expected to do so for some time unless the US economy slows rapidly. Although this sustained deficit may in part be due to "misaligned" real exchange rates, some may also be due to "inappropriate" domestic absorption. The greater the "appropriate" level of domestic absorption, the higher the "correctly aligned" real exchange rate. It is possible to look at changes in domestic absorption and the real exchange rate using our model, NiGEM, which is outlined on the website of the National Institute of Economic and Social Research (NIESR; www.niesr.ac.uk), and we use these results to suggest one possible path to a new equilibrium based on the targets set out in Williamson (2007).

Without an analysis of equilibrium capital flows and the national savings underlying them, it is difficult to judge what is meant by "inappropriate" or "misaligned." Such an analysis might suggest that the existing global current account deficits and surpluses may be sustainable and may

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be the result of private sector investment choices reflecting risk-adjusted real rates of return. The current pattern does involve a deterioration of the US foreign asset position, as we can see from figure 5.1. The United States was a net creditor until 1990, but cumulating deficits since then have led to a negative asset position of 20 percent of GDP. If the deficit were to stay at around 6 percent of GDP and the United States were to experience nominal growth of 6 percent per annum, then the net asset ratio would settle at around 100 percent of GDP, which may of course be sustainable. Depending on the rates of return on assets and liabilities, the trade balance would have to improve from its current level, and if the net return on the stock of liabilities were 4 percent, then the trade balance would have to improve by more than 3 percent of GDP to accommodate the new equilibrium.

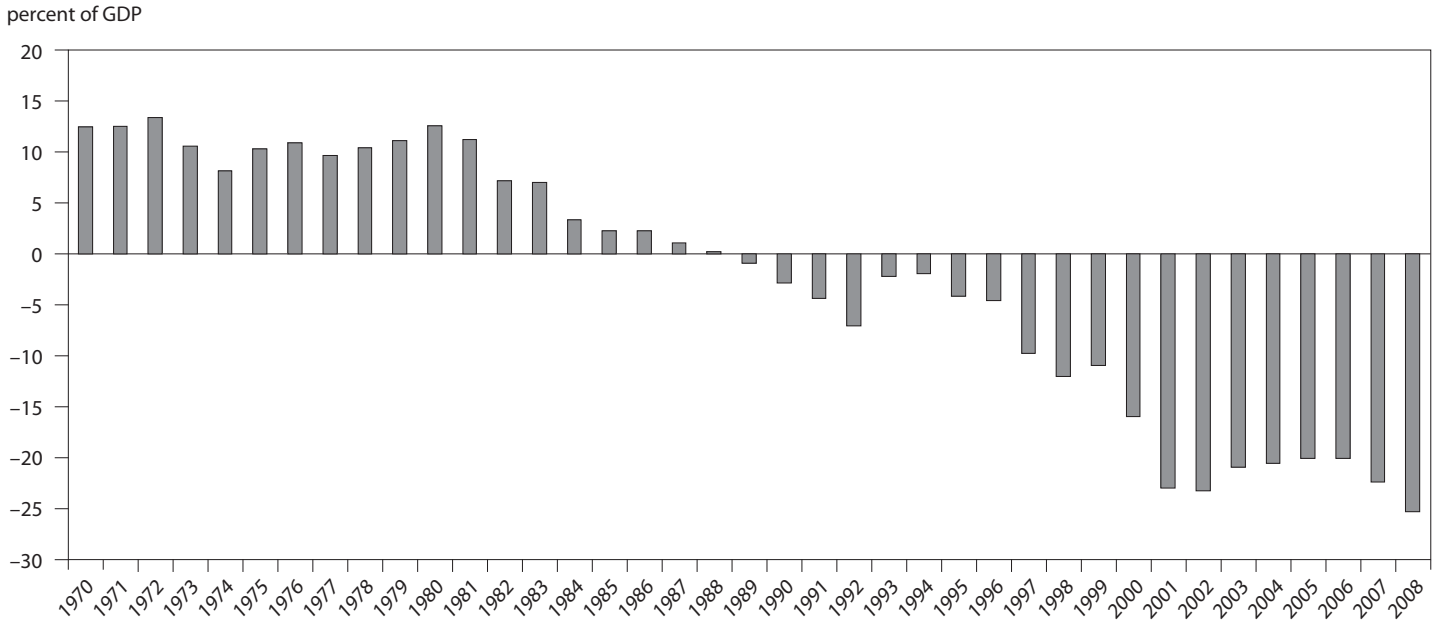
Using NiGEM to analyze different scenarios requires the use of a baseline that describes a possible future, and that baseline must itself represent a path to an equilibrium (Barrell 2001). The equilibrium describes assets and liabilities willingly held by agents and hence sustainable current account flows. If the baseline does not describe a sustainable equilibrium, then it will not be possible to undertake forward-looking solutions that require changes in asset holdings as a percent of GDP, as Mitchell, Sault, and Wallis (2000) show when discussing fiscal solvency simulations of the IMF model Multimod. Solvency requires that baseline asset stocks stabilize as a percent of income and that the real rate of return on assets exceed the growth rate. There are many possible sustainable and solvent equilibria, and scenario analysis involves shifting the model from one such path to another. If preferences for assets (or plans and preferences elsewhere) change, then the equilibrium will change.

Changes in nominal exchange rates that do not have real causes have no real effects in the long run in our model and can be seen as monetary experiments that cause the price level to change (Barrell, Holland, and Hurst 2007a).[1] This can be illustrated with shifts in monetary policy in Japan and the euro area and a realignment of the renminbi: They are shown to have only a transitory effect on the Japanese, euro area, and Chinese (and hence US) current accounts because they do not address the structural factors behind the US deficit and the Chinese surplus. A simple devaluation of the US dollar in NiGEM has no long-term effect on the current account (Barrell and Hurst 2007b).

The January 2007 baseline determined by the UK-based National Institute of Economic and Social Research (NIESR) has the US current account stabilizing at a level that would produce a negative net asset ratio of just over 100 percent of GDP in the long run. It is possible that this might be perceived as unsustainable, and therefore something real would have to change to reduce domestic absorption and switch expenditure. We look at an exchange rate–driven orderly adjustment, where US imbalances are

1. That paper also outlines the relevant aspects of NiGEM.

Figure 5.1 US net foreign asset ratio, 1970–2008



Source: NiGEM model and database, available at www.niesr.ac.uk.

gradually corrected by a sequence of exchange rate movements driven by changes in risk premia, much as discussed in Blanchard, Giavazzi, and Sa (2005) and Obstfeld and Rogoff (2005). If neither US consumers nor the US fiscal authorities change their behavior and spend less of their incomes, this scenario is extremely likely. However, it is likely that there will be a concerted attempt by other countries, as well as the United States, to address imbalances and change structural capital flows. Hence we combine a rising risk premium on US assets with changes in domestic demand to produce a pattern of exchange rates and current accounts that are considered sustainable.[2]

The Exchange Rate and Monetary Policy in a Forward-Looking Model

It is usual to presume that agents in the foreign exchange markets form expectations about interest rates and other events that may affect the evolution of the currency. The arbitrage equation for the bilateral exchange rate (e_t) may be written as

$$e_t = e_{t+1}\,((1 + rf_t)/(1 + rh_t))(1 + rp_t) \tag{5.1}$$

where rh_t is the interest rate at home, rf_t is the interest rate in the partner country, and rp_t is a risk premium. Exchange rates change because one of these factors changes. For example, a rise in domestic interest rates (now or in the future) will cause the exchange rate to strengthen, while the same change abroad will cause it to weaken. Interest rates may be expected to change because of fiscal and monetary policy developments or because of changes in the private sector. A change in the risk premium either now or in the future will also cause the exchange rate to change. Lane and Milesi-Ferretti (2004) argue that the net asset position should affect the real exchange rate, and Al-Eyd, Barrell, and Holland (2006) present evidence of an asset-related risk premium on the US exchange rate. Thus it is also possible that changes in the perception of future net assets could cause the real exchange rate to change.

Between 1997 and 2005 the US current account deteriorated by $650 billion, or about 4½ percent of GDP. Although the largest factor was the deterioration of the bilateral balance with China, the impacts of the North American Free Trade Agreement (NAFTA), the European Union, and the Organization of Petroleum Exporting Countries (OPEC) are all substantial. Domestic imbalances have been partly responsible for the deterioration in the current account, with low levels of domestic saving and in-

2. The sustainable balances are as suggested by Williamson (2007), and the exchange rates are the result of changes we put in place, as described below, to achieve them.

creased government deficits contributing to excess domestic absorption and hence current account deficits. In addition, since 2002 the price of oil has risen by 200 percent, and as the United States is a large net oil importer, this has led to a significant deterioration in the current account, of perhaps 1 percent of GDP (Barrell, Holland, and Hurst 2007a).

The US effective exchange rate fell by around 15 percent between the first quarter of 2003 and the first quarter of 2005, and each time it fell there should have been a worsening of the current account for a year as prices changed in advance of quantities (the J curve effect of the first-year textbook). Thus it would have been reasonable to expect no sustained improvement until at least a year after the last downward step (toward the end of 2004).[3] We have provided a model of this history (Barrell, Holland, and Hurst 2007b) by eliminating each major step down in the currency (starting with the last) and evaluating what would have happened if the fall had not taken place. The new "history" with a higher exchange rate then serves as the baseline against which we remove another drop in the exchange rate. The exchange rate changes are assumed to be driven by small changes in the risk premium, and as we discuss below, this has real effects in the longer term, as it causes a wedge to develop between US and other countries' real interest rates and hence changes relative domestic absorption. These experiments suggest that if the exchange rate had not fallen by 15 percent, the US current account would have been approximately 2 percent of GDP worse than it now is; instead, domestic absorption rose autonomously enough to offset the impact of the fall in the exchange rate.

The role of monetary policy in inducing a change in the current account can be addressed through its effects on domestic demand and on the exchange rate. A US current account deficit can be the result of too much absorption in the United States or too little elsewhere. Monetary expansion outside the United States—for instance, in the euro area, Japan, or China—might be expected to shift the US current account balance. To evaluate this possibility we look at the impacts of a monetary policy expansion and Chinese exchange rate realignment using NiGEM; we set out our monetary policy framework and explain how it affects current accounts, among other things. The effects vary depending on the assumptions. NiGEM can be operated in various ways, from an old-fashioned "backward-looking" model in which devaluations are possible, to one where all agents are forward looking and equilibrium is achieved quickly.

Monetary policy is set by using rules that describe monetary authorities' responses to events. The rules we use are not derived from estimated equations but rather from standard presentations in the literature or from the

3. The appreciation of the dollar was a relatively recent phenomenon in 2002, and the 15 percent increase over the previous four years may not have had much impact on the US current account.

publications of central banks. The default rules on the model involve nominal GDP and inflation targeting described in equation 5.2 (the two-pillar strategy), while alternative rules use versions of the Taylor rule (equation 5.3) with industry standard parameters as in Taylor (1993). The parameters of the two-pillar strategy are calibrated to be "optimal" in response to shocks on the model (see Barrell and Dury 2000; Barrell, Dury, and Hurst 2001; and references therein). These rules feed back on a nominal aggregate (NOM) as compared with a nominal target (NOMT), on the output gap (OG), and on the deviation of inflation (INF) from target (INFT) (Barrell, Hall, and Hurst 2006). We include a rule of the form used by a monetary authority that pegs to the dollar; it involves shadowing the US interest rate r_{us} with a capital controls or risk-related premium *rp(cap)*, so monetary policy has to be used to sustain the exchange rate through intervention.

$$r_t = \phi(NOM \,/\, NOMT) + \varphi(INF - INFT) \tag{5.2}$$

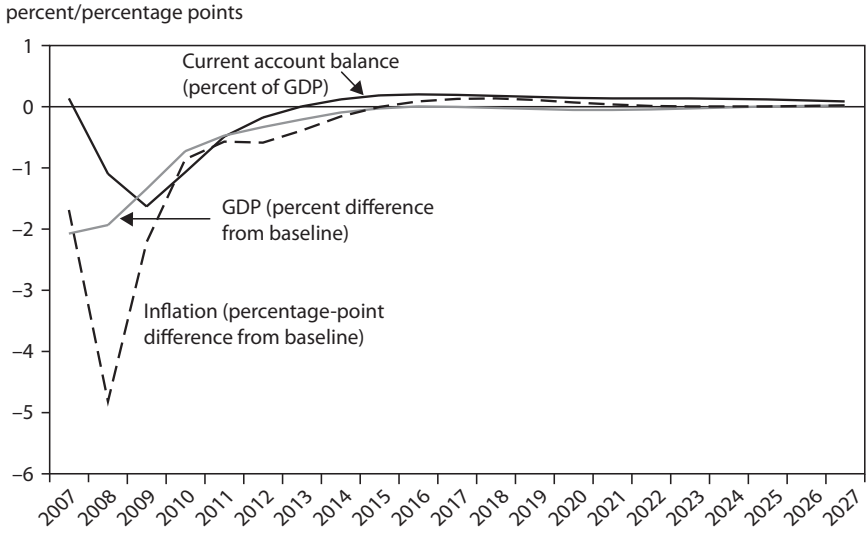
$$r_t = r_s + 0.5(OG) + 1.5(INF - INFT) \tag{5.3}$$

$$r_t = r_{us} + rp(cap) \tag{5.4}$$

In the nominal targeting regime (equation 5.2), which we may call a European Central Bank (ECB) two-pillar strategy, we do not need to specify the equilibrium or steady state real interest rate r_s in the economy, but this is essential in the Taylor-style rule (equation 5.3). We can describe a change in policy as a change in a target variable in rules 2 and 3 (equations 5.2 and 5.3), whereas it is a change of peg in rule 4 (equation 5.4). If interest rates are changed for a period independent of the target then we have to specify what happens afterward: If a nominal target is left in place, then the rule will drive nominal GDP back to where it would otherwise have been, whereas with a Taylor rule the long-run impact of a target change will depend on its duration, the parameters of the rule, and the parameters and structure of the model. Forward-looking foreign exchange markets make monetary policy more powerful in the short run, but a change in the monetary stance or the exchange rate peg is unlikely to lead to any changes in current account or the real equilibrium of the economy in the long run.

As the Chinese renminbi has been following the US dollar closely, it is possible to conceive of a change in the peg; figure 5.2 indicates the projected effects of a 10 percent appreciation (with the rest of the world following their existing policies). As the rest of the world has forward-looking financial markets, their exchange rates adjust in a minor way and their inflation stays around target but with higher nominal Chinese export prices in the short run. The loss of competitiveness reduces overall demand and increases spare capacity, putting a downward pressure on prices, which will continue until the increase in spare capacity is removed.

Figure 5.2 Projected effects of a 10 percent appreciation of the renminbi, 2007–27



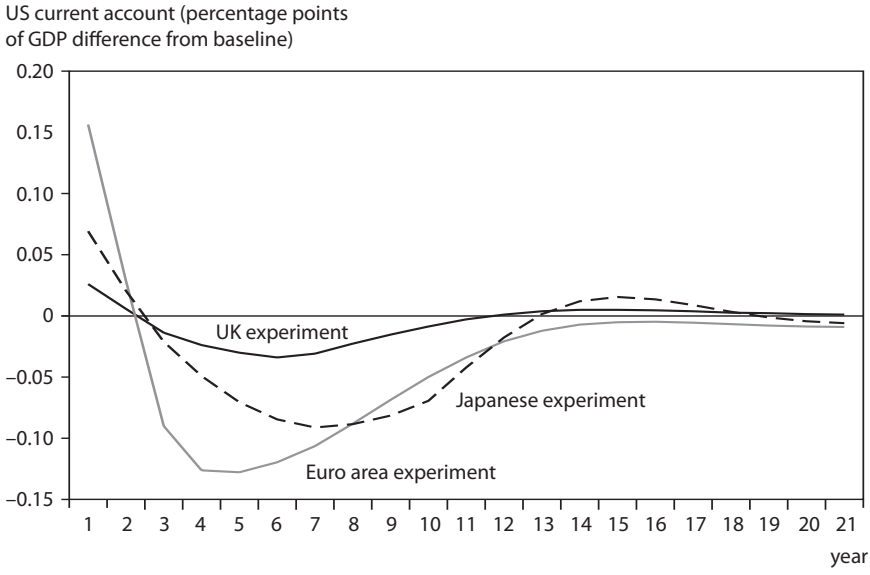
Source: NiGEM model, available at www.niesr.ac.uk.

We use a small estimated model of China in our world model, and the estimated parameters for price setting reflect behavior in the estimation period, which includes the period of deflation after the appreciation of the currency during the Asian crisis in 1997–98. It is therefore not surprising that our simulation produces a sharp fall in Chinese inflation, a decline in growth, and a decline of the current account surplus that is even more transitory than it would be among the slower-reacting European economies, for instance. We suggest that the policy-driven structural factors that have given China a current account surplus are largely independent of the exchange rate regime.

Other monetary experiments are possible in a world where financial markets are rational with forward-looking expectations and where labor markets and firms' investment decisions are affected by the same expectations of the future. A shift in the inflation target by 1 percentage point for six years in Japan or the United Kingdom, assuming that policy rule 3 is in place, would expand demand. This rule is appropriate because there are clear elements of inflation targeting in what a central bank does. Demand would also expand in response to a shift in the euro area's nominal target in rule 2 by an amount sufficient to raise the price level by an amount similar to the changes in Japan. This rule represents what the bank says it does.

It can be seen from figure 5.3 that a monetary expansion in either the euro area or Japan or the United Kingdom would cause the US current ac-

Figure 5.3 Impact on US current account of monetary expansions in Europe and Japan

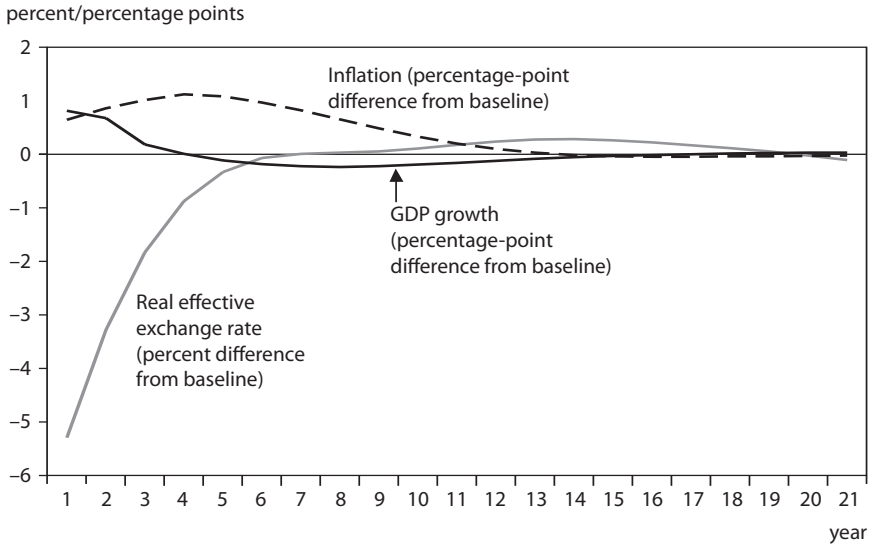


Source: NiGEM model, available at www.niesr.ac.uk.

count to improve for around two years and then worsen before eventually returning to baseline. Hence there are no long-run impacts of these monetary expansions. The price level will rise in each of the countries involved by approximately 6 to 8 percent, depending on the parameters of the rules and the speed of response in the economies. In each experiment the exchange rate will "jump" down as equation 5.1 requires, and demand will expand because the real exchanges rates and real interest rates are initially lower in the expanding economies. However, the lower real exchange rate will quickly offset the demand effects, and inflation will remove the competitiveness advantage gained after a few years.

The effects on the economies undertaking monetary expansions are similar, as shown for the euro area in figure 5.4. The monetary expansion induces a real depreciation of over 5 percent as interest rates in the euro area fall relative to those elsewhere. GDP growth is boosted by almost 1 percent in the first two years as real interest rates are lower than base by around 1 percent for three years. However, inflation increases by around a percentage point a year for six to eight years, after which the competitiveness advantage has disappeared. Output, inflation, and the real exchange rate all end up back where they would otherwise have been. The United States gains temporary respite on its current account for two years, and the euro area has higher growth and higher inflation for a period. Although some

Figure 5.4 Impact of monetary expansion on the euro area



Source: NiGEM model, available at www.niesr.ac.uk.

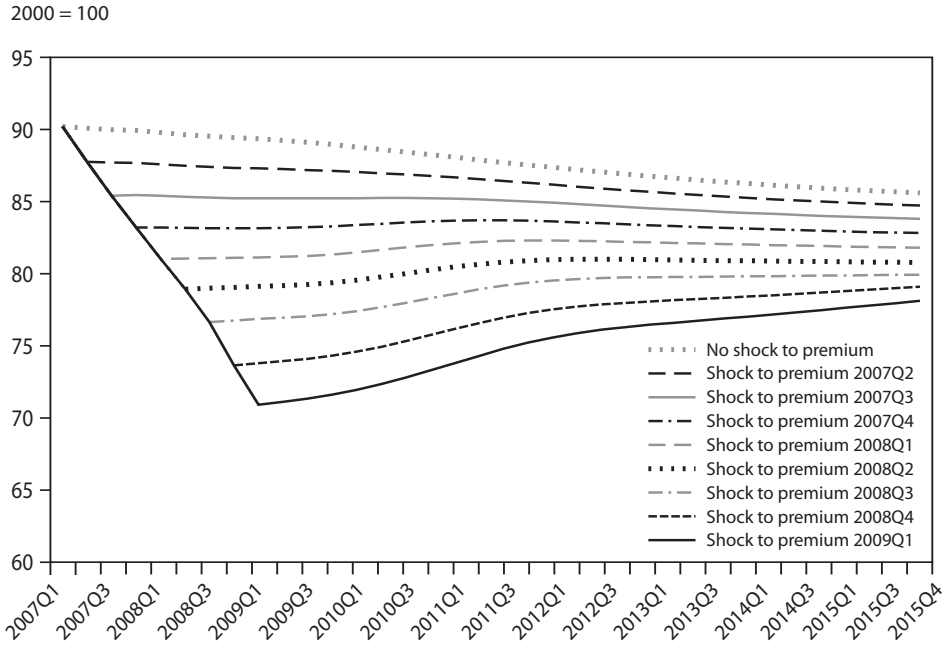
people in Europe may want to see such an outcome, it is very unlikely to materialize as the ECB sets its own inflation target, and it would exceed that target by 1 percent a year for (a further) six years. The ECB would be prepared to do this only if the monetary authorities thought a temporary respite for the United States was essential for the health of the global financial system and if they could see no other way of achieving it.

Realignments and exchange rate changes driven by monetary factors can give no more than transitory relief to the United States. If there is to be a sustained change in current account patterns, something real has to change. This may be either a reduction in the level of US domestic absorption or an increase in domestic absorption in the rest of the world, or a change in the risk premium on US assets with the associated change in the real exchange rate. It is more probable that a combination of both will be involved in a shift in the path of the US current account.

Orderly Adjustment Through Risk Premia

The decline in the US current account from 1997 until 2006 seems to have been associated with a decline in private-sector, and especially household, saving. This conclusion is independent of the impacts of government spending on consumption and may reflect the willingness of the rest of

Figure 5.5 Sequence of risk premium–induced movements in the US exchange rate, 2007–15



Note: Dates are the start of each unanticipated shift, using the last run as a baseline.

Source: NiGEM model and database, available at www.niesr.ac.uk.

the world to lend to US consumers, albeit through banking sector intermediaries. The situation may be sustainable, but it could also give rise to a rising risk premium and a fall in the US real exchange rate to correct the imbalance. If the United States does not adjust, risk premia will rise, although it is unlikely that this will take place suddenly and all at once. The risk premia would reflect the increasing exposure of lenders to US borrowers and the fact that as their portfolios became overburdened with US debt, they would be reluctant to take on more without a greater markup over standard market rates. As debts rose, the premium would rise, and we can assume that every time it did so markets would expect the United States to adjust its overall savings. If this did not happen in a reasonable amount of time, the premium would rise again.

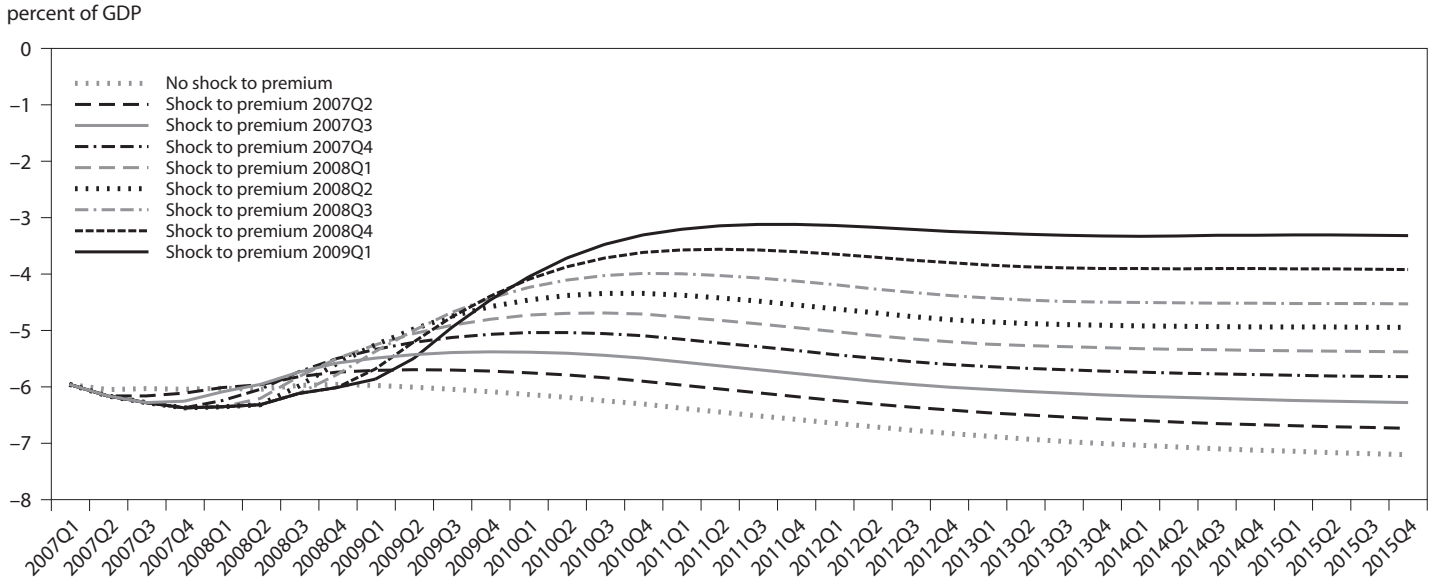
An orderly adjustment could emerge with a sequence of shifts in the risk premium every three months for four years, producing a cumulative downward movement in the nominal exchange rate of around 15 percent. The sequence we discuss below is consistent with the results in Barrell and Holland (2006). Each time the risk premia rose, the exchange rate would jump down, as we can see in figure 5.5, and real interest rates would rise

in the United States and fall elsewhere. This would reduce absorption in the United States, raise it elsewhere, and also cause expenditure switching for a sustained period as real exchanges rates would have changed. All these forces would help move the US current balance in the right direction. (The pattern of deficits and surpluses elsewhere in the world would change, but unless there are specific reasons to shift risk premia elsewhere, that pattern is not of great interest.) If the deficit is a US problem, then the obvious solution is for the market to change things in the United States without concerning itself excessively about developments elsewhere. Policymakers may adopt a different, more partial view.

The rise in the risk premium would increase US real interest rates by over 1 percentage point by 2010, as compared to baseline, and if no other changes took place, they would be more than 2½ percentage points higher by 2015 than they were in 2006. The fall in the real exchange rate of around 20 percent by 2010 would not boost US output, as its effects would be offset by the rise in real interest rates, and US growth would slow by more than half a point to around 2 percent a year for some years before reverting to its technology- and labor supply–driven trend. US inflation would rise to around 4 percent or so for a sustained period. The real exchange rate decline would be enough, with the change in growth rate, to induce a change in the current account, as we can see from figure 5.6, which plots an orderly sequence of current account balance improvements. In the early quarters of each sequential shift in the premium there is a small deterioration in the current account as compared to the last element in the stack. Within a short period there is a sustained improvement, and within three years a sustained improvement in the current account is under way. As a consequence of these changes the current account deficit would approach 3½ percent of GDP by 2015, compared with 7½ percent in our January 2007 baseline, and this may be regarded as acceptable.

A risk premium adjustment of this sort is both orderly and conceivable. Unless domestic demand changes elsewhere, raising absorption or reducing it in the United States, this is a highly likely outcome. It involves neither a collapse of the US economy nor a currency crisis and it quickly boosts output in the rest of the world as other countries benefit from the fall of 1 to 1½ percentage points in their real interest rates between 2010 and 2015 (Barrell and Holland 2006). Each shift in the US effective exchange rate is associated with a change in all relevant dollar exchange rates. The real interest differential between the United States and the euro area would then be as large in 2012 as in 1981, and the four-year average around 2012 could be larger than it was between 1981 and 1984. There are floating rates in all countries, but the Swedish krona follows the euro. The improvement in the US current account is matched by widespread and relatively evenly distributed changes elsewhere. If the adjustment focuses on Japan and China, then there has to be an autonomous change in absorption there in addition to the induced change that comes from higher real interest rates.

Figure 5.6 Impacts of risk premium–induced realignments on the US current account, 2007–15



Note: Dates are the start of each unanticipated shift, using the last run as a baseline.

Source: NiGEM model and database, available at www.niesr.ac.uk.

A Mixed Scenario of US Devaluation and Demand Change Elsewhere

Williamson (2007) suggests three patterns for global current account adjustment: an even adjustment, a cap on surpluses, and adjustments that take account of some oil producers' needs to accumulate reserves to spread their consumption optimally. The possible scenarios all require adjustment in surplus countries, with China, East Asia, Japan, Sweden, Switzerland, Norway, and Russia all having to reduce their current account surpluses. Apart from the scale of the change for China, the major difference between scenarios is that OPEC has to take up some slack in the even share. It would be possible to achieve the Williamson targets by inducing positive and negative risk premia on the targeted countries, but we do not do this because it is harder to justify a specific additional negative risk premium elsewhere than it is to justify a positive one on the United States. In addition, there are clearer reasons for the scale of the US premium, given the results in Al-Eyd, Barrell, and Holland (2006).

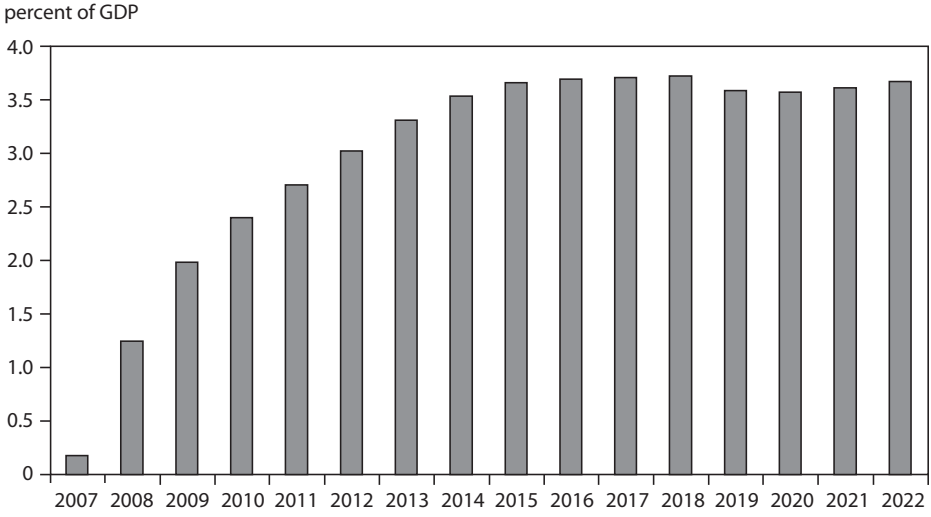
Worries about the change in real interest rates that a market-based adjustment would require might induce changes in governments' behavior. Hence adjustment might come through both shifts in risk premia and changes in absorption in major surplus and deficit countries. We combine approximately half of the risk premium shock discussed above with changes in domestic demand in the major surplus countries and in the United States, and we assume that exchange rates are allowed to float in response to events. We raise domestic demand growth by 3 percent a year for a sustained period of three to four years in China, Hong Kong, Norway, Russia, Switzerland, and Taiwan, and by 1 percent a year for three years in Sweden.[4] In Japan, the smaller East Asian economies, and Canada we raise the level of demand by approximately 2 percent progressively over two years. It is easy to induce changes of this magnitude on a model and to reduce US domestic demand with a 2 percent GDP fiscal contraction over two years. In contrast, it is very difficult to envision global adjustment without a direct change in absorption in the United States.[5] Overall, the US current account balance progressively improves as a result of the changes in absorption and risk premia, as shown in figure 5.7.

Because we have combined a US risk premium with changes in absorption in the United States and elsewhere, the pattern of current account outcomes is of interest; figure 5.8 plots the changes in current accounts as a

4. In the first group there is 2 percent extra growth in demand on average for three years or more, in Sweden 1 percent a year on average for three years, and elsewhere 1 percent a year for two years.

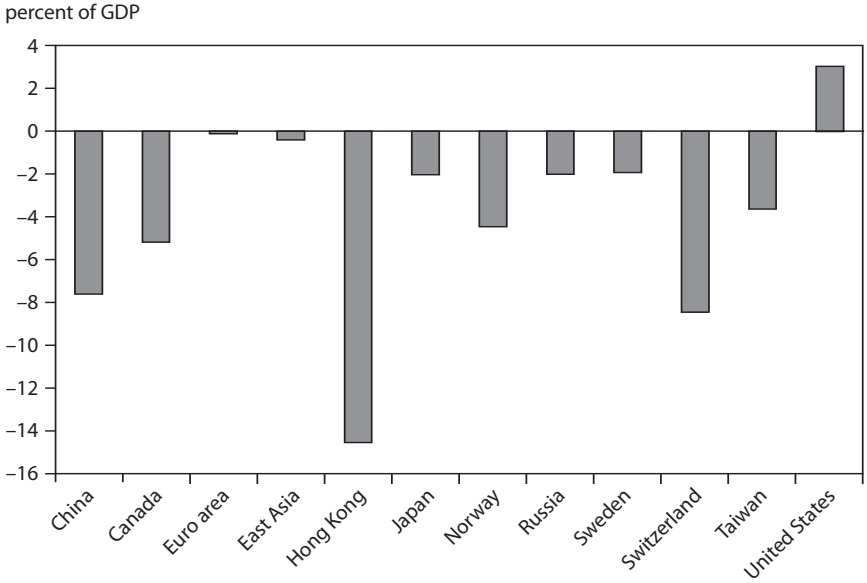
5. We reduce government spending progressively by 2 percent of GDP, but the medium-term results (six years on) would be the same if we raised taxes. The choice of instrument changes only the path to equilibrium.

Figure 5.7 Projected impact of adjustment on US current account balance, 2007–22



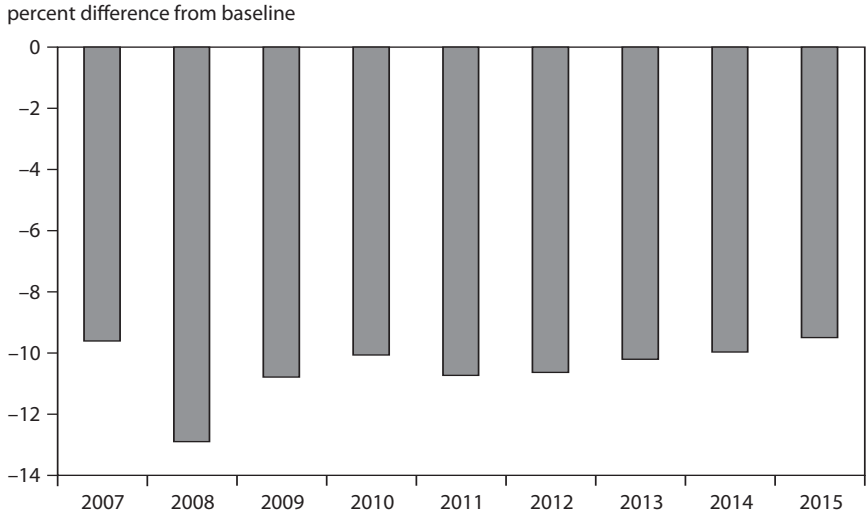
Source: NiGEM model, available at www.niesr.ac.uk.

Figure 5.8 Projected impact of adjustment scenario on current account balances, 2012



Source: NiGEM model, available at www.niesr.ac.uk.

Figure 5.9 Projected path of US real effective exchange rate, 2007–15



Source: NiGEM model, available at www.niesr.ac.uk.

percent of GDP in 2012. The absolute size of the adjustment is largest in Canada, China, East Asia, and Japan in absolute terms, but as a percent of GDP it is largest in Hong Kong at over 14 percent of GDP in 2012, and in Switzerland it is over 8 percent. The Chinese balance of payments worsens by 7½ percent of GDP by 2012, which would be around $300 billion a year. The Japanese current account balance would worsen by 2 percent of GDP, or around $50 billion a year, an amount similar to that of Hong Kong. Canada shows a marked worsening of more than 5 percent of GDP, or around $90 billion, reflecting its heavy dependence on the slower-growing United States as an export market. Adjustment in the smaller East Asian economies would be of a similar size. The US current account would improve by around $530 billion a year.

The exchange rate consequences are broadly clear; figure 5.9 plots the projected path of the US real effective exchange rate. The real depreciation of 10 percent or so is not the only factor behind the improvement in the current account, although there is a good deal of expenditure switching as a result. This fall in the real rate is half that required to produce the same current account adjustment if no changes in absorption take place. The rise in real interest rates in the United States and their fall elsewhere also induce some changes in relative absorption. US fiscal tightening induces lower interest rates than otherwise expected, and the dollar weakens as compared to where it would have been. Fiscal loosening in other countries raises their interest rates and induces an exchange rate increase. Both

of these factors cause a change in relative absorption that produces about half of the improvement. The risk premium increase raises the exchange rate outside the United States and reduces the US real exchange rate. The scale of the nominal appreciation depends on the reactions of the authorities to the change in demand and whether they will allow currencies that have fixed exchange rates to float. If monetary policy were to react less in the short run, more action would be needed later, and the appreciation would remain largely the same unless inflation targets were changed significantly, which is not likely.

The impacts on the US economy would be quite marked, but less noticeable than those that would result from risk premium adjustment alone. The rise in the risk premium changes US equilibrium output permanently, and growth slows by almost 1 percent a year for two to three years before resuming its technology- and labor supply–determined trend in the model. The long-term real interest rate rises by 1 percent, reducing the equilibrium capital stock. The overall change in the long-term rate is the result of a positive impact from the risk premium and fiscal expansions elsewhere and of a negative impact from the US fiscal tightening. The combined effects of revaluations and the improved current account balance would mean that by 2015 the US net asset position would be 24 percent of GDP better and would improve relative to base by 2 percent a year thereafter. Almost half the change in the first eight years would come from revaluation effects, but they would largely have worked out by 2015.[6]

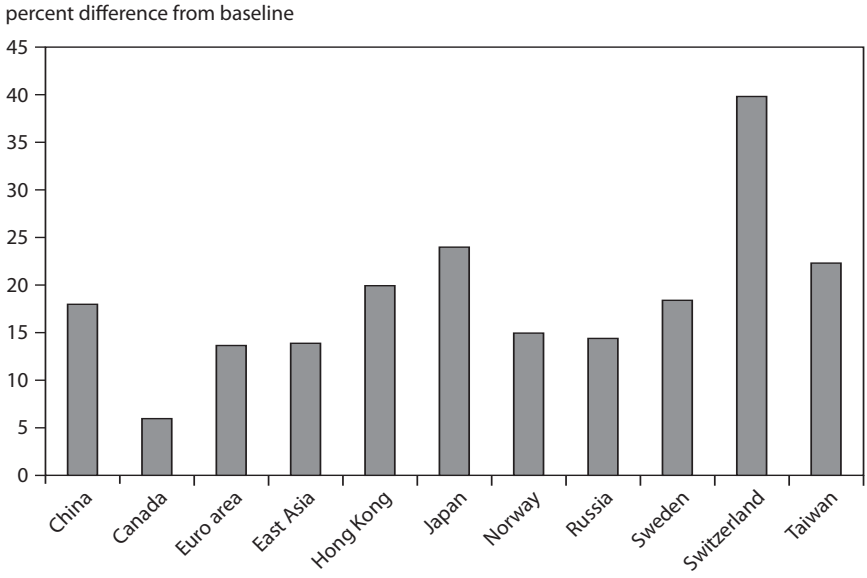
The exchange rate changes that a risk premium– and domestic absorption–driven adjustment (shown in figure 5.10) would induce are different from those we would see if adjustment came through risk premium–induced real realignments of the exchange rate alone. This difference is in part because specific current account balance targets have been set for countries that need to adjust, and increases in their domestic absorption are met by tighter monetary policy and a real appreciation to support the worsened current accounts. It also reflects the speed with which a real exchange rate change can be achieved by internal adjustment. If domestic prices respond more quickly, then real exchange rate adjustment will take place through that route rather than as a result of a nominal realignment.

Conclusion

Current account imbalances are difficult to change and do not need to do so if they are sustainable. The United States has a large deficit and, unless

6. The perpetual inventories that we use for government debt stocks have an average life of 6 to 8 years depending on the actual maturity structure of government debt, so revaluations will continue for at least this long.

Figure 5.10 Real US dollar exchange rate in 2012



Source: NiGEM model, available at www.niesr.ac.uk.

something structural changes, it is difficult to see how it might be adjusted. Our analysis suggests that the deficit has been affected by rising oil prices, which may have increased it by 1 percent of GDP, while the fall of the dollar since 2003 has prevented a further worsening of 2 percent of GDP. Although China has seen the largest increase over the past ten years in its overall surplus and in its bilateral surplus with the United States, it is not clear that a nominal realignment would be anything other than a short-term palliative. A 10 percent appreciation of the Chinese currency would reduce the surplus by more than 1 percent of Chinese GDP after a year, and the change would be sustained for a couple of years, with a cumulated impact on the current account in excess of –$100 billion, but only one-fifth of that would accrue to the US position, and the relief would be temporary. If China is to be part of a solution, it must come through another channel.

It is necessary to explain why exchange rates change before assessing whether such changes will affect imbalances other than in a transitory way, as the reasons for the change affect the outcomes. A devaluation of the dollar induced by monetary expansions elsewhere would have a much more transitory impact on the US current account than the same fall induced by a rise in the risk premium on US assets or by a US domestic contraction that resulted from a decline in domestic demand and output. If we take account of descriptions of the exchange rate that involve financial

markets, it is difficult to see how exchange rates change for no reason, and we prefer to explain changes with shifts in policies or parameters.

If the US current account is not sustainable, then an orderly market-driven adjustment is possible, and we look at such a scenario. The forward-looking arbitrage condition that we use involves a risk premium, reflecting portfolio decision on assets. A gradual rise in the risk premium on US assets as debts to foreigners increased would induce both a permanent change in the real exchange rate and a reduction in domestic absorption. We analyze a sequence of risk premium–induced declines in the dollar that would involve a gradual 20 percent real depreciation that would leave the current account 3½ percent of GDP higher than in our baseline. As the problem involves excessive US deficits, we do not allocate the solution to specific surplus countries but leave that allocation to the market, at least as described by the model.

Market-based adjustment may be difficult to contemplate, and governments may adjust domestic absorption to avoid the pain and consequences of high real interest rates in the United States and a permanent, large-scale loss of competitiveness elsewhere. The most important adjustment would have to be that of the United States, where domestic demand would have to change in order to reduce the need for structural capital inflows. If structural capital flows from China, Japan, and the other countries discussed in Williamson (2007) are to change, then domestic demand must rise in those countries. We suggest that such changes, along with some market-based adjustment of risk premia against the United States, could produce a pattern of real exchange rates and current accounts that could be seen as sustainable. That pattern would involve a 10 percent real decline in the US dollar by around 2010 and would have much more moderate implications for US output than a market-based adjustment. Policy coordination might achieve this goal more quickly.

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6

Meeting the China Challenge Is Meeting the Challenge of Comprehensive Engagement and Multilateralism

WING THYE WOO

The rise of China should more properly be understood as the return of China. First, China has not always been poorer than Western Europe. The GDP per capita (measured in 1990 international dollars) of China and Western Europe was $450 for both in 0 AD, but by 1000 AD it was $450 for China and $400 for Western Europe (table 6.1). Second, Japanese growth since 1870 suggests that the income disparity between China and Western Europe need not be permanent. In 1870 the average Japanese income was 37 percent that of the average Western European income, but by 1998 it was 14 percent higher, and the growth experiences of South Korea and Taiwan since 1965 confirmed that catching-up growth was not unique to Japan. Third, China's average annual growth rate of 10 percent for the last 30 years gives hope that China has finally embarked on the path of modern economic growth described by Simon Kuznets (1966).

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Table 6.1 GDP per capita around the world, 0 AD to 1998 AD
(1990 international dollars)

Country/ region	0	1000	1500	1600	1700	1820	1870	1913	1950	1973	1998
Western Europe	450	400	774	894	1,024	1,232	1,974	3,473	4,594	11,534	17,921
United States			400	400	527	1,257	2,445	5,301	9,561	16,689	27,331
Japan	400	425	500	520	570	669	737	1,387	1,926	11,439	20,413
China	450	450	600	600	600	600	530	552	439	839	3,117
India	450	450	550	550	550	533	533	673	619	853	1,746
World	444	435	565	593	615	667	867	1,510	2,114	4,104	5,709

Source: Maddison (2001, table B-21, 264).

China's very likely return to center stage in the global economy has given rise to immense optimism on some fronts and intense pessimism on others. Optimistic analysts have predicted that China's reemergence as an independent growth pole would create a new web of synergistic relationships that would unleash greater global prosperity. On the other hand, pessimistic analysts have pointed out that rising powers in the 20th century inevitably came into conflict with existing powers: Germany in the First World War, the Japan-Germany axis in the Second World War, and the Soviet Union in the Cold War.

The real lesson from the history of the 20th century is not that conflict is inevitable but that rising powers and existing powers should work hard together to avoid past mistakes—to falsify Karl Marx's quip that "history repeats itself, first as tragedy, second as farce." It is not naïve to think that conflict is preventable, because the most important power to rise and prevail in the 20th century, the United States, has in general been a stabilizing force in the international order. But averting a pessimistic outcome requires adherence to the multilateralist principle of the existing powers accommodating rising powers, and the latter becoming responsible stakeholders in the international system.

The dialogue between existing and rising powers must be comprehensive because the range of global public goods that must be supplied is very broad (ranging from the establishment of a universal postal system to the peaceful use of outer space), and the nature of some of these global public goods is highly complicated (e.g., a scheme to control the emission of greenhouse gases). In this chapter, I focus on an economic issue where the need to engage China in constructive dialogue is important for sustainable global growth: the protection of the world trading system.

Rising Protectionist Sentiments Against Trade with China

The threat of a major disruption in trade between China and the developed countries should be taken seriously. The turn against free trade is especially notable in the United States. The 2007 Pew Global Attitudes Survey revealed that the proportion of US residents who have a positive view of trade was 59 percent, a dramatic drop from the 78 percent reported from the 2003 survey (Pew Research Center 2003, 2007).

The rising skepticism about the benefits of free trade has come to focus on the large US overall trade deficit and the big Chinese overall trade surplus. China's current account balance became chronically in surplus in 1994 and started climbing steadily upward from 2001 on. The current account surplus went from 1.9 percent of GDP in 2000 to 2.8 percent in 2002, 4.2 percent in 2004, and 8.7 percent in 2006.[1] Recently, Jun Ma (2007), a perspicacious analyst at the Deutsche Bank, forecasted in December 2007 that China's current account surplus would reach 9.5 percent of GDP in 2007. One disharmonious result from this large sustained rise in China's current account surplus is that increasingly harsh words are being said about China's trading practices and exchange rate policy.

At a US congressional hearing in March 2007, Morris Goldstein (2007) opined that the renminbi was overvalued by 40 percent against the US dollar and accused China of exchange rate manipulation, a charge echoed by C. Fred Bergsten (2007). On June 14, 2007, four US senators introduced legislation "to punish China if it did not change its policy of intervening in currency markets to keep the exchange value of the currency, the yuan, low."[2] Both Hillary Clinton and Barack Obama, the frontrunners for the Democratic presidential nomination, declared that they supported the bill.[3]

The introduction of the US Senate bill was followed by demands from the International Monetary Fund (IMF) and European Union that China change its policy regime on external economic engagement. On June 19, 2007, the IMF, with the strong endorsement of the United States Treasury, adopted a new country surveillance framework that

> sets out a catch-all obligation on countries not to adopt policies that undermine the stability of the international system, and lists a set of objective criteria that will be used to indicate whether a country is complying with its commitments. Warning lights will include large-scale currency intervention, the accumulation of reserves and "fundamental exchange rate misalignment"—a term that mirrors language in a bill before the US Congress that would impose penalties on nations that

1. The current account surplus as a percent of GDP was 1.6 in 1999, 1.9 in 2000, 1.5 in 2001, 2.8 in 2002, 3.2 in 2003, 4.2 in 2004, 7.2 in 2005, and 8.7 in 2006.

2. "4 in Senate Seek Penalty for China," *New York Times*, June 14, 2007.

3. "Clinton and Obama back China crackdown," *Financial Times*, July 5, 2007.

> fail to correct such misalignments. . . . Rodrigo Rato, managing director of the IMF, said: "This decision is good news for the IMF reform programme and good news for the cause of multilateralism . . . [because this new framework]" gives clear guidance to our members on how they should run their exchange rate policies, on what is acceptable to the international community and what is not.[4]

According to the UK *Evening Standard*:[5]

> European Trade Commissioner Peter Mandelson has warned that China is taking business with Europe for granted. Writing to EU President Jose Manuel Barroso, he said: "The Chinese juggernaut is, to some extent, out of control." China is the EU's largest source of manufactured goods but trade the other way is negligible. Mandelson called the relationship "deeply unequal" and said China was being "procedurally obstructive."

Under the headline "EU Hoping to Hit Back at Chinese on Trade," the *International Herald Tribune* reported on October 18, 2007 that:

> Peter Mandelson, the European trade commissioner admitted] that dialogue and cooperation with Beijing have failed to secure concessions for Europe, [and he called for the European Union to] align policy more closely with Washington and be more ready to take cases against China to the World Trade Organization.
>
> The comments came before EU heads of government were to meet on Thursday in Lisbon to discuss calls from Nicolas Sarkozy, the French president, and Angela Merkel, the German chancellor, for a more aggressive stance toward emerging Asian economies over trade.

These recent developments in the United States and European Union should be seen as warnings that China, Europe, and the United States could be heading toward a trade war.

Nature of the Link Between Globalization and Worker Anxiety in the United States

It is not uncommon to encounter allegations that the bilateral US-China trade deficit represents the export of unemployment from China to the United States. A recent study by Robert Scott (2007) of the Economic Policy Institute used an input-output model to arrive at the claim that the bilateral trade deficit of $49.5 billion in 1997 caused the loss of 597,300 jobs that year and the 2006 bilateral trade deficit of $235.4 billion caused the loss of 2,763,400 jobs, and that every state suffered a net loss in jobs from the rise in the bilateral trade deficit during 1997–2006. The alleged job loss in 2006 from the bilateral trade deficit implied that the 2006 unemploy-

4. "IMF Set to Scrutinize Exchange Rate Policies," *Financial Times*, June 19, 2007.

5. "Mandelson: China Trade 'Out of Control,'" UK *Evening Standard*, October 17, 2007.

ment rate was 1.21 percentage points higher than if the bilateral trade balance were zero.[6]

Another alleged outcome of US-China trade that is commonly heard is that the bilateral deficit has forced down US wages.[7] As it is well documented that US worker anxiety has increased steadily in the last two decades, just as US-China trade has increased steadily, it is tempting indeed to blame the rise in US worker anxiety (Otoo 1997, Valletta 2007) on China's rise as a major trading nation.

Actually, an analyst with a broader grasp of global developments would have seen that the integration of China into the international division of labor was only part of the broader process of economic globalization that accelerated in the last decade of the 20th century and hence would have argued that economic globalization must have depressed wages in the advanced countries and thus heightened worker anxiety in those countries. The common understanding from the post-1990 integration of the labor force in the former Soviet Union, India, and China (SIC) into the international division of labor is that this must have exerted large downward pressures on US wages.[8]

Table 6.2 shows that the distribution of the global labor force was already 2.315 billion in 1990, of which the combined SIC labor force was 1.232 billion. This division of labor was certainly unnatural because up until then half of the world's workforce had been kept out of it by autarkic SIC policies. A decade after the start of internationalization, the number of workers involved in the international economic system had increased to 2.672 billion in 2000, with 1.383 billion SIC workers. The Heckscher-Ohlin model

6. The US civilian labor force in 2006 was 151.4 million (*Economic Report of the President 2007*, table B-35, available at www.gpoaccess.gov).

7. Strictly speaking, import competition could lower US wages permanently without increasing the unemployment rate permanently. The structural adjustment required to accommodate the increased imports would cause a temporary increase in the unemployment rate.

8. The economic isolation of the Soviet bloc started crumbling when the new non-Communist Solidarity government of Poland began the marketization and internationalization of the Polish economy on January 1, 1990. The economic transition and political disintegration of the Soviet bloc became irreversible when Yeltsin replaced Gorbachev as the unambiguous leader of Russia in August 1991 and implemented market-oriented reforms in January 1992. For the Chinese elite, the events in the Soviet Union confirmed that there did not exist a third way in the capitalism-versus-socialism debate. In early 1992, Deng Xiaoping led a successful campaign to put China firmly on the path of convergence to a private market economy. In 1991 India faced a balance of payments crisis and responded by going well beyond the administration of the standard corrective macroeconomic medicine of fiscal-monetary tightening and exchange rate devaluation to comprehensive adjustments of microeconomic incentives. The trade regime was deregulated significantly, restrictions on foreign investment were relaxed, reform of the banking sector and capital markets was initiated, and divestment of public enterprises and tax reform were announced.

Table 6.2 Distribution of the global labor force, 1990 and 2000 (millions)

Category	1990	2000[a]
Non-SIC countries		
Developed	403	438
Developing	680	851
Total	1,083	1,289
SIC countries		
Former Soviet bloc	213	214
India	332	405
China	687	764
Total	1,232	1,383
Global total	2,315	2,672

SIC = Former Soviet bloc, India, and China

a. The 2000 total is different from that in Freeman (2004).

Source: Freeman (2004).

would predict that this doubling of world labor, achieved by bringing in cheaper SIC labor, would lower the relative price of labor-intensive goods and hence reduce the income of labor in the industrialized countries.[9]

The fact that US capital could now move abroad to set up production facilities in the SIC economies to service both the US and foreign markets meant another channel (besides the cross-border movement of goods) for globalization to depress the US labor income. It is important to note that the imposition of a very high US tariff would not only drastically curb imports from SIC but also radically reduce US foreign direct investment (FDI) in the SIC.

There is no denying that the Heckscher-Ohlin model provides a coherent mechanism for globalization to lower US labor income and to cause US unemployment to rise in the process. The fact that the overall US trade deficit has widened steadily from 1.5 percent of GDP in 1991 to 2.5 percent in 1996, 4.4 percent in 2001, and 6.7 percent in 2006 could only have worsened the drop in labor income and the rise in the unemployment rate. This is because even if US exports had increased by the same amount as US imports, there would still be deleterious consequences on US workers because US exports are less labor-intensive than US imports.

The inconvenient truth, however, is that the above two expectations based on the Heckscher-Ohlin model have turned out to be wrong. The alleged rise in US unemployment is not seen in the 1998–2006 period chosen by Robert Scott (2007). The average unemployment rate of 4.9 percent

9. More accurately, the wages of the formerly isolated SIC workers would rise while those of workers in the industrialized countries would fall.

during that time was actually lower than the rates in the immediately preceding periods of 1980–88 and 1989–97, which were 7.5 percent and 6 percent, respectively. In reality, the US economy was a highly successful job creation machine in 1998–2006.

Many analysts have pointed out that the inflation-adjusted weekly earnings (wages and salaries) of nonsupervisory employees in 1980 was higher than in every year in the 1982–2006 period.[10] So is the backlash against globalization in the G-7 countries the result of the immiseration of their low-skilled workers? The answer is no because earnings is only one of the two components of worker compensation; the other is employer-paid benefits (e.g., pension contributions and health insurance). The omission of benefits gives the wrong picture on labor income because the growth of benefits has been especially rapid in the last decade due to the soaring costs of health insurance. When we measure labor income as the sum of earnings (wages and salaries) and benefits, then we find that labor income in 1980 was lower than in every year in the 1982–2006 period, refuting the conclusion drawn from looking at only the earnings component of labor income.

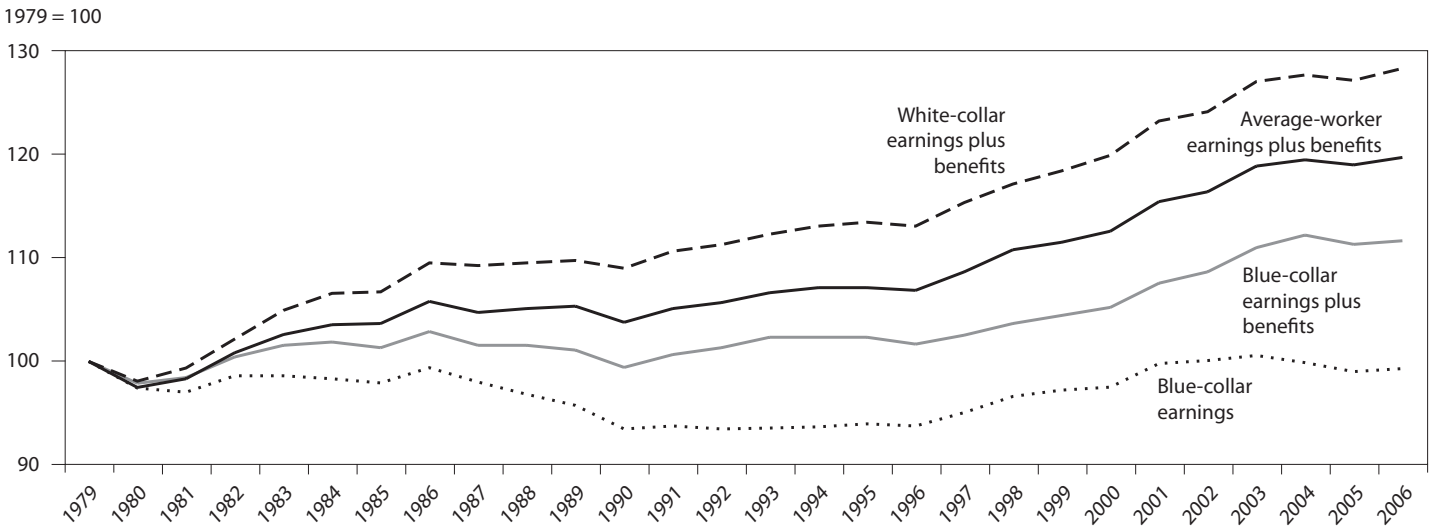
Figure 6.1 reports the evolution of four data series over the 1979–2006 period, each indexed at 100 in December 1979:

- series (a) is the inflation-adjusted earnings received by a blue-collar worker in December of each year,
- series (b) is the inflation-adjusted compensation of a blue-collar worker in December of each year,
- series (c) is the inflation-adjusted compensation of an average worker in December of each year, and
- series (d) is the inflation-adjusted compensation of a white-collar (excluding sales occupations) worker in December of each year.

Series (a) shows that the earnings of the blue-collar worker in 2006 was 1 percent lower than in 1979. Series (b) shows that the compensation (earnings plus benefits) of the same worker in 2006 was 12 percent higher than in 1979. In fact, blue-collar compensation since 1991 has been higher than in 1979. Furthermore, it started growing faster beginning in 1997, just as the US overall trade deficit started growing faster. Series (d) shows that the compensation of the white-collar worker in 2006 was 28 percent higher than in 1979. This much higher income growth of the white-collar worker caused the compensation of the average worker, series (c), in 2006 to be 20 percent less than in 1979. The important message from figure 6.1 is that the income growth of the United States in the 1990–2006 period of accelerated

10. For example, see figure 1 in Polaski (2007).

Figure 6.1 Compensation received by US workers, 1979–2006



Note: Each data series is produced by combining the relevant Standard Industrial Classification (SIC)–based series of the 1979–2005 period with the relevant North American Industrial Classification System (NAICS)–based data for 2006.

Source: BLS (2007a, 2007b).

globalization was shared by both low- and high-skilled workers, albeit the latter getting a larger share of the income growth.

In my opinion, the key to reconciling the theoretical predictions of the Heckscher-Ohlin model with the actual outcomes is to recognize that economic globalization was not the only significant economic process in the last two decades. The other was accelerated technological innovation, especially in the advanced economies, notably the United States. The reason US real labor income has not fallen despite economic globalization is that US productivity growth has been remarkably high since the late 1980s, enabled in large part by the information and communication technology (ICT) revolution. It is instructive here to note that Alan Greenspan has attributed his (generally hailed) superior ability in making the "correct" policy to his early recognition that the United States entered a period of rapid technological innovation in the late 1980s.

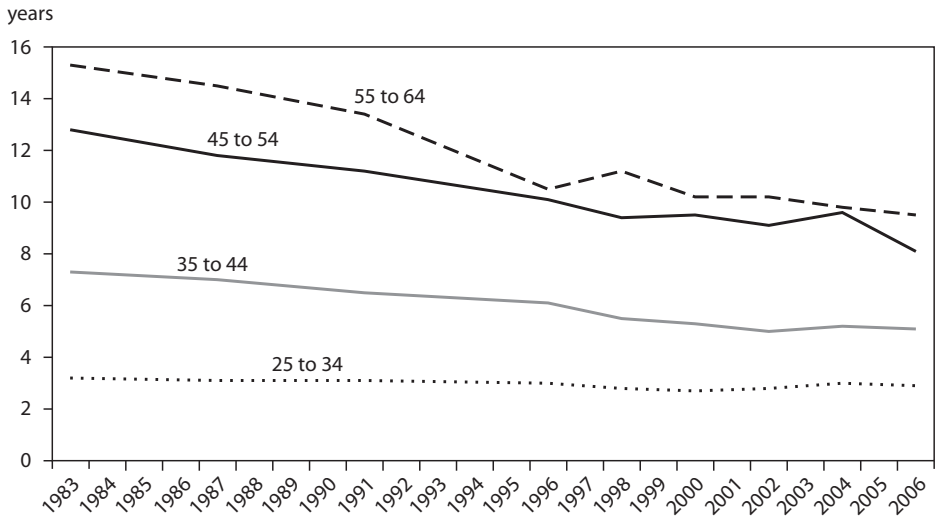
I note that while this high productivity growth was able to offset the downward pressures on the real labor income from economic globalization, it was also likely to have joined economic globalization in diminishing the labor share of GDP.[11] Recent technological innovations have not just substituted capital for labor (e.g., fewer secretaries are needed because answering machines can now convert messages into voice files and email them to traveling professionals), they have also transformed many traditionally nontradable services to tradable services, allowing jobs to be outsourced to foreign service providers. For example, the ICT revolution has allowed offshore call centers to handle questions from US customers, offshore accountants to process US-based transactions, and offshore medical technicians to read the X-rays of US patients.[12]

What, then, is fueling US resentment toward imports from China when the average US worker is experiencing neither more unemployment nor lower compensation? The explanation is that the US worker is feeling more insecure in the 2000s than in the 1980s because of the faster turnover in employment. Globalization and technological innovation have required workers to change jobs more often and they find that there are consider-

11. Besides capital-biased technological innovation and economic globalization, two other developments in the US economy are likely to have contributed to the decline in labor share of GDP. The first is changes in the institutional nature of the US labor market; union membership has declined and there has been an upward shift in compensation norms for high-level executives. (This shift in compensation norms could reflect a combination of a shift in social attitudinal norms and more collusion between managers and their boards. Akerlof (2007) provides a recent discussion of "norms" and their economic consequences.) The second development is increased immigration to the United States (before 2001); see Borjas (1994) and Ottaviano and Peri (2005).

12. There is a large empirical literature on the relative impact of technological changes and globalization on the US wage rate; notable contributions include Sachs and Shatz (1994) and Feenstra and Hanson (1996, 1998).

Figure 6.2 Median tenure at current job by age of US workers, 1983–2006



able costs associated with each job change because of the inadequacies of the US social safety nets.

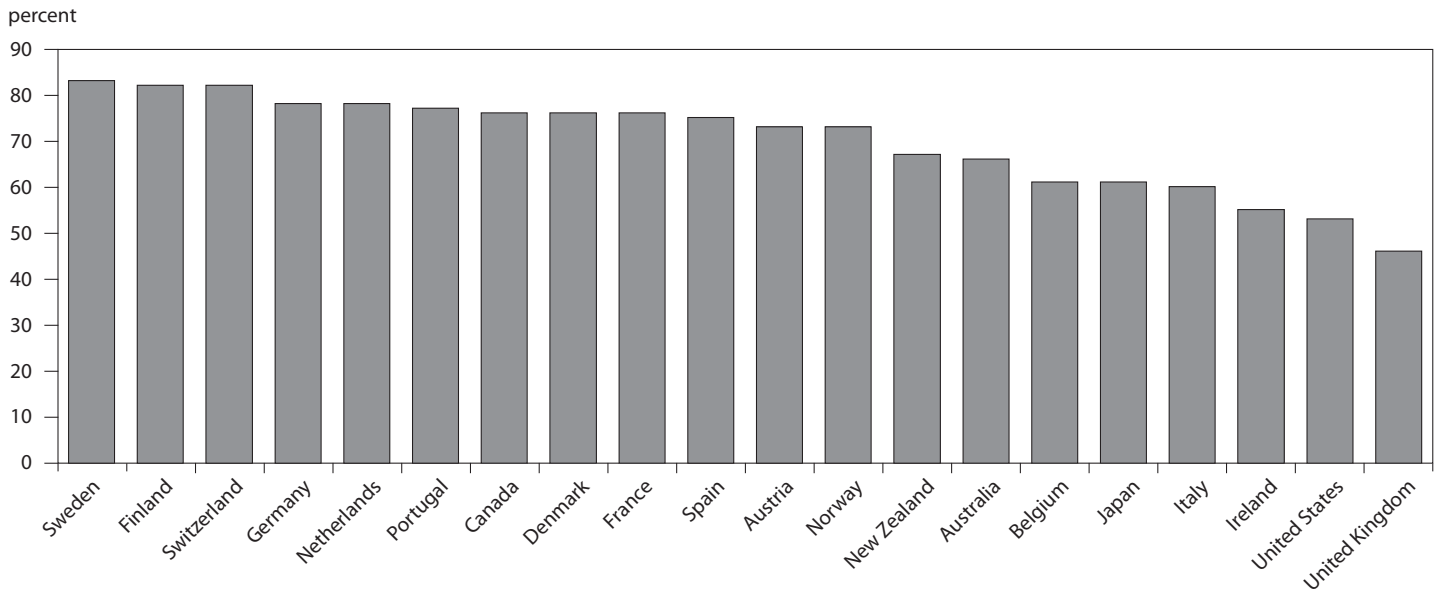
The more frequent job changes are shown in figure 6.2 by the declining trend in the length of median job tenure for older male workers. From 1987 to 2006, the median job tenure for males

- aged 33 to 44 decreased from 7.0 to 5.1 years,
- aged 45 to 54 decreased from 11.8 to 8.1 years, and
- aged 55 to 64 decreased from 14.5 to 9.5 years.

In terms of social safety nets, Gary Burtless (2005) reports that in the G-7 in 2004, only the United Kingdom had less generous unemployment benefits than the United States. Figure 6.3 shows that an unemployed person in the United States received initial unemployment benefits that equaled 53 percent of previous income compared with 78 percent in Germany, 76 percent in Canada and France, 61 percent in Japan, 60 percent in Italy, and 46 percent in the United Kingdom. Figure 6.4 shows that the duration of unemployment benefits was 6 months in the United States compared with 12 months in Germany, 9 months in Canada, 30 months in France, 10 months in Japan, and 6 months in Italy and the United Kingdom.

The dilemma is that the fast rate of technological innovation has been good for labor income but bad for job stability because technological improvements in the production process usually mean occupational obsolescence. The unfortunate fact is that the temporary unemployment associated with job changes is especially painful in the United States compared with

Figure 6.3 Indicators of unemployment benefit generosity in 20 OECD countries, 2004

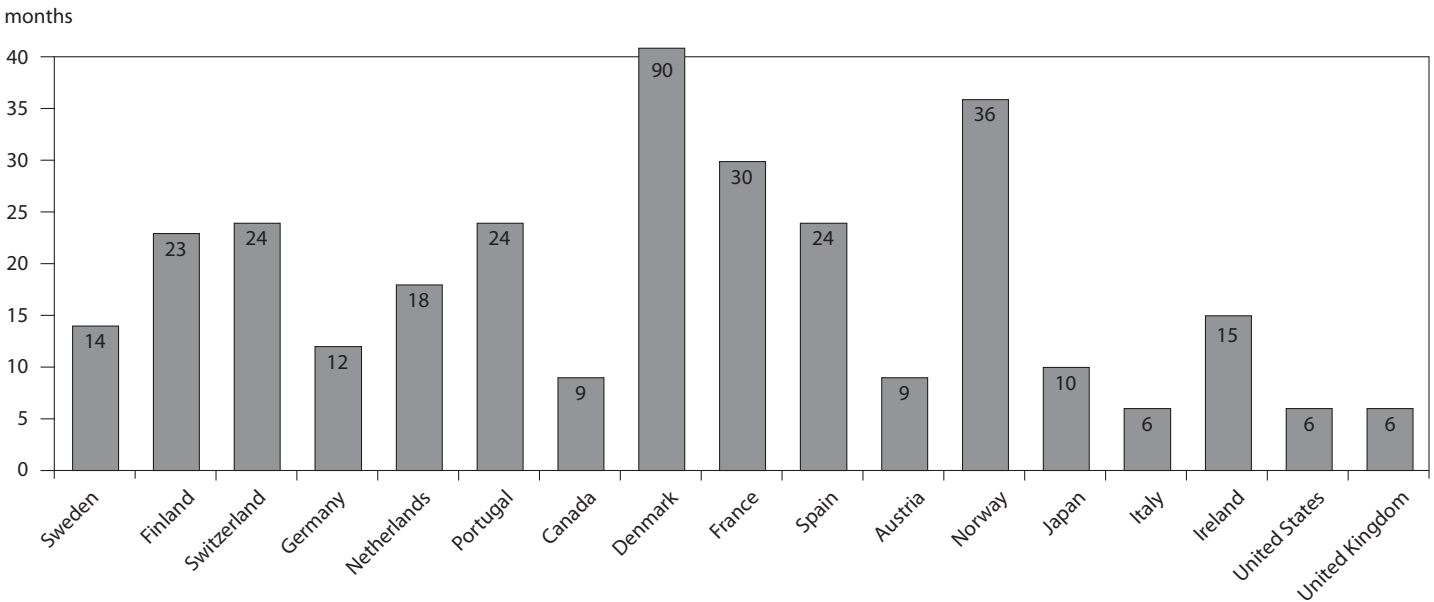


OECD = Organization for Economic Cooperation and Development

Note: Figure shows percent of net earnings initially replaced by after-tax value of unemployment benefits (married single earner with two children who is paid the average wage).

Source: Burtless (2005).

Figure 6.4 Duration of unemployment benefits, 2004



Note: Australia and New Zealand offer only means-tested benefits. If the eligibility test continues to be met, unemployment benefits can last indefinitely. Belgium essentially provides unemployment benefits of indefinite duration.

Source: Organization for Economic Cooperation and Development, *Benefits and Wages: OECD Indicators*, 2004 edition.

most of the advanced countries because of the less generous social safety nets and because health coverage is usually supplied by the employer.

In short, the popular outcry in the United States and the European Union against China's trade surpluses is really misplaced. Even if China's trade balance were zero, the pains of structural adjustment and income redistribution caused by technological innovations, institutional changes, globalization, and immigration would still be there. The additional pain from the incremental structural adjustment caused by the widening trade deficit is minor by comparison.

In summary, it is my hypothesis that the worker anxiety so well documented in the United States has been created not by a lower real wage and a higher unemployment rate but by job insecurity resulting from (1) occupational obsolescence because of rapid technological innovation and (2) import competition from economic globalization, and that US job insecurity is made worse by inadequate social safety nets and by the inappropriate design of the funding of health insurance.

Understanding the Evolution of China's Current Account Balance

Since 1986,[13] China's bilateral surplus with the United States has exceeded its overall trade surplus, meaning that China is running massive trade deficits with some of its other trade partners. The changing configuration of China's bilateral trade balances since 1986 reflects mainly the steady expansion of production networks in China. In the new geographical division between the production of components and their assembly, China usually makes the cheaper components and assembles the final products by combining domestically produced and imported components. The fast transfer of manufacturing and assembly operations from Japan, Taiwan, and South Korea to China translates directly into high growth in the China-US bilateral trade surplus because this transfer correspondingly reduces the bilateral Japan-US and South Korean–US trade surpluses. In short, the China-US trade deficit could be reduced by transferring the assembly operations of Korean, Taiwanese, Japanese, and European production networks to Vietnam, but the Vietnam-US trade deficit would then increase, leaving the overall US trade balance unchanged.

China's chronic and growing overall trade surplus reveals a deep-seated serious problem in its economy: its dysfunctional financial system. This problem is revealed by the aggregate-level accounting identity that the overall current account balance (of which, in China, the overall trade account is the biggest part) is determined by the fiscal position of the gov-

13. Except for the four years—1990, 1991, 1997, and 1998—associated with an economic downturn in China.

ernment and the saving-investment decisions of the state-controlled enterprise (SCE) sector and the private sector.[14] Specifically:

$$CA = (T - G) + (S_{\text{SCE}} - I_{\text{SCE}}) + (S_{\text{private}} - I_{\text{private}})$$

where CA = current account in the balance of payments;[15] T = state revenue; G = state expenditure (including state investment); S_{SCE} = saving of the SCEs; I_{SCE} = investment of the SCEs; S_{private} = saving of the private sector; and I_{private} = investment of the private sector.

The Chinese fiscal position ($T - G$) has for the last decade been a small deficit and so is not the cause for the swelling current account surpluses of the 2000s. The current account surplus exists because the sum of savings by SCEs and the private sector exceeds the sum of their investment expenditures, and it has expanded steadily because the nongovernment savings rate has been rising steadily. I argue later that there is a link between the existence of the current account surplus and the growth of the surplus.

Why has China's financial system failed to translate savings into investments? Such was not always the case. Before 1994, the voracious absorption of bank loans by SCEs to invest recklessly kept the current account usually negative and the creation of nonperforming loans (NPLs) high. When the government imposed stricter controls on the state-owned banks (SOBs) from 1994 onward (e.g., removing top bank officials from banks that lent more than their credit quota or that allowed the NPL ratio to increase too rapidly), the SOBs slowed the growth of loans to SCEs. This cutback created an excess of savings because the SOB-dominated financial sector did not rechannel the released savings (which were also increasing) to finance the investment of the private sector. This failure in financial intermediation by the SOBs is quite understandable. First, the legal status of private enterprises was, until recently, lower than that of the state enterprises; and, second, there was no reliable way to assess the balance sheets of the private enterprises, which were naturally eager to escape taxation. The upshot was that the residual excess savings leaked abroad in the form of the current account surplus. Thus inadequate financial intermediation has made developing China a capital-exporting country!

This perverse current account outcome is not new. Before the mid-1980s, Taiwan experienced this same problem when all Taiwanese banks

14. The SCE category covers companies classified as SOEs (state-owned enterprises) and joint ventures and joint stock companies controlled by third parties (e.g., legal persons) who are answerable to the state. For an analysis of how the principal-agent problem in SCEs has shaped China's macroeconomic performance, see Woo (2006).

15. $CA = (X - M) + R$, where X = export of goods and nonfactor services, M = import of goods and nonfactor services, and R = net factor earnings from abroad (i.e., export of factor services).

were state-owned and were operated under a civil service regulation that required loan officers to personally repay bad loans that they had approved. The result was a massive failure in financial intermediation that caused Taiwan's current account surplus to rise to 21 percent of GDP in 1986. The reason China has not been producing the gargantuan current account surpluses seen in Taiwan is its persistently large amount of SCE investments.

Why is the saving rate of the nongovernment sector rising? The combined savings of the SCE and non-SCE sectors rose from 20 percent in 1978 to 30 percent in 1987 and has remained above 45 percent since 2004. In discussions about the rise of the saving rate, a common view is that it reflects the uncertainty about the future that many SOE workers feel in the face of widespread privatization of loss-making SOEs. I find this explanation incomplete because it seems that there has also been a rise in the rural saving rate even though rural residents have little to fear about the loss of jobs in the state-enterprise sector because none of them are employed there.[16]

Two general changes have caused both urban and rural saving rates to rise significantly. The first change relates to increased worries among the Chinese about the future. The steady decline in state subsidies to medical care, housing, loss-making enterprises, and education coupled with mismanagement of pension funds by the state have led people to save more to ensure against future bad luck (e.g., sickness, job loss), buy their own lodging, build up nest eggs for retirement, and invest in their children.

The second change is the secular improvement in the official Chinese attitude toward market capitalism. Given the high rate of return to capital, this increasingly business-friendly attitude in the Communist Party of China has no doubt encouraged both rural and urban residents to save for investment—in other words, greater optimism about the future has spawned investment-motivated saving.

In my explanations for the existence of the current account surpluses and the growth of the surplus, there is a common element in both: China's financial system. The fact is that saving behavior is not independent of the sophistication of the financial system. An advanced financial system has a variety of financial institutions that enable the pooling of risks by providing medical, pension, and unemployment insurance and that transform savings into education, housing, and other types of investment loans to the private sector. In general, the more sophisticated a financial system, the lower the saving rate, a proposition that finds formal statistical support in my work with Liang-Yn Liu (Liu and Woo 1994, Woo and Liu 1995).

16. The Economist Intelligence Unit (2004, 23) reported that "farmers' propensity to save seems to have increased."

In short, China generates a chronic current account surplus because of inadequate financial intermediation: The dysfunctional financial system fails to pool risks to reduce uncertainty-induced savings and fails to provide loans to reduce investment-motivated saving.

Misplaced High Hopes on the Curative Power of Renminbi Appreciation

While there is little doubt that a large appreciation of the renminbi against the dollar—say, 40 percent as suggested by Morris Goldstein (2007)—could eliminate the bilateral US-China trade deficit as well as China's overall trade surplus, this move would only hurt China and not "save" the world. Ceteris paribus, in the aftermath of the 40 percent renminbi appreciation, foreign companies producing in China for the G-7 markets would move their operations to other Asian economies (e.g., Vietnam and Thailand) and export from there, and G-7 importers would start importing the same goods from other Asian countries instead. In the absence of a collective appreciation of all Asian currencies, the renminbi appreciation will only reconfigure the geographical distribution of the global imbalances and not eliminate them significantly.

It is instructive to recall the experience of yen-bashing in the 1980s when the yen-dollar exchange rate went from 248 in 1984 to 202 in 1985, 162 in 1986, 128 in 1987, and then to 123 in 1988. There was a significant decline in the Japanese overall current account surplus, from 3.7 percent of GDP in 1985 to 2.7 percent in 1988, but the improvement in the US overall current account deficit in the same period was insignificant, from 2.8 percent of GDP to 2.4 percent. An important reason for this small change was that Japanese companies started investing in production facilities in Southeast Asia and started exporting to the United States from there. In a way, the present expectation of many analysts that a humongous renminbi appreciation would reduce the US overall current account deficit represents the triumph of hope over experience.

There is only one meaningful definition of the "correct exchange rate," and it is the "market-clearing exchange rate"—the exchange rate generated by foreign exchange markets in the absence of any central bank interventions. The fact that the People's Bank of China has been accumulating foreign reserves every period means that the renminbi is undervalued. However, what would happen if China were to now go further in its marketization of foreign exchange transactions by removing its capital controls? Diversification of asset portfolios by private Chinese agents would surely result in a great outflow of funds, possibly causing the renminbi to depreciate instead. In such a case, the present exchange rate of 7.3 renminbi per dollar would be "overvalued" compared to the "complete free

market exchange rate." Of course, no one knows whether the "complete free market exchange rate" would be higher or lower than 7.3 renminbi per US dollar.

Suppose the value of the "complete free market exchange rate" is 6.5 renminbi per US dollar, and the "market-clearing exchange rate with controls on capital outflows" is 4.5 renminbi per US dollar, and suppose the government stops intervention immediately and then removes capital controls a few years later after it has strengthened the supervision, management, and technical capability of the domestic financial institutions. One plausible result of this particular two-step market liberalization (which I call option A) would be renminbi appreciation to 4.5 renminbi per dollar upon cessation of foreign market intervention, followed by renminbi depreciation to 6.5 renminbi per dollar upon removal of the capital controls.

Suppose China adopts another form of two-step liberalization (option B), incremental appreciation of the renminbi and removal of capital controls after a few years. Option B is better than option A because the exchange rate overshooting in option A creates an unnecessary to-and-fro movement in resources. As mentioned, the removal of capital controls could very well cause the renminbi to depreciate past 7.3 renminbi per dollar to, say, 8.5 renminbi per dollar, meaning that option A would result in very severe exchange rate overshooting compared to option B.

In effect, the Chinese government has been implementing a form of option B since July 2005. But I believe the government has chosen a speed of exchange rate adjustment that is too slow, causing the renminbi to depreciate significantly against the euro. I recommend that the Chinese government increase the speed of the renminbi appreciation—but not in the form of an immediate discrete 10 to 15 percent appreciation as advocated by Goldstein (2007).[17]

In my opinion, the calls by some economists for the use of the exchange rate mechanism to solve China's external imbalance are only partially correct. Given China's capital controls, a freely floating currency regime could mean a value for the renminbi that would be greatly overappreciated compared to its value under free capital flows and could therefore reduce economic growth significantly.[18] Freeing capital flows is not, however, an option at this time. Given the weakness of the balance sheets of China's state-owned banks and the considerable embezzlement of state assets that

17. My analysis therefore leads me to agree with the three recent policy positions of the US Treasury: (1) China must increase "the pace of reform in the financial services market" (Paulson 2007); (2) China has not engaged in currency manipulation; and (3) China should increase the rate of renminbi appreciation.

18. In Robert Mundell's opinion, "China's growth rate could fall by half and FDI could slow to a crawl if the country were to abandon its long-standing support of pegging the currency." Quoted in "Abandoning peg will slash growth 50 pc in China," *South China Morning Post*, September 15, 2003.

has occurred, as well as the experience with the Asian financial crisis, I advise against allowing the free movement of capital in the short term.

The correct way to think about exchange rate management is to analyze the issue in the context of overall macroeconomic management and not just in terms of its impact on the balance of payments. It is very likely that there are alternative combinations of macroeconomic policies that would produce results superior to the one generated by appreciating the renminbi alone. The general point is that because the balance of payments is only one of the main outcomes of concern[19] and the exchange rate is only one of the ways[20] to affect it, it is seldom optimal to concentrate exclusively on one policy target (which does not dominate the other policy targets in importance) and then to employ only one particular policy tool (which is chosen idiosyncratically) to achieve that policy target. In short, the much-touted solution of an immediate 25 percent revaluation of the Chinese renminbi against the US dollar does not deserve the central place it has occupied in the discussions of what is to be done about the large and growing trade imbalances with China.

A Multilateral Policy Package to Address Trade Tensions with China

The real source of the anxieties that have given rise to the current US obsession with renminbi appreciation is not the large trade imbalances but the large amount of structural adjustment necessitated by the acceleration of economic globalization and of labor-saving technological progress. Dollar depreciation and trade barriers will slow but not stop the process of structural adjustment because the other main (and most possibly bigger) driver of structural adjustment in the United States is technological progress. The optimum solution is a policy package that emphasizes multilateral actions to achieve several important objectives. It is bad economics and bad politics to dwell on just one region (China alone), one instrument (renminbi appreciation alone), and one target (external imbalance).

The multilateral policy package that I propose can be framed as answers to the following three questions:

1. What should the United States do?
2. What should China do?
3. What should the United States and China do collaboratively?

19. The inflation and unemployment rates would be among the other key concerns.

20. Other ways include monetary and fiscal policies.

What Should the United States Do?

Congress should hasten the reduction in fiscal imbalance, strengthen social safety nets and programs that upgrade the skills of (especially) the younger workers, and make health care insurance coverage independent of individual employers. In particular, the Trade Adjustment Assistance (TAA) program still functions inadequately after its overhaul in 2002. Lael Brainard (2007) reported:

> Participation has remained surprisingly low, thanks in part to confusing Department of Labor interpretations and practices that ultimately deny benefits to roughly three-quarters of workers who are certified as eligible for them. TAA has helped fewer than 75,000 new workers per year, while denying more than 40 percent of all employers' petitions. And remarkably, the Department of Labor has interpreted the TAA statute as excluding the growing number of services workers displaced by trade. . . . Between 2001 and 2004, an average of only 64 percent of participants found jobs while they participated in TAA. And earnings on the new job were more than 20 percent below those prior to displacement.

In addition to improving the TAA program, the establishment of wage insurance is an excellent way to bring US social safety nets more in line with the type of structural adjustments driven by globalization and technological changes. Occupational obsolescence created by the latter should not be forestalled by inadequate regulatory measures but accommodated by establishing extensive skill-upgrading programs (e.g., training loans, apprentice stipends) and improving the formal education system, especially at the K-12 level.

What Should China Do?

The obvious short-run policy package has three components. First, the steady process of renminbi appreciation begun in July 2005 should be quickened and used more aggressively as an anti-inflation instrument. Second, import liberalization should be accelerated (e.g., implement seriously the commitments made in negotiations for World Trade Organization [WTO] membership, like intellectual property rights protection) and expanded beyond WTO specifications.

The third component of the short-run policy package is to have an expansionary fiscal policy (e.g., rural infrastructure investments) to soak up excess savings, with an emphasis on import-intensive investments (e.g., buying airplanes and sending students abroad). There must be time limits on expanded public works and SCE investments because, in the long run, the large public investments could follow an increasingly rent-seeking path that is wasteful (e.g., building a second big bridge to a little-populated

island to benefit a politically connected construction company, as in Japan), and the large SCE investments could convert themselves into nonperforming loans at the SOBs.

It is now common to hear calls for China to rebalance its growth path by reducing savings to increase consumption. This advice makes sense only if increasing consumption will reduce the current account surplus without reducing the level of investment. Growth requires an enlargement of output capacity, and a government-induced increase in consumption that lowers investment will maintain full usage of the existing output capacity but will diminish the expansion of output capacity, causing a lower GDP growth rate and, hence, a slower absorption of China's surplus labor. Furthermore, China still has a long way to go before its technological level reaches that of the G-7, and technological upgrading requires investing in more modern capital equipment. So a policy that increases consumption and decreases investment is not only a slow-growth policy, it is also a slow technological-upgrade policy.

It is likely that consumption could be increased without lowering investment by (1) the state's provision of an integrated health insurance system, a comprehensive pension system, and an extensive scholarship program; and (2) the financial system's provision of more sophisticated financial products (e.g., education and housing loans) and various types of insurance schemes and discontinuation of its discrimination against private investors. The establishment of a modern financial system requires the establishment and growth of competitive *domestic* private banks. As China is required by its WTO accession agreement to allow foreign banks to compete against its SOBs on an equal basis by 2007, it would be akin to self-loathing not to allow the formation of truly private banks of domestic origin.

I therefore recommend that, after the recapitalization of the four big state banks, at least two be broken into several regional banks and most of these privatized. It would be a good idea to sell a few of the regional state banks to foreign banks to facilitate the transfer of modern banking technology to Chinese banks because the more local staff the foreign bankers train, the larger the pool of future managers for Chinese-owned banks. At the same time, the laws governing the establishment of new banks should be loosened and interest rates deregulated. However, it is most crucial that financial sector liberalization proceed no faster than the development of the state's financial regulatory ability in order to avoid the danger of substituting financial crash for financial repression.

An important part of financial reform should be the promotion of the development of sound rural financial institutions. In particular, I draw attention to the successful Indonesian experience of establishing a self-sustaining and profitable banking system (the *Unit Desa* system) in the countryside as a starting point for discussing how to accelerate financial

development in rural China.[21] China should allow the establishment of new small-scale rural financial institutions that will mobilize local savings to finance local investments as quickly as adequate prudential supervision can be put in place.

What Should the United States and China Do Collaboratively?

I reported earlier the survey finding of the Pew Research Center that there has been a dramatic decline in US support for free trade. But we should really worry about the future of the multilateral free trade system as constituted by the WTO because this rise in discontent with trade is not limited to the United States but rather is a global phenomenon. Table 6.3 displays the proportion of population in 38 countries that regarded trade in a positive light in 2003 and 2007: From one year to the next, 27 countries reported a drop in support for free trade, 2 were unchanged in their view, and 9 increased their support. If we take an absolute change of 5 percentage points or less to be indicative of an unchanged level of support for free trade, then 13 countries turned significantly against it and 4 significantly in favor of it. The most alarming sign of threat to the WTO system is that 5 of the G-7 countries view trade in a significantly more negative light than before; the decline in support was 24.4 percent in the United States, 13.9 percent in Italy, 11.4 percent in France, 10.3 percent in Britain, and 6.6 percent in Germany. None of the four countries (Argentina, Bangladesh, India, and Jordan) that became significantly more ardent supporters of trade is a major trading power.

Why have the largest stakeholders in the world economic system, especially the United States, become more disenchanted with the present WTO system? I contend that many analysts have drawn the wrong conclusions on globalization because they have not been sufficiently cognizant of the other major driver of the world economy, the accelerated pace of technological innovation. The two mutually interacting international trends of deep economic globalization and dynamic technological innovation have brought huge increases in prosperity to some segments in each national economy but have also caused painful structural adjustments in others. Because the international community is having trouble dealing with some of the negative consequences from structural adjustments created by the enhanced economic interaction among countries and by the accelerated technological progress, global multilateral free trade embodied by the WTO system is under threat.

21. Indonesia is very similar to China in key economic and institutional features: It has a geographically vast and heavily populated economy, and the rural financial system is dominated by branches of a state bank (Bank Rakyat Indonesia and Agricultural Bank of China, respectively); see Woo (2005).

Table 6.3 Rise in discontent with trade, 2003–07

Country	Proportion of population with a positive view of trade (percent) 2003	2007	Increase in level (percentage points)	Proportionate increase in level (percent)
India	69	89	20	29.0
Jordan	52	72	20	38.5
Argentina	60	68	8	13.3
Bangladesh	84	90	6	7.1
Pakistan	78	82	4	5.1
Kenya	90	93	3	3.3
Bolivia	77	80	3	3.9
China	90	91	1	1.1
Ghana	88	89	1	1.1
Japan	72	72	0	0.0
Tanzania	82	82	0	0.0
Brazil	73	72	–1	–1.4
Poland	78	77	–1	–1.3
South Africa	88	87	–1	–1.1
Bulgaria	89	88	–1	–1.1
Mexico	79	77	–2	–2.5
Peru	83	81	–2	–2.4
Lebanon	83	81	–2	–2.4
Ukraine	93	91	–2	–2.2
Ivory Coast	96	94	–2	–2.1
Slovakia	86	83	–3	–3.5
Senegal	98	95	–3	–3.1
Czech Republic	84	80	–4	–4.8
Canada	86	82	–4	–4.7
South Korea	90	86	–4	–4.4
Egypt	67	61	–6	–9.0
Russia	88	82	–6	–6.8
Germany	91	85	–6	–6.6
Venezuela	86	79	–7	–8.1
Turkey	82	73	–9	–11.0
Britain	87	78	–9	–10.3
Mali	95	86	–9	–9.5
France	88	78	–10	–11.4
Nigeria	95	85	–10	–10.5
Italy	79	68	–11	–13.9
Uganda	95	81	–14	–14.7
Indonesia	87	71	–16	–18.4
United States	78	59	–19	–24.4

Source: Pew Research Center (2003, 2007).

It is important that the United States and China start collaborating immediately to push the Doha Round to a successful conclusion. China's commitment to work for continued economic globalization will help strengthen the now wavering US commitment to the WTO system (as captured in the Pew Global Attitudes Surveys).

The United States, which has traditionally been at the forefront for expanding multilateral free trade, is now beset by self-doubt for three major reasons. First, the country was willing to put up with the pains of structural adjustments during 1960–90 to accommodate the growing imports from Japan, South Korea, Taiwan, and the Association of Southeast Asian Nations (ASEAN) because these were frontline allies in the Cold War. With the end of the Cold War, it is natural for the United States to reconsider the economic cost of structural adjustment because the security and ideological benefits that went with it have decreased.

Second, the amount of US structural adjustment required to accommodate the rise of the SIC bloc is far greater than the earlier adjustment to the rise of its Cold War allies. As noted, the entry of the SIC economies has doubled the labor force participating in the international division of labor (table 6.2).

Third, the strongest lobby for free trade in the United States has been the economics profession, and the free trade doctrine has come under strong internal criticism in the last few years. Paul Samuelson has made many fundamental contributions to the development of the standard trade models that convinced mainstream economists that free trade is the best policy; it was therefore an intellectual earthquake when he argued in 2004 that under free trade, when outsourcing accelerates the transfer of knowledge to a developing country, there could be a decline in the welfare of the developed country.[22] And intellectual apostasy is spreading; in 2005, Alan Blinder, another eminent economist, joined Paul Samuelson in criticizing free trade fundamentalism.

In April 2007, the United States bypassed multilateralism in free trade by agreeing to form a free trade area (FTA) with South Korea. With the United States weakening in its resolve to protect the multilateral free trade system, it is time for China to show that it is a responsible stakeholder by joining in the stewardship of the multilateral free trade system from which it has benefited immensely. With China so far playing a very passive role in pushing the Doha Round forward, Brazil and India have by default assumed the leadership of the developing economies camp in the trade negotiations. According to US Trade Representative Susan Schwab, at the G-4 (Brazil, European Union, India, and the United States)

22. See Samuelson (2004); "Shaking Up Trade Theory," *Business Week*, December 6, 2004; and "An Elder Challenges Outsourcing's Orthodoxy," *New York Times*, September 9, 2004.

meeting in Potsdam in June 2007, Brazil and India retreated from their earlier offers to reduce their manufacturing tariffs in return for cuts in agricultural subsidies by the developed economies because of "their fear of growing Chinese imports."[23] The Brazilian-Indian action caused the Potsdam talks to fail and hurt the many developing economies that were agricultural exporters.

Brazil is now attempting to bypass multilateral trade liberalization by entering into FTA negotiations with the European Union. A growing number of nations like Brazil "are increasingly wary of a multilateral deal because it would mandate tariff cuts, exposing them more deeply to low-cost competition from China. Instead, they are seeking bilateral deals with rich countries that are tailored to the two parties' needs."[24]

Because the present international atmosphere is ripe for protectionism, China and the United States must work together to provide the leadership to prevent the unraveling of multilateral free trade. Of course, while it is desirable for Chinese economic growth for China to become more active in supplying global public goods, the country might not be allowed to do so because of the usual reluctance of existing dominant powers to share the commanding heights of world political leadership. The sad experience of Japan being denied permanent membership of the Security Council of the United Nations is a case in point.

Final Remarks

China's rapid movement toward the center of the world stage has sparked much global concern on other fronts besides China's impact on the international economic system. With China building a power generation plant every week, would the country be willing to work with the international community to amend the Kyoto Protocol to achieve effective control over the emission of greenhouse gases and hence slow (or even reverse) climate change? Following China's inept handling of the severe acute respiratory syndrome (SARS) epidemic in 2002–03 and the appearance of other new diseases such as avian flu and a yet-to-be-identified pig disease, is China now better prepared to cope with new potential pandemic diseases and to cooperate fully with foreign health organizations? As North Korea has just tested a nuclear device and Iran has reiterated its determination to develop one, will China reassess its traditional ties with these two countries and help stop nuclear proliferation?

Clearly, enhanced global prosperity and improved global security require extensive cooperation on many issues between China and the rest of

23. "Schwab Surprised by Stance of India and Brazil," *Financial Times*, June 22, 2007; and "China's Shadow Looms over Doha Failure," *Financial Times*, June 22, 2007.

24. "Brazil, Others Push Outside Doha for Trade Pacts," *Wall Street Journal*, July 5, 2007.

the world. An important first step in building the foundations for cooperation on these issues is to save the world from lapsing into protectionism in the form of fragmented trading blocs. A failure on this easier task is unlikely to bode well for future cooperation to slow climate change, stop nuclear proliferation, and fight pandemic diseases.

I expressed the hope earlier that the return of China to the world stage in the 21st century would be like the stabilizing rise of the United States in the 20th century, but there are two major differences both between the return of China now and the earlier rise of the United States, and in their implications. The first difference is that the world stage is now more crowded. Since 1914, the United Kingdom, France, and Germany have been joined at the center stage by Japan, Russia, and the United States. The greater number of influential players means higher organizational costs and more diversity in preferences, both of which mean that cooperative decision making will become harder. It is therefore necessary to expand the size of the stage to accommodate the greater number of sharp elbows. In short, we must enlarge global governance (i.e., allow more sharing of global responsibilities) in order to strengthen it.

The second difference between the return of China and the rise of the United States is that we now have the addition of not one but two giants, China and India, to the world stage. By 2050, the size of the Indian economy will have become larger then the combined economies of Canada, France, Germany, Italy, Japan, and the United Kingdom. The global economic restructuring and environmental stress that will result will be tremendous, and so we need to strengthen the trusses that support the world stage to accommodate the weight of the Chinese dragon and the Indian elephant. In short, we must establish more effective global institutions in order to supply the needed global public goods.

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7

Institutional Systems and Economic Growth

LESZEK BALCEROWICZ

It is believed that before 1800, living standards differed little across countries and time (Parente and Prescott 2002). Modern economic growth started around 1800 in Great Britain and its ethnic offshoots and then spread to other Western European countries, setting off an unprecedented acceleration in the improvement of living standards in the West. As the Western economies surged ahead, there was also a substantial convergence of their income levels, especially between 1950 and 1973. The post–World War II period also saw an impressive catching-up of some other economies: Japan and later other Asian Tigers as well as Chile in Latin America. Many countries, however, continued to lag, most notably in Africa, Latin America, and the former Soviet bloc.

To explain these and other differences in long-term growth is one of the most fundamental tasks of empirically oriented economics. Although the literature on this topic is extensive, much remains to be done. There is a broad consensus that growth models focusing on proximate causes of growth—such as productivity and accumulation of capital—cannot provide a convincing explanation for the different rates of long-term growth as these "causes" themselves require explanation. Thus a growing literature focuses on the deeper factors that differentiate the speed of development across countries and time periods and especially on institutional de-

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terminants of long-run growth. This chapter draws extensively on this literature and attempts to make the following contributions.

First, I distinguish between innovation-based growth, which is potentially universal and lasting, and other growth mechanisms that are situation-specific and transitional.

Second, I sketch a simple model of individual choice and link the impact of institutional systems to this model, distinguishing *information* and *incentive* barriers to innovation-based growth. I also present an extensive discussion of institutional systems that block innovation-based growth and thus convergence, and I show that such systems are broader than closed economies (Sachs and Warner 1995) or systems where producers enjoy monopoly rights (Parente and Prescott 1999, 2002). I attempt to go beyond the existing literature by showing a broader range of such systems and explaining how they block innovation-based growth.

Next I take a brief look at the history of successful growth accelerations. I distinguish between a very small group of countries that maintained a relatively unchanged *liberal* system and achieved accelerated growth and a much larger category that used reform packages to transform a growth-retarding system.

I then analyze such reform packages, distinguishing between economic and political economy considerations and describing the interactions between the two. The discussion focuses on the economics of reform packages—their direction, scope, and time structure—and offers a critical look at so-called nonconventional reform solutions (e.g., village and town enterprises in China). I link the differences in the scope of successful reforms via two variables in the initial conditions: institutional growth barriers and special growth mechanisms. By definition, the former constrain lasting growth to very low levels while the latter explain why growth may transitionally accelerate before more comprehensive reforms are completed or in the presence of only modest reforms.

Last, I discuss the importance of breakdowns of growth, which may reduce long-term average growth, and link them to features of countries' institutional systems. Against this background I distinguish between two overlapping sets of domestic institutions, those that propel and those that stabilize. In the closing section I offer a summary of my findings and suggestions for further research.

Innovation-Based Growth

The mere extension of unchanged production processes and products is not capable of producing lasting growth. Simple observation and economic theory tell us that under such conditions the declining marginal productivity of capital will bring economic growth to a halt. This conclusion is supported by economic history: Before 1800, technology was basi-

cally stagnant and growth very slow. The modern economic growth that started around 1800 has been based on changing technology.

It is thus systemic innovations that increase productivity and bring about welfare-enhancing new products,[1] making economic growth lasting—as long as such innovations continue and shocks do not interrupt growth. I define innovations in a Schumpeterian vein, as applications in the business practice of new ideas: innovative proposals. Some of these "proposals" are inventions—new products from independent inventors or R&D departments in firms and other organizations; other innovative proposals concern business practices. Innovations may affect not only narrowly defined production processes but also transportation, communication, and organization (e.g., "just in time" logistical systems).

Many innovations require or are "embodied" in new capital goods. Therefore, strong barriers to physical investments block innovation-based growth. However, the lack of such barriers and resulting high investment ratio do not guarantee fast growth, as innovations may be constrained by other barriers (as discussed below).

Innovation-based growth includes structural changes such as the reallocation of resources to new production processes and products that otherwise would not spread in the economy. But not all structural changes are related to innovations; some reflect the fact that different categories of consumer goods have different income elasticities of demand. Such differences explain the declining share of agriculture in a growing economy (Engels Law).

Innovative business practices may have domestic or foreign origins; in the latter case we speak of foreign (or international) technology transfer. Because it is difficult for technological leaders in a given field to borrow technology from abroad, progress depends on moving the world technology frontier through inventive activity. Countries that rely on technology transfer instead of their own innovation may nonetheless require domestic R&D capacity to enable the successful adoption and integration of foreign technologies (Griffith , Redding, and Van Reenen 2005).

As successive innovations raise productivity and enhance welfare, countries that are technological leaders in their productive sectors are also leaders in per capita income. Correspondingly, economies that are less technologically advanced display lower standards of living. They can, however, catch up with more advanced economies by adopting their technologies. This is the innovation-based growth mechanism for such economies.[2]

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1. I sometimes call such innovations "genuine" to differentiate them from "easy" innovations, which are pursued under some institutional systems but do not increase productivity or increase consumer welfare.

2. As Weede (2006) points out, benefits accrue not only to the institutions in the advanced economies that produce technological knowledge but also to less advanced economies, thanks to technology transfer.

Why is technology transfer (including related structural changes) the convergence mechanism that makes it possible for less developed economies to grow faster than the advanced ones? There are at least two reasons. First, it is more difficult and costly for advanced economies to bear the risks and R&D expenses necessary to shift forward the technology frontier (Barro and Martin 1997).[3] Second, it is then cheaper and faster for the less advanced economies to adopt technology already invented and applied in the advanced country than to invent or reinvent it (Gomulka 1990). The first regularity explains why the less developed country's technological growth may be faster than in advanced countries, the second explains why technology transfer accelerates the growth of nonadvanced economies.

However, the fact of being poor is not a guarantee that a poor country will grow, nor that it will grow faster than a rich one. Poverty neither generates growth nor condemns a country to future poverty (the poverty trap). The *reasons* for developmental lag have to be identified, removed, and replaced by conditions that enable effective technology transfer and other growth mechanisms. These conditions are often referred to as "social capability" (e.g., Abramovitz 1986), which in turn is usually reduced to the domestic capacity to learn and adopt foreign technologies.[4]

Innovation-based growth is the only growth mechanism capable of producing lasting growth, but there are other growth mechanisms. One is the Ricardian comparative advantage—improvement in allocative efficiency, based on the expansion of trade and effective even if technologies and products do not change. The Ricardian comparative advantage may explain the improvement in the living standards of the European trading nations during the expansion of trade in the 15th to 17th centuries.

Some situation-specific mechanisms (i.e., those inherent to a country's conditions) can also produce transitional economic growth. For example, the communist system operated with enormous waste (slack) and produced some very repressed sectors (e.g., agriculture in China, services under Soviet socialism), and some countries operate at low levels of (official) employment. Removing these weaknesses may accelerate growth for a while and—as they are usually much more widespread in the underdeveloped countries than the advanced ones—also constitute a convergence force. I return to situation-specific growth mechanisms in a later section.

In the next sections I focus on innovation-based growth as it is the main force for lasting development and convergence.

3. Some theories of endogenous growth (e.g., of P. Romer) may be interpreted as questioning the second assumption and thus convergence based on technology transfer. However, as Sachs and Warner (1995) point out, this is not validated by experience.

4. Keller (2004), for example, focuses only on this factor and disregards the question of incentives.

Determinants of Individual Choice

As a proponent of methodological individualism, I recognize that aggregate outcomes (e.g., economic growth) ultimately depend on individual decisions. These decisions may be conceived as resulting from the interaction of two variables: (1) individual disposition and (2) a choice situation (for more on this, see Balcerowicz 1995, 4–15).

Personal disposition is a lasting or relatively lasting feature that affects human decision making (Madsen 1968). It is both motivational and cognitive. The former determines what utility an individual assigns to various objects and courses of action, the latter represents the individual's informational capacities, including the capacity to learn.

A choice situation is any situation that includes more than one option (see Greif 2006), including a situation in which an individual does not perceive a choice or thinks that there is "no choice" because one option is incomparably better than the others.

An individual's disposition determines which variables are personal motivators. A variable is a motivator if the person reacts to a change in its intensity as either a reward or a punishment. Thus differences in value linked to the options perceived in a choice situation constitute positive or negative incentives.

For the purpose of this discussion I suggest that four main categories of motivators define an individual's utility function:

$$U = U(EM, ES, IM, E) \tag{7.1}$$

where *EM* stands for external motivators of a pecuniary nature (e.g., income or wealth) and *ES* represents external motivators of a social nature; these result from emotional needs and the tendency to maintain or increase self esteem (Madsen 1968) and include reputation, social position, prestige, and power. *ES* is, among other things, the basis for the power of social norms, those enforced by the informal reactions of other members of a given group and not by a specialized enforcement apparatus (see Elster 1989). Some variables are both *EM* and *ES*; for example, income or wealth is for many individuals not only a source of consumption but also an indicator of social position. *IM* is intrinsic motivation, for example, personal achievement (McClelland 1961) or pleasure derived from an intellectually stimulating activity; such activity is psychologically rewarding because of the need for sensory and intellectual stimulation (Hebb 1958). Finally, *E* denotes unpleasant effort, related to boring or excessively stressful actions.[5] This motivator helps to explain the innovative defi-

5. Therefore, actions differ in the extent to which they are self-rewarding (at least to some people) or involve an unpleasant effort. Self-rewarding actions require less external motivation than actions related to *E*.

ciency of a monopoly relative to enterprises facing competition (more on this below).

An individual's cognitive and motivational dispositions "translate" each choice situation into a mental representation of a "feasible set." The feasible set has two dimensions:

- a set of actions that the individual perceives as feasible; and
- the perceived distribution of motivations across these actions and, as a result, their relative utility or preferential ordering.[6]

We now turn to barriers to innovations. Individuals do not introduce innovations

- if the innovative proposals are absent in their feasible set (see Elster 1989); I call this an *information barrier* to innovation.
- if such proposals are present in their feasible set but, given the choice situation and the individual's motivational disposition, they are not attractive because of their low expected utility relative to alternative options (e.g., routine activity, robbery, rent seeking); I call this the *incentive barrier* to innovation.

Moving from the individual to society, the information barrier is the absence of innovative proposals in the feasible sets of all the appropriate decision makers in a given society. The incentive barrier exists when the innovative proposals are present in the feasible sets of at least some of these decision makers but are not selected because their expected utility is too low relative to that of other options. Some innovative proposals may "hit" the information barrier while others are stopped at the incentive barrier.

In subsequent sections I discuss first the factors responsible for the information barrier and their interaction with the factors responsible for the incentive barrier. Then I analyze the latter factors at greater length. But before proceeding to those discussions I will link the variables that determine individuals' decisions—their dispositions and choice situations—to institutions.

Linking Individual Choice to Institutional Systems

Discussions of economic growth and of other aggregate economic outcomes increasingly recognize that capital accumulation, productivity growth, and technology transfer are only proximate determinants that de-

6. This ordering does not need to be complete; in practice, one action (or type of action) is preferred, given the motivational dispositions, over the other options, which are often not preferentially ranked.

pend on deeper factors such as institutions.[7] I define institutions as all nonmaterial and relatively enduring factors that are both external to the individual and capable of influencing an individual's behavior (Balcerowicz 1995; for a similar definition, see Greif 2006). Institutions shape individuals' actions and especially their interactions (transactions) in the sense that sufficiently large differences or changes in institutions produce differences in these actions and interactions. Institutions are usually either *formal* (i.e., related to the existence of the state) or *informal* (e.g., the caste system in India). Informal institutions—social norms and informal networks—constitute what is usually called the "culture" of different societies.

In discussing a society's economic growth and other aggregate outcomes, it is useful to look at all the institutions that may affect the behavior of the members of this society.[8] How do differences or changes in a society's institutional systems affect individuals' decisions? Here we come to the link between institutional systems as a complex variable and the determinants of individuals' choice. I have identified three types of impact of this variable on individuals' decisions (Balcerowicz 1989):

- Institutional systems differ in the types of positions they offer, and these positions are defined in terms of the typical choice situations faced by the individual in the position (the *situational impact*).
- Institutional systems differ in the ease (or difficulty) with which an individual can access decision-making positions (the *selectional impact*).
- Institutional systems that have operated for a longer time may produce some specific dispositions (e.g., beliefs, attitudes, and skills) in the members of society that participate in these systems (the *formative impact*).

Situational Impact

Let us first consider the situational impact of the institutional system, the types of positions (or roles) available in the system, and the typical choice situations faced by those who occupy them. Examples of such positions or roles are private entrepreneur, private monopolist, manager of a state-owned company, deputy in a democratic parliament, member of a ruling

7. Other determinants include, first of all, physical environment. But differences in institutions can bring about larger differences in economic performance (see, e.g., North and South Korea) than differences in physical environment. Besides, institutions can be more easily changed than geographical factors.

8. Institutional systems of various countries may have some similar aspects or components (e.g., similar laws). This is especially true for countries of the European Union. Besides international law, membership in international organizations may be regarded as a common part of various countries' institutional systems.

group in a dictatorship, worker in a state-owned enterprise, worker in a private firm, and caste member in India. In addition, people may have different positions in different spheres of life; for example, an individual may be a member of a voluntary association and an employee of a public agency.

Differences in countries' legal framework, property rights, competition, and political regime are likely to show up as differences in individual positions. In this way there is a link between these institutional or institutionally determined variables and individuals' actions. One crucial difference among institutional systems is the extent to which they offer productive positions, those that allow and encourage those who occupy them to pursue productive actions (e.g., saving, investing, inventing, and innovating).

Special sets of positions linked by a common origin and common rules are usually called organizations. Of particular interest in every institutional system are the top decision-making positions, which are usually part of the political system. The key question is, What are the constraints (if any) on the top political rulers? This is crucial both for the type and security of individual property rights and for the likelihood of policies (i.e., rulers' actions) that produce economic shocks (discussed below). In this sense the basic features of a political regime and of the fundamental economic institutions are two sides of the same coin. More generally, various individual liberties are determined by limits on political powers rather than by lists of rights.[9] If one wants to know how extensive and lasting these liberties can be, one should look at constraints on these powers, including checks and balances.

The more the decision-making power is concentrated at the top, the less room for acting—and especially interacting—is available for individuals other than the top ruler(s).[10] Free interaction includes the spontaneous development of new institutional arrangements such as new types of contracts and new forms of organizations. Institutional systems with highly concentrated decision-making power are thus deprived of the possibilities of bottom-up institutional innovations—that is, they are characterized by institutional rigidity. In contrast, systems where such power is limited, so that individuals have a large scope for interacting, can spontaneously evolve. This difference in the scope of free interaction is of tremendous importance for institutional dynamics and for innovation-based growth (as discussed below).

9. This is why James Madison, main author of the US Constitution and a proponent of these liberties, was not enthusiastic about the Bill of Rights but pushed for constraints on political powers.

10. This scope depends not only on institutional factors but also on geographical distance and technology. For example, the people in Siberia in Tsarist Russia had more de facto freedom than those who lived in Moscow. However, technological advances in transportation and communication have reduced the importance of distance for the efficacy of political control.

In considering the situational impact of institutional systems, one usually varies the institutionally determined positions while holding the individuals' dispositions constant—that is, one assumes certain dispositional invariants in human nature. These invariants include a general utility function and certain informational capabilities.[11] This is a typical approach in theoretical social sciences, especially economics, and enables the isolation of the impact of institutional and, more broadly, situational variables on individuals' actions.

But although individuals share certain invariants, they also differ along many dimensions—talent, ambition, intelligence, character, propensity to take risks, and so forth. One can assume that every large society displays a wide distribution of individuals along these psychological dimensions.[12] And as individuals differ, it matters what positions they occupy, especially those with decision-making power.

Selectional Impact

This intersection of individual invariants and institutional positions brings me to the selectional impact of institutional systems. These systems differ not only in their positions but also in the mechanisms that govern the access of different individuals to higher decision-making positions. In other words, institutional systems differ in the extent of upward social mobility they allow, and this bears on economic growth and other aggregate outcomes. Characterizing the higher positions as political and economic explains upward political and economic mobility. Of course, institutional systems differ in the extent to which these two categories overlap or are separated. This is one of their most important variable dimensions. For example, under the communist regime, political and economic decision-making power were concentrated in the same higher positions, whereas under democratic capitalism they are separate.

The importance of the variability of individuals and thus of selection mechanisms depends on what types of positions are provided by the system. Consider the issue of the mode of succession in top political positions: It may be through election, cooption, an incumbent's nomination of his/her successor, or a coup d'état. These mechanisms differ in the variability of the psychological characteristics of the office holders they allow, with elections probably enabling more variability than other modes.[13] And the

11. I discussed these invariants at greater length in Balcerowicz (1995). Psychology may provide new information about these dispositional invariants that, if implemented in economics, may give rise to new insights. One example is behavioral finance.

12. I have in mind "natural" societies (e.g., nations) created by birth and not by self-selection (examples of the latter include monasteries and Israeli kibbutzes).

13. This is just a hypothesis, as I have not found any empirical analysis of that issue.

differences in the personality features of those who hold decision-making positions matter because of the very nature of these positions. (Various modes of political succession also differ in the degree of instability they produce, and this can affect the economy, too.) Notice, however, that the impact is stronger the larger the concentration of power in the top political positions. In other words, the weaker the constraints on the top political positions, the greater the scope of differences in the personality features of the successive rulers and thus the scope for different policies. For this reason, analysis of the performance of dictatorships must include the psychology of dictators. Their psychological characteristics are also relevant to institutional rigidity or change: Individuals who ascend to positions of concentrated political power have the possibility to reduce this power by changing a basic characteristic of the inherited system.[14] Whether they do that or preserve the system depends on their personality.[15]

Let us now turn to the issue of individuals' access to economic decision-making positions. Rigid institutional or institutionally determined barriers (e.g., the caste system, slavery, and serfdom) can block the mobility of large groups of individuals regardless of the personal features of the group members. Less drastic barriers to mobility include unequal access to education, finances, and state protection for individuals with similar characteristics. One may assume, other things being equal, that the performance of societies plagued by serious mobility barriers must be worse than those that are closer to the meritocratic ideal of equal opportunity. The second situation is obviously to be preferred on the grounds of equity.

However, if we focus on efficiency alone, we can't help but notice that the importance of upward social mobility depends, again, on the first dimension of the institutional system, that is, what kinds of position it includes. If there are productive positions, especially for private entrepreneurs acting under competition, then the easier the access of talented and hard-working individuals to these positions, and the better for economic growth. Free enterprise and social mobility produce better results than free enterprise without social mobility. Under a system that combines a broad set of productive positions and social mobility, individuals can choose positions that best suit their psychological profiles, and as a result positive self-selection forces operate.[16] This strengthens the spontaneous evolution of the system.

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14. Examples include Gorbachev and Yeltsin in the former Soviet Union.

15. But dictators may to some extent be prisoners of their own power apparatus, which will defend the dictatorship as the source of privileges to its members. This was the situation for some tsars in 19th century Russia.

16. Under a system with concentrated political power negative self-selection may operate: Individuals with morally reprehensible characteristics are likely to be attracted to the power apparatus.

However, certain types of institutional systems exclude the most productive positions (more on this below). Under such systems social mobility matters much less for efficiency because talented, hard-working individuals cannot move to such positions for the simple reason that the latter do not exist. The society's entrepreneurial potential is then wasted. In a similar situation, productive positions nominally exist, but rigid institutional barriers prevent anyone from accessing them. The long-term economic performance of institutional systems without productive positions is likely to be worse than that of systems that include such positions but limit access to them.[17] Even the best individuals in unproductive positions cannot outperform less talented persons in productive positions.[18]

Formative Impact

Finally, two very different institutional systems operating for a long time in two similar societies may produce varying special dispositions (e.g., skills, attitudes, and beliefs). I call this a *formative impact* of institutional systems. The term does not, however, indicate how important and lasting this impact can be. Comparative psychological research, for example, on East and West Germans and on North and South Koreans, would help to elucidate this issue. The psychosocial legacy of a regime may be especially important when an attempt is made to replace it by a different one, the most prominent example being the transition from socialism to capitalism in Central and Eastern Europe.[19]

The bulk of economic research on institutions focuses on their situational impact. This appears to be the most important channel, and it is easier to model and to investigate empirically than the other two channels.[20] But many interesting questions related to the other two kinds of impact of institutions on aggregate outcomes await research. For example, the economic ascent of the West is usually attributed to the emergence of productive positions—those of private entrepreneurs acting under competi-

17. For example, successful entry into entrepreneurship may depend on political connections. Keefer and Knack (1997) suggest that persons who become entrepreneurs thanks to such connections may have lower entrepreneurial potential than those who become entrepreneurs under free entry.

18. Different institutional positions may be compared with the different capital equipment used by individuals.

19. I believe (Balcerowicz 1995) that if socialism left a psychosocial legacy, then even more emphasis should be on its radical institutional transformation: the theory of cognitive dissonance. Festinger (1957) tells us that people are more likely to adapt internally to external changes if they are radical and therefore perceived as irreversible than if they are small and thus regarded as easy to reverse.

20. Sociology and anthropology deal more with specific cultures and therefore include research on the formative channel.

tion. One wonders about the role of the reduction of institutional barriers (e.g., the abolition of serfdom) to entry into these positions. Or there are now some useful indicators for measuring economic freedom; they deal mostly with the administrative barriers that an average entrepreneur has to overcome in entering the business.

One particularly important question remains: What is the distribution of barriers across individuals with different socioeconomic characteristics but similar psychological profiles? A potentially useful example, the psychosocial legacy of socialism in the former Soviet bloc, is the subject of much speculation but little empirical research.[21] Such research is possible and would be very interesting, for example, on the impact of intergenerational dynamics on initial socialist attitudes or on differences in the attitudes of workers at state-owned and privatized enterprises.

In the following section, however, I focus on the situational channel, as it appears to be more important for our topic, differences in economic growth. Whenever possible, given the state of research, I will also invoke the selection channel.

The Information Barrier to Innovation-Based Growth

The principal reason for innovations not being implemented in a society is the absence of innovative proposals in the feasible sets of decision makers. It is also true that such proposals may be known to them but rejected in favor of other activities (the incentive barrier). I briefly discuss the factors behind the information barrier and how they interact with those that produce it.

A broad look across time and space reveals three situations in which innovations are affected by the information barrier. Innovative proposals

- are not produced and are therefore absent in all societies;
- are not produced in a given society but exist in other societies; and
- are produced in a given society but they are not known to the appropriate decision-making individuals in this society.

The first situation characterizes the distant past when humans were organized in small hunter-gatherer groups with basically stagnant technology. How some of these groups evolved and then introduced the major innovation of agriculture is beyond the scope of this discussion.

In situations 2 and 3, the absence of innovative proposals is due to broadly conceived communication barriers (including limited capacity to

21. There is much talk of "homo sovieticus" but at the same time an amazing amount of adaptation has taken place since radical reforms were introduced.

understand the innovative ideas). These barriers may be external (i.e., vis-à-vis other societies) or domestic (e.g., between scholars and rulers or universities and firms).

Until relatively recently, external isolation was mostly due to geography. In the modern world, however, it is institutionally determined and takes the form of politically imposed bans on contact with foreigners. Such bans are characteristic of systems with a heavy concentration of political power in society (e.g., Imperial China, China under Mao, or other communist countries).

Systems that impose external isolation on societies often display features that produce incentive barriers to innovation, too. Therefore, even if isolation were reduced, the incentive factors would still block innovation. For example, China before the isolation period produced a stream of pioneering innovations, but they were not implemented because of their relative low utility in the eyes of decision makers, who regarded innovators with suspicion (Baumol 2002). The command economies were plagued by incentive problems (as discussed below); for example, the relative opening of Poland in the 1970s resulted in poor choices and inefficient implementation of Western technologies. Thus information barriers tend to go hand in hand with incentive barriers.

One of the reasons for this joint occurrence is that every kind of behavior depends on incentives—the production of innovative proposals, communication of these proposals to the appropriate decision makers, and the search for innovative ideas. If institutional arrangements block the introduction of innovative projects, few people will bother to produce them, communicate them, and search for them. Thus an information barrier may result from incentive factors.

However, there is also a reverse link, from external isolation to incentives: Isolation not only blocks the inflow of foreign technologies but also reduces competition, and this matters for the utility of innovation relative to routine activity. Isolation also limits the scope of the market, thus reducing the possible rate of return from innovations in two additional ways. First, it worsens the profitability of implementing new, large-scale technologies. Second, it raises the unit costs of activities that distinguish innovations from routine activity. These costs consist of expenditures for acquiring the new technology (costs of original research or of imitation) and the start-up costs of learning by doing in the early phase of production that uses the new technology. Both of these costs are largely fixed, which means the unit costs decline with the scope of the market. Obviously, the negative effects of external isolation on incentives to adopt innovations are much more serious in small than in large economies.

In the following section I focus on the institutional variables that shape the relative utility of innovations and related activities (investment). Because incentive factors, as I stressed above, are the most powerful deter-

minant of innovation-based growth, I start with institutional arrangements that block or seriously limit such growth.

The Incentive Barrier: Institutional Systems that Block Innovation-Based Growth

This section deals with institutional arrangements that so reduce the relative utility of innovation and of related activities in the estimation of a society's decision makers that genuinely innovative proposals are rejected in favor of alternative options. I assume here the general individuals' utility function and ask, What institutional arrangements could structure the distribution of motivators across genuine innovations and alternative courses of action such that the former rank lower in the decision makers' preferential ordering than the latter? In other words, I focus on what I have called the situational impact of institutional variables on individuals' actions.

The impact of institutional systems (and of situations in which they operate) that produce an incentive barrier to innovation is concentrated on different arguments of individuals' utility function. The most important (and most researched) case deals with systems that structure pecuniary motivators (*EM*) in such a way that they discriminate against innovation or against activities that require it. It is (usually implicitly) assumed that social norms related to *ES* do not play any role as a barrier to innovation and that opportunities related to conquest or to the exploitation of subjected territories do not exist. I will adopt the same assumptions and focus on this category as it represents most countries where innovation-based growth is blocked in the modern world. However, I will consider the impact of innovation-blocking systems not only on *EM* but also on the required, unpleasant effort, *E*. Otherwise it is difficult to explain why such systems block innovation. At the end of this section I briefly discuss institutional systems that existed in the past and might have blocked innovation because of social norms and/or because noneconomic actions provided more attractive opportunities to gain wealth to the key decision makers than productive activities (other than agriculture).

Systems that block innovation-based growth because of their impact on *EM* (and *E*) may be divided into

- those that block investment in physical capital and thus indirectly block innovation, which frequently requires such investment; and
- those that create specific barriers to innovation.

Systems of the first group limit the investment ratio to a very low level. However, their negative effect on growth and convergence is mostly due to the fact that this category applies not only to routine investment but also to the accumulation of physical capital, which would embody technical

change.[22] In addition, some of these systems discriminate against innovative investment; therefore there is a certain overlap between the first and second group of innovation-blocking/institutional frameworks.[23] Systems that belong to the second category may display a high investment ratio and thus block innovation-based growth, not through investment barriers but through mechanisms that reduce the utility of innovations relative to that of routine activity or "easy," nonproductive innovations.

Let us start with the first group. Low investment may be caused by low or highly uncertain returns to individual investors or by a low domestic savings ratio when access to foreign savings is limited.

The returns to individuals' investment depend on a crucial institutional variable: property rights. The literature on this important issue is huge and growing; I will make here only some clarifications necessary to this discussion of innovation-based growth.

It is important to distinguish between the structure of property rights and the level of security (protection) enjoyed by those who hold them. The content determines whether private economic activity is allowed or banned, and if allowed, then under what conditions regarding entry, the functioning of private entrepreneurs, and the division of the total effects of their activity into those that accrue to them and those that are appropriated by other agents. This definition indicates that property rights are shaped internally by regulation, contract law, and taxation.[24] The security of property may be defined by the extent of uncertainty with respect to the entrepreneur's private returns from investment.[25]

Generally speaking, barriers to investment result either from the improper structure of property rights that are effectively enforced or from the insecurity of property rights that have a proper structure.[26] The first

22. If technology were stagnant, then the negative impact of limiting investment on economic growth would be much reduced. However, most productive new technologies require investment (Abramovitz 1993).

23. This means that the proportion of innovative investment under such systems is lower than in innovation-friendly frameworks. But even if it were the same, the amount of such investment allowed under the systems with low investment ratios would be lower than under those with a higher ratio but the same composition of investments.

24. Property rights with reduced decision-making power (the control rights of their holders because of regulation are often called "attenuated."

25. This uncertainty may be expressed by parameters (e.g., standard deviation) of the statistical distribution of possible returns or by subjective measures based on investors' perceptions.

26. This formulation expresses the general idea that the effect of the content of property rights and of the level of their protection on economic efficiency are not additive. If the content is improper (i.e., the property rights guarantee a private or public monopoly), it is doubtful their increased protection increases overall efficiency, as it implies that competitors who dare to enter the monopoly fiefdom would be more harshly prosecuted. In contrast, in the case of property rights providing for a free enterprise, the higher the protection of individual entrepreneurs the better for economic efficiency.

case is common in traditional, small, kin-based communities with collective property rights that tend to equalize individual returns regardless of individual effort. Kin-based redistribution, based on informal property rights and given individuals' motivational invariants, discourages individual accumulation. Only the assumption of strongly altruistic or collectivist motivation could change this conclusion, but judging by the results, such an assumption is not realistic.[27]

A more modern example of the first category is represented by systems that allow nominally private property rights but subject returns from private investment to confiscatory taxation. This practice may be due to ideological reasons (as in the case of a private sector in the centrally planned economy) or to fiscal needs resulting from an overextended budgetary sector. The latter situation exists in some less developed countries because of an oversized public bureaucracy and/or excessive (and often badly targeted) social spending. State-enforced redistribution may have similar effects to that of kin-based redistribution in traditional communities. The economics of such situations is not complicated: Predatory taxation must reduce private investment.[28] More interesting is the political economy question of why such socially dysfunctional systems come into being and persist. Generally speaking, they usually owe their origin to politico-ideological breakthroughs and, once created, reproduce their own clientele that supports their continued existence and resists reforms.

In discussing predatory taxation I had in mind official taxes. However, the private returns to investment are reduced by all forced payments imposed on an entrepreneur, both regular and corruption taxes. There are many countries where the former are low and the latter high, resulting in large forced payments and low investment.[29] This was also the case in Imperial China, where confiscatory corruption payments especially affected innovation.

From the analytical point of view, persistent and widespread corruption is not just an aberrant behavior of public officials but something with institutional roots. Entrepreneurs pay both official and corruption taxes because officials use a credible threat of exercising state power to enforce payments: In the case of official taxes, that power is ultimately the penal

27. The communal nature of property rights is not the only reason for the low level of economic development of traditional, kin-based communities. Some of them have more individualistic property rights, but the scope of private transactions is limited by enforcement that does not extend beyond members of the group (see, e.g., Greif 2006).

28. Excessive budgetary spending often reduces investment and growth through an additional channel: chronic fiscal deficits, which absorb private savings, produce macroeconomic instability and related uncertainty that affects private investment, and lead to crises (for more information, see Rzońca 2007).

29. This explains why the correlation between only the official tax burden and investment and growth is weak. A different picture emerges if one links the total taxes a firm must pay and these variables. On the links between corruption and private investment see Frye (2001).

code; in the case of corruption taxes, it is the instrument of pressure. In this sense, corruption payments (as distinct from purely private predation) owe their existence to the state or, to be more precise, to its regulations, which seriously damage private returns from economic activity. And these regulations must be eliminated so that the very basis of corruption—the credible threat of using state power—is eliminated.[30]

Systemic corruption may be categorized either as an improper de facto structure of property rights due to excessive regulations or as poor protection of official property rights, described by their legal definitions. In either case its impact is clear: Larger corruption, ceteris paribus, reduces private investment compared with smaller corruption.

Impacts of Improper Structure of Property Rights

The impact of the insecurity of private property rights on private investment becomes clear when the rights are properly structured but investors are subject to predation, not from public officials but from nonofficial agents. This is the case in weak or failed states that do not perform well, or at all, the constitutive function of a state: the protection of individuals and of their property, including the enforcement of contracts.[31] The huge uncertainty these situations generate, if effective private protection does not exist, must limit investment to a very low level. Their impact is thus similar to an egalitarian redistribution in kin-based communities and to confiscatory taxation in some efficient but predatory states.

It is clear that some institutional systems may combine features of the models I have sketched. For example, officials' predation may go hand in hand with weak defense of property rights against nonofficial predation. High regular taxes, if spent on bloated bureaucracy or on oversized social transfers, can be combined with a low level of law and order. Therefore, these "mixed" systems are also bound to produce low expected returns from private investment.

Systems that reduce the rate of investment may be especially detrimental to investments in new and superior technology. For such investment is likely to be more visible—because of its larger scale or its novelty—than

30. Two additional comments are in order. First, not all regulations that produce compliance costs can and should be eliminated. For example, sanitary and safety regulations are usually justified and need not produce corruption. Second, corruption is not related only to official regulations but may also be present in public procurement or in the legislative process. The main remedies for these kinds of corruption are transparency and a strong and impartial judicial apparatus.

31. I leave aside here a fundamental question about the extent to which private protection (either contractual or self-help) can substitute for state protection. This issue deals—in its philosophical dimension—with the rationale for the very existence of the state. For an in-depth discussion, see Nozick (1974) and Greif (2006).

noninnovative investments and therefore provoke more predation, either from the officials or from private agents, in systems where private property rights are badly protected (Gonzales 2005).[32]

Finally, I note that investment in some countries may be limited by low domestic savings rather than low returns of investment. Such countries display high returns to investment but a low investment ratio; a prominent example is Brazil (Hausman, Rodrik, and Velasco 2005). Domestic savings may act as a constraint on investment because of imperfect international mobility of savings, denoted as home bias. In addition, countries with a history of macroeconomic crises[33] may have particular difficulty in attracting foreign savings. The question arises as to what factors are likely to limit domestic savings in the presence of high returns to private investment. The most likely candidate is an overextended welfare state, which reduces precautionary private savings. Fiscal stance may thus limit investment in several ways: by producing high taxation that reduces the return to investment, by bringing about chronic budget deficits, and by lowering domestic savings.

Impacts of Improper Protection of Property Rights

I now turn to the second group of institutional systems that block innovation-based growth: those that constitute a barrier to innovation without necessarily affecting the rate of investment. What these systems have in common are serious deficiencies in the content of property rights, not in their security.

One such system is analyzed by Stephen Parente and Edward Prescott (1999, 2002), who single out widespread and persistent working practices that perpetuate the use of inefficient technologies by preventing the shifting of labor, both within and across firms, to new technologies. They illustrate this model by pointing to the example of India under British rule: The country was incapable of introducing the superior British technologies in the textile industry even though it was open to British capital (and British technology had been successfully adopted in Japan). Parente and Prescott stressed that for working practices to be an effective barrier to innovation,[34] they have to be protected by the state.

32. This is why high official taxes without predation may be less detrimental to innovation-based growth than low taxes and insecure property rights.

33. These crises may be linked to the weakness of stabilizing institutions, which I discuss below.

34. In terms of individual choice, this barrier may be interpreted as factors that either eliminate superior technology from entrepreneurs' feasible sets or burden its introduction with such effort that its utility is less than the continued use of inefficient technology.

This category must include the institutional blockade of domestic and foreign competition by giving the monopoly position to crippled domestic firms (crippling institutions include not only restrictive working practices but also state ownership). Otherwise, domestic or foreign entry would undermine the profitability of the enterprise subjected to restrictive, anti-innovative working practices and thus crowd them out. This point may be generalized: Any institutional arrangement that blocks the efficiency potential of domestic firms requires—as a functional necessity—their protection from competition[35] (or permanent subsidies to them).

The situation discussed by Parente and Prescott includes restrictive working practices and, as their necessary complement, the monopoly rights granted by the state to the domestic firms crippled by these practices. The authors stress in their conclusion (1999, 1231) that "Until now, support for the view that monopoly rights can lead to large inefficiencies and impede economic progress has been empirical in nature. Theory provided no economic mechanism by which monopoly could have large effects. In this paper, we provide a mechanism for monopoly rights to have large effects upon aggregate output." However, Parente and Prescott deal with a special case when monopoly rights affect economic efficiency through restrictive working practices as their necessary complement. What about monopoly rights of the terms without the restrictive working practices? What are the incentive mechanisms by which the monopolistic position of domestic firms affects innovation? I agree with Parente and Prescott that the theoretical literature on this important topic is surprisingly scarce, and the bulk of it deals with the static deficiencies of monopolies.

Impacts of Monopolies: The Private Monopoly System

I distinguish here two types of institutional systems with monopolistic suppliers in the product markers and point out the mechanisms by which these systems discriminate against innovation.

I call the first model the *private monopoly system*. Under this system producers have private property rights but do not face competition. Competition is another concept that, despite extensive literature, needs some clarification. What I have in mind here is competition as an incentive-reallocation mechanism. The two functions are organically linked: Competition can act as an incentive mechanism with respect to suppliers only if they can attract the resources to realize their plans. Such a competition requires three concurrent conditions (Balcerowicz 1995):

35. But the reverse is not true, as protectionism is due not only to functional necessities but also to ideological considerations (economic nationalism, the misuse of infant industry argument) or to rent seeking.

- Demand must be able to shift among alternative products.
- Suppliers must include those who are capable of and willing to undertake actions that result in outcomes that attract demand and thus produce a competitive threat to other suppliers.
- Shifts in demand must have serious incentive consequences for the suppliers affected by them.

If even one of these three conditions is not met, competition as an incentive-reallocation mechanism cannot operate. And in a number of institutional systems—all varieties of the private monopoly model—at least one of these conditions is not fulfilled.

Buyers do not have a choice among products if there is only one product because of blocked entry and a small economy, as is the case with an externally isolated economy or with royal monopolies granted in past centuries to selected individuals. However, there may be many supplies but still no choice—and no competition—if all are subject to restrictive price and quality regulations and thus prevented from producing new outcomes that might pose a competitive threat to other products. This was true of medieval guilds and nowadays is approximated by heavily regulated service industries in some countries (e.g., until recently in Japan; see Lewis 2004). Finally, competition as an incentive-reallocation mechanism is excluded if initially successful firms cannot expand because of the rigid nature of the input markets or if the decision makers in those firms cannot reap the benefits of their market success because of steeply progressive taxation or wage regulation. Competition will also be excluded if failure in the market does not have serious consequences for the firm and its decision makers—that is, if they do not face bankruptcy or some other soft budget constraint.

Different mechanisms are behind different cases. Efficiently enforced restrictive price and quality regulations have incentive effects equivalent to the restrictive working practices analyzed by Parente and Prescott (1999, 2002). They burden innovative proposals with such a threat of penalties in terms of *EM* and additional *E* that the expected utility of their implementation falls below that of simply continuing the routine activity.[36]

But I focus here on an analytically more interesting case: that of long-term monopolies that are free to innovate (i.e., they are not subject to innovation-restricting regulations).[37] A review of a whole system

36. The declining effectiveness of the enforcement of these regulations could change the incentive calculus, as happened with medieval guilds. This shows, again, that the efficiency effects of changes in levels of enforcement depends on what is enforced.

37. However, the state's granting of monopoly power often goes hand in hand with constraining regulations (e.g., price or rate of return) justified by the attempt to curb this monopoly power. Thus there is a double link between restrictive regulations and monopoly: on the one hand such regulations require that the affected firms be protected from competition, and on the other hand established monopolies are often regulated.

dominated by such monopolies shows that it excludes one important innovation-incentive channel: The chances to discover new technologies are directly related to the number of people or departments engaged in the search for and testing of new possibilities (Gomulka 1990). And radical innovations are often introduced by new entrants. On these two accounts the private monopoly system has to be inferior in genuine innovation than a system with free entry and competition.

But what about the monopolies themselves? Why shouldn't they innovate? After all, some analysts follow Joseph Schumpeter (1962 [1942]) in suggesting that a certain degree of monopoly power (but not a lasting monopoly) is conducive to innovation. Here we come, I think, to the theoretically least explored link between monopoly and innovation. Empirically we know that private enterprises under competition are much more innovative than those that enjoy lasting monopoly. But why?

One theoretical possibility is to postulate that monopolies have an aspiration level of *EM* that can be easily achieved without innovation and without the related effort and technical risks. This explanation in the spirit of Herbert Simon (1979) may be applicable to some real-life situations.

However, one can suggest other mechanisms that produce an incentive barrier to innovation without invoking the satisfying model of choice. A lasting monopoly is institutionally based and the political powers that grant this privilege are likely to impose some requirements on the monopolists. In other words, to explain its behavior one must remember that a lasting monopoly is a political fact that can have certain political consequences. One likely consequence is the responsibility of a monopolist for an uninterrupted supply of goods: It has a monopolistic privilege to supply, for by granting a monopoly, the ruler took the responsibility of ensuring a supply for the domestic population. Now, innovations—as distinct from continued technological status quo—may end in technical failure, especially the more radical they are. Therefore, the responsibility for supply system may burden the potential pecuniary rewards of more radical innovations with such a risk that their expected utility in terms of *EM* would fall below status quo to "easier" and thus probably less productive innovations.

Finally, even if the political responsibility for supply is not a factor, still another mechanism may expose innovations under the monopoly system to an incentive barrier. Remember that innovations require an extra effort compared to continued routine activity, and this effort is likely to grow with the degree of technical novelty and social usefulness of the innovative proposals.

The expected utility of alternative actions depends not only on *EM* but also on other motivators, including *E*. Focusing on only these two variables yields the following utility function:

$$U = U(EM) - U(E) \tag{7.2}$$

Let us now denote the *relative* utility of innovation as $U_i - U_c$, where U_i stands for the utility of innovating and U_c for that of continuing the routine activity. By virtue of (6.1):

$$\begin{aligned} U_i - U_c &= [\, U_i\,(EM) - U_i\,(E)\,] - [\, U_c\,(EM) - U_c\,(E)\,] \\ &= [\, U_i\,(EM) - U_c\,(EM)\,] - [\, U_i\,(E) - U_c\,(E)\,] \end{aligned} \tag{7.3}$$

The component $U_i\,(E) - U_c\,(E)$ denotes the extra effort required by innovation compared to that of status quo. I assume that it is the same for the same innovative proposals under both monopoly and competition. Therefore, monopoly does not discriminate against innovation through this component of utility. The difference lies entirely in $U_i\,(EM) - U_c\,(EM)$. Under competition, the more time passes from the moment of the introduction of an innovation, the riskier it is to delay the introduction of the next one. Therefore, $U_i\,(EM) - U_c\,(EM)$ is growing and thus at some point is likely to compensate for the entire effort required by innovation. Under monopoly, the continued status quo is not risky in terms of *EM*, and hence $U_i\,(EM) - U_c\,(EM)$ is much less likely to be so large as to compensate for the extra effort. This is especially true for genuine innovations, for which this variable is bound to be especially large.

All in all, given the various possible channels, private monopoly systems suffer from the incentive barrier with respect to genuine innovation and therefore hamper innovation-based growth.

Impacts of Monopolies: The Command Economy

Let us now turn to the *command economy*, which differs from the private monopoly system in two basic respects: (1) monopolistic enterprises are state-owned, not private; and (2) command mechanism (central planning) replaces market coordination. What could be the impact of these two differences on the relative innovativeness of the command economy? A glimpse at the history of economic thought provides a puzzling observation: While no prominent economist has regarded the private monopoly system as conducive to innovation and economic growth, quite a few highly regarded thinkers did not doubt the innovative potential of a centrally planned economy. As they did not praise long-term monopolies (either state-owned or private) as vehicles for innovation, their optimism about the innovative performance of a command economy must have stemmed from the belief that market competition is not necessary for innovation-based growth because it can be effectively replaced by central planning. And indeed, this was the view expressed by Schumpeter (1962 [1942]), who maintained that under socialism innovations could be spread just by instructions issued by the authorities to the managers of state companies.

Early critics of socialism (e.g., Brutzkus, von Mises, and Hayek) did not have such illusions and warned that the centrally planned economy would be plagued by bureaucratization and insufficient risk taking. And experience has indeed shown that, instead of being an effective substitute for market competition, the command mechanism is a source of additional problems that are likely to make the centrally planned economy even more hostile to innovation than the private monopoly system (Balcerowicz 1995). There are two reasons for this outcome: First, the additional effort that such innovations require of managers is likely to be larger under the planned regime because they produce chronic shortages; second, central planning induces managers to seek "easy" plans, thus avoiding efficiency-increasing innovations. And given information asymmetry to the disadvantage of central planners, they are not in a position to overcome the incentive barrier felt by the subordinate managers and to launch rational central investment. Indeed, central investment drives may lead to extreme misallocation of resources and to macroeconomic crises. Contrary to naïve beliefs, central planners are neither omniscient nor benevolent. Besides, once completed, newly built factories operate under the regime that discriminates against genuine innovation at the enterprise level.

Incentive Barriers

I have focused so far on institutional systems that block innovation-based growth either because they limit investment (including that required by innovation) or because they produce such an incentive structure that the utility of genuine innovation, defined in terms of *EM* and *E*, is lower than that of continued routine activity. These systems seem to cover the bulk of growth-retarding institutional frameworks not only in the contemporary world but also in many similar situations in the past.

However, to complete the picture I mention two additional reasons for the existence of incentive barriers with respect to innovation:

- Alternative options to such innovations may include not only routine economic activity but also conquest, lucrative public service, or exploitation of subjected territories.
- Social norms may discriminate against economic activity in general (except for being a land holder) or against innovation in particular.

These two reasons may be present separately or jointly, strengthening each other.

Baumol (2002) suggests with reference to historical literature that the elites in Imperial Rome were not interested in economic activity (except for land holding) because more lucrative options (in terms of *EM*) were open to them: conquest and administration of conquered territories. In

addition, he claims that social norms discriminated against nonagricultural economic activity. As a result, innovations were not pursued by members of the ruling elites. This leaves open the question of why other people did not engage in innovative entrepreneurial activity in order to get wealthy and, as in Britain since the 19th century, to become members of the growing elite. To prevent this and, thus, innovation-based growth, some barriers to social mobility or to innovations must have been present in Rome.

In Imperial China, innovations were subject to the incentive barrier because a more lucrative option existed for ambitious individuals: that of becoming an imperial official—a mandarin—by passing an examination. A mandarin could prey on successful innovators, thus contributing to their inferior relative utility (Baumol 2002).

In some systems, social norms penalized innovation by emphasizing the value of order and status quo and even regarding changes brought about by innovative competition as immoral. The idea of progress was alien to many cultures. How such social norms originated and how they changed (if they did) is a fascinating question that I cannot explore here.

A Look at History: Growth Accelerations and Slowdowns

The enduring lack of difference or change in living standards across countries and time can likely be explained by institutional factors: All societies until about 1800 had some variety of innovation-blocking system or a succession of such systems (the latter may be called unproductive transitions). The common features of these systems were (1) improper structure of property rights (i.e., those that excessively taxed individual rewards, heavily restrained freedom of private action, and/or created producers' monopolies) or (2) acute insecurity of properly structured property rights. There may have been an additional role for the availability of lucrative noneconomic options and social norms that penalized economic activity in general or innovation in particular. The command economy, which belongs to the first category, constituted the modern version of the innovation-blocking system, although in its essence it was not very different from much older systems that abolished private ownership and/or competition.

As long as societies lived under innovation-blocking systems, modern (i.e., persistent and fast) growth could not start. Such growth began in the late 18th century when Britain, its ethnic offshoots, and then other European nations broke out of the circle of such systems. Why such systems prevailed until that time and why Britain and, more generally, the West managed to escape their "gravitational force" are among the most important and debated questions of history, political science, and institutional economics (e.g., North 1990, Rosenberg and Birdzell 1986, Kuznetz 1971, Jones 1981), but it is beyond the scope of this chapter.

With the start of modern economic growth, the new era of divergence and convergence (i.e., the cross-country differences in the rate of long-term economic growth) has begun. Also, economies have displayed different growth trajectories during the last 200 years (Maddison 1991), differing in the length and time distribution of periods of stagnation, growth slowdown, and growth acceleration.

Obviously, growth accelerations in less advanced countries tend to overlap with their convergence periods vis-à-vis the world leader in per capita income, while periods of stagnation and serious growth slowdown in such economies overlap with divergence episodes or at least with periods when convergence does not take place. However, the world leader in per capita income accelerates its growth per capita, as the United States did in the 1990s; other countries would then diverge even if their rate of growth did not decline (e.g., larger Western European economies relative to the United States in the 1990s). Analysis of the distribution of countries' growth rates over the past few decades reveals that long-run growth may accelerate at various initial levels of income per capita (e.g., in the poor South Korea, Taiwan, and other future Asian Tigers in the 1960s, and in much richer Ireland in the early 1990s). The same goes for growth slowdowns—they occurred in most African countries since the 1970s, in the communist economies including China after their initial growth phase, in advanced countries such as Britain in the 1960s and 1970s, and in Germany in the 1970s and 1980s. The long-term growth trajectories of these economies display enormous variation: For example, China until the late 1970s suffered during the previous centuries from very slow growth and divergence, only to become a Tiger since early 1980. Smaller Asian Tigers also had long periods of relative decline until they surged beginning in the early 1960s. Central European economies were diverging after World War II, only to start catching up in the 1990s. Britain, once the world's economic leader in the standard of living, was overtaken first by the United States and then diverged relative to most other Western European economies after World War II before accelerating since the 1980s. Sweden displayed an impressive convergence for almost 100 years starting in the second half of the 19th century, slowed down and diverged in the 1970s and 1980s, and then has been accelerating since the early 1990s (Balcerowicz and Fisher 2006).

The theory of economic growth should be able to explain cross-country and cross-time episodes of stagnation (slowdown, or divergence) and of growth acceleration (convergence). However, it is clear that the formal growth models, with their emphasis on proximate growth determinants (productivity, employment, acceleration), are incapable of coping with this job,[38] for these factors themselves are in serious need of further ex-

38. For example, Temple (1999, 141) in his overview of the growth models says "few of the variables considered here would offer much insight into the experience of China or the former command economies, for example."

planation. And changes in institutional surfaces, as is increasingly recognized in the economic literature, must be linked either to these proximate causes of growth or directly to the rate of growth.

In the preceding sections of this chapter I focused on institutional systems that block innovation-based (i.e., modern) growth. Their universal existence until the 19th century would explain, as I noted earlier, why growth during that period was slow and differed little across time and space. However, their explanatory role does not disappear with the onset of modern economic growth: They are the main explanation of all recent periods of stagnation (growth slowdowns, or divergence) whenever it occurred during this epoch.[39] And they produced such effects wherever introduced. So they have the power to block longer-term growth.

Growth slowdowns can result not only from innovation-blocking systems but also from a transition to any variant of such a system, even if not introduced in its full-fledged form. What I have in mind here is the serious deterioration of the incentive qualities of the property rights through increased forced payments or anticompetitive regulations as well as seriously reduced protection of such rights. The existence and negative growth effects of transitions to a predatory, overregulatory, or failed state have been shown by ample empirical research (e.g., Lewis 2004, Scarpetta et al. 2002). Such negative transitions obviously occur only in countries that previously enjoyed institutional systems with better structure or protection of property rights, especially with respect to the structure of property rights; this was the case for many Western European economies in the 1970s and 1980s.

I now focus on the institutional determinants of episodes of accelerated growth (convergence). They fall into two categories:

- episodes that largely overlap with the whole trajectories of certain countries; and
- episodes that happen during and after a successful transition from an innovation-blocking system, whether in its full-fledged or a muted form.

The first category comprises countries that from the beginning have maintained a relatively unchanged institutional system with a strong and proper structure of private property rights, a large extent of market competition as the incentive-reallocation mechanism, and a reasonable protection of these rights. The constitutional features of this system provide a large scope and strong incentives not only for technological innovation

39. This is not to say that they are the only actual and possible reasons for such negative growth episodes. Protracted wars have similar effects. Powerful economic shocks may also derail the economy. However, many shocks have domestic, institutional roots (as discussed below).

but also for spontaneous, bottom-up institutional change (new types of organizations and contracts) that supplement or enable such innovations.[40] This system—let us call it liberal—is capable of spontaneous evolution thanks to its invariant fundamentals: a large scope of economic liberties and, as a result, a large scope of relatively free and thus flexible markets within the framework of the rule of law. Very few countries can be considered as belonging to this category; in fact, I can name only two: Hong Kong and—with some hesitation—the United States. However, this should not be interpreted as an argument against the liberal system—one should not confuse value with frequency. Rather, why have economic liberties historically been so difficult to achieve? And once achieved, why have they proved so fragile and vulnerable? These questions point to one of the most important issues of institutional dynamics and comparative history.

The growth record of countries that have managed to adhere to the liberal system suggests that it should serve as a guidepost for reforms aimed at producing rapid, innovation-based growth. Indeed, is there a qualitatively different model that, given expedience (and theoretical institutional economics), could play this role equally effectively? Centrally planned economies have failed miserably everywhere, and the illusions they produced have been shattered beyond repair. Corporationism à la Germany, praised by many a while ago, has shown its inherent limitations,[41] and Germany has been liberalizing its economy in recent years. France, another example of a constrained market economy, is trying to do it, too. Japan, which some 20 years ago was expected by some economists to overtake the Unites States in the not-too-distant future, was shown to be a dual economy whose export sector is subject to intense market competition and thus highly competitive, while the service sector displayed low productivity due to anticompetitive regulations (Lewis 2004). Sweden achieved an impressive convergence under a liberal system, then diverged when its welfare state and regulations expanded, only to deregulate and reform its social sector. Various "nonconventional" solutions (e.g., foreign trade regulations in South Korea or two-tier price systems in China), which I discuss below, can be shown to be more complicated functional equivalents of a liberal regime or its very important substitutes or clearly deficient in their economic impact.

40. One of the fundamental questions of institutional economics and political theory is what are the limits to such institutional evolution—i.e., which institutional changes, widely regarded as beneficial (e.g., limiting child labor) could not have been achieved through market competition or civil society and thus required collective action via the political system? For an early and fundamental treatment of the costs of these types of action see Buchanan and Tullock (1962).

41. Edmund S. Phelps, "The Genius of Capitalism," *Wall Street Journal*, October 10, 2006.

The second group of growth (convergence) episodes, by far larger than the first, applies to countries that successfully move away from some version of innovation-blocking institutional system. In the following section I focus on this category and consider the direction, scope, and time structure of such successful reform packages, how they depend on initial conditions, and why growth may accelerate before such reforms are completed.

Successful Reform Packages: Direction, Scope, and Time Structure

What are the characteristics of reform packages that are capable of producing potentially lasting growth acceleration (convergence)? One can group them into three categories: direction, scope, and time structure.[42] For reform packages in this category to be successful, they must (1) have proper direction, scope, and time structure and (2) be sustained. The first three are a function of the economics of reforms, which concerns the links between changing and changed institutional systems, individual behavior, and the resulting outcomes, including long-run growth as a primary objective. The last is a function of the political economy of reforms, which concerns the relationships between sociopolitical factors (e.g., protests, pressures, interest groups) and sustainability (i.e., the anchoring, attenuation, or rejection of reforms).

One can analytically isolate the first category by determining whether reform packages, given initial conditions, can lastingly improve economic performance if sustained. This is a legitimate approach—there is little point in introducing reforms that cannot work; the question of their sustainability is irrelevant. However, reforms that can work, if sustained, differ in their chances of being sustained. These chances may depend on their very scope and time structure. For example, changes that in their initial phase reduce the power of organized groups to resist market reforms would increase their chances of survival and would thus improve the performance of the economy, the sustainability of a changed institutional system, and the prospects of further reforms. Successful reforms that aim for the lasting improvement of economic performance must, therefore, often have a political component—that is, they must change the balance of forces affecting the country's institutional framework. Hence, there is an overlap between economics and political economy of reforms. This overlap exists also because, the better the economic outcomes of reforms, thanks to their proper scope and time structure, the better (on the whole) their chances for survival and extension.

42. I prefer the expression "time structure" to "sequencing," as the time distribution of reforms does not need to be sequential.

However, the sustainability of reforms is not simply a function of how they are structured—political economy of reforms cannot be wholly reduced to their economics; economic outcomes that influence the sustainability of reforms depend not only on their scope and structure but also on the economic conditions in which they are introduced. As a result, two reform packages can have different outcomes and chances of survival under different sets of economic conditions (reforms in China that started in that late 1970s and those in Russia in the early 1990s are good cases in point). Besides, sociopolitical developments have their own dynamics, independent of economic outcomes, and this dynamic differs across countries and across time. Thus, depending on a country's history and geopolitical situation, there are different possibilities to link reforms to other developments, positively or negatively valued by the people. For example, market reforms could have been positively linked in the Central and Eastern European countries to future entry into the European Union, while in Russia not only could such a linkage not exist but also market reforms were probably negatively linked to the perceived loss of the Soviet empire.

Political developments influencing reforms also depend on personalities, on both the reform and antireform side, and they are not likely to be identical across countries and time. Finally, different natural endowments produce different pressures for reform; politicians in resource-rich countries face weaker incentives to improve their countries' institutional framework than policymakers in resource-poor economies.

My focus in this section is on the economics of reforms—what direction, content, and time structure of reform packages are likely to produce potentially lasting growth acceleration (convergence) if sustained. However, I also mention some political economy problems, as they overlap with the economics of reform.

Direction of Reforms

Let us start with the *direction* of reforms, assuming situations in which some variant of growth-retarding institutional system exists at the beginning. Successful reforms must then take a direction toward a liberal system. Depending on the specifics of the inherited institutional framework, reform will mean either changing property rights (i.e., by removing the ban on private entrepreneurship, privatization, deregulation, reduced taxation, and fiscal reforms) or increasing the protection of these rights, if they are properly structured. As an empirical observation, I can't find a single example of successful reforms with a different direction. And I believe that institutional economics can explain why: They would further weaken the incentives to invent, to innovate, to save, or to work.

However, some authors[43] praise what they call "nonconventional" solutions as alternatives to liberal or classical prescriptions. They stress, for example, that trade openness is possible not only through lower tariffs but also through duty drawbacks, export subsidies, special economic zones, export processing zones, and so on. They praise Chinese townships and village enterprises as efficient substitutes for open firms' privatization (Rodrik 2006). They stress the benefits of the dual-track system in the Chinese transition toward the market economy as an example of successful "gradualism." They claim that different institutional arrangements can produce similar results. These claims raise two questions:

- How different are such arrangements from "classical" solutions?
- Can really different institutional arrangements produce similar results?

If very different institutional arrangements could, under the same conditions, produce the same individual behavior, and thus the same outcomes, then institutions would not matter. However, experience contradicts such institutional nihilism.[44] What these authors seem to have in mind, without clearly articulating it, is that some differences in institutions do not matter, as some institutions that differ in *nominal* (or legal) terms are *functionally equivalent*, that is, they have similar structure of incentives and thus produce similar behavior and outcomes under the same conditions.[45] Such a logical possibility cannot be denied. However, the true challenge is empirical—can the authors show that this is really the case? They usually just take it for granted, as is the case with Rodrik's various modes of trade opening. It is obvious that such different modes exist. But are they really functionally equivalent? They differ in at least one respect: The "nonconventional" modes of trade opening are more complicated than the simple across-the-board trade liberalization and thus more costly in terms of transaction costs and more prone to corruption. However, if they were truly functionally equivalent to the classical liberalization, why do the proponents of nonconventional solutions criticize classical liberalization?

One can have serious doubts whether the discussed "nonconventional" solutions are really functionally equivalent to outright liberal reforms. For example, township and village enterprises, praised by Rodrik (2006, 479) for their ability to "elicit inordinate amounts of private investment," pro-

43. Rodrik (2006) is a prominent representative of this category.

44. Some of these authors seem to believe in the superiority of "Third Way" solutions, so they are not institutional nihilists but ideological socialists. I leave them aside.

45. I note in passing that an important task for institutional economics is to analyze the relationship between the nominal and functional differences in institutional arrangements, including the fact that nominally different institutions produce similar behavior and outcomes under similar conditions.

duced a lot of corruption and abuse of peasant rights (Woo 2006). And the delayed privatization of state-owned enterprises in China created huge incentives and possibilities for asset stripping and outright embezzlement by managers. A dual-track price system, praised as a gradualist transition mode toward market pricing that would avoid social tensions, in fact generated such widespread corruption—and social tensions—that it had to be scrapped and replaced by "big bang" price liberalization in 1990–91 (Woo 2006).

It appears that those who praise nonconventional solutions for their (allegedly) good outcomes not only disregard some of their true effects but also attribute to them results that are in fact due to the special conditions under which they operate. For example, fast economic growth in China in the 1980s was largely due to its initial economic structure—a large share of easily privatizable agriculture; the initial structure in Russia in the early 1990s was very different and precluded such growth (Balcerowicz 1995, Woo 2006, Åslund 2007).

Therefore, in comparing the effects of various reform packages, one should control for differences in other factors. This elementary requirement, often violated in the discussion of reforms, goes beyond the debates on reforms after the collapse of communism. For example, the Danish "flexicurity" system is often presented as an alternative to the Anglo-Saxon flexible labor market; both, it is claimed, produce low unemployment and high employment rates. However, the differences in the growth of labor supply are overlooked here: It is stagnant in Denmark and growing in the United States. Therefore, Danish-type systems were most likely much more costly and less effective in terms of employment than the present flexible labor market arrangements in the United States.

Scope of Reforms

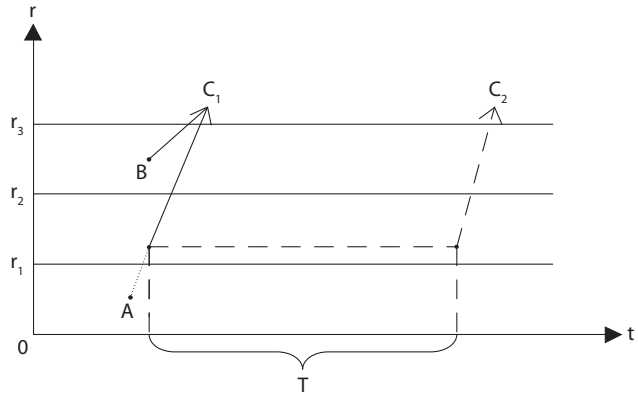
I now turn to the *scope* of growth-accelerating reforms. By scope I mean the number and extent of specific reforms during a given period.

The size of the reform package capable of producing accelerated growth clearly depends on the initial conditions, including the type of inherited institutional system. In exploring the links between the initial conditions, the scope of the reform package, and growth, I introduce two concepts: growth barriers and special growth mechanisms. The first variable indicates the necessary scope of a reform package that can produce potentially lasting growth acceleration. The second variable explains why growth may accelerate before the reform package is completed.

The idea of growth barriers is very old;[46] I use it with respect to the institutional system. Let us assume a list of institutional variables $I_1, I_2, \ldots I_n$,

46. For a recent application, see Hausman, Rodrik, and Velasco (2005).

Figure 7.1 Growth paths under restrictive barriers



which correspond to various dimensions of countries' institutional systems. Each variable is a set of alternative states. For example, a variable for the structure of property rights would consist of communal, state, and private property rights regimes. Another variable, the protection of property rights, denotes various levels of this protection. Each institutional system is a combination of interconnected states of different institutional variables that can coexist—that is, they constitute a system even if, taken together, they perform badly.[47] For example, a command mechanism cannot coexist with free entry; it requires a rigid multilevel organizational structure of the economy (Balcerowicz 1995).

Simple observation and empirical research indicate that institutional variables do not positively influence long-run growth: At least some of them limit growth to very low levels, regardless of the shape of other institutional variables. I call these institutional growth barriers.[48] A growth barrier, by definition, causes slow or no growth and, as described above, can be part of an institutional system.

The levels of slow growth resulting from the barriers B_1, $B_2 \ldots B_n$ may differ or be the same. The first scenario is depicted in figure 7.1. In this diagram, r denotes the average long-run growth achievable under successively more restrictive barriers B_1, B_2, B_3. Points A and B symbolize different initial positions and correspondingly different scopes of reform necessary to achieve r exceeding r_3. Starting from point A, one can achieve

47. Capacity to coexist (i.e., to last as a system) should be distinguished from performance; a badly performing combination of institutional variables can form a system (i.e., it can last).

48. Not all growth barriers are institutional in nature. For example, a chronic fiscal deficit is not directly an institutional barrier but depends on institutional factors, i.e., the lack of proper constraints on policymakers. In contrast, a bad location is a noninstitutional barrier to growth that does not depend on institutions.

growth faster ($A \rightarrow C_1$) or slower ($A \rightarrow C_2$). With the slower path, one incurs the costs of slow growth during period T. Therefore, the assumption of the existence of multiple growth barriers in an initial institutional system argues for a large package of reforms during a short time rather than for a gradualist approach. This abstracts, of course, from political economy considerations and logistical questions. The "antigradualist" conclusion does not change if we assume the existence of multiple growth barriers, each of which limits long-run growth to the same low level.

Successful reform packages may be defined as those that remove all growth barriers in the inherited institutional system; unsuccessful ones leave some of these barriers intact and so growth remains low despite some reforms.[49] The latter situation often leads to confusion in which the reforms—and not their incomplete nature—are blamed for the lack of success. Empirically oriented institutional economics should identify first the institutional variables that are barriers to growth and then the guidelines for successful reforms.

The task of describing successful reform packages includes more than identifying and removing institutional barriers to growth. Another important question is how much lasting increase in r can one achieve by larger and larger improvements in the institutional variables that make up a country's institutional system once all of these variables take the "proper" form (i.e., they are not growth barriers). In other words, which reforms are most productive in terms of r, given the initial conditions? A related issue is whether subsequent improvements to the institutional system display declining marginal productivity in terms of r. If this is the case, as appears likely, then reforms should focus on those aspects that constitute the weakest spots, as the marginal improvement in r would be the largest.

One should remember, however, that there are strong complementarities among reforms. Take, for example, competition as an incentive-reallocation mechanism, which is indispensable for innovation-based growth. It can operate only if three conditions are met at the same time: Demand must be able to move freely among the alternative bids, supplies must include those that create a competitive threat by attracting demand, and success or failure in the market must have serious incentive effects for the suppliers. If the initial situation is that of a command economy, then the lasting introduction of strong competition requires a massive liberalization (dismantling the central planning, entry, price, and foreign trade liberalization) and massive institution building (e.g., bankruptcy procedures, SOE privatization). Under such situations one should analyze the productivity of packages of strictly related (complementary) reforms and not just of single components.

49. Successful reform packages also remove all crucial vulnerabilities (i.e., sources of macroeconomic crises); unsuccessful reforms leave at least some of them intact (more on this below).

Of special interest are reform packages that bring an economy from very slow to very fast long-run growth. One speaks then of growth miracles. It is clear that the initial conditions in such cases must include at least one growth barrier, but what factors explain a jump in r from a very low to very high level? This is one of the most important questions of development theory and needs more research. What I can do here is to suggest that radical growth acceleration in a developing country requires a reform package that, given the initial conditions, very sharply and lastingly increases the pace of productive technology transfer from abroad. Depending on these conditions and the related growth barriers, the package would include radical external opening, extensive domestic deregulation, fiscal reforms that visibly raise the saving and, in effect, investment rates, and a radical increase in protection of private property rights.

And what initial conditions, given the proper reform package, are most likely to give rise to growth miracles? There are different views on this issue in economic literature. Some authors point to the poorest countries because, they claim, they have the largest stock of foreign technology to adopt, and they can start with the technology that produces the largest increase in r (Barro and Sala-i-Martin 1997). Other researchers suggest that it is the middle-income countries that are most likely, with proper reforms, to become growth miracles as, with more human capital, they are better equipped to adopt foreign technology (Gomulka 1990). The Irish example since early 1990 suggests that even richer countries may become economic tigers. To get richer a country has to grow reasonably fast for an extended period and be free of growth barriers. Then one of the growth determinants has to worsen to such an extent that it becomes a barrier and slows growth to a very low level, despite other proper determinants. Under such conditions, a limited reform that transforms the critical factor from a barrier to a growth-conducive form releases the full force of all the growth forces, and thus a relatively rich country may become, for a while, a growth miracle.[50] This illustrates again the main point that the scope of successful reforms depends on the initial conditions or, to be more precise, on their weaknesses. There is no point in curing a disease a patient does not suffer from.

If the initial conditions include many barriers to growth, a reform package capable of producing a lasting acceleration of growth must be huge indeed. However, there have been many cases where growth accelerated before the reform package was fully implemented, under evolving but still very imperfect institutional systems,[51] when presumably there remained

50. It appears that the blocking factor in Ireland until the late 1980s was desolate public finance; other factors had the proper shape—private and well-protected property rights, open economy, reasonable education.

51. This has led some authors (e.g., Eckhaus 2004) to question the importance of institutions for growth. Their point is that because growth can accelerate under imperfect institutions, institutions do not matter.

some growth barriers. How can one explain this apparent contradiction? My explanation is that to achieve a lasting acceleration of growth from a position of many barriers to growth, a large and properly structured package of reforms is required. However, transitional growth accelerations are possible thanks to smaller doses of reforms or before comprehensive reforms are completed if the initial conditions include what I call special growth mechanisms.

I have discussed innovation-based growth as the only lasting and potentially universal growth mechanism. In contrast, special growth mechanisms are situation-specific and nonlasting, even though some of them may operate for many years. Following are examples of these mechanisms.

The first two are due to the existence of "surplus" human capital, either general (e.g., widespread literacy, knowledge of mathematics, modern sciences) or specific (e.g., individual knowledge of technological blueprints). War in the West lowered the standard of living and at the same time created an imbalance between the human capital, both general and specific, and the stock of physical capital. The "surplus" human capital could have produced accelerated economic growth when the machinery of the war economy was abolished and market economy was thus restored.[52] Once this accelerated reconstruction was completed, the special growth mechanism ceased to operate.

The Communist education system was better than its economic systems; a relatively large stock of general human capital was created but not fully used for innovation-based growth, given the constraints of the command economy. With the removal of these barriers, the dormant part of human capital could serve as a vehicle for accelerated technology transfer. This potential extra-acceleration ends when previously inactive people are fully employed.[53]

The third special growth mechanism relies on the existence of widespread "simple waste," as exists in command economies both in their organizations and in the relations between them. The first type of waste appears as a very low level of X-efficiency (Leibenstein 1957)—for example, low utilization of fixed assets, workers' shirking, neglect of maintenance, and the like. The second type of waste concerns massive and chronic disruptions of interenterprise links that both produce delays and violate requirements of technical complementarity, thus lowering the quality of goods. This unavoidably results from the command mechanism (Balcerowicz 1989), although some Western economists have blamed the market

52. The liberalization of international trade, which reversed the economic isolation of the 1930s, was an additional growth factor.

53. However, freedom of migration may induce the most talented and energetic people to migrate, especially if there are poor prospects for economic improvement because of insufficient reforms. The longer-run growth of domestic human capital depends on the quality of the education sector, which could also depend in part on the extent of migration.

mechanism (Nelson 1981). The first type of waste probably exists in all organizations not subject to market competition and thus in all systems where such competition is banned, for the strength of incentives within organizations depends on the strength of incentives for the organizations themselves, and there are no good substitutes for market competition.

Communism was characterized by ideological hostility to sectors regarded by Marxism as "unproductive," including services and especially trade. As a result, the service sector was hugely repressed. Removal of this repression was bound to release pent-up demand, thus resulting in exceptionally high returns and growth in the affected sectors until their share achieved more "normal" levels. Such a source of acceleration would not exist in countries that were uniformly "backward."

Another sort of repression consisted in imposing on a given sector an incentive system that broke any link between individual effort and reward. This was the case with Marxist communes in Chinese agriculture, which employed most of the working population and did not rely on a large state machinery (i.e., they were easily "privatizable"). Once communes were disbanded and replaced by the "responsibility system," there was a powerful surge in productivity in agriculture and many farmers were released to seek employment in other sectors (Crafts 1998). This special growth mechanism could not operate with such strength in the former Soviet block because agriculture there accounted for a much lower share of employment and relied much more on large-scale machinery.[54]

A different mechanism of serious agricultural repression operated in many postcolonial African countries. It relied on the state's purchasing monopoly, which imposed unfavorable prices on nominally private farmers. The extracted surplus financed wasteful public involvement (Bauer 1998, Schultz 1980). Lifting this repression also released a special growth mechanism.

This mechanism overlaps to some extent with another: All technologically delayed economies have a high share of sectors with low productivity and a low share of sectors with high productivity. Thus they have a large scope for growth-enhancing structural shifts. This is strictly related to technology transfer, as the growth of more productive sectors is largely based on this factor. Such structural shifts of resources should therefore be regarded as a component of technology transfer and not as a situation-specific special growth mechanism. However, there are some initial situations that "contain" such mechanisms. One of them is related to the existence of a large bureaucracy with very low, possibly negative, productivity: Shifting its members to more productive sectors would raise the aggregate productivity.

54. Also, Chinese agriculture under Mao was heavily taxed, whereas Soviet agriculture was subsidized (Rozelle and Swinnen 2004).

Some economies display a low employment ratio—a large share of the working-age population has zero productivity.[55] Increasing this ratio—moving some people from zero to positive productivity—constitutes another special growth mechanism and another structured shift that raises aggregate productivity. A low employment ratio is caused by different sets of factors than other sources of proefficiency structural shifts and thus requires different treatment: reducing the incentives for not working by reforming social transfer systems.

Countries that have amassed more special growth mechanisms can achieve an accelerated growth for a while but, obviously, pay a heavy price for it, as these mechanisms are the reverse side of the conditions (heavily repressed sectors, massive waste, a large share of unproductive labor) responsible for their delayed growth. Because these mechanisms are inherently related to slow development, they are a force for transitional convergence, even though it is not clear whether a simple, linear relationship exists between income per capita and the strength of the mechanisms.[56]

Special growth mechanisms differ in the type of reforms that are likely to set them in motion. Some may be released through limited reforms that do not strengthen the fundamental growth mechanism, which is based on systematic innovations. Such reforms might entail shifting part of the bureaucracy to more productive occupations or the decollectivization of agriculture, while leaving the bulk of the economy without market competition. Such limited reforms could transitionally raise the rate of growth, but it would then fall to its previous low level (figure 7.2). Therefore, they should be considered failed reforms.

Other special growth mechanisms may be set in motion only by the start of more comprehensive reforms that begin to strengthen innovation-based growth. This would explain why growth can accelerate before these comprehensive reforms are completed. For example, to reduce massive waste within and among enterprises, market competition is required, which, in turn, calls for wider-ranging reforms.

In figure 7.3, r accelerates during $t_0 \_ t_1$ due to a special growth mechanism set in motion by comprehensive reforms that strengthen innovation-based growth. From t_1 onward, only the latter mechanisms remain and r stops growing.

55. Some formally nonemployed people may work in the informal economy while drawing on various social benefits. Thus low employment ratio may overlap with large informal sector.

56. It may well be that these mechanisms are more strongly related to some peculiarities of growth-retarding systems and not so much to their income per capita. For example, centrally planned economies might have accumulated more "surplus" human capital than an emerging market economy without comprehensive central planning but at a similar level of income per capita.

Figure 7.2 Growth resulting from limited reforms

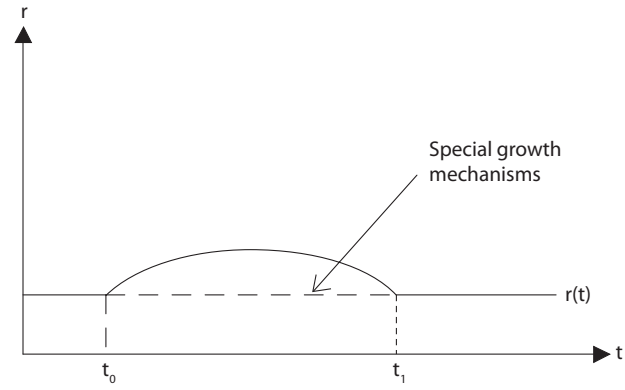
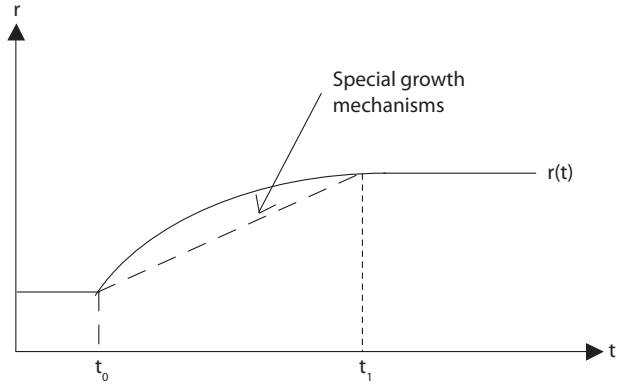


Figure 7.3 Growth resulting from comprehensive reforms



Time Structure of Reforms

Finally, let us turn to the time structure of successful reform packages, that is, the distribution over time of their constituent parts. Two decision variables are crucial here:

- the timing of the start of individual reforms (simultaneous or sequential), and
- the speed of their implementation (the amount of time between their start and the emergence of their effects).

The key point in analyzing and shaping the time structure of reform packages is that individual reforms differ in their maximum possible speed: preparing new legislation, including in support of liberalization,

and stabilizing the economy take less time than building new organizations or restructuring existing ones. Another important point is that, for any given initial conditions, required reforms differ in two crucial respects: in the importance of their direct impact on performance of the economy and in the importance of their results for the success of other reforms. Obviously, reforms that matter very much in at least one of these two respects should be started early and implemented fairly quickly.

For example, it has been suggested that product market reforms (deregulation of entry) should be combined with or precede labor market reforms, as they reduce producers' rents and thus resistance to the deregulation of the labor market (Berger and Danninger 2005). Comprehensive and radical liberalization of conditions for the establishment and functioning of private enterprises in a former socialist economy is crucially important for releasing growth mechanisms, removing widespread shortages, and reducing the scope for future rent seeking. Indeed, half-hearted deregulation threatens to perpetuate an immature market economy, plagued by widespread rent seeking and political connections, and thus displaying limited competition as early winners try to obstruct further reforms in order to preserve their privileges (Åslund 2007, Hellman 1998).

Stressing the importance of radical and comprehensive liberalization of an inherited socialist economy does not necessarily imply that it is optimal to delay other reforms. If the initial conditions include massive macroeconomic imbalances (as was the case in most former centrally planned economies), macroeconomic stabilization should start together with liberalization and be decisively pursued, both because it is dangerous to neglect such imbalances and because there are important links between liberalization and stabilization (Balcerowicz 1995).

But what about organizational restructuring—setting up the independent central bank and financial supervision, privatizing the state-dominated economy, reorganizing the justice system? These reforms are fundamentally important for the longer-term performance of the economy and take more time than liberalization, other legislative changes, and macroeconomic stabilization. These characteristics argue for an early start and rapid implementation of these reforms. In this way I arrive at the general conclusion that for the crumbling and heavily imbalanced command economy, massive parallel reforms, started at about the same time and implemented as quickly as possible, constitute the optimal time structure. Such a strategy releases both special growth mechanisms and innovation-based growth, thus ensuring the largest increase in economic growth relative to other strategies. It is also the strategy that, thanks to the dynamics of its outcomes, reduces the scope of rent seeking, thus facilitating further reforms.[57]

57. There are other arguments in favor of comprehensive and radical reforms of a formerly command economy. The collapse of such a regime creates a brief period of "extraordinary politics" when it is easier than usual to get radical reform accepted. The theory of cognitive dissonance implies that such reforms are likely to be recognized as irreversible (Balcerowicz 1995).

Summary of Successful Versus Unsuccessful Reforms

Let us sum up what distinguishes reform packages that are successful in producing a lasting growth acceleration from the unsuccessful ones. Remember we are speaking about initial situations, which include institutional systems that block rapid growth.

First, unsuccessful reforms perpetuate institutional features that inhibit growth or change one version of a system that blocks innovation-based growth into another (the unproductive transition discussed above).

A successful reform package has to aim at the liberal system. However, it is only a necessary but not sufficient condition, as there are unsuccessful reform packages that have the proper direction. What distinguishes them from the successful ones? The former leave some important growth barriers intact—that is, they are crucially incomplete or hollow, like the reforms under socialism that left in place all the anti-innovation incentive structures (Balcerowicz 1995). Unsuccessful reforms with a proper direction also include packages that remove some if not most inherited growth barriers but introduce new ones. This is the case of badly structured reform packages; a prominent example was the reforms in East Germany, which introduced a very good legal system together with a social policy framework that was destructive for a low-productivity economy. Successful reforms eliminate all the inherited growth barriers and do not introduce the new ones.

Finally, lasting growth accelerations may be undermined not only by remaining growth barriers but also by remaining vulnerabilities, the features of an institutional framework that are likely to produce, sooner or later, a macroeconomic crisis. Successful reform packages remove all such institutional vulnerabilities and do not introduce the new ones. Unsuccessful reform packages leave intact some serious vulnerabilities or introduce the new ones.

Institutions, Macroeconomic Shocks, Long-Run Growth

I have discussed so far what one may call "systemic" forces of growth in various institutional systems. By definition, they operate all the time, although possibly with varying intensity. They determine the power of relative incentives to innovate, save, and invest. The most important institutional variables behind these forces are the structure and level of protection of property rights and related factors: the degree of an economy's openness, the extent of anticompetitive regulations, the fiscal position of the state. Variables responsible for systemic forces of growth may be called *propelling* institutions, and institutional growth barriers may be equated with weak propelling institutions.

However, such institutions are not the only reason for slow growth. A look at growth trajectories of various countries reveals that they differ enormously in their variability (Easterly and Levine 2000). Some countries grow steadily, albeit at different paces, while others are plagued by frequent and serious development breakdowns. This has been especially prevalent among the African countries, where the standard deviation of GDP growth per worker over 1960–2000 was the highest among all regions of the world, and where as a result "growth has been episodic and not restrained" (Fosu 2007).

Sudden slowdowns, even if followed by rapid spurts of growth, may lower an economy's average long-term rate below that achievable under steadier growth. Indeed, a recent study has found that the 18 most successful developing countries in growth "show remarkably narrow fluctuations in their growth rates over time" (World Bank 2005). In another paper Viktoria Hnatkovska and Norman Loayza (2003) investigated 79 countries during 1960–2000 and concluded that "volatility and long-run growth are negatively related" and that "this negative link is exacerbated in countries that are poor, institutionally underdeveloped, undergoing intermediate changes of financial development, or unable to conduct countercyclical fiscal policies." They add that this link does not result from small cyclical deviations but from "large drops below output trend." Therefore, "it's the volatility due to crisis, and not due to normal times, that harms the economy's long-run growth performance."

An important question for further research is why some slowdowns in growth can have such long-lasting consequences. One possibility could be that some disruptions damage the propelling institutions; they would then be "destructive distractions" and not "creative distractions." Another, that there are some limits to the speed of short-term growth, even after a deep decline; therefore time is required to compensate for the slowdown. Finally, opportunities for growth may be time dependent, and a country that suffers a slowdown may lose some of them.

Differences in the frequency and severity of growth breakdowns are partly due to differences in external shocks that hit economies. However, many negative shocks are produced at home. Countries also differ in their ability to cope with external shocks. And the very vulnerability to shocks, due for example to the composition of domestic output, is an important variable that can have domestic institutional roots.

Since Keynes, the economic profession has focused on analyzing the self-equilibrating properties of macroeconomy under just one institutional system, that of free market capitalism. Much effort has been spent both trying to show that this system has serious deficiencies in this respect and refuting this claim. However, a broader issue of instabilities under *different* institutional frameworks has been largely neglected. Meanwhile, there is little doubt that the worst breakdowns in economic growth have occurred under extended and not laissez-faire states, and because of the actions of

the former states. An important question awaiting more research is which features of countries' institutional systems determine their propensity to suffer growth breakdowns. One can call these features the *stabilizing institutions*; they may range from very weak (destabilizing) to very strong. Preventing frequent or deep breakdowns of growth clearly belongs to growth strategy. But this issue is omitted from most growth theories.

As a first approximation one can divide the stabilizing institutions into the proximate and the underlying ones. The former include:

- *Monetary regime and rate of exchange system*: These determine the stability of money and the risks of overvaluation;
- *Fiscal regime*: This imposes constraints (if any) on public spending and public debt, which influence the risks of fiscal crisis;
- *Financial supervision and the extent of allowed market discipline*: These affect financial institutions and the risks of financial crises.

Some variables may be thought of as belonging to both propelling and stabilizing institutions. The ownership of banks matters both for their efficiency and for the risks of a banking crisis, as state-owned banks are much more susceptible to polarization than private ones and are prone to incur more nonperforming loans (see, e.g., World Bank 2001). Institutional constraints on the flexibility of the labor market are relevant both for long-run unemployment and for the economy's response to external shocks. Fiscal institutions shape the fiscal position of the state, and this matters for the systemic forces of growth as well as for the probability of fiscal crises. Monetary and rate of exchange regime determine both the probability of catastrophic inflation and the rate of less spectacular growth of prices, which, however, weakens the systemic forces of growth (Fischer 1991).

The shape and strength of proximate stabilizing institutions depend on a key feature of the political regime: whether it includes limits to political power (and what these constraints are) or power is unlimited. If the latter is the case, the stabilizing institutions must be very weak as, by their very nature, they are supposed to constrain policies (i.e., the actions of political rulers). Policy restraint is then a function of the leader's personal characteristics and not of impersonal institutional limitations. Only if political power is institutionally limited is there room for strong stabilizing institutions. To what extent this room is used to institutionalize constraints on macroeconomic policies (or, in other words, to depoliticize them) depends on factors that are specific to countries with limited government (rule of law).[58]

The political regime influences macroeconomic stability and thus growth through other, more political channels, too (see Acemoglu et al. 2002). Un-

58. For example, an independent central bank was introduced in West Germany in 1950, but in Britain only in the 1980s.

limited political power attracts ambitious but not necessarily highly ethical individuals and so may lead to frequent power struggles and related instability. Conversely, unlimited power can for a long time reside in the hands of one individual, who may launch catastrophic policies; Lenin and Stalin in the former USSR, Mao in China, Kim Il Sun in North Korea, and Mugabe in Zimbabwe are only the most spectacular examples of this danger.

Note that division of political regimes into those with limited and those with unlimited political power is not identical to the distinction between democracies and nondemocracies. Democracies with weak constitutional constraints may also be prone to bad economic policies that provoke growth breakdown. This was the case, for example, during the rule of Alan Garcia in Peru in the 1980s.

Institutional limits on political powers are thus crucial prudential safeguards for any society, both because they reduce the risk of various destabilizing economic follies (of the rulers) and because they enable the creation of specialized stabilizing institutions. Needless to say, such limits are also necessary for the existence of strong propelling institutions.

Concluding Comments

This chapter is based on certain conceptual building blocks that I have found useful for explaining differences in the speed of long-term growth.

First, I have distinguished between innovation-based growth (which includes technology transfer as the main convergence force) and other growth mechanisms. The former is potentially lasting and universal, the latter are situation-specific and transitional in nature.

Second, I have introduced the notion of countries' institutional systems as a complex variable that differs in the type of decision-making positions and in the mechanisms of access to these positions. The first variable dimension produces, given individuals' dispositions, the situational impact of the institutional systems on countries' performance. The second generates what I call their selectional impact. I focus on the first influence as fundamentally important, while noting that more research is needed on the second.

Innovation-based growth may be blocked by either the information or the incentive barrier. The former exists whenever innovative proposals are absent from the feasible sets of appropriate decision makers in a given society. In the modern world this absence is due to institutionally determined isolation. However, the factors that produce such isolation tend to produce an incentive barrier with respect to innovation, too. Also, isolation weakens the incentive to innovate because of the reduced scope of the market and of market competition.

The incentive barrier with respect to innovations exists whenever their expected utility (defined in terms of individuals' general utility function)

or that of the required investment is low relative to alternative actions. Two types of institutional systems block innovation-based growth by producing an incentive barrier. The first group limits investment, including investment that would require new technology. Low investment may be caused by low or highly uncertain individual returns from private investment or from a low savings ratio when access to foreign savings is limited. Behind low returns from private investment are institutional systems (e.g., communal property rights, prohibitive taxation) that equalize returns regardless of individual effort. Behind highly uncertain individual returns from investment are various combinations of official and private predation (predatory or failed states). Returns from private investment may be high but the rate of investment low because of a low savings ratio. The most likely reason for such a situation is an overextended welfare state.

With the second type of institutional system, innovation-based growth may be blocked by an incentive barrier that directly affects innovation without necessarily constraining the rate of investment. Various systems can produce such a situation. They include not only frameworks that combine restrictive working practices and firms' monopoly rights (Parente and Prescott 1999, 2002) but also other types of institutional systems that block competition.

With the start of modern economic growth in Britain, there began a new era of convergence and divergence and of growth accelerations and slowdowns. Episodes of slow growth (divergence) may also be explained by institutional systems that blocked innovation-based growth or by the transition to such systems.

Positive episodes (those of accelerated growth, or convergence) fall into two categories. The first, numerically very small, includes the total growth trajectories of countries that have maintained a relatively unchanged liberal system (i.e., a large scope of economic freedom and reasonably high protection of that freedom). The second, much larger group comprises countries that transformed a growth-retarding system through a successful reform package (i.e., one that produced potentially lasting acceleration of growth).

The scope of successful reform packages depends on the initial conditions, including inherited institutional systems. These systems differ in the number and type of growth barriers—the institutional variables that block lasting growth regardless of the shape of other variables.

The more barriers of this type in the initial institutional systems the larger must be the required reform package. However, the inherited conditions may also contain some situation-specific mechanisms of transitional acceleration of growth, which can be released before comprehensive reforms are completed, or by more limited reforms.

Long-term growth depends not only on the systemic forces but also on the frequency and severity of growth breakdowns. The former forces are linked to what I have called propelling institutions (the structure and pro-

tection of property rights and related variables); the latter are related to stabilizing institutions, which may range from very weak to very strong. At the proximate level they include the monetary and rate of exchange systems, the fiscal constitution, and financial supervision. The strength and shape of these proximate, stabilizing institutions ultimately depend on the nature of a country's political regime, which also influences its vulnerability to economic shocks through more political channels.

Finally, let me point out some issues that merit further research. They include mechanisms of upward social mobility and how they interact with the types of decision-making positions that influence innovation-based growth. More information is needed on what are the main institutional growth barriers; and more generally, how productive—for long-term growth—are various changes in the respective variables, given different initial situations. It would also be worth exploring what mechanisms of transitional growth are present in various initial conditions.

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8

Impact of "Legal School" Versus Recent Colonial Origin on Economic Growth

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Why different economies grow at different rates is one of the most important questions in economics. Robert Barro's (1991) seminal paper on economic growth across the world introduced dummies for sub-Saharan Africa and Latin America and found that their coefficients were negative and significant, but did not explain why this was the case. Many empirical studies show that so-called "total factor productivity" accounts for most observed cross-country variations in income levels, yet—although it may well be more important than the accumulation of capital, population growth, and even educational improvement—productivity is "the unexplained part of economic growth" (Easterly and Levine 2002).

One of the reasons for the presence of this "residual" in cross-country comparisons may be that the neoclassical framework ignores institutions, what Douglass North (1991) called "the humanly devised constraints that structure political, economic, and social interaction." These include both "informal constraints (sanctions, taboos, customs, traditions, and codes of conduct), and formal rules (constitutions, laws, property rights)" (North

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1991). Institutions are usually *stable* over time and have a lasting effect that may explain the long-run persistence of discrepancies in economic performance. Two ways of introducing the impact of institutions into standard models of economic growth are presented in appendix 8A. However, this institutional approach has been challenged by John Luke Gallup, Jeffrey Sachs, and Andrew Mellinger (1999), who report that countries that are landlocked (apart from those in Europe) or situated in tropical areas are generally poor, and by Edward Glaeser and colleagues (2004), who claim that most measures of institutional differences are endogenous to economic growth and/or subjective.[1]

Our first aim is therefore to find "markers" of institutional differences between countries that would be both exogenous to economic growth and objective, to test whether differences in economic performance can be attributed to them. We describe the key elements of our investigative approach in the next section. One largely objective way of classifying countries is according to the "school" to which their legal systems belong, and so we test for the impact of "legal school" on real GDP per capita growth rates.

However, it is unclear ex ante which institutions or "complexes of institutions" are key to economic performance. It may be that institutions at a higher level of aggregation than "legal school" determine economic performance.[2] In order to test the hypothesis that a wider set of institutions than "legal school" alone may determine economic growth, we then examine the impact of countries' having been either British or French colonies in the first half of the 20th century (we call this variable "colonial origin").[3] Finally, we also test our institutional explanations against what Gallup and Sachs (2000) have claimed is the strongest environmental candidate for explaining growth differences, the incidence of malaria. In conclusion we discuss the implications of our findings for institutional, geographic, and policy explanations of economic growth.

Investigative Approach

To be sure that we are not picking up spurious relationships, we consistently control in our regressions for a number of environmental and his-

1. They also claim that it is economic policies rather than political institutions that determine the accumulation of human capital and that the latter is the main determinant of growth.

2. Many studies have already examined the impact of more narrowly (functionally) defined institutions (such as the progressiveness of taxation or the restrictiveness of trade or labor-market rules) on economic performance.

3. Appendix table 8A.3 shows the distribution of country observations across the institutional categories. The results of the regressions show that the effects of the two kinds of institutions can be distinguished in the data.

torical variables that the literature suggests are fundamental. However, we do not control for many of the variables commonly used in cross-country growth regressions, such as the growth rate of physical capital and the level of human capital (or their instruments, such as the investment rate or educational enrollment). Nor do we control for measures of good or bad policy, such as an economy's openness to international trade or the rate of inflation. This is because we are looking for the impact of exogenous geographical and deep institutional variables, and if we find these to have an effect on growth, we would expect variables such as openness and physical or human capital stock to be largely endogenous to the institutional variables, and indeed to provide some of the channels through which institutions affect growth. The only exception we make to this rule is the use of an index of the incidence of war, because of its huge destructiveness and the lack of clarity as to its causes.

Cross-country high population density in coastal areas is positively correlated with higher GDP per capita, while high population densities in interior regions have a negative correlation. The higher development of coastal areas is explained by the significant increase in transport costs for landlocked regions. Gallup, Sachs, and Mellinger (1999) present two constant returns models (one with intermediate products and one without) in which transport costs affect not only levels of GDP per capita but also their growth rates.[4] To control for such effects we introduce the proportion of a country's population living within 100 kilometers of the coast as an explanatory variable.

Jared Diamond (1997) and Paul Bairoch (1992) argue that tropical regions have been unable to adopt modern crop technologies developed in temperate areas. Tropical regions are also severely affected by diseases. To control for these effects we have used the percentage of a country's territory that lies in the tropics.

It has been argued that one of the major causes of tropical underdevelopment is the high incidence of malaria. Sachs (2003) provides indicators for the proportion of a country's population that is exposed to malaria falciparum, the most dangerous form of malaria. Could initial incidence of malaria explain the differences in growth between countries in a subsequent period? Here one must be careful about the question of endogeneity, as richer countries can afford to fight malaria more effectively. We discuss the possible role of malaria in explaining growth differences between various groups of countries.

Our two historical control variables are, first, an index (from Easterly and Levine 1997) indicating whether a country suffered from war (the variable takes a value of 1 for each decade in which war occurred on the territory of the country, with the exception of the 1990s, for which we do not have information); and second, the natural log of real GDP per capita

4. Diminishing returns models of the Solow type cannot generate such an outcome.

in 1960 at purchasing power parities (as a measure of the amount of growth resulting from the convergence of real GDP per capita levels).

In using objective "markers" of current or recent institutional differences between countries we differ from the seminal papers by Daron Acemoglu, Simon Johnson, and James Robinson (2001, 2002) and Acemoglu and Johnson (2003), which use a distant hypothesized cause of institutional differences (settler mortality at the start of European colonization), which is objective, as an instrument for a subjective measure of current institutions (an index of perceived risk of expropriation). We feel justified in our return to a simpler approach by David Albouy's work (2005), which shows that the data used by Acemoglu and colleagues suffers from manifold weaknesses that seriously undermine their results. Moreover, whereas we are concerned with the recent medium term (1960–95), Acemoglu and coauthors attempt to explain very long-term growth measured in centuries, in spite of the fact that modern economic growth began centuries earlier in some of the countries they examine than in others.[5]

Legal School as a Determinant of Economic Performance

Theoretical Background

According to Richard Posner (1973), the economic efficiency of common law is due to the ability of judges to adapt old rules and create new ones suitable for new and difficult-to-predict circumstances. Within these evolving rules, the principle of precedent and the ability of higher courts to make decisions that bind lower ones mean that the common law provides more stability and predictability. Paul Mahoney (2001) points out that "In the common-law system the judge is an independent policy maker occupying a high-status office, whereas in the civil-law system the judge is a (relatively) low-status civil servant without independent authority to create legal rules. This difference . . . fragments power more in a common law system." Such so-called horizontal fragmentation of power has been found to produce less economic redistribution (Persson, Roland, and Tabellini 2000).[6] Rafael La Porta and colleagues (2004) find that, thanks to greater judicial independence, common law countries have more "economic freedom" (i.e., protection of property and contract rights) than others.

Friedrich Hayek (1960) argued that the common law is superior to the civil law in its economic effects, not so much because of substantively dif-

5. Since we look *only* at colonies with little European settlement and high settler mortality, the instruments Acemoglu, Johnson, and Robinson use have little variability and are of little use in our regressions. As a result, we have decided not to use them.

6. "Vertical" fragmentation is fragmentation between different levels in a federal structure.

ferent legal rules but because of their differing assumptions about the rights of the individual and the state, which go back to the philosophical writings of Locke and Hume on the one hand and Rousseau on the other. Mahoney (2001) claims that this philosophical difference has a structural impact: "A central feature of the civil law is a sharp distinction between 'private' law (which governs relations between citizens) and 'public' law (which governs relations between the citizen and the state)." As a result, in the French civil law tradition, ordinary courts are not allowed to review government action, and although specialized "administrative" courts exist, they are under the "direct supervision of the executive (and their) judges are trained at administrative schools alongside future civil servants."[7] Furthermore, although "private" law places a strong emphasis on the protection of property and contracts, "public" law stresses the rights of the state to pursue social or national goals.[8]

La Porta and colleagues (1997) found that "countries with poorer investor protections, measured by both character of legal rules and the quality of law enforcement, have smaller and narrower capital markets." Accordingly, countries belonging to the "French civil law school" (a subset of all civil law countries) have the weakest investor protection and the least developed financial systems. Ownership is more concentrated in such countries because of poor shareholder rights, while corporate valuation is lower. Anglo-Saxon "common law" countries tend to have the opposite characteristics. We therefore call the view that common law leads to better economic performance than French civil law the "Hayek–La Porta hypothesis."[9]

Yet legal scholars have pointed out that civil law courts do in practice often follow precedent and the decisions of higher courts and that in some civil law jurisdictions, high courts give "guidance" on how statutes and codes should be applied. Moreover, common law courts (especially in the United States) often promote wealth-destroying and rent-seeking litigation (Tullock 1997). Thus the difference in the impact of the two legal schools on economic performance may be more apparent than real and certainly requires empirical testing.

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7. In common-law jurisdictions the same courts judge both types of cases.

8. Such deep structural assumptions in the law may be very important given the large numbers of lawyers in the executive and legislative branches in many countries, so that the influence of Rousseau's political philosophy on the law comes full circle and influences the assumptions of lawyer-politicians.

9. Although they point to differences in the "quality of government" between the two groups of countries (1999) and to the findings by King and Levine (1993) and subsequent authors indicating that financial development promotes economic growth, La Porta et al. do not themselves claim that the "school" a country's legal system belongs to influences its economic performance.

Investigative Approach

In his empirical investigation into the economic impact of the common law, Mahoney (2001) found that over the period 1960–90 common law countries in general had significantly higher growth than civil law countries. He regressed growth of GDP per capita on whether a country uses the common law and a number of control variables, such as levels of schooling at the start of the period (a measure of human capital), investment rate (a measure of physical capital), inflation (a measure of sound macroeconomic policy), and exports per GDP (a measure of openness and thus of good macro and microeconomic policy). He also controlled for a number of more fundamental variables, such as the degree of ethnic fractionalization, the religious composition of the population, and whether a country is in Latin America or Africa.

We find this approach wanting as a way of identifying institutional effects, because the control variables used are (1) likely to be endogenous to the institutional differences being tested for, as discussed in the last section, (2) rather crude (the two "continental" dummies), or (3) not statistically significant (discussed later). Instead, we use only the geographical and historical control variables described above.

Furthermore, unlike Mahoney, who compares the common law to all civil law countries, we limit ourselves to the impact of countries belonging either to the common law or the "French civil law" school. This is because La Porta and colleagues (1997) find the common law to be the most supportive of financial development and the French civil law the least supportive. If effects on growth are to be found, they should be found here. Also, these two legal schools are present in the largest number of countries. Finally, it is better to use the "legal school" to which all former French colonies belong rather than a wider one so that any differences in the impact of "legal school" and "colonial origin" cannot be ascribed to the inclusion in the civil law category of countries with a legal system that differs in some important respects from the French one.[10]

Data and Results

We constructed a dataset of 119 countries for which we had both growth rates of real GDP per capita over the period 1960–95 and data for our en-

10. La Porta et al. (2004) find German and Scandinavian civil law systems to have better investor protections than French civil law systems. This is also the case for Romano-Dutch law (Wood 1995). Former British colonies all use the common law, with a few exceptions that use French civil law (e.g., Mauritius).

vironmental control variables.[11] We classified countries' legal school in much the same way as La Porta and colleagues (1997) with three exceptions: (1) we reclassified some countries when we considered the classification of La Porta and colleagues (1997, 1999, 2004) to be mistaken (for instance, we excluded Romano-Dutch law countries from the French school); (2) on the basis of Philip Wood (1995), the online *CIA Factbook*, and searches for individual countries, we extended our classification to countries not covered by La Porta and colleagues (Djankov et al. 2002);[12] and (3) in our main regressions we excluded Hong Kong and Singapore as they are extreme outliers in terms of real GDP per capita growth (although retaining them gives very similar results in our key equation, 8.3).

Thus we have 55 French civil law countries, 33 common law countries, and 31 unclassified countries (which constitute the omitted category and include German and Scandinavian civil law countries, Romano-Dutch law countries, ex-socialist countries, and any other countries whose legal school is ambiguous). See appendix table 8A.2.

The results indicate clearly that belonging to the "French civil law" school reduces a country's growth rate of per capita GDP both highly significantly and by a large amount when we control for the incidence of war, the share of territory located in the tropics, the share of population near the sea, and the impact of convergence:[13]

$$\begin{aligned}\text{Growthrpc6095} = {} & 1.036 - 0.071\text{*War} - 0.668\text{*Tropicar} + 0.598\text{*Pop100km} \\ & \quad (0.000)\ (0.125) \qquad (0.000) \qquad\quad (0.000) \\ & - 0.368\text{*Frenchcivil} - 0.232\text{*Commonlaw} - 0.184\text{*Convergence} \\ & \quad (0.001) \qquad\quad (0.057) \qquad\quad (0.004)\end{aligned} \tag{8.1}$$

Adjusted $R^2 = 0.406$, 119 observations

where dependent variable = real per capita GDP growth 1960–95; War = an index equal to 1 for each decade the country was involved in foreign or civil war; Tropicar = the proportion of a country's land area between

11. Data on GDP per capita and GDP per capita growth are from the World Bank database. The data for the share of the population lying within 100 km of the sea and for the share of a country's territory lying in the tropics are taken from Gallup, Sachs, and Mellinger (1999). The data are available only for countries with over 1 million inhabitants (108 countries). We were able to extend the sample to another 13 countries (marked by an * in appendix table 8A.2).

12. This is a larger group, which subsumes the group La Porta et al. (1997) use.

13. From an econometric point of view, there do not seem to be major problems with heteroskedasticity in our regressions. Residuals are normal in all regressions, hence the significance tests should be valid. The only issue is that of possible multicolinearity between the legal and colonial dummies, as discussed later.

the Tropics; Pop100km = proportion of a country's population living within 100 km of the sea; Frenchcivil, dummy = 1 for French legal origin; Commonlaw, dummy = 1 for common law countries; Convergence = natural log of GDP per capita in 1960.

Although common law countries do grow faster than French civil law ones, so that the difference in growth rates between the two groups goes the way the Hayek–La Porta hypothesis would lead us to expect, this difference is not significant (p-value: 0.181).[14]

Thus in contrast to Mahoney's (2001) results, we find that the Hayek–La Porta hypothesis does not perform well in the presence of reasonable environmental and historical control variables, even when we compare growth only in the two legal schools between which we would expect to find the clearest difference in outcome. Moreover, when we replicate Mahoney's key regression, we find the impact of legal school on growth not to be significant (table 8.1a). Using Mahoney's (mainly intermediate) control variables (investment, secondary school enrollment, and population growth) and a dummy for civil law countries, we reran his regression on a subsample of common and civil law countries from our database. We found the coefficient on the dummy for all (not just French) civil law countries to be highly insignificant (p-value: 0.729). When we mimicked Mahoney's approach, by regressing per capita growth on our own "fundamental" control variables using a subsample of only common law and French civil law countries (87 countries) and using only a common law dummy to test the effect of legal school on growth, we again found that common law was not significant (p-value: 0.179) and the coefficient, though positive, was rather small (table 8.1b).

Our results also reject the hypothesis of Djankov and colleagues (2002) that worse economic performance in countries with a legal system based on French civil law are the result of other "statist" institutions that are "complementary" to this legal system. This is because countries with French civil law but without a history of recent French colonization do not perform worse than countries that use the common law.

Colonial Heritage

A possible explanation for the disappointing result regarding the economic impact of "legal school" is that a more comprehensive set of institutions than just the legal system influences economic performance. But

14. All control variables have the expected signs. Growth should be lower for countries with more war, a larger proportion of their territory in the tropics, and a higher initial level of GDP per capita, while it should be higher for those with a larger proportion of their population close to the sea.

Table 8.1a Replication of key regressions excluding the "other countries" category

Variable	Regression 1	Regression 2	Regression 3	Regression 4
Constant	2.013	1.616	2.063	0.257
	(0.000)	(0.000)	(0.000)	(0.265)
War				–0.040
				(0.361)
Pop100km				0.372
				(0.002)
Tropicar				–0.579
				(0.000)
Civil law	–0.079	–0.334		
	(0.538)	(0.729)		
Average investment rate, 1960–92		0.0409		3.777
		(0.000)		(0.000)
Secondary school enrollment, 1960		0.004		–0.001
		(0.374)		(0.891)
Population growth, 1960–90		–0.169		0.095
		(0.060)		(0.541)
Convergence		–0.0093		–0.262
		(0.004)		(0.003)
British common law				–0.189
				(0.225)
French civil law				–0.067
				(0.535)
British colonies			–0.075	0.228
			(0.654)	(0.1578)
French colonies			–0.527	–0.211
			(0.005)	(0.135)
Adjusted R^2	–0.006	0.425	0.084	0.559
Difference between British and French colonies (p-value)			0.028**	0.021**
Difference between French civil law and British common law (p-value)				0.436
Number of observations	98	89	94	107

Note: Dependent variable is growth of GDP per capita, 1960–92. p-values are in parentheses.

** = significance at the 5 percent level. Shown only for the most important values.

how would one identify countries that share a wider set of institutions than just their legal system? We decided to explore the possibility that a common colonial past might prove an important and statistically significant determinant of growth.

Table 8.1b Differences in growth between British common law and French civil law countries

Variable	Regression 1	Regression 2	Regression 3	Regression 4
Constant	0.396	0.340	0.695	0.728
	(0.000)	(0.000)	(0.000)	(0.000)
War				–0.057
				(0.266)
Population living within 100km of the coast			0.473	0.458
			(0.001)	(0.002)
Tropical share of area			–0.728	–0.712
			(0.000)	(0.000)
Common law	0.179	0.154	0.130	0.132
	(0.143)	(0.189)	(0.186)	(0.179)
Convergence		0.190	–0.085	–0.090
		(0.005)	(0.236)	(0.209)
Adjusted R^2	0.013	0.092	0.367	0.369
Sample size (French civil law and English common law countries)	87	87	87	87

Note: Dependent variable = growth of GDP per capita, 1960–95. p-values are in parentheses.

Table 8.1c Differences in growth between former French and British colonies

Variable	Regression 1	Regression 2	Regression 3	Regression 4
Constant	0.176	0.187	0.478	0.485
	(0.155)	(0.141)	(0.020)	(0.022)
War				–0.014
				(0.863)
Population living within 100km of the coast			0.612	0.605
			(0.012)	(0.016)
Tropical share of area			–0.726	–0.727
			(0.000)	(0.000)
British colonies	0.412**	0.396**	0.372***	0.378***
	(0.011)	(0.018)	(0.007)	(0.009)
Convergence		0.057	–0.214	–0.214
		(0.644)	(0.128)	(0.132)
Adjusted R^2	0.112	0.097	0.407	0.393
Sample size (former French and British colonies)	48	48	48	48

Note: Dependent variable is growth of GDP per capita, 1960–95. p-values are in parentheses.

, * = significance at the 5 and 1 percent levels, respectively. Shown only for the most important values.

Theoretical Background

The fact of countries having been colonies of a single colonial power is a possible indicator of shared institutions between them, since the imperial powers tended to implant similar institutions across their colonies, and even after independence in the second half of the 20th century, former colonies tended to copy new institutions from the metropolis. This imposition of institutions was largely exogenous to the precolonial development of the territories concerned.[15] Furthermore, colonial borders often cut across ethnic communities and ecosystems, grouping together areas with different climate, traditions, and religions; for example, British and French colonies alternated along the coast of West Africa.

The patterns of colonization adopted by various European powers were different at many points. Historical studies suggest that the differences between British and French colonies were particularly stark and went well beyond legal origin. In French colonies, the ideal of assimilation derived from "the constitutional relationship between colonies and metropolis . . . [and] the republican principles of 1789. The republic was one and indivisible: Colonies were an intrinsic part of it . . ." (Fieldhouse 1966, 308).[16] The administrative structure, civil liberties, taxes, and tariffs were supposed to be identical, and there was no separate colonial military. In addition, the French administration tried to speed the establishment of modern infrastructure (such as railways) and to improve native agriculture.

French colonies were also ruled in a more centralized way than British colonies.[17] The French system of direct rule in the colonies meant that a hierarchical system of civil servants was organized (Isnard 1971, 109): Native rulers could be promoted, transferred, and dismissed much like ordinary civil servants but could maintain their authority only at the village level (Miles 1988). Alice Conklin (1998) quotes a French civil service report arguing that "[f]or a long time yet it will be necessary for our subjects to be brought to progress against their will."[18] However, such intervention

15. Except that territories with well-organized preexisting states and with a higher level of technology were less likely to be colonized.

16. This is reflected in the fact that all French colonies in sub-Saharan Africa except two became independent on the same day (when the "French Union" was transformed into the "French Community" in 1960). British colonies in Africa, on the other hand, achieved independence over a period of nine years.

17. While the contiguous British territories in East and South Africa were organized as separate colonies and protectorates, the French preferred the unified blocks of French West Africa and French Equatorial Africa.

18. The idea expressed in a directive was "to liberate the slaves, to ruin the great commands, to eradicate feudal vestiges."

was often disruptive and included forced labor, state regulation of peasants' crop choice, relocation of villages, and conscription.[19]

The goal of British policy, on the other hand, was to ensure the cheap and flexible administration of the colonies (Isnard 1971, 110). Local inhabitants were to preserve much of their autonomy and of their traditional institutions under a system of indirect rule. The ideas behind indirect rule were less idealistic than France's *mission civilisatrice*. While France offered the possibility of representation in the French Parliament (although this was extremely limited before the Second World War), Britain relied on local elected bodies such as town councils and later on legislative councils for individual colonies.[20]

Peter Geschiere (1993) gives an apposite microexample of the different approaches in the two empires, looking at French and British policies in previously chiefless areas in Cameroon. The French were "as quick as the British" in creating *chefs coutumiers*. However, "For the French, coercion was the only way to solve . . . problems. . . . The Maka still tell gruesome stories about the ferocity of the chiefs in executing official orders, especially during the inter-war years." The newly established chiefs had no judicial power and were expected only to put into practice the directives of the colonial administration, a policy that had a clear impact after independence in 1960: "The role of the Maka chiefs in modern politics came to a definite end. . . . Surprisingly few chiefs' sons had had sufficient schooling to join the elite. Most of the leading figures in regional politics since the 1960s have been 'new men', not related to the chiefs' families. . . . French authoritarian policy left the chiefs little scope to legitimize their position in the eyes of the Maka. To them the chiefs remained the ruthless executors of highly unpopular government measures."

In contrast, Geschiere (1993) reports that "The present position of the chiefs among the Bakweri in the former British southwest Cameroon is strikingly different." The British focused on strengthening the authority of the chiefs, who had judicial power and whose main role was maintaining law and order and local traditions. Thus "the British system of indirect rule allowed the chiefs more scope to strengthen their position than the French policy. . . . These chiefs remained more than mere executive organs of the State." And after independence Bakweri chiefs maintained some of their previous authority; for example, the succession of a long-lived chief by his son in the 1980s got a lot of support from the local population.

In British colonies, not only was common law probably more suited to local needs (because of its less formalistic practices and its stress on verbal

19. The *prestation* was established at 12 days per year. In theory, this work had to be remunerated at market rates.

20. Voting rights were severely restricted in the case of British territories (mostly to Europeans), while the Senegalese towns and the French Caribbean had universal male suffrage.

contracts and evidence), but also tribal law was applied in cases where both parties were natives or where one party was a native and "the strict letter of the English law would involve injustice" (Asmis 1912).[21] There were also *native tribunals* for minor offenses and "all complaints as to ownership or possession of (native) land" (Asmis 1913). In French colonies, "assimilation" meant that a single body of legislation was used everywhere.[22] Also, British adherence to free trade meant that British colonial economies were more exposed to world competition than French ones.

The differences between the two empires were possibly most striking in education. A history textbook used in colonies in Africa and Indochina famously started with the words "*Nos ancêtres les Gaulois étaient roux*. . ." ("Our ancestors the Gauls were red-haired . . ."). In contrast, the Advisory Committee on Native Education in the British Tropical African Dependencies argued in its report that "the central . . . problem lies in finding ways to improve what is sound in the indigenous tradition. Education should strengthen . . . responsibility to the tribal community, and . . . be related to the . . . daily experience of the pupils" (quoted in Grier 1999). Grier continues: "Students in British Africa were, for the most part, taught in their own languages and in their tribal villages . . . (while) in the French system most students were boarded . . . (and) were required to speak French (only). . . ." As a result, Corbett (1972) found that, whereas three-quarters of pupils in British Africa completed primary education, only one-third did so in French Africa.

Perhaps the most tangible sign of the different effects of the two systems of colonial rule is the movement of population across borders. Anthony Asiwaju (1976) documents a steady migration of the population from the Côte d'Ivoire to the Gold Coast. Geographic conditions are similar in the two territories and migrants often belonged to ethnic groups divided by the new border; thus the difference was due to the institutions introduced by colonial rulers. The main reasons for discontent on the French side seem to have been conscription into the army, forced labor, higher taxes, and administrative intrusion into peasants' crop selection.

Thus it is possible that the institutions bequeathed before and upon independence by the colonial empires (or imported from them after independence) differed considerably across the imperial powers.

Data and Results

We therefore decided to test whether having a British or French colonial past had a discernible impact on economic growth when we controlled for

21. Although the principal law used was English law supplemented by the special laws of the colony.

22. Although Muslims were allowed to use their own family law.

the same environmental and historical variables as in equation 8.1. As with the two legal schools, we limited ourselves to these two imperial powers since they had the largest number of colonies. It is important that the effects of the two kinds of institutions (legal school and colonial origin) *can* be clearly distinguished in the data (see equation 8.3 and subsequent tables). Appendix table 8A.3 shows the distribution of country observations across the institutional categories.

To qualify as ex-colonies, countries need to have been under British or French rule continuously from 1910 to 1948.[23] The purpose is to exclude ex-colonies of settlement (e.g., Australia, Canada, and the United States) and countries that were under British and French rule only briefly in the interwar period (e.g., Iraq and Syria). We thus keep as ex-colonies only those British and French dependencies where a wide range of common institutions were in place sufficiently long, and sufficiently recently, for them to affect post-1960 economic growth.[24] We omitted all remaining countries.

We found that having been a French colony has a very significant and large negative effect on growth, whereas having been a British colony has no such effect:

$$\begin{aligned} \text{Growthrpc6095} = {} & 1.013 - 0.118\text{*War} - 0.732\text{*Tropicar} + 0.533\text{*Pop100km} \\ & (0.000)\ (0.0175) \quad (0.000) \quad (0.000) \\ & - 0.505\text{*Frenchcol} - 0.037\text{*Britcol} - 0.246\text{*Convergence} \\ & (0.001) \quad (0.731) \quad (0.000) \end{aligned} \tag{8.2}$$

Adjusted $R^2 = 0.421$, 119 observations

Not surprisingly, the coefficients for British and French colonial origin are highly significantly different from each other (p-value: 0.001). Again, the control variables all have the expected signs and are very significant, and the adjusted R^2 is quite high (and slightly higher than for the regression using legal school). On average, real GDP per capita in ex-British colonies increased 1.3 percent per annum more than that of ex-French colonies during 1960–95, after controlling for environmental variables, war,

23. Countries in Africa that had been German colonies but continued as British or French colonies until 1960 (e.g., Tanzania and Togo) were retained as British or French colonies.

24. Grier (1999) and Bertocchi and Canova (2002) run regressions that purport to test the differential impact of colonial origin on growth. However, neither study distinguishes between "colonial origin" and "legal school" as we do, and both in fact test for "legal school" rather than "colonial origin" as we define the terms. This is because they include former Spanish colonies in Latin America and former British "colonies of settlement" like the United States in their regressions. Furthermore, like Mahoney (2001), both studies use potentially endogenous control variables (government consumption, inflation, and education in the case of Grier and the investment ratio and education in the case of Bertocchi and Canova, although the latter also use ethnic fractionalization).

and convergence. This is equivalent to a cumulative difference over the period of 60 percent.[25]

The presence of the two environmental variables is particularly important in this regression as it helps to control for any selection bias by which Britain, as the stronger imperial power, may have obtained the economically more productive colonies at the time of conquest. Nor are former British colonies likely to have benefited particularly during the 1960–95 period from their trade links with Britain. Although Britain was still richer than France at the beginning of our period, over the period as a whole it was poorer, and French growth was higher than British for most of the period.

When we test for the impact of legal school and colonial origin together, we again find that the impact of the French civil law and the common law are statistically indistinguishable (the p-value of the difference between the two coefficients is 0.521). These results are thus at variance with the Hayek–La Porta hypothesis:[26]

$$\begin{aligned}\text{Growthrpc6095} = {} & 1.110 - 0.118*\text{War} - 0.657*\text{Tropicar} \\ & \quad (0.000)\ (0.015) \qquad (0.000) \\ & + 0.541*\text{Pop100km} - 0.265*\text{Frenchcivil} - 0.362*\text{Commonlaw} \\ & \quad (0.000) \qquad\qquad (0.023) \qquad\qquad (0.031) \\ & - 0.394*\text{Frenchcol} + 0.152*\text{Britcol} - 0.210*\text{Convergence} \\ & \quad (0.008) \qquad\qquad (0.348) \qquad (0.002)\end{aligned} \tag{8.3}$$

Adjusted $R^2 = 0.446$, 119 observations

On the other hand, while the British colonial origin dummy is not at all significantly different from zero, the French colonial dummy is highly significant, negative, and large. Not surprisingly, then, the *difference* between the colonial dummies is highly significant (p-value of 0.005). It is also large (about 0.55), making it about the same size as in equation 8.2, which gives a similar difference in growth rates between the two groups of ex-colonies (1.6 percent per annum, 70 percent over the period).

Tests of Robustness

As further tests of the robustness of our findings, we ran our key regression (equation 8.3) with a number of potential fundamental historical variables, which we added sequentially (table 8.2). We find the value of the ethnolinguistic fractionalization index for 1960 to be insignificant when inserted into our main equation, and the results for the significance of the differ-

25. It is worth remembering that former British colonies had a higher initial average income per capita in 1960 than did French ex-colonies (appendix table 8A.1).

26. The negative impact of common law is actually *larger* than that of civil law.

Table 8.2 Tests of robustness

Variable	Ethnic fractionalization	Religious shares	OECD dummy	Sub-Saharan Africa
Constant	1.164	1.310	1.098	1.221
	(0.000)	(0.000)	(0.000)	(0.000)
War	–0.095	–0.113	–0.114	–0.110
	(0.044)	(0.016)	(0.030)	(0.020)
Pop100km	0.459	0.552	0.544	0.400
	(0.000)	(0.000)	(0.000)	(0.002)
Tropicar	–0.661	–0.663	–0.655	–0.560
	(0.000)	(0.000)	(0.000)	(0.000)
Elf60	–0.161			
	(0.364)			
Catholic		0.085		
		(0.675)		
Protestant		–0.784		
		(0.002)		
Muslim		–0.231		
		(0.185)		
OECD			0.044	
			(0.685)	
Sub-Saharan Africa				–0.367
				(0.004)
Frenchcivil	–0.219	–0.527	–0.261	–0.255
	(0.061)	(0.001)	(0.039)	(0.022)
Commonlaw	–0.335	–0.482	–0.370	–0.370
	(0.042)	(0.004)	(0.007)	(0.026)
French colony	–0.364	–0.147	–0.391	–0.245
	(0.016)	(0.423)	(0.014)	(0.105)
British colony	0.182	0.247	0.167	0.208
	(0.262)	(0.138)	(0.253)	(0.189)
Convergence	–0.211	–0.158	–0.218	–0.251
	(0.001)	(0.025)	(0.001)	(0.000)
Adjusted R^2	0.474	0.491	0.440	0.482
Difference				
Legal (p-value)	0.450	0.799	0.369	0.456
Colonial (p-value)	0.005***	0.067*	0.001***	0.013***
Sample size	114	119	119	119

Note: Dependent variable = growth of GDP per capita, 1960–95. Elf60 is the value of the ethnolinguistic fractionalization index for each country in 1960. Catholic, Muslim, and Protestant are the shares of the population of each country belonging to each of these religions. The data for ethnolinguistic fractionalization and for the shares of different religious groups are taken from La Porta et al. (1999).

ences between the two pairs of institutional dummies remain qualitatively the same (i.e., the difference between the legal school dummies is very insignificant, while that between the colonial origin dummies is highly significant). We get similar results when the percentages of Catholics, Mus-

lims, and Protestants in the population of each country are inserted (together), although the difference between the colonial origin dummies is somewhat less significant (p-value: 0.067); moreover, only the coefficient for the percentage of Protestants is significant.[27] We again get the same results when we add a dummy for the countries of sub-Saharan Africa or a dummy for the original OECD members (based on the idea that the impact of legal school may be different in rich countries).[28]

If we confine the sample to British and French colonies only (along the lines of the strategy used by Mahoney for "legal schools"), while using our "fundamental" control variables only, we again find that British colonization has a positive and highly significant impact on growth (table 8.1c). When we mimic Mahoney's approach by using a sample that excludes the "other countries" (i.e., those that are neither British nor French colonies and have neither common nor French civil law systems) and use both our "fundamental" and his "intermediate" control variables, we again find that the difference between "legal schools" is quite insignificant (p-value: 0.436), while that between former British and French colonies is very significant (p-value: 0.021). Finally, "colonial origin" has a significant impact on economic growth in all subperiods when we split the period into either two (1960–75, 1976–95) or three (1960–70, 1971–80, 1981–95) subperiods.

Institutions Versus Malaria?

When we add the incidence of malaria falciparum as an explanatory variable to equations 8.1 and 8.2, our results change considerably.[29] The difference between British and French ex-colonies, though still significant, is now the same as that between common law and French civil law countries (p-value: 0.035). When we add malaria to equation 8.3, the differences between both sets of institutional variables become very insignificant.

However, we have data on the incidence of malaria for only 104 countries (compared with 119 for the larger sample).[30] Moreover, there is the

27. We ignore the percentage of Hindus, as they were numerous only in a limited number of colonies, while Buddhists and Confucians were present only in small numbers in a few colonies. The data for ethnolinguistic fractionalization and for the shares of different religious groups in the population are taken from La Porta et al. (1999).

28. If the dummy includes all pre-1996 OECD members, results are again largely unchanged. Excluding these countries from the sample also has only minor effects. Since the idea of convergence has been criticized by some empirical researchers, we have also run the regressions without the indicator for initial per capita GDP. Results are similar in all cases.

29. This is the most dangerous form of the disease, and we take the data for its incidence from Sachs (2003).

30. The data are once again taken from Gallup, Sachs, and Mellinger (1999) and include only countries with a population of over 1 million inhabitants. In this case we were unable to increase the size of the sample, as we could not find information on the incidence of malaria in the countries that we added to our main sample.

issue of endogeneity—rich countries can afford to fight malaria more effectively than poor ones. In the first half of the 20th century malaria was present in large parts of East Asia, Latin America, and Europe, from which it subsequently disappeared.[31] The British colonies in our sample were richer than the French colonies before 1966 (appendix table 8A.1), so we would expect them to have reduced malaria more effectively.

Gallup and Sachs (2000) claim that there is a fundamental difference between malaria in temperate and subtropical zones, where it has been possible to eliminate or reduce it considerably, and tropical malaria. Previously endemic malaria has been cleared from Spain, Italy, Greece, and the southern United States. In contrast, Gallup and Sachs claim, malaria in tropical zones simply cannot be eliminated at reasonable cost, except on islands; there are just too many mosquitoes and mosquito breeding grounds, and too many human carriers. Furthermore, not only does its incidence in 1966 significantly (and considerably) affect subsequent growth, but a reduction in its incidence (where it can be achieved, as in temperate zones) boosts growth significantly.

We find the first claim very dubious. There are several examples of sharp reductions in the incidence of tropical-zone malaria over the 1966–94 period: The Dominican Republic reduced incidence from 94 percent to zero, whereas Haiti, the other half of the tropical island of Hispaniola, failed to reduce its 100 percent incidence at all. Although Hispaniola is an island, it is very large, four-fifths the size of England. More important, the persistence of 100 percent incidence in Haiti means that epidemiologically, the Dominican Republic was not an island at all, as there was always a reservoir of malaria available across the border. Other examples of large reductions in tropical malaria over the 1966–94 period occurred in Brazil (from 40 to 19 percent) and Bangladesh (from 63 to 16 percent). Additionally, large increases in incidence observed in India (from 13 to 28 percent) and Malawi (from 52 to 100 percent) also suggest that tropical incidence is not exogenous or exclusively determined by the environment.

When we regress the proportional change in malaria falciparum during 1966–94 on GDP in 1960, we get a strongly significant effect, indicating that wealth does help reduce malaria:

$$\text{Lnmalfal94} - \text{lnmalfal66} = 1.856 - 0.985*\text{lnrpcgdp60} \qquad (8.4)$$
$$(0.064)\ \ (0.043)$$

Adjusted $R^2 = 0.049$, 64 observations

Although there is clearly a lot of noise, the coefficient has the expected sign and is quite strongly significant, so that a lower level of real per capita

31. Mussolini famously drained the Pontine Marshes south of Rome in the 1920s to eliminate the breeding ground for malaria there, something Julius Caesar had done in the 1st century BC.

GDP leads to a lower reduction in the incidence of malaria falciparum in the subsequent period. Moreover, this effect is much stronger than that of initial level of malaria on subsequent real per capita GDP growth:

$$\text{Lnrpcgdp95} - \text{lnrpcgdp60} = 0.318 - 0.051*\text{lnmalfal66} \quad (8.5)$$
$$(0.000)\ \ (0.137)$$

Adjusted $R^2 = 0.019$, 66 observations

Both the significance of the explanatory variable and the adjusted R^2 are much higher in the regression that explains the fall in incidence of malaria by initial GDP level than in the one that explains growth by initial malarial incidence.[32]

We have tried to calculate the two effects in a way that would allow us to compare their strength: An increase in initial real per capita GDP by one standard deviation (starting from the mean of the sample) results in malaria incidence decreasing by an additional 17.6 percent over the 29 years from 1966 to 1994, a continuously compounded annual rate of approximately 0.6 percent. This additional reduction is slightly above the mean reduction in malaria incidence. In other words, a one standard deviation increase in 1960 GDP from the mean of the sample more than *doubles* the reduction in malaria in the subsequent period. An analogous increase in initial incidence of malaria by one standard deviation from the sample mean decreases the growth rate of real GDP per capita over the subsequent 35 years by 2.6 percent, an annual reduction in growth of 0.07 percent, which is less than one-twelfth of the mean growth rate. Thus, the effect of a one standard deviation increase in initial real per capita GDP on malaria is slightly more than twelve times that of a one standard deviation increase in initial malaria incidence on subsequent real per capita GDP.[33]

32. In a cruder version of the same approach, we calculated the correlation between the incidence of malaria falciparum for 1966 (for those countries in which there was malaria) and real per capita GDP in 1960 and 1970. We then repeated the exercise for real per capita GDP in 1990 and 1999 and malaria in 1994. The results were as follows:

corr(rpcGDP60,malfal66) = –0.59 corr(rpcGDP70,malfal66) = –0.52
corr(rpcGDP90,malfal94) = –0.54 corr(rpcGDP99,malfal94) = –0.59

suggesting that real per capita GDP may have "Granger-type caused" malaria in the 1960s and malaria may have "Granger-type caused" real per capita GDP in the 1990s.

33. It is important that Gallup and Sachs (2000) do not find any significant effect of other tropical diseases on economic growth, so that malaria cannot be taken as an instrument for a general disease-laden environment over and above what is identified by tropical location—something we control for independently in all our regressions.

Conclusions

Legal School Versus Colonial Origin

When we regress economic growth separately on the two pairs of "legal school" and "colonial origin" dummies, we find that the difference between the two legal school dummies is insignificant and the difference between the colonial origin dummies is highly significant. We get the same outcome when both pairs of dummies are used together in the same regression. This remains true when we add the percentages of the followers of various religions, ethnolinguistic fractionalization, an Africa dummy, or an OECD dummy to equation 8.3.

Thus our results fail to confirm the Hayek–La Porta hypothesis that having a legal system based on the English common law is more conducive to economic development than French civil law. Our results also, therefore, reject the suggestion of Djankov and colleagues (2002) that other institutions historically associated with French civil law, such as a higher degree of state intervention, may cause weaker economic performance, rather than the French legal system itself. On the other hand, the results do support the view that a wider complex of institutions than just the legal system, such as those associated with having been a British rather than a French colony, does affect economic performance; a recent British colonial history is superior to a French one in enabling economic growth in the postcolonial period.

Importantly, the use of geographical variables helps us control for selection bias at the beginning of the imperial period. We also provide strong evidence that the incidence of malaria is endogenous to economic performance and should therefore be ignored as a control variable when examining the determinants of economic growth.

Grier's results for Africa suggest that better educational levels in former British colonies may be the main cause of their better growth performance. However, the results of Graziella Bertocchi and Fabio Canova (2002) are ambiguous as to the impact of colonial origin on education and growth. Examining the channels through which colonial origin could affect growth is therefore the first priority for further research.

Geography Versus Institutions

Our results also contribute to the debates about "geography versus institutions" and "policies versus institutions," which have divided researchers in recent years. First, our preferred indicator of institutional differences (colonial origin) is far less subjective than those used by some

researchers.[34] Dollar and Kraay (2000), for instance, use subjective indicators of property and political rights.[35]

Second, the debate between Acemoglu, Johnson, and Robinson on the one hand and Sachs and coauthors on the other comes down to whether differences in economic performance between what Acemoglu, Johnson, and Robinson call "colonies of settlement" and "colonies of extraction" are due, at least in part, to geographical conditions directly or whether such conditions affect performance *only* to the extent to which they determine the (better) institutions introduced by the imperial powers in "colonies of settlement." Sachs (2003) points out that this choice is itself associated with geographical/environmental conditions that may be unhelpful for economic performance today. Furthermore, higher settler mortality at the time of colonization is associated with lower levels of inherited human capital, as it is negatively correlated with migration from Europe, which was much richer than other parts of the world by the 19th century and thus had higher levels of human capital.

Whatever the merits of these arguments, our analysis excludes "colonies of settlement" from the "ex-colony" categories and compares only what Acemoglu, Johnson, and Robinson call former "colonies of extraction" belonging to different empires. In spite of this restriction, we find that the institutional differences reflected in our classification (which according to Acemoglu, Johnson, and Robinson are far smaller than the differences between "colonies of settlement" and "colonies of extraction") have a highly significant and large impact on economic performance. Thus we show that exogenously determined institutions do have an independent effect on economic performance, although unlike Acemoglu, Johnson, and Robinson, we do not claim that geographical factors have no independent effect themselves.[36]

Policies Versus Institutions

In their critique of institutional explanations of growth, Glaeser and colleagues (2004) stress the subjectivity and/or endogeneity of the institutional variables used by many researchers, an argument that, as we have seen, does not apply to the present work. They also show that measures of initial human capital stock (such as secondary school enrollment) explain

34. Even the "legal school" variable may involve a greater degree of subjectivity, as some countries have a number of sources for their legal tradition, as discussed earlier.

35. Such indices also suffer from the fact that they may be endogenous, with the quality of institutions improving as GDP per capita increases.

36. We do not need to make such a claim, as our classification depends on the accidents of history, whereas that of Acemoglu, Johnson, and Robinson depends on the supposed disease environment of countries at the time of colonization.

subsequent real GDP per capita growth rates and improvements in institutional variables better than the initial level of various (largely subjective) indices of institutional quality explain subsequent growth of income and of human capital. Since the experience of the Soviet Bloc has shown clearly that education does not in itself generate superior growth performance in the absence of private property and markets, and since Glaeser and colleagues (2004) find that political constraints on government do not have strong explanatory power in predicting growth, they conclude that *policies* that respect property rights and encourage education are those that determine growth.[37] These, it is argued, may be pursued equally well by democracies because they are compelled to do so or by dictatorships out of the free choice of the dictators.

While there were limits on the arbitrary use of political power in both French and British colonies (especially in the 20th century), neither empire was run on anything approaching a democratic basis, and both gave native populations little voice. Furthermore, almost all the "colonies of extraction" of both empires became dictatorships shortly after independence, a situation that began to improve significantly only in the 1990s, toward the end of the period we cover. In this respect our results are compatible with the views of Glaeser and colleagues (2004).

We therefore interpret our results as throwing light on differences between the two empires regarding institutions that help sustain "economic freedom," rather than those that might ensure "political freedom."[38] Such institutions consist in broadly defined property rights, including among others the right to a quick and fair trial (criminal or civil) according to comprehensible and clear laws, the right to protection from depredation by more powerful neighbors, the right to trade with whom one wishes, the right to save in a stable currency, and so on. They may also include access to an educational system adapted to local needs.

Of course, it is unclear which of these rights stem from policies and which from institutions. Are the rights to price stability and to trade freely "policies" or "institutions"? Is the maintenance of a more efficient and less corrupt police force and judiciary a policy or an aspect of the institutions concerned? We suggest that the answer depends on how long a given state of affairs is maintained, so that institutions are defined by the characteristic of persistence: A short period of freer trade in an era of protectionism is a policy; maintaining free trade for an age is an institution. The same principle would apply to inflation, corruption, efficiency of the judiciary, and so on. While we do not examine here how such varied "eco-

37. However, the arguments of Glaeser et al. are weakened by the results of Easterly and Levine (2003), which suggest that the three economic policies that are most often credited with hindering growth (protectionism, high inflation, and overvalued exchange rates) fail to explain growth differences once institutions are controlled for.

38. We use here the terminology of La Porta et al. (2004).

nomic institutions" differed quantitatively between the two empires in the first half of the 20th century and in the postcolonial period, we can infer that they did so sufficiently for economic growth to be clearly superior in the postindependence period in former British colonies than in former French ones.

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Appendix 8A

Table 8A.1 Summary statistics

Institutional category	Mean	Standard deviation
Real per capita GDP, 1960		
French civil law	1,807.96	1,631.03
British common law	2,559.21	2,765.56
French colonies	902.28	407.77
British colonies	1,498.00	1,504.17
Other countries	2,696.96	2,440.81
Real per capita GDP, 1995		
French civil law	3,609.35	4,074.85
British common law	5,124.72	5,624.17
French colonies	1,245.31	1,038.35
British colonies	3,015.46	2,887.53
Other countries	6,909.29	5,503.65
Growth rates (yearly, continuously compounded)		
French civil law	1.152 percent	1.347
British common law	1.641 percent	1.674
French colonies	0.389 percent	0.563
British colonies	1.681 percent	1.550
Other countries	2.678 percent	1.668
Share of population within 100 km of the coast		
French civil law	0.5131	0.3572
British common law	0.5347	0.4060
French colonies	0.3661	0.3121
British colonies	0.5370	0.4226
Other countries	0.4500	0.3994
Share of the land area within the tropics		
French civil law	0.7097	0.4293
British common law	0.6421	0.4506
French colonies	0.8233	0.3588
British colonies	0.7862	0.3792
Other	0.3063	0.4374
Malaria incidence, 1966		
French civil law	0.4357	0.4691
British common law	0.4779	0.4487
French colonies	0.7281	0.4276
British colonies	0.6451	0.4023
Other	0.2286	0.3462
Malaria incidence, 1994		
French civil law	0.3970	0.4646
British common law	0.4601	0.4393
French colonies	0.7047	0.4233
British colonies	0.5915	0.4114
Other	0.1791	0.2990

(table continues next page)

Table 8A.1 Summary statistics *(continued)*

Institutional category	Mean	Standard deviation
Ethnic fractionalization (115 observations)		
French civil law	0.3545	0.3126
British common law	0.4422	0.3151
French colonies	0.6049	0.2758
British colonies	0.4836	0.3279
Other	0.3080	0.2977
Share of Catholic population		
French civil law	0.5720	0.3882
British common law	0.2182	0.2099
French colonies	0.1574	0.1965
British colonies	0.2427	0.2507
Other countries	0.1572	0.2543
Share of Protestant population		
French civil law	0.0525	0.0906
British common law	0.2085	0.1710
French colonies	0.0794	0.1334
British colonies	0.1857	0.1761
Other	0.2460	0.3381
Share of Muslim population		
French civil law	0.2083	0.3504
British common law	0.1015	0.2706
French colonies	0.5412	0.4111
British colonies	0.1857	0.2818
Other	0.2513	0.3871

Table 8A.2 List of countries in the sample

French civil law countries	Common law countries	Other countries	French colonies	British colonies
Algeria	Australia	Austria	Algeria	Bahamas*
Angola	Bahamas*	Cameroon	Benin	Bangladesh
Argentina	Bangladesh	China	Burkina Faso	Barbados*
Belgium	Barbados*	Czech Republic	Chad	Belize*
Benin	Belize*	Denmark	Central African Republic	Botswana
Bolivia	Botswana	Ethiopia	Comoros*	Fiji*
Brazil	Canada	Finland	Congo	Gambia
Burkina Faso	Fiji*	Hungary	Côte d'Ivoire	Ghana
Burundi	Gambia	Iceland*	Gabon	Guyana
Cape Verde*	Ghana	Indonesia	Guinea	*Hong Kong*
Chad	Guyana	Iran	Madagascar	India
Central African Republic	*Hong Kong*	Japan	Mali	Jamaica
Chile	India	Jordan	Mauritania	Kenya
Colombia	Ireland	Namibia	Morocco	Lesotho
Comoros*	Israel	Nepal	Niger	Malawi
Democratic Republic of the Congo	Jamaica	Netherlands	Senegal	Malaysia
Costa Rica	Kenya	Norway	Togo	Malta*
Côte d'Ivoire	Lesotho	Oman	Tunisia	Mauritius
Dominican Republic	Malawi	Philippines		Nigeria
Ecuador	Malaysia	Romania		Pakistan
Egypt	New Zealand	Saudi Arabia		Papua New Guinea
El Salvador	Nigeria	South Africa		Seychelles*
France	Pakistan	South Korea		Sierra Leone
Gabon	Papua New Guinea	Sudan		*Singapore*
Greece	Sierra Leone	Suriname*		Sri Lanka
Guatemala	*Singapore*	Sweden		Swaziland*
Guinea	Sri Lanka	Switzerland		Tanzania
Guinea-Bissau	Swaziland*	Syria		Trinidad and Tobago
Haiti	Tanzania	Taiwan		Uganda
Honduras	Trinidad and Tobago	Thailand		Zambia
Italy	Uganda	Turkey		Zimbabwe
Luxembourg*	United Kingdom			
Madagascar	United States			
Mali	Zambia			
Malta*	Zimbabwe			
Mauritania				
Mauritius				
Mexico				
Morocco				
Mozambique				
Nicaragua				
Niger				
Panama				
Paraguay				
Peru				
Portugal				
Rwanda				
Senegal				
Seychelles*				
Spain				
Togo				
Tunisia				
Uruguay				
Venezuela				

Note: All countries not in the British or French colony categories are in the omitted category in equation 8.2. Although data are available for *Hong Kong* and *Singapore*, they are not included in the regressions. We added countries marked with an asterisk (*) to the Gallup, Sachs, and Mellinger (1999) sample.

Table 8A.3 Distribution of countries in the sample across institutional categories

Institutional category	Number of countries
French civil law	
French colonies	18
Not French colonies	37
Total	55
Common law	
British colonies	26
Not British colonies	7
Total	33
British colonies	
Common law	26
French civil law	4
Total	30
French colonies	
French civil law	18
Not French civil law	0
Total	18
Others	30

9

Does the European Union Emulate the Positive Features of the East Asian Model?

ANDERS ÅSLUND

In recent years, criticism of the European economic model has grown stronger. In comparison with both the American and the East Asian models, it has been perceived as inferior in terms of economic efficiency as reflected in both overall economic growth rates and productivity. For instance, Alberto Alesina and Francesco Giavazzi (2006, 4–5) complained that EU GDP per capita fell from 80 percent of the US level in the late 1980s to 70 percent of the US level in 2006. The South Korean GDP per capita in purchasing power parity, by contrast, rose from 12 percent of the US level in the mid-1960s to 50 percent at present.

The European Union has gradually accepted this critique and tried to improve its economic model. The main policy statement was adopted by the European Council in March 2000 in Lisbon, formulating "a strategic goal for the next decade." The Lisbon Agenda acknowledges the challenge in dramatic words (European Council 2000):

> The European Union is confronted with a quantum shift resulting from globalization and the challenges of a new knowledge-driven economy. These changes are affecting every aspect of people's lives and require a radical transformation of the European economy. The Union must shape these changes in a manner consistent with its values and concepts of society and also with a view to the forthcoming enlargement.

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The Lisbon Agenda detailed these strategic goals, aiming at "an average economic growth rate of around 3%." The European Council asked the European Commission and the member states to carry out a large number of reforms to accomplish the strategic goals.

The question today is whether this is actually happening and, if so, how. Critics of the EU model tend to look either at the United States (notably, Alesina and Giavazzi 2006) or East Asia. The purpose of this chapter is to scrutinize EU performance and adjustment in light of the East Asian model. The first section establishes what the East Asian model actually amounts to and how it compares with the EU model. The second section summarizes the main idea of the discussion of the East Asian model after the Asian financial crisis in 1997–98. The third section considers how the EU model could be altered so that it would be able to adopt the desirable features of the East Asian model. The fourth section offers conclusions.

Characteristics of the East Asian Model in Comparison with the EU Model

The East Asian "miracle" started out as the single Japanese miracle after World War II, but Japanese growth faded around 1990. The next impressive growth story was the four East Asian Tigers—Hong Kong, Taiwan, Singapore, and South Korea—which took off in the early 1960s. Later on, the East Asian high-growth group broadened, and I shall discuss the six most developed East Asian countries: South Korea, Hong Kong, Singapore, Taiwan, Malaysia, and Thailand. All these countries have reached such a high GDP per capita that they are no longer developing countries, and they all represent the East Asian model as discussed below. As the East Asians were creeping closer to the EU countries in GDP per capita, the East Asian model was taken more seriously, although so far only Hong Kong has overtaken the EU average GDP per capita in purchasing power parities. In its original study, *The East Asian Miracle,* the World Bank (1993) also included Indonesia and the Philippines among eight "high-performing Asian economies," but they remain far poorer and are therefore of little relevance for a comparison with Europe. China has produced high economic growth since the start of its reform in 1978, but it, as well as Indo-China, is even poorer. The European Union of comparison in this paper is the European Union of 15 countries from 1995 to 2004.

The World Bank singled out the East Asian economies because they had achieved rapid, sustained economic growth of 5.5 percent a year between 1960 and 1990. What distinguished these economies from other developing economies was their high investment rates and sizable and rising endowments of human capital due to universal primary and secondary education (World Bank 1993, 8). These factors were assessed to account for

Table 9.1 GDP in East Asia and EU-15

Country	GDP growth, 1996–2005 (percent)	GDP per capita, PPP, 2005 (dollars)
East Asia		
Hong Kong	3.9	33,479
Korea	4.5	20,590
Malaysia	4.8	11,201
Singapore	5.2	28,368
Taiwan	4.5	27,721
Thailand	2.8	8,368
Average	4.3	21,621
EU-15		
Austria	2.2	33,896
Belgium	2.1	32,524
Denmark	2.1	34,367
Finland	3.6	31,367
France	2.2	30,104
Germany	1.3	30,253
Greece	3.9	22,691
Ireland	7.5	38,075
Italy	1.3	28,396
Luxembourg	4.6	68,681
Netherlands	2.6	34,359
Portugal	2.4	19,707
Spain	3.7	27,284
Sweden	2.8	31,691
United Kingdom	2.8	32,265
Average	3.0	33,044

PPP = purchasing power parity

Sources: World Bank, *World Development Indicators* database, 2007; International Monetary Fund, *World Economic Outlook* database, September 2006.

roughly two-thirds of the growth in these countries, while the remainder was attributable to improved productivity.

Over time, East Asian growth rates have slowed down somewhat. The (unweighted) average annual growth rate in the decade 1996–2005 was 4.3 percent in the six East Asian countries, compared with 3 percent in the EU-15. (If the growth rate of the EU-15 were weighted it would decline about 1 percentage point to 2 percent a year because of the underperformance of three big EU economies.) The difference is not all that impressive, as the average GDP per capita in purchasing power parities in East Asia was $21,621, compared with $33,044 in the EU-15 in 2005 (table 9.1).

It can largely be explained merely by a laggard effect of economically more backward countries growing faster when they pursue the same economic policies as already richer countries. However, East Asian dynamism in this period was reduced by the devastating 1997–98 financial crisis. The difference in growth is not conspicuous but still significant.

How has East Asia been able to achieve the high growth rates and rates of investment in both physical and human capital, and what can other countries learn from this experience? This was the question asked by the World Bank (1993), which has become the standard source describing the principal elements of the "East Asian model."

East Asia is quite a varied region with respect to history, culture, and economy. Public policy in East Asian countries has also been far from homogeneous, but some key elements have been more or less common.[1] In comparison with the EU model, East Asia has some common features, some advantages, and some drawbacks. We start with the common positive features: sound macroeconomic policy, economic freedom, and export orientation.

- *Conservative macroeconomic policy*. All of the East Asian countries have long adhered to "sound fundamentals"—maintaining low budget deficits, inflation, and low current account deficits—which has created a stable business environment and encouraged high saving and investment rates. Over the last five years, inflation in the region averaged 2.3 percent, and current accounts and government budgets were in surplus at 9 and 0.4 percent of GDP, respectively (table 9.2). These good monetary and fiscal policies distinguish East Asian countries from other developing countries and even many developed countries. The advantages of "getting the basics right" remain unchallenged even while many other recipes for growth have gone out of fashion.

Since the adoption in 1993 of the Maastricht criteria on fiscal and monetary policy, the European Union has also pursued quite a conservative macroeconomic policy. The average budget deficit from 2000 to 2005 was a tiny 0.8 percent of GDP, and inflation has lingered around 2.2 percent, even better than East Asia's (table 9.2). There are two main explanations of the higher inflation in East Asia. First, the East Asians have kept their exchange rates low by buying up large international currency reserves, while the European Union has focused on combating inflation, which has been facilitated by the European Central Bank. Second, the Balassa-Samuelson effect leads to higher inflation in countries that are growing richer, because their low domestic price level is catching up with that of wealthier countries. The European Union does not appear to have much to learn from the East Asians in macroeconomics.

1. The summary below draws on World Bank (1993) and Stiglitz and Yusuf (2001).

Table 9.2 Stabilization indicators in East Asia and EU-15

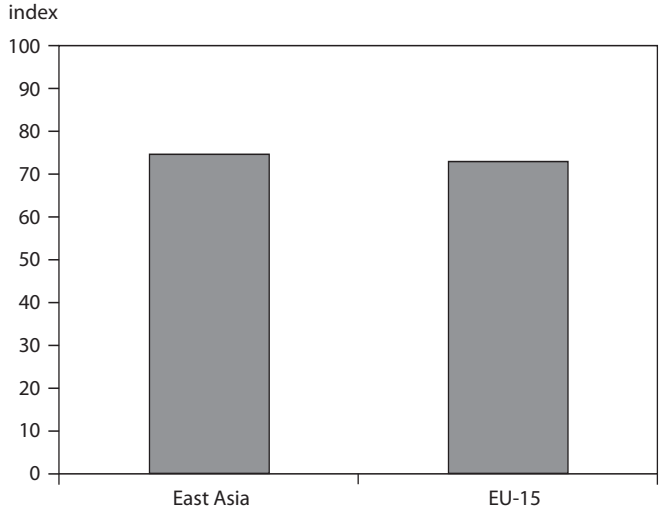
Country	Budget deficit, 2000–2005 (percent of GDP)	CPI growth rate, 2005 (percent)	Current account balance, 2001–05 (percent of GDP)
East Asia			
Hong Kong	–2.2	0.9	9.0
Korea	1.9	2.7	2.2
Malaysia	n.a.	3.0	11.4
Singapore	5.7	0.5	20.9
Taiwan	–3.9	2.3	7.0
Thailand	–1.4	4.5	3.7
Average	0.4	2.3	9.0
EU-15			
Austria	–1.2	2.3	–0.1
Belgium	0.2	2.8	3.6
Denmark	1.5	1.8	2.8
Finland	3.8	0.9	7.6
France	–2.9	1.7	0.2
Germany	–2.7	2.0	2.3
Greece	–5.4	3.5	–7.2
Ireland	1.2	2.4	–1.0
Italy	–2.9	2.0	–0.9
Luxembourg	1.8	2.5	9.3
Netherlands	–0.9	1.7	5.1
Portugal	–4.7	2.3	–8.0
Spain	–0.1	3.4	–4.7
Sweden	1.6	0.5	5.9
United Kingdom	–1.5	2.8	–1.8
Average	–0.8	2.2	0.9

CPI = consumer price index
n.a. = not available

Sources: World Bank, *World Development Indicators* database, 2007; International Monetary Fund, *World Economic Outlook* database, September 2006; UN Economic Commission for Europe database, 2007.

- *Economic freedom*. Overall economic freedom has not been much of an argument, because economic freedom in East Asia and the EU-15 is almost identical and among the highest in the world, although East Asia is slightly ahead of the EU-15 (figure 9.1). Prices and trade are free.
- *Export orientation*. Export promotion is considered to have been the "engine of growth" in East Asia. These states provided strong incentives for successful exporters via subsidies and favorable credit terms.

Figure 9.1 Economic freedom in East Asia and EU-15, 2007



Note: Economic freedom is graded using a scale from 0 to 100, where 100 represents the maximum freedom.

Source: Heritage Foundation and the Wall Street Journal, 2007 Index of Economic Freedom.

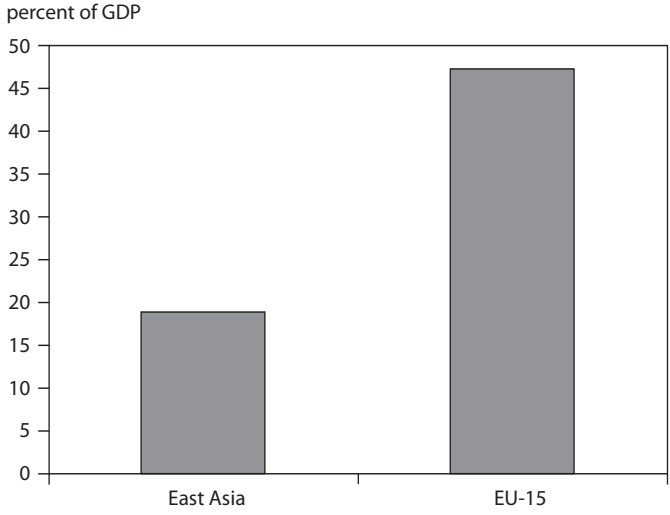
They also maintained competitive exchange rates, which contributed to domestic companies' export success. Because their domestic markets are small, export markets have been crucial for achieving efficient production scales. By maintaining open markets and by exposing domestic industries to foreign technology and foreign competition, the East Asian countries have been able to achieve a rapid rate of technological progress, which was critical for their economic growth. South Korea and Taiwan were not particularly open in the 1960s because of substantial protective tariffs and import substitution policies, but their openness has evolved.

Europe has an old and proud tradition of free trade and open markets, as the origin of such policies. One of the greatest achievements of the European Union is the single market. In this regard, East Asia has essentially followed Europe's successful lead, but it is still lagging behind in terms of freedom of trade.

East Asian advantages are noticeable in primarily four regards: smaller social transfers, lower taxes, freer labor markets, and stronger education.

- *Small social transfers and public expenditures.* Low public expenditures on social transfers are hallmarks of the East Asian economies. Here,

Figure 9.2 Public expenditures in East Asia and EU-15, 2005



Sources: European Commission, Eurostat database; International Monetary Fund, *World Economic Outlook* database, September 2006; International Monetary Fund, *Government Finance Statistics Yearbook 2005*.

the difference between East Asia and Europe is huge. In 2005 total public expenditures in East Asia amounted to about 19 percent of GDP compared with 47 percent of GDP in the EU-15 (figure 9.2). Most of the additional public expenditures in Europe are devoted to social transfers. The difference in policy on social transfers stands out as one of the most important quantitative and qualitative contrasts between the two models.

- *Low taxes*. A natural consequence of the limited public expenditures in East Asia is that taxes can also be kept relatively low. By all measures, East Asian taxes are far lower than in Europe, whether considering personal income taxes, corporate profit taxes, or consumption taxes. These low taxes should contribute to higher growth rates in East Asia.
- *Freer labor markets*. According to the original World Bank (1993, 266) study, "in East Asia, more than elsewhere, governments resisted the temptation to intervene in the labor market." Since wages flexibly adjusted to the demand for labor, East Asian economies have been able to adjust to changing economic conditions more quickly and less painfully, maintaining high employment levels. In 2005, when the whole world was booming, the average unemployment rate was 4.7 percent in East Asia, which appears a reasonable approximation of full employment,

Table 9.3 Labor markets in East Asia and EU-15

Country	Unemployment, 2005 (percent of labor force)	Rigidity of Employment Index, 2007[b]
East Asia		
Hong Kong	5.7	0
Korea	3.7	37
Malaysia	4.0[a]	10
Singapore	3.1	0
Taiwan	4.1	49
Thailand	2.0[a]	18
Average	4.7	19
EU-15		
Austria	5.2	37
Belgium	8.4	20
Denmark	4.8	10
Finland	8.4	48
France	9.5	56
Germany	9.5	44
Greece	9.8	55
Ireland	4.3	17
Italy	7.7	38
Luxembourg	4.5	62
Netherlands	4.8	42
Portugal	7.6	48
Spain	9.2	56
Sweden	7.8	39
United Kingdom	4.7	7
Average	7.1	39

a. 2004 data.
b. Based on World Bank *Doing Business* database, 2006.

Sources: World Bank, *World Development Indicators* database, 2007; International Monetary Fund, *World Economic Outlook* database, September 2006; UN Economic Commission for Europe database, 2007; World Bank *Doing Business* database, 2006.

compared with 7.1 percent in the EU-15 (table 9.3).[2] In this regard, East Asia went against dominant global tendencies, because overall richer countries tend to regulate their labor markets less than poor countries (Botero et al. 2004). Moreover, this discrepancy is considerable. European labor markets are about twice as rigid, or overregulated, as in East Asia, according to the World Bank's 2006 *Doing Business* database.

2. The figure is comparatively low because we used an unweighted average, considering that most big European countries have more unemployment than the small countries.

- *Strong education.* A persistent and common feature of all the East Asian countries has been a strong societal tendency to invest heavily in both public and private education. In recent Programme for International Student Assessment (PISA 2006) comparisons of education by the Organization for Economic Cooperation and Development in various developed countries, the East Asian countries regularly cram the top of the tables with the qualitatively best education. It is a great challenge for Europe to catch up with them, though Finland has already succeeded in beating most of them. Clearly, the disparity among EU countries is great, and this is and will remain a sphere of national policy among them.

Naturally, the East Asian countries also have some drawbacks. It would be rather surprising if they were ahead of the wealthier EU countries in all regards. Three aspects stand out: substantial state intervention, excessive tolerance of corruption, and mild authoritarianism.

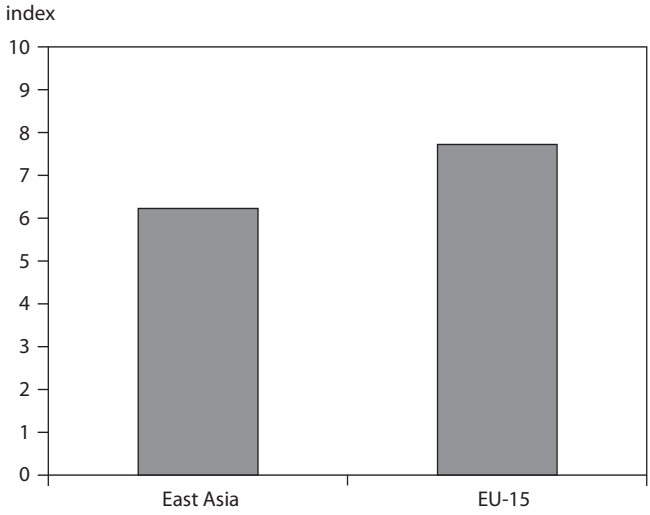
- *Substantial state intervention.* Very centralized economic decision-making power characterized some East Asian economies, especially South Korea and Taiwan, while Hong Kong and Thailand were non-interventionist. State interventions took many forms:

> Targeting and subsidizing credit to selected industries, keeping deposit rates low and maintaining ceilings on borrowing rates to increase profits and retained earnings, protecting domestic import substitutes, subsidizing declining industries, establishing and financially supporting government banks, making public investments in applied research, establishing firm- and industry-specific export targets, developing export marketing institutions, and sharing information widely between public and private sectors. (World Bank 1993, 5)

The governments of South Korea and Taiwan supported especially their heavy industry and high-tech sectors. They not only promoted research and development through direct and indirect subsidies but also allocated credit to preferred sectors, projects, and firms (Amsden 1989). Whether industrial policy was a major source of growth in these economies was a major dispute until the East Asian crisis. Today, a broad consensus in the economic growth literature sees state intervention as a negative influence (Barro and Sala-i-Martin 2004). Extensive industrial policy is now seen as a drawback in the East Asian model, which strangely has not cost all too much, presumably because these economies were catching up with the West, so it was relatively easy to divine which industries to support. The European Union has had less state intervention.

- *Tolerance of corruption.* Corruption ranges widely in the region. As measured by the Transparency International Corruption Perceptions Index, Singapore consistently ranks as one of the most transparent countries in the world, but most of the others are somewhat more cor-

Figure 9.3 Corruption in East Asia and EU-15, 2006



Note: The figure shows Transparency International's Corruption Perceptions Index (from 0 = "highly corrupt" to 10 = "highly clean").

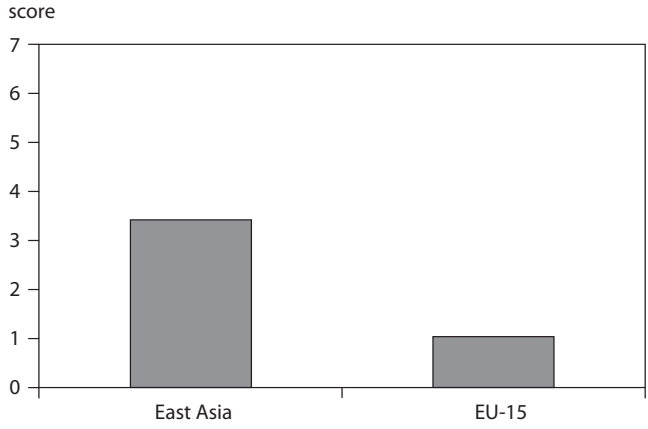
Source: Transparency International (2006).

rupt than the EU countries, making the group average somewhat more corrupt than the European Union (figure 9.3; Transparency International 2006). The special relationship between government and business in East Asia that was once celebrated as one of the causes of high growth was denounced as "crony capitalism" during the East Asian financial crisis and blamed for the severity of the economic downturn. Multicountry regression analysis suggests that corruption is bad for economic growth, so the higher corruption appears a negative factor (Mauro 1995).

- *Mild authoritarianism.* Another part of the "Asian development model" is a forceful bureaucracy able to achieve the developmental goals of the state. This "strong state" in the East Asian context frequently means an authoritarian, centralized state. According to the report recently released by Freedom House (2006; see figure 9.4), the region saw little change over the last year, with the majority of the countries remaining only partially free. Thailand was even downgraded from "partly free" to "not free" in 2006.

Evidently, the East Asian model is no panacea in comparison with the EU model, but it has an impressive record of higher economic growth. In several respects, the two models are more or less equal, namely in conser-

Figure 9.4 Political freedom in East Asia and EU-15, 2006



Note: The figure shows Freedom House Political Rights and Civil Liberties average score (from 1 = "free" to 7 = "unfree").

Source: Freedom House (2006).

vative macroeconomic policies, great economic freedom, and free trade. In at least three important regards, the East Asian model appears to have advantages over the EU model: smaller social transfers, lower taxes, and freer labor markets, and possibly in education as well. But East Asia also has some rather unattractive features: substantial state intervention, somewhat high corruption, and mild authoritarianism.

Controversy over the East Asian Model

After the World Bank labeled East Asia an economic miracle in 1993, a lively debate erupted. Initially, the discussion focused on an assessment of the actual quantitative effects of its different features. A natural follow-up was an interpretive debate on possible ideological conclusions.

Paul Krugman (1994) claimed that growth in East Asia was not sustainable because it was based primarily on factor accumulation—eventually subject to diminishing returns rather than productivity growth; it was not caused by a superior economic system but by great savings. Krugman argued that total factor productivity made a negligible contribution to growth in much of industrializing East Asia. It was "mainly a matter of perspiration rather than inspiration—of growing harder not smarter" (Krugman 1997, 27).

Several econometric papers responded to Krugman's assertions (notably, Collins, Bosworth, and Rodrik 1996; Iwata, Khan, and Murao 2003;

Ito and Krueger 1995; Ito and Rose 2004). Iwata, Khan, and Murao (2003) provided a late and convincing econometric analysis in which they found that Hong Kong, South Korea, Singapore, and Taiwan, the original Asian Tigers, had very similar total factor productivity growth of 3.4 to 3.9 percent over the long period of 1960–95, and total factor productivity accounted for no less than 44 to 47 percent of the output growth of each country during that period. Capital accumulation, by contrast, contributed only 25 to 28 percent of their output growth. Besides, something in their economic model apparently made East Asians save and invest more, not least in their human capital.

When the East Asian model dawned on the world as a miracle, the former Soviet Bloc was undergoing its transition. Leftwingers and rightwingers picked and chose what they liked in the East Asian model and singled out their ideological preferences as the cause of success. Leftwingers particularly liked the state intervention and its soft dirigisme, allowing the state to pick industrial "winners," but the role suggested for the state was rather limited. Although a certain acceptance of state ownership was suggested, nobody advocated increased state ownership (Amsden, Kochanowicz, and Taylor 1994; Aoki, Kim, and Okuno-Fujiwara 1996; Stiglitz 1996). Some even advocated more tolerance of corruption (Amsden, Kochanowicz, and Taylor 1994).

Jeffrey Sachs (1996) assumed the opposite rightwing point of view. He stated that the role of the state was exaggerated and particularly its positive impact. Looking at East-Central Europe, he argued: "Perhaps the greatest economic challenge in the medium term will be to reduce the scope and ambition of the social welfare state, both to ease chronic fiscal pressures, and to reduce the distortions caused by very high levels of labor taxation" (p. 55). Other authors (e.g., Kokko 2002) praised the trade liberalization of the East Asian countries, while singling out the selective large-scale export promotion and failed attempts to "pick winners" as particularly unsuccessful policies. The rightwing view of the East Asian experience was that its three big lessons were to keep social transfers small, taxes low and reasonably flat, and labor markets free, while excessive state intervention, especially to the benefit of the very large companies, remained a serious problem, breeding corruption and hampering economic growth.

The East Asian financial crisis of 1997–98 challenged the positive international opinion about the East Asian miracle and tested the many hypotheses of its causes.[3] A sense spread that something was profoundly wrong with this model. Two major conclusions emerged.

First, to peg exchange rates at unrealistic levels was obviously unfortunate, but this mistake had little to do with the model as such (Stiglitz and

3. See Adams and Ichimura (1998), ADB (1999), Henke and Boxill (2000), and Jomo (2001).

Yusuf 2001, 8–10). The East Asian countries adjusted their exchange rate policies, formally adopting more or less floating exchange rates, but they moderated their exchange rates downward by purchasing vast international currency reserves. The change of exchange rate policy did not have any ideological consequences.

Second, the benefits of industrial policy with directed credits and subsidies were seriously challenged. This ran against the arguments of, particularly, Alice Amsden (1989; Amsden, Kochanowicz, and Taylor 1994), who had cherished South Korea's state interventions. More broadly, the opaque governance system of both state and big corporations was questioned. The right saw "crony capitalism," the corrupt intertwining of large business and government, as the main problem (Krueger 2002). In this regard, the right won a major victory.

A large number of other arguments were raised, but they were soon forgotten, because the crisis was much less profound than first appeared to be the case, with Indonesia being a partial exception. By and large, the East Asian governments have become slightly more orthodox capitalists and their capitalisms slightly less crony. Their fiscal policies have become even more conservative. Leftwingers focused on what they considered premature financial liberalization, which had been advocated by the IMF (Stiglitz 2002), but the East Asian economies have become even more open after the crisis and their financial depth has evolved. Both the left and the right criticized the IMF for excessive intervention after the crisis erupted.

Robert Barro (2001) concluded that a sharp reduction of economic growth had occurred, especially in the five countries directly hit (Indonesia, Malaysia, the Philippines, South Korea, and Thailand). In particular, their investment rates were reduced. Still, in his broader analysis he found no evidence that the financial crisis had effects on growth that persisted beyond a five-year period. At present, the East Asian model looks even more attractive than before the crisis, although growth rates have faded somewhat as the development gap to the West has shrunk (Gill and Kharas 2006). The leftwing case for the success of the East Asian model, most strongly made by Alice Amsden (1989) for South Korea, is quite difficult to maintain today.

Thus, the ideological strife over the East Asian model now appears to point in the direction of a more unregulated market model, although that may change.

Adaptation and Reform of the European Union

Europe has undergone a great ideological change. Today, it is difficult to recall the ideas of far-reaching social engineering and egalitarianism that were so common in the 1970s, when marginal taxes of 90 percent were still

common. The belief in the capacity of the state is still far greater than in other parts of the world, but the understanding of the benefits of a freer economy and larger private sector is great and seems to penetrate ever more people and countries.

A comparison with either America or East Asia suggests that the European Union's most immediate need is to emulate three fundamental advantages of both models: smaller social transfers, lower and flatter taxes, and freer labor markets. To improve the education system is a much more complex reform that requires more elaboration. The reasons for undertaking such changes are well known and widely accepted. All three aims were incorporated into the Lisbon Agenda (European Council 2000).

The assumption is that lower public transfers give people greater incentives to save for their own social security, and lower taxes increase their ability to do so. Lower taxes also offer people better incentives to invest in their human capital through education. A deregulation of labor markets will improve the allocation of labor and reduce unemployment, and thus reduce the need for social transfers to the unemployed. A broad consensus has evolved among economists that these steps are necessary for Europe's future.

The question today is no longer how the EU model needs to adjust, but how it can most easily adjust to these three requirements. How can the economically vital become politically possible? Two competing approaches exist, top-down or bottom-up change.

The traditional EU approach has been top-down. From the outset, the European Union aimed at a greater centralization of political power. The essence of the Treaty of Rome is that the EU members get together and decide unanimously what the Union as a whole should do about ever more issues. Such a top-down approach of decision making was characteristic of the 1950s, which favored extensive state intervention, with industrial policy and mild central planning. All joint EU decisions, including the *acquis communautaire*, belong to this category. Not only the old EU model of economic policy but also the old EU model of decision making appears to have failed because they offered the wrong incentives. Rather than facilitating necessary reforms, they impeded them.

The sources of inspiration of the European Union's centralized mode of operation were many. The fundamental EU idea—no more war!—suggested that all governments should get together and agree. Another inspiration were the ideas of central planning and social engineering so prevalent after World War II, which have been conserved in the EU structures. The soft version of central planning is international harmonization and standardization. A third influence was that the European Commission was formed on the French administration with its Napoleonic centralization. Even when the European Union has advocated deregulation of various markets, it has done so in a centralized rather than a decentralized or competitive manner.

Strangely, this top-down mode of action has long been taken for granted. The Lisbon Agenda is also a child of this model. The European top politicians gathered and decided plan targets for what Europe should do. Alesina and Giavazzi (2006) accuse the Sapir report (2003) of the same flaw, although it argues for a much freer market economy in Europe.

Today, not only the content of common EU policy but also its mechanisms are now under serious scrutiny. For years, disappointment has developed with the EU top-down approach. A major cause was the apparent failure of the Lisbon Agenda. Although the European Union had solemnly declared clear quantitative targets, little action was taken to reach these goals (Gros 2007). The *acquis communautaire* functions as a conserving force: One rule after the other is added to the *acquis,* but it is exceedingly difficult to eliminate obsolete rules. As a result, the European Union is petrified and overregulated. To contemporary Europeans, the centralized EU model is seen as the way things are done in Europe. Naturally, the tremendous economic progress after World War II reinforces the European sense of having seen the light through the formation of the European Union.

Two recent events have exposed the EU mode of operation and its decision-making mechanism to new challenges. One was the referendums on the European Constitutional Treaty in the summer of 2005, in which France and the Netherlands rejected the Treaty. Even if the focal issues were not the centralized EU model, the popular rejections of the EU treaty undermined it. Another challenge was the sizable enlargement of the European Union in 2004, opening the Union to many nations with poorer populations and more liberal economic policies. At the same time, the gradual reinforcement of the internal market and global economic integration expose the EU countries to increasing competition. As a consequence, national governments felt compelled to accept responsibility for their economic policy and not only blame Brussels.

In fact, the EU model marks a sharp disruption of European precedence. Traditionally, Europe has been a disorderly and decentralized place, where each country has gone its own way, as economic historians emphasize (Rosenberg and Birdzell 1986, Landes 1998). One of the clearest illustrations of the old European model has been put forward by David Landes in his discussion of "European exceptionalism" from the Middle Ages. Landes argues that the strength of Europe lay in fragmentation:

> Fragmentation gave rise to competition, and competition favored good care of good subjects. Treat them badly, and they might go elsewhere. (p. 36)
>
> Ironically, then, Europe's great good fortune lay in the fall of Rome and the weakness and division that ensued. (p. 37)
>
> The economic expansion of medieval Europe was thus promoted by a succession of organizational innovations and adaptations, most of them initiated from below

> and diffused by example. The rulers, even local seigneurs, scrambled to keep pace, to show themselves hospitable, to make labor available, to attract enterprise and the revenues it generated. (p. 44)

This traditional European approach of competitive evolution has come to the fore after the failure of the constitutional referendums and the recent enlargements. The most obvious example is the tax competition that is spreading from the East.

It started in 1994 in Estonia with a 26 percent flat personal income tax (now 22 percent), and ever lower flat income taxes have proliferated (in chronological order) to Lithuania, Latvia, Russia, Ukraine, Slovakia, Georgia, Romania, and Kyrgyzstan (table 9.4). In spite of predictions to the contrary, flat personal income taxes are continuing to spread (Keen, Kim, and Varsano 2006); at present, Bulgaria and Poland are seriously considering the introduction of flat personal income taxes. The overall effect has been considerable. The average highest personal income tax has fallen among ten new EU members in Eastern and Central Europe by 7.8 percentage points from 37.0 percent in 1998 to 29.2 percent in 2006. This has also had effects on the old 15 EU members, whose maximum marginal income tax has decreased meanwhile by 3.1 percentage points from 48.9 to 45.8 percent. Needless to say, liberal migration rules in Europe will further sharpen tax competition.

Considering that capital is more mobile than labor, we would expect tax competition to have even greater impact on corporate profit taxes, and that is indeed the case, as is evident from table 9.5. From 1995 to 2007, the average corporate tax fell by no less than 12.9 percentage points in the 10 new EU members and almost as much as 9 percentage points in the 15 old EU members. At the same time the dispersion of corporate profit taxes has declined sharply. No single European country has as high a corporate profit tax as the United States (40 percent). All EU countries, save Finland and Sweden, which had the lowest tax already, have reduced their corporate profit taxes since 1995. This tendency toward lower taxes is no global phenomenon but a European exception (KPMG 2007).

The most fundamental question about Europe's future might be whether tax competition will be allowed or not. If it will, the overall tax pressure is likely to fall toward the lowest level, that is, from currently about half of GDP to barely one-third of GDP, the level in Romania and Lithuania (EBRD 2007). The champions of tax competition are most of the new members, the United Kingdom, Ireland, and Luxembourg. As part of its radical market reforms, Ireland reduced its profit tax to 12.5 percent, and Estonia has abolished profit tax on reinvestments as undesirable. The main opponents have been Germany and France. In 2006 German Minister of Finance Peer Steinbrück lashed out against Austria because of its decision to cut corporate tax rates from 34 to 25 percent: "In the case of Austria we are dealing not with a moderate position but a rather ambitious

Table 9.4 Personal income tax (percent)

Country	1998	2000	2006	Tax rate
EU-15				
Austria	50.0	50.0	50.0	p
Belgium	55.0	55.0	50.0	p
Denmark[a]	58.0	59.0	59.0	p
Finlanda	n.a.	n.a.	50.9	p
France	n.a.	n.a.	40.0	p
Germany	53.0	53.0	42.0	p
Greece	45.0	42.5	40.0	p
Ireland	46.0	42.0	42.0	p
Italy	46.0	45.5	39.0	p
Luxembourg	46.0	46.0	38.9	p
Netherlands	60.0	52.0	52.0	p
Portugal	40.0	40.0	42.0	p
Spain	48.0	39.6	45.0	p
Sweden[a]	n.a.	n.a.	56.6	p
United Kingdom	40.0	40.0	40.0	p
EU-15 average	48.9	47.1	45.8	
10 new EU members[b]				
Bulgaria	40.0	38.0	24.0	p
Czech Republic	40.0	32.0	32.0	p
Estonia	26.0	26.0	23.0	f (since 1994)
Hungary	42.0	40.0	36.0	p
Latvia	25.0	25.0	25.0	f (since 1995)
Lithuania	33.0	33.0	27.0	f (since 1995)
Poland	40.0	40.0	40.0	p
Romania	45.0	40.0	16.0	f (since 2005)
Slovakia	42.0	42.0	19.0	f (since 2004)
Slovenia	n.a.	42.0	50.0	p
10 new EU members average	37.0	35.8	29.2	
Overall average	43.8	41.9	39.2	

f = flat, p = progressive
n.a. = not available

a. State taxes plus municipality taxes.
b. Excluding Malta and Cyprus.

Note: Table shows top statutory rate (highest marginal).

Sources: European Commission (2007); World Bank, *World Development Indicators* online database (accessed on November 5, 2007).

and aggressive attempt to get companies to come to Austria" (Parker 2006). However, before his demise, even German Chancellor Gerhard Schröder, the other great enemy of "tax dumping," made a failed attempt to reduce the German federal profit tax by 6 percentage points. France's

Table 9.5 Corporate tax, statutory rate (percent)

Country	1995	2000	2007
EU-15			
Austria	34.0	34.0	25.0
Belgium	40.2	40.2	34.0
Denmark	34.0	32.0	28.0
Finland	25.0	29.0	26.0
France	36.7	36.7	33.3
Germany	59.0	51.6	38.4
Greece	35.0	40.0	25.0
Ireland	38.0	24.0	12.5
Italy	53.2	41.3	37.3
Luxembourg	40.3	37.5	29.6
Netherlands	35.0	35.0	25.5
Portugal	39.6	37.4	25.0
Spain	35.0	35.0	32.5
Sweden	28.0	28.0	28.0
United Kingdom	33.0	30.0	30.0
EU-15 average	37.7	35.4	28.7
10 new EU members[a]			
Bulgaria	30.0	20.0	10.0
Czech Republic	41.0	31.0	24.0
Estonia	26.0	35.0	22.0
Hungary	18.0	18.0	16.0
Latvia	25.0	25.0	15.0
Lithuania	29.0	24.0	15.0
Poland	36.0	30.0	19.0
Romania	38.0	25.0	16.0
Slovakia	40.0	29.0	19.0
Slovenia	25.0	25.0	23.0
10 new EU members average	30.8	26.2	17.9
Overall average	35.0	31.7	24.4

a. Excluding Malta and Cyprus.

Sources: KPMG (2007); World Bank, *World Development Indicators* online database (accessed on October 26, 2007); World Bank and PricewaterhouseCoopers (2006); EBRD (1995, 2001).

President Jacques Chirac, another great critic of "fiscal dumping," proposed to slash France's profit tax from 33 to 20 percent soon before his departure.[4] As tables 9.5 and 9.6 indicate, tax competition is thriving, and it is not likely to be contained.

4. Vanessa Houlder, "Europe's Tax Rivalry Keeps Multinationals on the Move," *Financial Times*, January 19, 2007, 11.

Table 9.6 General government expenditure
(percent of GDP)

Country	1995	2000	2005
EU-15			
Austria	56.0	51.4	49.9
Belgium	51.9	49.1	49.9
Denmark	59.6	54.2	53.1
Finland	61.6	48.3	50.5
France	54.4	51.6	53.7
Germany	54.8	45.1	46.9
Greece	45.5	46.7	43.2
Ireland	41.1	31.5	34.2
Italy	52.5	46.2	48.3
Luxembourg	39.7	37.6	41.8
Netherlands	56.4	44.2	45.2
Portugal	42.8	43.1	47.7
Spain	44.4	39.1	38.5
Sweden	67.1	57.1	56.6
United Kingdom	44.9	39.8	44.5
EU-15 average	51.5	45.7	46.9
10 new EU members[a]			
Bulgaria	41.3	39.7	37.5
Czech Republic	40.5	41.8	43.6
Estonia	39.4	36.5	33.2
Hungary	52.6	46.5	50.0
Latvia	37.5	36.7	35.5
Lithuania	34.7	32.5	32.5
Poland	50.1	41.1	43.3
Romania	34.7	35.3	31.0
Slovakia	54.1	63.1	38.0
Slovenia	41.6	47.4	46.0
10 new EU members average	42.7	42.1	39.1
Overall average	48.0	44.2	43.8

a. Excluding Malta and Cyprus.

Sources: European Commission, Eurostat (accessed on November 30, 2007); European Bank for Reconstruction and Development online database (accessed on November 30, 2007).

The reduced taxes have been accompanied by improved fiscal discipline and lower public expenditures (table 9.6). In this regard, the 15 old EU members starred, cutting their average public expenditures by almost 6 percentage points from 1995 to 2000, which occurred as a preparation for the introduction of the euro. The sharpest cuts were undertaken by Finland, Sweden, and Ireland, which cut their public expenditures im-

pressively by 13, 10, and 10 percentage points, respectively. The new EU member states did not have such high public expenditures to begin with, so their cuts have been more moderate. Even if the old EU members have seen their expenditures rise slightly during the long boom, the trend toward lower public expenditures is likely to recur with leaner times and more tax competition.

Although less striking, another characteristic of Europe today is competitive deregulation of goods, services, and labor markets. Some of this deregulation is inspired by the European Commission, but most of it is not. Examples are the very gradual deregulation of the labor markets that most EU countries are now pursuing (Lenain 2007). The big breakthrough was Margaret Thatcher's acrimonious deregulation in the 1980s, which was later emulated by Ireland, contributing to that country's great economic success. Even if European deregulation is tardy and piecemeal, it is steady.

Conclusions: Competition Revives Subsidiarity

The hype about the East Asian miracle has abated, but its specific advantages have also become more evident, namely low social transfers, low and relatively flat taxes, and free labor markets, leading to high investment in both physical and human capital and high economic growth. Hardly anybody praises its minor remaining crony features—state intervention, more corruption, and less democracy—as benefits after the Asian financial crisis of 1997–98. Europe has learned these most obvious lessons. A broad consensus, as reflected in the Lisbon Agenda, agrees that the European Union needs to emulate these three features of the East Asian model not to be left behind in near stagnation and ultimate decline.

The question today is not whether the European Union needs to adopt the three liberal features of the Asian model but how to do so most easily. The main idea of this chapter is that the centralized mode of resolving problems in the European Union, which has accomplished a great deal in the last half century, has run its course. What Europe needs today is not top-down decisions but a greater acceptance of bottom-up reforms of taxation, social transfers, and deregulation, based on its traditional comparative advantage, competition among the European countries and regions. In particular, tax competition should be welcomed and facilitated. The same is true of regulatory competition, notably labor market deregulation, which will be greatly facilitated by freer movement of labor.

We may attempt a concrete prediction of the outcome of these changes already under way. First, since enterprises are easily relocating from one country to another, we may expect corporate profit taxes to rapidly fall to 15 to 20 percent. Considering that labor is much less mobile, a higher taxation of labor may still be feasible. Yet, given the new trend of flat personal income taxes in the range of 16 to 25 percent in several new EU

members, personal taxation might go through a radical reduction because of the example and moral imperative rather than factor mobility. A natural consequence would be that the total burden of taxation declines from about half of GDP to one-third of GDP, which appears a reasonable level (Tanzi and Schuknecht 2000).

With the anticipated greater labor mobility in the European Union, the need for Europeanization and harmonization of pension rules and payroll taxation is becoming ever greater, which would probably have to be done in the old top-down fashion. Evidently, because of fiscal constraints, systems of social transfers have to adjust, which is likely to be done incrementally at a national level. Ever since Britain's deregulation of its labor market in the 1980s, similar reforms have spread piecemeal through Europe. After they have proved both their economic and social efficacy, they are likely to proliferate further.

In theory, the European Union has long cherished the principle of subsidiarity. In reality, however, the rhetoric has suggested that everything needs to be done top-down by the European Commission. The referendums of the summer of 2005 were a rude surprise to the EU establishment. Their productive outcome might be that subsidiarity has become reality, and that the European Union's excessively hierarchical mode of functioning has become supplemented with a healthy element of horizontal competition between countries and regions. The perceived power of the European Commission in Brussels has been rolled back to what it formally is and what it was supposed to be.

If the trends suggested here were to hold, the European Union might have found a good formula for future economic development. The liberal features of *acquis communautaire*—the free movement of goods, services, capital, and labor—provide Europe with a level playing field. Globalization and enlargement reinforce the competition. Then, ceteris paribus, Europe will be prone to move in a more free-market direction than East Asia or the United States.

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10

Eight Potential Roadblocks to Smooth EU-China Economic Relations

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For about two decades, economic relations between the European Union and China developed impressively and, putting aside episodic sectoral tension, without causing major dispute. For the European Union, China has become the first source of imports and the fourth largest export market (behind the United States, Switzerland, and Russia). Likewise, for China, the European Union has become the second source of imports (behind Japan) and the second largest export market (behind the United States). Although EU-China bilateral trade has been permanently imbalanced in favor of China, the situation did not raise significant concerns among European policymakers until recently. European foreign direct investment (FDI) to China has also developed substantially over the last decade to reach some €6 billon in 2005, and the European Union has become one of China's most important investment partners.

The smooth development of EU-China relations contrasts with the emotional, generally politicized, and sometimes tense character of US-China relations. In fact, those relations have only recently become a matter of

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public interest in Europe.[1] Before, the international rise of China and its global economic implications had long remained almost unnoticed—and certainly underestimated. In the 1990s and early 2000s, political energy was essentially devoted to addressing internal issues such as the creation of the Single Market and the euro or EU enlargement. An illustration of this apparent neglect was the fact that Europe's new economic strategy (the "Lisbon Agenda") adopted in 2000 essentially ignored the opportunities and challenges posed by China's growth and development.

Perceptions have changed, and initial inattention is quickly being corrected. At the political level, the EU-China annual summit has gained prominence on the diplomatic agenda. The bilateral trade relationship has attracted growing attention, especially after the lifting in 2005–07 of trade restrictions inherited from the Multi-Fiber Arrangement. Europe's longstanding indifference toward Chinese exchange rate policy has also ended, as illustrated by the joint visit to Beijing in November 2007 by the president of the euro area's Council of Ministers, the president of the European Central Bank (ECB), and the Commissioner for Economic and Monetary Affairs. Nevertheless, European interest in and concern about China remain strikingly less intense than US fascination with it.

The thesis of this chapter is that such a situation is paradoxical given the intensity of the bilateral relationship and the fact that China's development represents an even more significant economic challenge to Europe than to the United States. We certainly do not dispute that this relationship creates trade and investment opportunities for Europe as well as China. Yet we point out that it would be unwise to ignore its challenges and the corresponding potential roadblocks on the way to the development of smooth economic relations between China and the European Union. It is only by clearly identifying those challenges, by addressing them explicitly, and by developing a far-reaching dialogue on the possible risks and appropriate responses that policymakers on both sides can reap the full potential of EU-China relations.

We identify eight channels through which China's growth is bound to affect Europe in a distinctive way:

1. Europe's industry is at risk of being squeezed between the United States and China.
2. Dysfunctional European labor markets add to the adjustment cost.
3. Chinese integration into the world economy may interfere with the process of European integration.
4. European privileged trade relations are being destabilized by Chinese competition.

1. The first EU policy paper on China was issued in 1995, almost two decades after the Chinese economy had started to transform, and the first EU-China summit meeting took place in 1998. See Barysch (2005) for an overview of the development of EU-China relations.

5. China's effort to secure access to energy and raw materials affects an import-dependent European Union.
6. Europe's and China's stances on climate change may result in conflict over greenhouse gas emissions containment and its trade implications.
7. The euro exchange rate risks being the ultimate adjustment variable.
8. China's rise to world economic power status is bound to reduce Europe's weight in the governance of international organizations.

Some of those channels are specific to Europe; some others affect other countries too. The origins of Europe's particular position are not identical either across the eight channels; they include its economic situation and institutions, its policies, and its integration process. Addressing the corresponding problem should in some cases be the task of European or Chinese policies; in others it could be the focus of joint action between China and the European Union, and in still others it is beyond the reach of policy actions and Europeans must simply adjust to reality.

What is certainly specific to Europe, however, is the coexistence of those eight potential roadblocks. This is why we claim that policymakers from both sides should reflect on the corresponding challenges and address them explicitly rather than ignore them.

We take the channels one by one and for each briefly discuss the issue, the risks, and the policy options. We offer general conclusions at the end of the chapter.

Europe Is at Risk of Being Squeezed Between the United States and China

In spite of its claims and hopes, the European Union is far from being a knowledge-based economy. It is even far from being en route to becoming one. While the United States has moved decisively toward becoming a high-technology, service-based economy, the European Union's economic strength and comparative advantage remain in manufacturing. Some of the EU member states still remain specialized in low-technology manufactures (table 10.1).

Several other indicators confirm that Europe has not yet embarked on the kind of transformation the US economy has been undergoing for well over a decade.

First, manufacturing[2] (OECD 2004) still represents about 30 percent of total employment in the European Union (EU-27), against 20 percent in the United States. Its share in employment and value added is especially

2. Manufacturing also includes mining, electricity, water, and construction.

the situation for Europe, or at least parts of it: While Germany's strong comparative advantage in equipment goods enables it to benefit from China's demand for them, countries like Italy and Spain do not enjoy the same comparative advantage.

Turning to policy implications, the Europeans should obviously not blame China for their own inability to transform themselves and reinvent their comparative advantage. The response strategy should, to a very large extent, be the one they defined at Lisbon in 2000: invest massively in knowledge and education, focus on innovation, and make the economic system better equipped for change. Unfortunately, so far there has been too little action on this front.

The rise of China therefore reinforces the necessity to transform the European economy and makes procrastination more costly and less acceptable.

Dysfunctional European Labor Markets Add to Adjustment Cost

For trade gains to materialize, factors of production need to relocate to new sectors in which the European Union can exploit its comparative advantage. This process is never as smooth as in the textbook case of perfectly competitive markets for capital and labor since it always involves adjustment costs. The magnitude of these costs depends on the quality of domestic institutions—the functioning of labor, product, and capital markets.

The problem for Europe (or at least for the large continental economies of the EU-15) is that the functioning of labor markets—and of product, housing, and capital markets as well—is not conducive to adjusting international specialization.

Continental European labor markets are notoriously dysfunctional when it comes to ensuring the relocation of displaced workers. Workers who approach the retirement age—a frequent situation in traditional industries such as textile, apparel, and light manufacturing—are generally unlikely to find another job because there is virtually no labor market for people over 55. A series of comparative studies of France, Germany, Spain, and the United States in the 1990s found that the probability of reemployment for a low-skilled worker over 55 was at least six times lower in Europe than in the United States (Pisani-Ferry 2000). Thus when a plant that employs middle-aged, low-skilled workers in a small city closes, a large number of the workers end up permanently unemployed. Recent EU efforts to increase the participation and employment rates of older workers and get rid of early retirement schemes have produced results in many member states: The employment rate of "older workers" (aged 55–64) in the EU-27 increased from 37 to 43 percent between 2000 and 2006. Nonetheless, the EU rate remains far behind the levels in Japan or the United States, where it is above 60 percent.

Even for prime-aged employees, empirical evidence suggests that the cost of losing a permanent job is substantial. In France, Margolis (2000) reckons that, on average, workers laid off from a permanent job because of industrial restructuring remain unemployed for more than six months and that those who do not find a new job quickly typically lose one-fourth of their wage income (one-half for women). Those who take a new job in another place also take on the costs related to access to subsidized housing and public services. Furthermore, public policy is generally not effective in redistributing trade gains to those on which the burden of adjustment falls.

The problem is not limited to labor markets. European product and credit markets are not conducive to adjusting through the creation and growth of new businesses. The OECD (2003) has shown that while the birth and death rates of new companies are roughly the same in Europe and the United States, after a few years the typical newly founded European company has barely increased the number of employees on its payroll, whereas the typical new US company has doubled in size. In other words, the process of adjusting to economic change is much slower in Europe than in the United States. This means that adjusting to a change such as the development of China's production and export is often painful for European economies, even when they are poised to gain from restructuring their own production and foreign trade.

Governments in several EU countries have started to emphasize the functioning of the labor market, the incentive properties of unemployment insurance, and the quality of the match between labor supply and labor demand. The accepted slogan is that public policies should equip people for economic change and assist them in coping with it, rather than prevent change. "Flexicurity," which promotes a combination of flexible labor markets and a high level of employment and income security, is often seen as the answer to the European Union's dilemma of how to maintain and improve competitiveness while preserving its social model(s). However, many continental European countries are still some distance from reinventing their economic institutions to adapt to a fast-transforming world economy.

In 2007 the European Union introduced the European Globalization Adjustment Fund to provide labor market support to trade-displaced workers. Although, like US trade adjustment mechanisms, the new fund is fraught with problems (Wasmer and von Weizsäcker 2007), it is nonetheless a step in the right direction, helping to make market opening politically sustainable and avoid a backlash against the hardships of globalization.

Chinese Integration into the World Economy May Interfere with European Integration

The recent European enlargement has greatly increased economic disparities in the European Union, and further EU enlargement, to the western

Table 10.2 Export specialization index, Central and Eastern European member states of the European Union

Country	Technological intensity				Information and communication technology
	High	Medium-high	Medium-low	Low	
Czech Republic	0.6	1.1	1.6	1.0	1.0
Hungary	1.2	1.0	0.7	1.0	2.0
Poland	0.3	0.8	1.9	1.7	0.4
Slovakia	0.2	1.1	2.0	1.2	0.3

Note: The export specialization index is the ratio of the share of a given product in the country's exports to the share of the same product in OECD exports. It is an indicator of revealed comparative advantage.

Source: Organization for Economic Cooperation and Development Structural Analysis (STAN) database.

Balkans and beyond, is on the agenda for the years ahead. Making the enlarged Europe of 27 countries an economic, and not only an institutional, reality is now a priority. The new member states are expected to catch up, over time, with the older ones, but this process is bound to take several decades. In the meantime, the European Union is going to be in transition, and a significant part of its energy will be absorbed by its own integration.

This integration process is bringing together rich, mature economies and new member states that can be characterized as relatively well endowed in human capital but poor in physical capital. Export specialization indices confirm that the new members' comparative advantages differ significantly from those of the old member states; this is especially the case for Poland and the Slovakia (table 10.2). The integration process will thus involve the relocation of labor-intensive industries to the new member states and the emergence of a new division of labor across Europe. However, it does not take place in an international vacuum. China shares some of the characteristics of the new member states: It is capital-scarce but has a very elastic supply of unskilled labor, and while it is relatively less well endowed in skilled labor than the new EU member states, it is fast increasing its stock of skilled labor.[3]

To some extent, therefore, China and the new member states are competing locations for investment from the capital-rich old EU members. This is the viewpoint of many European policymakers, who tend to see enlargement as an opportunity to improve European competitiveness in the face of globalization. They point to the transformation of German industry and its successful relocation of the most labor-intensive production segments in the new member states, which have helped Germany recoup its

3. Farrell et al. (2005) provide interesting data on the supply of skilled labor in major emerging regions and discuss the potential for offshoring.

position as the world's number one exporter. In this way, enlargement or, more precisely, economic integration in the enlarged European Union can be regarded as a response to the pressure of globalization. But public opinion in the old member states tends to regard enlargement and globalization as two mutually reinforcing transformations that result in an accelerated relocation of jobs. Viewed in this way, the strains of enlargement reduce the political tolerance to the strains of globalization—and vice versa.

The response to this challenge belongs again to the European Union. Successful economic integration of the new member states may be conducive to an improvement in the overall competitiveness of the European Union. For this to happen, however, the comparative advantage of the new member states needs to be exploited in full, and their catching up needs to be supported by EU policies. In such a scenario, accelerated growth and catching up would make tangible the notion of a positive-sum game from which both old and new member states can expect to gain (as in fact happened in the 1980s and the early 1990s with enlargement to Greece, Portugal, and Spain). It would also favor external liberalization. A less favorable scenario, however, could heighten fears and make the European Union less able to cope with the globalization challenge.

Chinese Competition Is Destabilizing Europe's Privileged Trade Relations

More than the United States and Japan, the European Union has created a network of bilateral and regional trade agreements that give partners preferential access to its market. Over the last two decades, trade policy has been used as an instrument of political or development aims—especially as the European Union has responsibility for trade policy but lacks other instruments to conduct foreign policy. Trade agreements have been signed with countries that aimed to join the European Union but were not considered legitimate candidates, with ex-colonies, and with countries in which the European Union intended to express positive interest. The result is an impressive web of preferential trade agreements (Sapir 1998).

With developing partners, these agreements embody a commitment from the European Union to contribute to their development. For example, economic partnership agreements (EPAs) with African, Caribbean, and Pacific (ACP) countries aim at encouraging trade both with the European Union and among the developing-country partners. Several countries (e.g., in the Mediterranean region) have effectively tied their development strategy to the preservation of privileged access to the EU market.

Beneficiaries of such preferential trade agreements generally tend to resist multilateral trade liberalization or at least try to slow it down. Their reluctance is likely to be heightened by the risk of seeing their exports to

the European Union substituted by more competitive Chinese exports, as is the case with textiles and clothing.

In the Doha Round, the European Union has come under pressure from China and other G-20 countries to liberalize its market on a multilateral basis and from ACP and other G-90 countries to preserve their preferential treatment. It remains to be seen whether and how the European Union will manage to satisfy both groups.

Contrary to the past EU-ACP trade agreements, which provided only for nonreciprocal preferential access to the European market, the new EPAs also give EU exporters preferential access to ACP markets. Although the reciprocal nature of these agreements was essentially imposed by the need to bring the EU-ACP trade relationship in line with WTO rules, it also serves EU interests well, as EU exporters enjoy a substantial preferential margin over their competitors given that tariff levels tend to be quite high in ACP countries. This may help the European Union to counter China's growing trade and investment influence in Europe's former colonies, especially in Africa (concern about the rapid expansion of China's economic relationship with Africa was certainly a key driver of the EU-Africa summit in Lisbon at the end of 2007, the first such summit in seven years).

China's Strong Demand for Energy and Raw Materials Affects Import-Dependent European Union

In recent years, China's emergence as a major importer of energy and raw materials has had significant effects on world markets. From 1995 to 2005, its demand for energy accounted for 32 percent of the growth in total energy demand, whereas Europe accounted for only 11 percent.[4] According to the International Energy Agency, China's demand for energy should continue to grow in the years ahead and more than double between 2005 and 2030 (IEA 2007). The same applies to other raw materials, for which China's share increased from 0.7 percent of world imports in 1985 to 6.4 percent in 2005 (Lemoine and Ünal-Kesenci 2007). Overall, China's share in these markets is strongly affected by its demand.

As a major importer, Europe is obviously affected by the increase in the relative price of energy and corresponding deterioration of its terms of trade. China's development is therefore often considered a threat to Europe's own growth and income. Europe, it is feared, could lose out from changes in relative prices resulting from China's emergence.

But casual analysis can be seriously misleading. While it is correct to point out that China's emergence resulted not only in a global supply shock to the market for manufactures but also in a global demand shock

4. Based on data from the US Energy Information Administration.

to the market for raw materials, the pessimistic view overlooks China's impact on Europe's terms of trade, which can be assessed only in a general equilibrium setting: China's supply of cheap manufactures and its demand for expensive European products have to be taken into account also. Interdependence through changes in relative prices is a feature of the world economy, and the European Union would have little ground for complaining about the rise in the price of raw materials without considering the benefits of cheaper imports and an increased demand for its own products. We are not aware of studies that provide a comprehensive assessment of China's impact on European incomes.

It is true that (1) the effects of China have been staggered, with the drop in the price of manufactures coming first and the rise in the price of raw materials second, and (2) as always with changes in relative prices, the impact of this shock differs across countries and individuals, leading to a redistribution of income.

Another related issue is energy security. In recent years, China has developed an effort to secure access to oil and other sources of energy through a series of bilateral agreements. The issue here is whether the combination of higher world demand for energy and China's supply policy in some way threatens the European Union's own security.

There are two ways to promote secure access to energy, raw materials, and food. One is to rely on the depth of open markets and on multilateral rules and institutions designed to accomplish the proper functioning of these markets. The other policy is to rely on self-insurance through the accumulation of reserves or bilateral deals with selected partners. According to this approach, economic security requires investing in the development of arrangements that can be activated when appropriate.[5] Both solutions are hardly compatible in a tight market, because recourse to bilateral or unilateral arrangements reduces the depth of markets and therefore the security of the countries that primarily rely on it for ensuring their supplies.

In the last decades, the oil market has evolved in the direction of the first model, while bilateral agreements tend to predominate for natural gas, for which infrastructure and transport costs are much higher. This is true also for Europe, which relies on the global market for its oil supplies but has entered into agreements with Russia and developing countries to ensure continued access to gas reserves. But as observed by Coby van der Linde (2007), the European Union lacks the instruments of a state and therefore prefers market-based solutions, whereas individual member states can also rely on the traditional instruments of energy diplomacy.

5. Financial security can be analyzed along the same lines. Some countries choose to rely on the depth of the global financial system and the insurance provided by multilateral financial institutions; others prefer to build self-insurance through the accumulation of reserves and the securing of specific deals with private or public financial institutions.

Table 10.1 Export specialization index, selected countries

Country	Technological intensity				Information and communication technology
	High	Medium-high	Medium-low	Low	
United States	1.4	0.9	0.7	0.8	1.5
EU-15	0.9	1.0	1.1	1.1	0.8
Germany	0.8	1.2	1.1	0.7	0.7
France	0.9	1.0	1.0	1.1	0.7
United Kingdom	1.5	0.8	0.8	0.8	1.5
Italy	0.5	0.9	1.3	1.7	0.3
Spain	0.4	1.1	1.3	1.3	0.4

Note: The export specialization index is the ratio of the share of a given product in the country's exports to the share of the same product in OECD exports. It is an indicator of revealed comparative advantage.

Source: Organization for Economic Cooperation and Development Structural Analysis (STAN) database.

high in Germany and the new member states of Central and Eastern Europe. Furthermore, productivity growth in Europe still largely depends on the performance of the manufacturing sector. Unlike the United States, recent years have not witnessed the emergence of high-productivity service sectors that could replace manufacturing as engines for growth. Europe's economy thus remains much more rooted in manufacturing than that of the United States.

Second, European R&D still represents only about 2 percent of EU GDP and has not yet started to increase despite the repeated political commitment to raise it to 3 percent under the Lisbon Agenda. At the same time, the proportion of the population of working age with tertiary education remains below one-fourth, against more than one-third in the United States. With total (public and private) EU spending on tertiary education remaining around 1½ percent of GDP (against almost 3 percent in the United States), investment in education is well below what would be required to bridge the gap (OECD 2007).

What this means is that unlike the United States, Europe has demonstrated a limited ability to develop a new comparative advantage based on knowledge and innovation. As China develops and moves away from traditional low-skill sectors toward more skill- and research-intensive sectors, Europe's traditional comparative advantage is being eroded. This is exactly the type of situation in which the Samuelson (2004) argument has relevance. While it is wrong to claim that the erosion of a country's traditional comparative advantage implies an income loss if new comparative advantages simultaneously emerge in other sectors, it is true that a country whose comparative advantage is being eroded faces an income loss if it does not move ahead and change its production mix. This is precisely

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China meets its growing oil demand on the open market as well but at the same time also relies on bilateral oil agreements. These are not likely to undermine the functioning of the global market or the energy security of the European Union, but a significant shift toward bilateral agreements could trigger reactions from other countries and contribute to changing the pattern of world oil supplies.

The issue deserves a serious forward-looking dialogue between the European Union and China, in which both partners could spell out their views on the future of energy and raw material markets, discuss corresponding securities issues, and envisage potential cooperation. Candid dialogue would be preferable to suspicion.

Europe's and China's Stances on Climate Change May Result in Conflict over Emissions Containment and Its Trade Implications

The European Union has for a long time advocated the reduction of greenhouse gas emissions, but it is only in the 2000s, when the Bush administration backtracked on previous US commitments, that it has taken the lead in pushing for international agreements on climate preservation. Its efforts resulted in the ratification and entry into force of the Kyoto protocol in 2005 despite the opposition of the United States and (at the time) Australia. In 2007 a further step was the unilateral commitment to reduce, by 2020, EU emissions by 20 percent (and by 40 percent in the framework of a concerted international endeavor). Already in 2005, a system of tradable quotas called the European Union Greenhouse Gas Emissions Trading Scheme (EU ETS) was put in place with a focus on energy-intensive industries.

China's perspective is very different. Although it is at risk of suffering significant damage from climate change, its major priorities remain economic development and job creation. Starting from a low per capita base, its total emissions are expected to overtake those of the United States by 2015 and to continue growing rapidly in the ensuing decades.

This creates two potential areas for conflict. The first, based on the sheer size of China, is that the effects of Europe's efforts are bound to be dwarfed by Chinese developments. This may lead to some European frustration and to disputes over the distribution of the burden of emission control.

The second area for conflict is commercial. Tough European measures (through regulation, emission control, or taxation) will inevitably affect the international competitiveness of European countries in certain sectors. Furthermore, the evidence is that because of specialization in capital- and energy-intensive industries, European countries are hardly "carbon-competitive" (Delgado 2007). A situation in which carbon-intensive in-

dustries would face competition from China or in which those industries would relocate to China would likely lead to trade disputes and amplified demands for a system of border adjustment taxes.

China and Europe may have convergent interests in the long run, but in the short run, their opposite stance on climate issues represents a significant risk to their relationship at both bilateral and multilateral levels.

Euro Exchange Rate Risks Being the Ultimate Adjustment Variable

The relationship between the euro and the renminbi exchange rate has long been a matter for specialists only. However, at end-2007, Europeans woke up to the issue and signaled dissatisfaction with the way the Chinese currency is run. This was illustrated by the high-level mission to Beijing in November 2007 headed by Eurogroup President Jean-Claude Juncker, ECB President Jean-Claude Trichet, and European Commissioner Joaquín Almunia.

From an analytical standpoint, the relationship between the euro and the renminbi has been the focus of studies whose basic arguments can be summarized as follows.

A first reasoning starts from the observation that the US dollar needs to depreciate in effective terms to get closer to equilibrium and correct the US current account deficit. According to this logic, rigidity in the renminbi-dollar exchange rate shifts the burden of adjustment to the countries that maintain a more flexible exchange rate, among which the euro is a prime candidate for appreciation. This may trigger a damaging overvaluation of the euro. This kind of reasoning is illustrated by Agnès Bénassy-Quéré and colleagues (2004), who discuss the burden sharing of adjustment among US trade partners and provide corresponding orders of magnitude.

A second reasoning starts from the capital rather than the current account. As long as China kept a fixed exchange rate vis-à-vis the US dollar, it had a strong motive for investing primarily its reserves in dollar-denominated assets. However, a move away from the dollar peg implies that private investors will replace the People's Bank of China (PBC)—in other words, that the Chinese investors' preference for dollar assets will diminish, or at least that the PBC will embark on a diversification of reserves, which has the same implications. This would lead to a higher demand for euro-denominated assets and therefore an upward pressure on the euro exchange rate. This kind of reasoning is put forward by Olivier Blanchard, Francesco Giavazzi, and Filipa Sa (2005), among others.

The difficulty with those approaches is not only that they are speculative in character but also that putting the two stories together leads to a "heads I win, tails you lose" situation. This is paradoxical since both approaches rely on the equilibrium exchange rate concept.

The solution to this apparent paradox is that the concept of an equilibrium exchange rate for the United States had little relevance in the so-called revived Bretton Woods system (Dooley, Folkerts-Landau, and Garber 2003). As long as the PBC was willing to accumulate as much dollar reserves as necessary to keep the peg, the relevant equilibrium exchange rate was that of the aggregate dollar zone, not that of the US economy alone. China's exchange rate policy had the effect not only of increasing Europe's share in the global exchange rate adjustment burden, but also of lowering the amount of overall adjustment. This is why severing the renminbi-dollar link could lead to an upward pressure on the euro.

The upshot is that exchange rate interdependence between China and the euro area is likely to be a lasting feature of the world economy. Although not as tense as the US-China relationship on exchange matters, the potential for further friction between Europe and China is unmistakable.

China's Rise to World Economic Power Status Is Bound to Reduce Europe's Weight in International Organizations

Members of the European Union are already overrepresented in the G-7 and Bretton Woods institutions. At the same, the European Union itself has been able to maintain its share of world output only by enlarging further and further. Against the background of sustained or even impressive growth rates elsewhere, European demographic decline and slow productivity growth are bound to make this overrepresentation unsustainable. The rise of China and other major emerging countries implies giving them adequate representation and responsibility in global governance.

The numbers are well known. According to Goldman Sachs, in 2025 the combined GDP of the BRICs (Brazil, Russia, India, and China) will account for half of the G-7 GDP, and by 2040 it should exceed that. By 2050 the first three economies ranked by GDP should be China, the United States, and India (Wilson and Purushothaman 2003).

Europe's temptation is to embark on postponement tactics, for two reasons. First, it knows its overall institutional weight needs to be scaled down but hopes it can retard the adjustment. Second, as European representation in international organizations is fragmented, scaling it down would most probably imply discussion of burden sharing and the possible merger of representations, which the incumbents tend to retard. This preference for procrastination may coincide with China's strategic interest, which is to avoid freezing the institutional balance of power until its leading role is fully recognized.

But postponement is counterproductive. A multilateral governance system that is still dominated formally (for the G-7 and the international financial institutions) or informally (for the WTO) by the United States and

the European Union clearly does not encourage investment by those who feel underrepresented.[6] Although the G-20 was a step in the right direction, the slow pace of reform of global institutions has acted as an incentive to China (and other emerging powers) to explore alternative bilateral or regional routes.

The reform of the global economic and financial institutions and the rebalancing of power it implies are required not simply for the sake of fairness: More importantly, they are necessary to ensure a sufficient degree of ownership in the multilateral system. Rather than postpone them, the incumbent powers—the European Union and the United States—should instead accelerate the pace of reform so as to create incentives among the emerging powers for a strong commitment to multilateralism.

Such a rebalancing necessarily implies that EU members abandon their current overrepresentation in the G-7 and the Bretton Woods institutions. In turn, this implies some form of pooling of representation in global institutions, especially those where membership is limited. This perspective has been discussed for some time among Europeans, but without much follow-up. External pressures might lead to more serious consideration, because a diminished but still fragmented European representation would have little hope of playing a meaningful role in the governance of the global institutions.

Conclusion

We began by emphasizing the common economic interests of China and the European Union, which have recently become each other's second largest economic partners. We then reviewed potential obstacles to the smooth development of their relations in the future. Although China and the European Union share a strong common interest in the development of their bilateral relations in a multilateral framework, obstacles to such development are bound to arise due to major differences in the two partners' initial conditions and development potentials.

Some of these obstacles are inherently economic, while others are more political in nature. Some can—and must—be addressed by one of the two partners alone, while others need to be discussed and resolved jointly. In several cases, tackling them will involve significant policy adjustments. In view of the importance of China and the European Union, for each other and for the world economy, it is crucial that the two partners engage in more bilateral dialogue that is both forward-looking and candid about potential tensions.

6. This is very clear in the case of monetary and financial cooperation. IMF conditionality at the time of the Asian crisis is commonly regarded as having been distorted by US views and interests.

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