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Does Finance Accelerate or Retard Growth? Theory and Evidence

Franklin Allen, Elena Carletti, Jun “QJ” Qian, and Patricio Valenzuela

Abstract

Finance can be beneficial for growth, but it can also contribute to financial crises, which are often very damaging for growth. An extensive review of the literature suggests that financial development has a positive impact on economic growth at adequate levels of financial depth but that the effect vanishes, or even becomes negative, when finance becomes excessive. Excessive finance can incubate economic booms and asset price bubbles that end in financial crises, followed by low rates of economic growth for sustained periods. Too little finance is not desirable—but too much is not desirable either.

Keywords: Financial crises, economic growth, banking crises, bubbles, financial development, financial inclusion, international monetary system, financial regulation, China, East Asia, developing countries, advanced economies

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1. Introduction

What determines the economic welfare of global citizens? One very imperfect but important measure is gross domestic product (GDP) per capita in the country in which they live over their lifetime. This measure is determined by the level at the start of their lives and the growth rate during their lives. For poor countries, the growth rate is particularly important. As Rodrik’s paper on this website describes, policies to promote manufacturing are very important for growth. There is considerable evidence that finance is also important. However, there is a positive and negative aspect to the effect of finance on growth. On the positive side, finance is the visible hand of resource allocation in the economy. Financial institutions and markets determine which firms in which industries receive funds to invest. There is considerable evidence, reviewed below, that finance can be beneficial for growth. On the negative side, financial crises are often very damaging for growth. The understanding of financial crises, particularly global financial crises, and their effect on growth is relatively limited. The literature that addresses this issue is also considered below.

One important aspect of the growth, finance, and crises nexus is what to focus on when analyzing the interrelationship between them. A theme of this paper is that for both the positive and negative aspects, it is the extremes of the distribution that are important for understanding

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how to improve the welfare of global citizens living in poor countries. Many Asian countries, particularly some in East Asia, have done extremely well in terms of growth. The “Four Tigers”—the Republic of Korea (Korea hereafter); Taiwan, China (Taiwan hereafter); the Hong Kong Special Administrative Region of China (Hong Kong hereafter); and Singapore—along with Japan showcased episodes of “economic miracles” between the 1960s and 1980s. In 1950, Taiwan’s per capita GDP in purchasing power parity (PPP) was 916 international dollars—similar to the level in many African countries and 13 percent of per capita GDP in the United Kingdom and France. By 2011, its per capita GDP was higher than in the United Kingdom and France and similar to the level in Germany (table 1.1). Assuming growth rates in per capita GDP persist, it will take less than 10 years before Taiwan catches up to the United States. Korea, which had per capita income of 845 international dollars in 1950, had a higher per capita income than Spain and Italy in 2011.

Table 1.1 Economies with Highest GDP per Capita, 2011

<i>Rank</i>	<i>Economy</i>	<i>GDP (in international dollars)</i>
1	United States	48,387
2	Netherlands	42,183
3	Canada	40,541
4	Australia	40,234
5	Germany	37,897
6	Belgium	37,737
7	Taiwan, China	37,720
8	United Kingdom	36,090
9	France	35,156
10	Japan	34,740
11	Republic of Korea	31,714
12	Spain	30,626
13	Italy	30,464
14	Czech Republic	27,062
15	Greece	26,294

Source: IMF 2012b. *Note:* Singapore and Hong Kong are essentially city-states and are therefore excluded from the table. They have already overtaken the United States, with per capita GDPs in PPP terms of \$59,710 (Singapore) and \$49,417 (Hong Kong) in 2011.

Table 1.2 GDP Levels and Growth Rates of World's Largest Economies, 2011

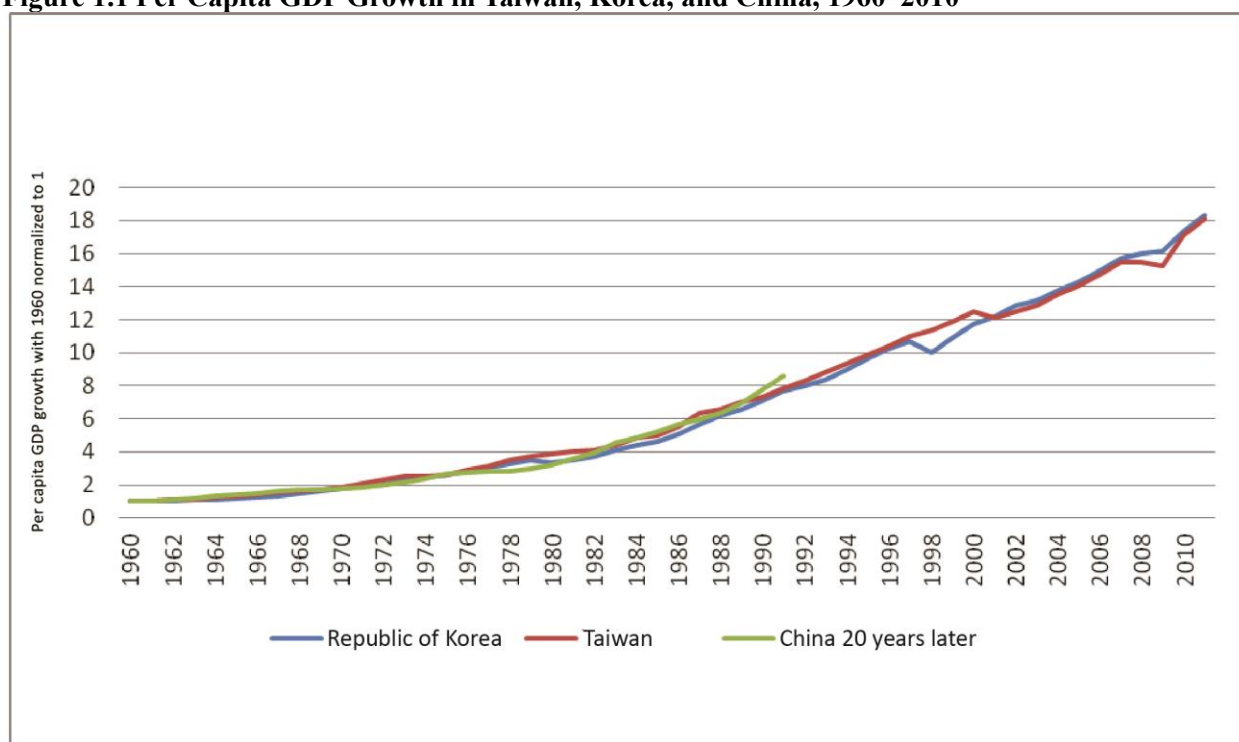
		<i>GDP</i>		<i>Growth in constant prices 1990–2011</i>					
		<i>At simple exchange rates</i>		<i>In PPP</i>		<i>Total</i>		<i>Per capita</i>	
<i>Rank</i>	<i>Economy</i>	<i>Billions of U.S. dollars</i>	<i>Economy</i>	<i>Billions of international dollars</i>	<i>Economy</i>	<i>Annual growth (percent)</i>	<i>Economy</i>	<i>Annual growth (percent)</i>	
1	United States	15,094	United States	15,094	China	10.4	China	9.5	
2	China	7,298	China	11,300	Vietnam	7.3	Vietnam	5.8	
3	Japan	5,869	India	4,458	India	6.5	India	4.7	
4	Germany	3,577	Japan	4,440	Angola	6.0	Republic of Korea	4.6	
5	France	2,776	Germany	3,099	Malaysia	5.8	Taiwan	4.3	
6	Brazil	2,493	Russia	2,383	Bangladesh	5.4	Sri Lanka	4.2	
7	United Kingdom	2,418	Brazil	2,294	Nigeria	5.4	Sudan	4.1	
8	Italy	2,199	United Kingdom	2,261	Sri Lanka	5.3	Poland	3.9	
9	Russia	1,850	France	2,218	Sudan	5.3	Chile	3.9	
10	Canada	1,737	Italy	1,847	Chile	5.3	Bangladesh	3.6	
11	India	1,676	Mexico	1,662	Taiwan	5.0	Thailand	3.5	
12	Spain	1,494	Republic of Korea	1,554	Peru	4.9	Malaysia	3.5	

Source: IMF 2012b.

Notes: Economies with population less than 11 million, GDP of less than \$50 billion in 2011, or less than 15 years of GDP observations are excluded from the rankings.

Figure 1.1 shows the growth of Taiwan and Korea from 1960, together with that of China starting in 1980. It shows that China is following closely in their path. India, the third-largest economy in the world in PPP terms in 2011, has also been successful during the past two decades, as have other southern and southeastern Asian countries, such as Vietnam. Most experts would agree that Asia, and in particular China and India, will continue to be the main engines of global economic growth going forward.¹

Figure 1.1 Per Capita GDP Growth in Taiwan, Korea, and China, 1960–2010



Source: GDP statistics are from website of A. Maddison (<http://www.ggd.net/MADDISON/oriindex.htm>).

Note: Base year is 1960 for Taiwan and Korea, 1980 for China.

Other poor countries that were similar in 1950 have not fared nearly as well. For example, many African countries still have GDPs per capita not much higher than in 1950. Most South American countries have performed better than those in Africa but nothing like as well as those in East Asia. Understanding the achievements of economies such as Taiwan, Korea, and China is crucial to improving the position of the global citizen.

¹ The size of these countries means that the strain on the environment and the earth's natural resources will be substantial. These implications of widespread growth are considered at length in the paper by Steer on this website.

The main theme of this paper is that financial systems play an important role in determining variations in growth. It presents evidence that financial development has a positive impact on economic growth at adequate levels of financial depth but that this effect vanishes, and even becomes negative, when finance becomes excessive. Excessive finance incubates economic booms and asset prices bubbles that end in financial crises with low rates of economic growth for sustained periods. Alternative finance plays an important role in emerging economies, such as China and India. In contrast to the conventional view that strong institutions and legal systems are important for growth, we suggest that alternative systems based on trust, reputation, and other mechanisms can play a crucial role.

Section 2 overviews the theoretical literature on growth, finance, and crises. Section 3 explores the empirical relationship between finance and growth. It starts with the historical evidence from the United Kingdom, the United States, Germany, and Japan. It then examines the relationship between finance (domestic, alternative, and international) and growth. Section 4 investigates the main causes and consequences of financial crises and what can be done to prevent them. Section 5 considers the international financial architecture. Section 6 analyses how finance affects several aspects of the global citizen. It covers the intersection of finance with demographics, education, labor markets, poverty, and income distribution. Section 7 discusses some of the ethical issues raised by the growth, finance, and crises nexus. Section 8 contains draws some lessons and policy implications.²

2. Finance and Growth: Theory

Financial systems channel funds from depositors and capital markets to people and institutions with investment opportunities. By borrowing from and lending to large groups, financial systems are able to produce relevant information and offer risk sharing to investors through the creation of diversified portfolios. This section briefly overviews the theoretical literature exploring two channels connecting financial development and financial structure to economic growth: information acquisition and risk sharing. It also reviews the literature that formally analyzes the

² The study draws on a number of our previous contributions, including Allen and Oura (2004); Allen and Carletti (2012); Allen, Carletti, Qian, and Valenzuela (2012); Allen, Carletti, Cull, Qian, Senbet, and Valenzuela (2012); and Allen and Carletti (2013).

relationship between bubbles, financial crises, and growth and considers the relationship between finance and inequality.

Producing Information and Allocating Capital

Theories that assume that capital flows toward more profitable projects usually ignore the fact that investors do not always have the capacity to collect enough information to make the most profitable investments. Acquiring information and strengthening incentives for obtaining information to improve resource allocation are key issues. A large body of theoretical literature argues that financial intermediaries improve the ex ante assessment of investment opportunities, with positive ramifications for resource allocation, by reducing the costs of acquiring information acquisition (Ramakrishnan and Thakor 1984; Bhattacharya and Pfleiderer 1985; Boyd and Prescott 1986; Allen 1990).

A strand of this literature explicitly incorporates the role of information in a growth model. Greenwood and Jovanovic (1990) develop a theory in which financial intermediaries produce better information, improve resource allocation, and foster growth. Growth means that more individuals can afford to join financial intermediaries, which improves the ability of the intermediaries to produce better information. King and Levine (1993) show that financial intermediaries may boost the rate of technological innovation by identifying those entrepreneurs with the best chances of successfully initiating new goods and production processes.

Some more recent literature argues that markets potentially perform better than intermediaries where there is diversity of opinion about innovation and genuine disagreement about the optimal decision. Allen and Gale (1999) argue that with new technologies, investors' diversity of opinion reflects differences in prior beliefs rather than differences in information. The advantage of financial markets is that they allow people with similar views to join together to finance projects. In contrast, intermediated finance involves delegating the financing decision to a manager who incurs the cost necessary to form an opinion. The problem is that the manager may not have the same opinion as the investor (agency problem). The model predicts that market-based systems will lead to more innovation than bank-based systems. Hence, the role of the market may be more important in the phase of economic growth at the technological frontier.

Risk Sharing

A large body of research tries to understand how financial development promotes economic growth through a risk-sharing channel. One limitation of this literature is that it ignores the effect of nondiversifiable risk. The implications for financial development and financial structure on economic growth are potentially quite different when markets cannot diversify away all of the risks inherent in the economic environment.

Domestic risk sharing

Risk sharing plays a key role in promoting growth when agents are risk averse and less risky projects yield low returns. In this view, the financial system allows agents to create diversified portfolios with higher expected returns while keeping risk reasonably low (Greenwood and Jovanovic 1990; King and Levine 1993; Devereux and Smith 1994; Obstfeld 1994).

More recent contributions emphasize that the positive effect of risk sharing on growth depends on the level of economic development of an economy. Bose and Cothren (1996) show that the financial sector needs to reach a critical mass before advances in financial sophistication improve growth. Acemoglu and Zilibotti (1997) find that at early stages of development, the presence of indivisible projects limits the degree of diversification the economy can achieve and that the desire to avoid highly risky investments slows capital accumulation. Gaytán and Rancière (2005) show that at early stages of economic development, risk sharing can be achieved only at the cost of reducing investment and growth. In their model, once the economy has crossed a certain wealth threshold, the liquidity role of banks becomes unambiguously growth enhancing.

Risk sharing also plays a key role in promoting growth when agents face liquidity risks. Individuals are averse to both bearing risk and relinquishing control of their savings for long periods. The financial system can play a role in making projects more acceptable to the public and increasing growth prospects. Building on the Diamond and Dybvig (1983) set-up for liquidity demand, Levine (1991) models the endogenous formation of equity markets and integrates it into a growth model. As stock market transactions costs fall, more investment occurs in illiquid, high-return projects. If illiquid projects enjoy sufficiently large effects on other parts of the economy, then greater stock market liquidity induces faster steady-state growth. Bencivenga and Smith (1991) show that by eliminating liquidity risk, banks can increase

investment in high-return, illiquid assets and accelerate growth. Jappelli and Pagano (1994) use an overlapping-generations model to show that liquidity constraints on households increase the savings rate and growth by limiting households' ability to smooth consumption. De Gregorio (1996) constructs a model in which financial systems can promote growth through accumulating human capital by easing liquidity constraints.

Financial intermediation in most models takes the form of a perfectly competitive banking system. Some models consider a role for stock markets, but often only as a choice between mutually exclusive banks and markets (Greenwood and Smith 1997). Analyses in which markets and intermediaries coexist are rare because including markets can eliminate the risk-sharing benefits of intermediaries.

A few studies consider the case in which banks and markets coexist. Blackburn, Bose, and Capasso (2005) develop a model in which state-dependent moral hazard conditions allow both to exist together. In this model, feedback occurs from growth in the economy to the determination of the optimal financial structure, which can be based on banking or a mixture of banks and markets. Fecht, Huang, and Martin (2008) consider a model in which financial intermediaries provide insurance to households against idiosyncratic liquidity shocks. Households can also invest in financial markets directly if they pay a cost. In equilibrium, the ability of intermediaries to share risk is constrained by the market, but it can be preserved as long as the cost to participate in markets is relatively high and the portion of individual market participants is not too large.

International risk sharing

At the international level, risk sharing allows economies to grow more by specializing according to their comparative advantages while diversifying away the risk of this specialization through the financial system. Helpman and Razin (1978) show that the risk-averse nature of consumers in an uncertain environment results in imperfect specialization that reduces the gains from trade. In such circumstances, financial development that allows the trading of contingent claims provides better risk-sharing opportunities, allowing the economy to specialize in the production of a few goods while keeping risk low. This argument is further explored by Saint-Paul (1992), who shows that stock markets that facilitate international risk sharing enable specialization in technologies and higher growth.

International risk sharing also involves some risks. The sudden withdrawal of capital flows increased risk in some economies, hurting growth prospects. Calvo and Mendoza (2000) and Mendoza (2001) examine the causes and consequences of sudden reversals of capital flows to emerging markets, which are typically accompanied by large declines in output and collapses in real asset prices. In these studies, risk sharing across countries requires contract enforcement by domestic and foreign agents. The difficulty of this enforcement introduces a new source of risk. Broner and Ventura (2011) argue that the decision to enforce international contracts, which depends on the willingness of sovereigns, will depend on whether local players benefit from it. In equilibrium, this conflict can lead to the endogenous closure of some asset markets, including local ones, reducing growth and risk sharing at both the national and international levels.

Financial Crises, Growth, and Bubbles

The theoretical literature that attempts to formally analyze the impact of financial crises on economic growth is at an early stage. Although some theoretical and empirical studies show that it is possible for economies to grow faster with crises than without them, there are cases in which the crises that follow bubbles in asset prices are very damaging. This section overviews these issues.

Endogenous growth models generate predictions regarding which countries that experience occasional financial crises grow faster than countries with stable financial conditions. Rancière, Tornell, and Westermann (2008) present a model in which problems with contract enforceability generate borrowing constraints and impede growth. In financially liberalized economies with moderate contract enforceability, systemic risk taking is encouraged and increases investment, leading to higher mean growth but also to greater incidence of crises. Gaytán and Rancière (2005) integrate a neoclassical growth model with Diamond-Dybvig type banks that provide insurance against idiosyncratic liquidity shocks. In their model, banks play a growth-enhancing role in reducing inefficient liquidation of long-term projects, but they may face liquidity crises associated with severe output losses. Middle-income countries may find it optimal to be exposed to liquidity crises, whereas poor and rich economies have more incentives to develop a banking system that is not exposed.

Given that bubbles are likely to exacerbate the pernicious effects of financial crises on growth, it is important to understand how they are incubated. A number of theories explain bubbles (Tirole 1982, 1985; Allen and Gorton 1993; Allen, Morris, and Postlewaite 1993; Allen and Gale 2000a; Abreu and Brunnermeier 2003; Scheinkman and Xiong 2003; Brunnermeier and Nagel 2004; Hong, Scheinkman, and Xiong 2008).

Allen and Gale (2000a) provide a theory of bubbles that is explicitly related to crises. Many investors in real estate and stock markets obtain their investment funds from external sources. If the ultimate providers of funds are unable to observe the characteristics of the investment, there is a classic asset substitution problem in which debtors want to invest in risky assets and shift risk to creditors. This problem causes investors to bid up the prices of risky assets above their fundamental values, creating a bubble. The riskier the asset, the greater the amount of risk that can be shifted to creditors and the larger the bubble. When the bubble bursts, either because returns are low or because the central bank tightens credit, a financial crisis ensues.

The survey by Allen, Babus, and Carletti (2009) provides a fuller account of the literature on bubbles and financial crises. Although there is evidence that financial crises originated by a bubble have a strong negative effect on growth, the theory is silent on the relationship between the bursting of bubbles in asset prices and growth. Better understanding of these issues is needed.

2.4 Finance and Inequality

Financial development affects income distribution, because it affects the economic opportunities of individuals. A large body of empirical research suggesting that more developed financial systems reduce inequality. But theoretical studies are not conclusive. Demirgüç-Kunt and Levine (2009) review the literature on the finance-inequality nexus and identify three different types of effects: direct intensive margin effects, direct extensive margin effects, and indirect effects.

Direct extensive margin effects

Direct extensive margin effects refer to the use of financial services by individuals who had not been using those services. One set of models argues that financial development may improve income distribution because access to financial services should allow low-income individuals to improve their human and physical capital. For example, models by Becker and Tomes (1979,

1986) and Galor and Zeira (1993) highlight information and transactions costs associated with financing education. Their models predict that inequality falls when low-income families borrow to pay for the education of their children.

A second set of models argues that financial development may reduce the effects of external negative shocks that in general affect more strongly the unbanked, low-income segments of the population. Jacoby and Skoufias (1997) and Baland and Robinson (1998) highlight the connection between education and the smoothing of adverse income shocks. Their models predict that inequality falls when low-income families use financial services to smooth income shocks. In these models, parents with access to financial services that face a negative income shock are less likely to reduce investment in the education of their children than parents without access to those services.

A third set of models highlights the role of entrepreneurship. According to Aghion and Bolton (1997) and Bardhan (2000), low-income entrepreneurs tend to remain poor in the presence of financial markets that lend only to people with sufficient collateral rather than to people with the most profitable ideas.

Direct intensive margin effects

Direct extensive margin effects refer to improvements in the quality and range of financial services that may primarily benefit households and firms that already have access to finance. In the Greenwood and Jovanovic (1990) model, for example, improvements in financial systems that do not lower the fixed costs of accessing financial services will not tend to broaden access to financial services; instead, they improve the quality of financial services enjoyed by people already purchasing financial services. As financial development benefits primarily the rich, it may actually exacerbate income inequality.

A direct extensive margin mechanism is consistent, for example, with recent theoretical and empirical studies that suggest that foreign banks tend to cherry pick their customers (see, for example, Beck and Brown 2010; Detragiache, Tressel, and Gupta 2008; Gormley 2010; and Mian 2006). According to the cherry-picking hypothesis, foreign bank penetration is likely to increase the share of wealthy, urban, and professional households that already have bank

accounts instead of broadening the use of financial services. Therefore, a higher level of financial development as a result of a higher foreign bank penetration may increase inequality.

Indirect effects

A large body of theoretical research suggests that financial development may affect inequality through indirect mechanisms (Beck, Levine, and Levkov 2009; Gine and Townsend 2004; Townsend and Ueda 2006). In these models, financial development can influence both the allocation of credit and economic growth, which increase demands for both low- and high-skilled workers, with concomitant ramifications on the distribution of income. Financial development that primarily increases the demand for low-skilled workers will reduce inequality; financial development that primarily increases the demand for high-skilled workers will increase inequality (Jerzmanowski and Nabar 2007).

3. Finance and Growth: Empirical Evidence

Historical Evidence

The relationship between the growth rate of an economy and the development of its financial systems is a long-debated issue. Bagehot (1873) argued that the United Kingdom's financial system played an important role in the Industrial Revolution; Robinson (1952) suggested that the causation goes the other way. This section (based on Allen, Capie, Fohlin, Miyajima, Sylla, Wood, and Yafeh 2012) describes the historical experience of four of the most advanced economies in the world: the United Kingdom, the United States, Germany, and Japan. The fact that they all four developed sophisticated financial systems and all four grew successfully despite differences in those systems suggests that a variety of financial structures can lead to high rates of economic growth.

The experience of the United Kingdom during the 18th and 19th centuries suggests that financial development is an essential precondition for growth. The Industrial Revolution of the 18th century that allowed the United Kingdom to experience sustained growth throughout the period was preceded by a financial revolution at the end of the previous century. This revolution involved, among other things, the foundation of the Bank of England, the adoption of sound government finances, and the development of the stock market in London. However, in terms of real and financial growth, both revolutions were limited. The growth rate was no higher than 1

percent a year, and the size of the banking multiplier remained fairly small (no more than 1.5) throughout the century.

Better support for the importance of finance is provided by the country's experience in the 19th century, when the intermediation provided by the banking system expanded significantly as the Bank of England started to act as lender of last resort. Moreover, higher intermediation triggered an increase of the multiplier of the banking system to about 4. These developments were followed by a jump in the growth rate in the real economy, which averaged 3 percent a year in the middle decades of the 19th century.

The United States was blessed from its inception with a modern, dynamic financial system. As it began its modern economic growth trajectory at the same time, the case is strong that modern financial arrangements facilitated economic growth. Alexander Hamilton, the Secretary of the Treasury from 1789 to 1795, played a significant role in the modernization of the financial system. Among other things, he created the First Bank of the United States, reformed the government's finances, and ensured the issuance of sound public debt. These actions acted as a catalyst for the emergence of a modern, articulated financial system that included sound public finances and debt management, a stable dollar currency, a central bank, a banking system, securities markets, and stock exchanges. By the mid-1790s the United States had all the elements of a modern financial system in place, allowing the economy to grow at an average real per capita growth rate of 1–2 percent year from then until modern times.

Germany had a variety of financial institutions and markets in place well before modern growth emerged in the second half of the 19th century. Universal banks (banks that both make loans and underwrite securities) were part of a complex financial system that included active capital markets that worked in concert with joint-stock banks, a single monetary policy, a solid lender of last resort, and supporting financial and corporate regulations. Toward the second half of the century, the increasing financing needs of railroads and the lifting of the tight restrictions on incorporation and limited liability of the stock markets tightened the connections between finance and growth. However, despite some statistical evidence of a causative relationship between the level of joint-stock banking assets and output growth in the railroad sector during

the 1850s–1870s, there is no general statistical relationship between banking assets and aggregate output.

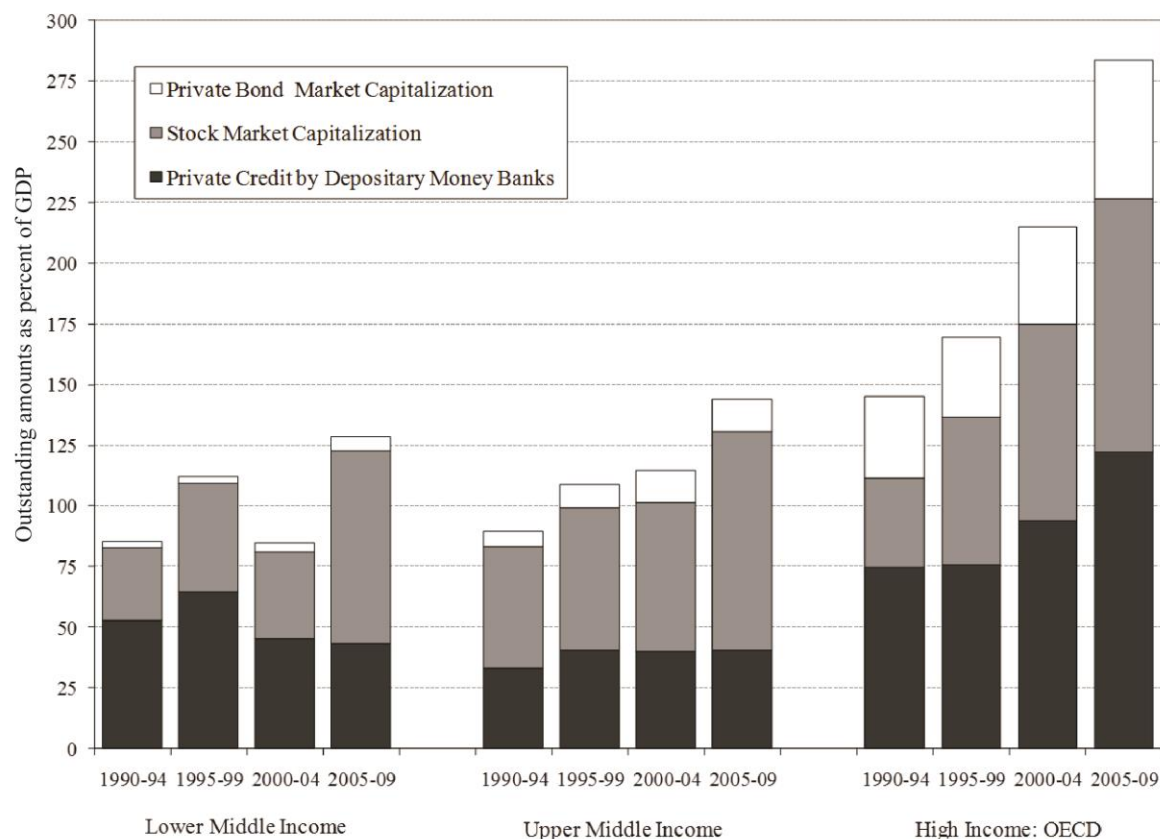
The development of the Japanese financial system started during the Meiji Restoration, when the Bank of Japan was founded, networks of commercial banks were created, and stock exchanges were set up. The Japanese process was unique, in that its financial history began with the establishment of an entire set of institutions that typically characterize developed economies. However, throughout the period of the Meiji Restoration, business financing occurred mostly through alternative finance, retained earnings, and joint-stock for starting companies. It was not until the interwar period that bank loans, bond issuance, and equity finance began to play a more important role in funding corporations. A distinctive characteristic of the Japanese financial development was the “division of labor” between banks, which financed small family firms, and equity markets, which financed large corporate groups. Based in part on its financial modernization, Japan was a modern, growing economy by the turn of the 20th century.

The role of different types of finance varied across the four countries. As all four were successful in terms of growth, it is difficult to conclude from this evidence that there is a unique optimal financial structure that should be widely adopted by other countries going through the development process. Different types of finance can be used to fund real economic growth. Bank loans and equity finance were important in all countries, but they operated in different ways. Although many factors were involved in economic modernization, the four cases suggest that financial development significantly facilitated the growth process.

Domestic Finance, Excessive Finance, and Growth

The relationship between financial development and economic development is not limited to the experiences of the four developed countries examined in the previous section. Figure 3.1 shows a positive correlation between the development of financial systems and the level of income. It also shows that financial markets have developed over time. The main task for researchers has been to provide evidence on the causality from finance to growth, as well as to confirm the robustness of the effects.

Figure 3.1 Financial Markets and Intermediaries in Lower-Middle, Upper-Middle, and High-Income Countries, 1990–2009



Source: Beck and Demirgüç-Kunt 2009.

Many empirical studies find a positive causal effect from finance to growth, even after accounting for endogeneity. This literature includes cross-country growth regression analysis (King and Levine 1993; Levine and Zervos 1998; Benhabib and Spiegel 2000); instrumental variable analysis (Levine 1998, 1999; Levine, Loayza, and Beck 2000); time series analysis (Rousseau and Wachtel 1998; Rousseau and Sylla 1999); regional analysis within a country (Guiso, Sapienza, and Zingales 2004; Burgess and Pande 2005); industry-level analysis (Rajan and Zingales 1998; Beck and Levine 2002; Wurgler 2000); and firm-level analysis (Demirgüç-Kunt and Maksimovic 2002).

The global financial crises of 2007–09 and the current debt crisis in Europe highlight once again the fact that excessive finance may have undesirable effects on economic growth. A flourishing

literature finds not only a vanishing effect in the positive impact of financial development on economic growth but also a negative effect of excessive finance on growth.

Using a dataset covering 95 countries from 1960 to 1985, De Gregorio and Guidotti (1995) find that long-run economic growth is positively correlated with bank credit to the private sector (as a percentage of GDP). In low-income economies, however, this effect is relatively small, and it is not significant in the period 1970–85. De Gregorio and Guidotti argue that this vanishing effect comes from the fact that low-income economies may be at the point at which financial development no longer affects the efficiency of investment.

Rousseau and Wachtel (2011) also find a vanishing effect in the positive relationship between financial development and long-run economic growth. They show that this relationship is positive and significant for 1960–89 but is not statistically different from zero for 1990–2004. They find evidence that this vanishing effect is associated with the incidence of financial crises. In fact, they show that the positive impact of financial development on economic growth remains intact for the whole period once crisis episodes are removed.

According to Arcand, Berkes, and Panizza (2012), the vanishing effect found in the earlier studies is not driven by a change in the fundamental relationship between finance and economic growth but by the fact that standard models do not allow for a nonmonotonic relationship between financial development and economic growth. Allowing for this relationship, they find a positive marginal effect of financial depth on economic growth in economies in which the level of credit to the private sector falls below a threshold of about 80–100 percent of GDP. Above this threshold, the relationship becomes negative (interestingly, this value is similar to the threshold at which Easterly, Islam, and Stiglitz 2000 find financial depth starts increasing output volatility). These findings are robust to controlling for macroeconomic volatility, banking crises, and institutional quality.

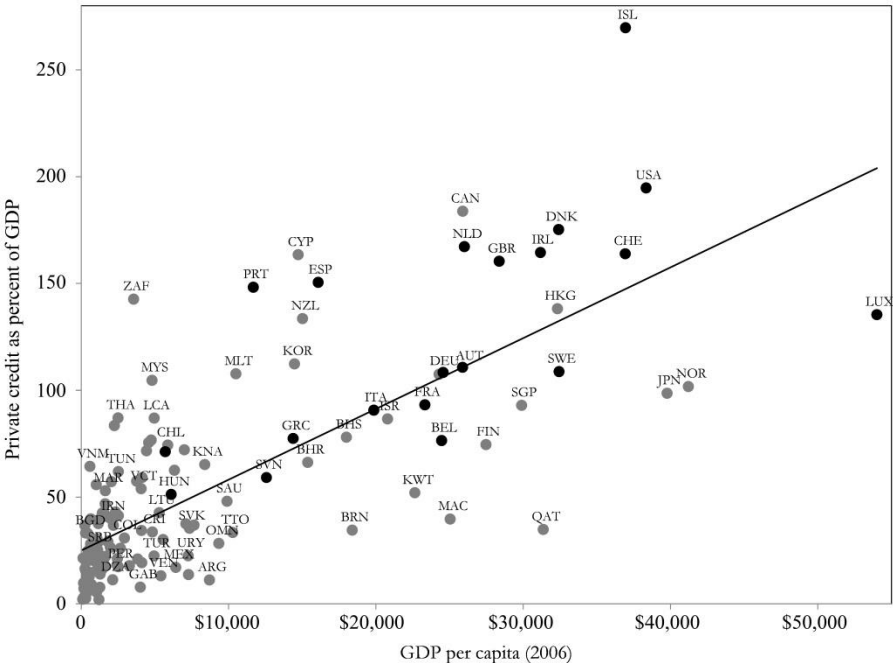
Overall, the findings from this new literature suggest that economies with small and medium-size financial systems relative to their GDP tend to do better as they put more of their resources into finance but that this effect reverses once the financial sector becomes too large. A potential

reason why excessive finance may have a negative effect on economic growth is the misallocation of resources. Beck, Levine, and Levkov (2009) show that enterprise credit is positively associated with economic growth but that there is no correlation between growth and household credit. This misallocation of resources is also likely to have a negative indirect effect on economic development through financial crises.

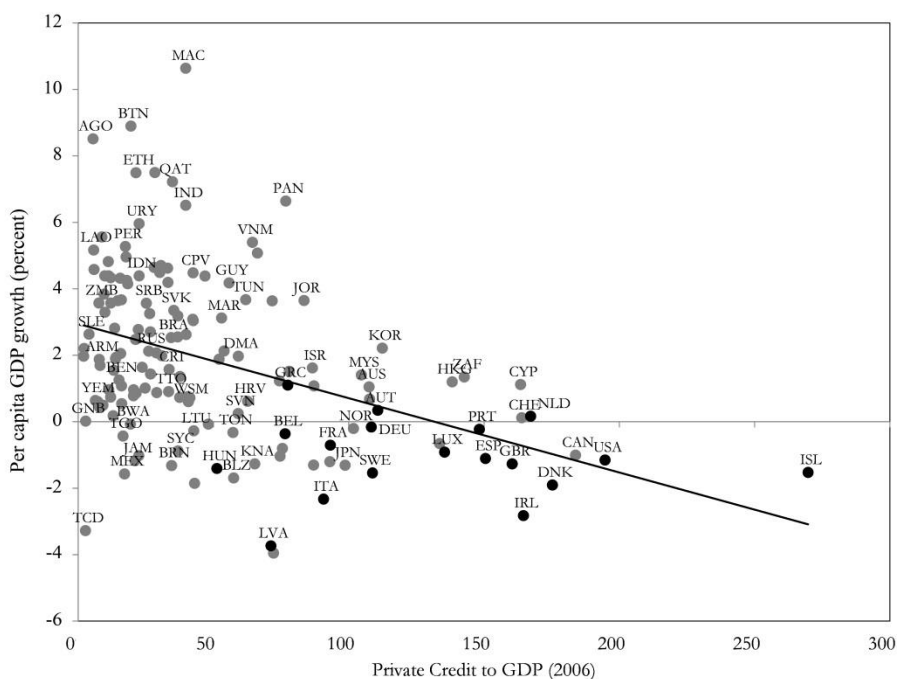
The global financial crisis of 2007–09 provides evidence of the relationship between excessive finance and growth. The top panel of figure 3.2 shows the positive relationship between financial depth and economic development. It also shows that many of the economies that in 2006 had levels of credit to the private sector above 80–100 percent of GDP tended to experience costly banking crises in 2007–08. The bottom panel of figure 3.2 shows that excessive finance is costly in terms of economic growth. In particular, it shows that economies that by 2006 had a very high level of credit to the private sector suffered sharper downturns in 2007–09. Moreover, the most affected countries were the ones that experienced systemic banking crises.

Figure 3.2 Financial Development, Economic Growth, and Banking Crises

a. Relationship between Private Credit and per Capita GDP



b. Relationship between per Capita GDP Growth and Ratio of Private Credit to GDP



Source: Beck and Demirgüç-Kunt 2009; Laeven and Valencia 2012; and World Bank 2012.

Note: Black dots correspond to countries that experienced a banking crisis in 2007–09. The black line represents the linear least squares regression line.

Loayza and Rancière (2006) reconcile the literature that finds a positive effect of financial depth on economic growth with the literature that finds a positive relationship between domestic credit and the incidence of financial crises. They find that a positive long-run relationship between financial development and economic growth coexists with a negative short-run relationship driven by financial crises. Although on average, financial depth may have a positive impact on long-run economic growth, excessive finance is pernicious for the domestic economy. Therefore, regulatory policies that reduce the size of the financial sector may have a positive effect on economic growth in countries with excessive credit, because they are likely to reduce the amplitudes of the leveraging/deleveraging cycle.

Financial Structure and Growth

The theme of much of the literature surveyed in the previous section is that too little finance is not good but that too much finance is also not good. These findings suggest that there may be a happy medium. Financial sector development may help countries take off but be less relevant otherwise. Another possibility is that this literature focuses too much on the particular measure

of depth of the financial system. Other factors—such as efficiency, stability, and access—are also important.

Some financial structures may be more efficient in driving growth than others. Lin and Xu (2012) survey a body of literature on the relationship between financial structure and growth. They identify four traditional views: the financial structure irrelevancy view, the law and finance view, the bank-based view, and the market-based view.

A number of studies provide evidence in support of the irrelevancy view (Beck, Demirgüç-Kunt, Levine, and Maksimovic 2001; Levine 2002; Stulz 2001). They contend that only financial depth, not financial structure, matters. The law and finance view holds that it is not structure that matters for growth but overall financial development, in particular the legal system and its origins; La Porta and others (1998, 2000) provide evidence in support of this perspective. The bank-based view emphasizes the important role of banks in mobilizing resources; it is particularly associated with Gerschenkron (1962). The market-based view claims that stock markets allow investors to diversify and manage risk better, facilitate competition, and promote innovative industries (Boyd and Smith 1998; Allen and Gale 1999, 2000b).

More recent contributions focus on the idea of an optimal financial structure that depends on a country's stage of development and endowments. Xu (2011) summarizes the evidence showing that the effects of the business environment on development tend to be heterogeneous and depend on the stage of development. Lin (2009) and Lin, Sun, and Xiang (2011) emphasize that financial structure must reflect the demands of the real economy and that there is an appropriate financial structure for an economy at each stage of development. Early on, for example, small banks may be better at providing finance to small firms. Carlin and Mayer (2003); Demirgüç-Kunt, Feyen, and Levine (2011); Cull and Xu (2011); and Calomiris and Haber (2013) provide a wide range of evidence that is consistent with these views.

A related issue is the role of state-owned banks in driving growth and preserving financial stability. They can potentially correct market failures and improve growth prospects for firms

that would otherwise not obtain finance. They can also improve financial access by individuals and households.

Clarke, Cull, and Shirley (2005) survey the literature on bank privatization. They conclude that it usually improves bank efficiency, with gains being greater when the government fully relinquishes control and does not restrict competition. The literature on the effects of public banks suggests they are not effective in correcting market failures. However, Allen, Qian, Shan, and Zhao (2012) argue that the Chinese model of state-owned banks that combines public listing and majority government control has performed well. As a group, the five largest state-owned and listed Chinese banks have significantly outperformed large non-state-owned banks from other emerging economies before and during the 2007–09 crisis.

Another important aspect of financial structure is the role of competition and its effect on the efficiency of the financial system and financial stability. Allen and Gale (2004) examine a variety of models of competition and financial stability, including general equilibrium models of financial intermediaries and markets; agency models; models of spatial competition; models of Schumpeterian competition, in which firms compete by developing new products; and models of contagion. They find a very wide range of relationships between competition and financial stability. In some situations, competition reduces stability; in others, it does not. In general equilibrium and Schumpeterian models, for example, efficiency requires both perfect competition and financial instability.

Another aspect of competition involves network-related issues. Issues such as fair access to payments and information systems and other networks are currently very important in the financial services industry. Regulation and taxation often impede competition, because they are still imposed in silos for different parts of the industry. The issue of regulation and its effect on competition and financial stability is complex and multifaceted. Sound policy requires careful consideration of all the factors at work, at both the theoretical and empirical level.

Much of the recent debate about structure has been about whether the scope of banks' activities should be limited (the Volcker Rule and the Vickers Report). The argument for restriction is that

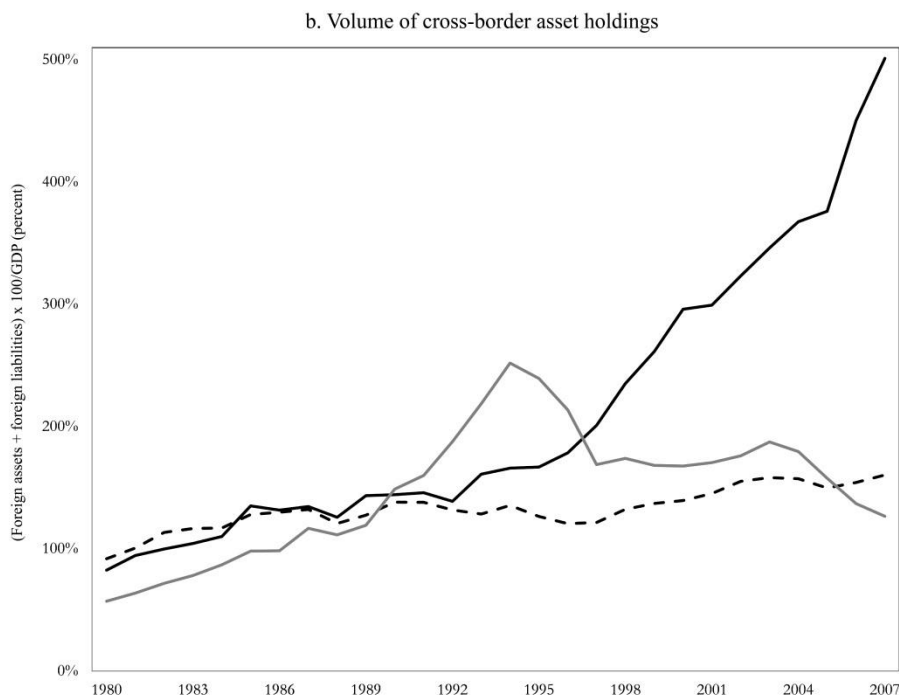
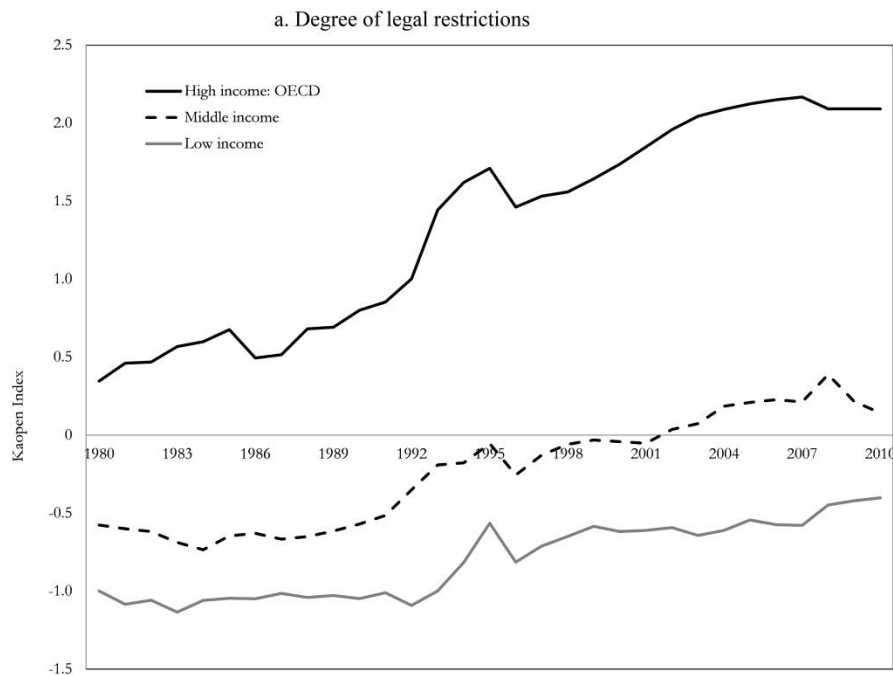
activities such as proprietary trading may cause bankruptcy and lead to contagion and financial crisis. The argument against restriction is that permitting banks to engage in a range of activities allows diversification and improves financial stability. Very little economic analysis has been done on the trade-offs involved; there is thus no good evidence on the circumstances in which such restrictions are desirable. There has also been debate about the desirability of restricting the size of financial institutions, in order to limit the “too big to fail” problem. Little serious economic analysis has been done on the trade-offs involved.

The role of foreign financial institutions is another determinant of the structure of financial systems. Banking has increasingly become more globalized, driven by deregulation, advances in communications and technology, and economic integration. Foreign banks can have a number of advantages and disadvantages over domestic banks. Claessens and van Horen (2012) explore the relative performance of foreign banks, measured by profitability, in a large group of countries over the period 1999–2006. They find that foreign banks tend to perform better when they are from a low-income country, when regulation in the host country is relatively weak, when they are larger and have a larger market share, and when they have the same language and similar regulation as the host country. Geographical proximity does not improve performance.

International Finance and Financial Globalization

Over the past four decades, global financial markets have become increasingly integrated, in terms of legal restrictions on capital account transactions and in terms of outcome measures, such as the level of cross-border asset holdings (figure 3.3). The global financial crisis of 2007–09 increased the possibility of a reversal of the previous trend toward freer capital markets, with several countries imposing new legal restrictions on capital account transactions or tightening existing restrictions. However, as shown in the top panel of figure 3.3, so far this reversal has been timid. Understanding the cost and benefits of financial globalization and its impact on long-run economic growth is crucial. (Issues of trade and other international aspects are considered in greater detail in the paper by Subramanian and Kessler on this website.)

Figure 3.3 Legal Restrictions on Capital Account Transactions and Cross-Border Asset Holdings, by Country Income Level, 1980–2010



Source: Lane and Milesi-Ferretti 2007.

Note: The measure of legal restrictions on capital account transactions in panel a (KAOPEN) is from Chinn and Ito (2008). A higher KAOPEN value indicates fewer restrictions. Only countries for which information was available for the full period are considered. Middle-income economies include upper- and lower-middle-income economies.

Financial globalization has many potential benefits. But there are also potentially significant costs. The main benefit is that capital can flow from countries with a low marginal rate of return to countries with a high marginal rate, improving the funding of firms and thus spurring growth.

Financial globalization also allows improved risk sharing across countries. This risk sharing interacts with productive opportunities to raise growth possibilities. It allows greater specialization in the real economy based on comparative advantage, even though it reduces diversification and increases the volatility of output.

However, opening up the financial system of a country also potentially creates significant risks. There can be contagion of crises and incubation of bubbles from large capital inflows. These downsides are not inevitable; the form in which flows occur matters considerably. Foreign direct investment is more benign in that it cannot be withdrawn very easily. The possibilities for contagion are thus reduced. However, the possibility for the incubation of asset price bubbles remains. Short-term capital flows can help transmit contagion if they result in a sudden withdrawal and can drive bubbles if the inflow is significant. These potential downsides decline with the sophistication of macroeconomic management and institutional development within a country.

The rest of this section considers the empirical evidence on these benefits and costs of financial globalization. Section 6 considers interactions between financial globalization and inequality.

The process of global financial integration has created an important source of funding for firms in both developed and developing economies. Table 3.1 reports that 36 percent of firms in developed economies and 27 percent of firms in developing economies issue debt in the international market; 5 percent of the firms in developed economies and 6 percent in developing economies issue equity in international markets. Moreover, the shares of debt and equity capital raised abroad are significant, especially for developing economies.

Table 3.1 Domestic and Foreign Sources of Financing in Developed and Developing Economies

<i>Financing</i>	<i>Developed economies</i>	<i>Developing economies</i>
<i>Equity</i>		
Total (billions of dollars at 2005 U.S. prices)	4,372	583
Percent foreign	8	28
<i>Debt</i>		
Total (billions of dollars at 2005 U.S. prices)	19,147	629
Percent foreign	35	47
<i>Total</i>		
Billions of dollars at 2005 U.S. prices	23,519	1,212
Percent foreign	30	38
<i>Number of firms</i>		
<i>Equity</i>		
Total	24	10
Percent foreign	5	6
<i>Debt</i>		
Total	12	3
Percent foreign	33	27
<i>Total</i>		
Total	36	13
Percent foreign	16	11

Source: Gozzi, Levine, and Schmukler 2010.

Note: Equity issues include initial public offerings and seasoned equity offerings. Debt issues include convertible and nonconvertible debt issues and preferred shares issues. Issues abroad are issues carried out in a public market outside of the firm's home country.

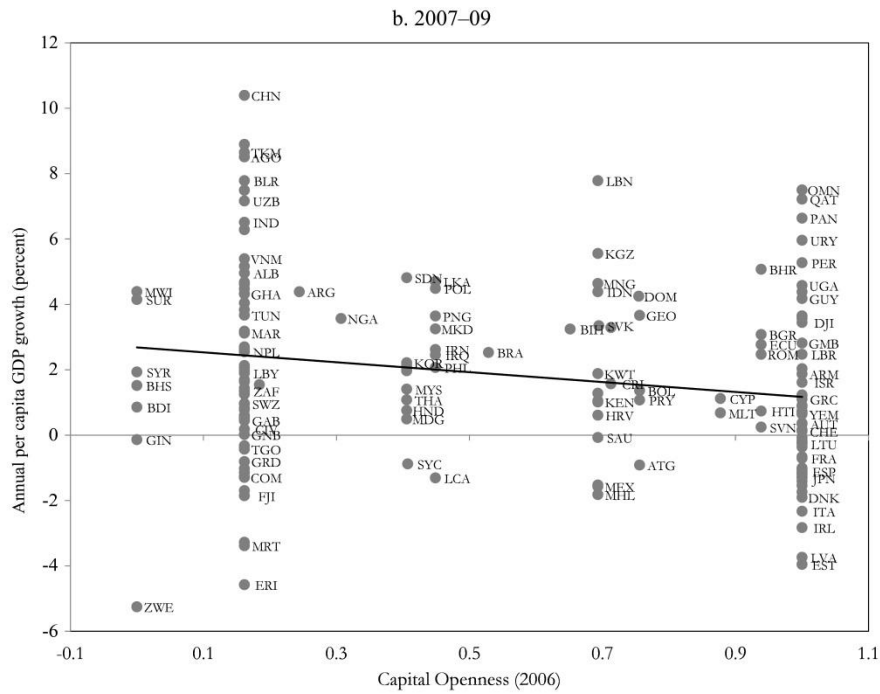
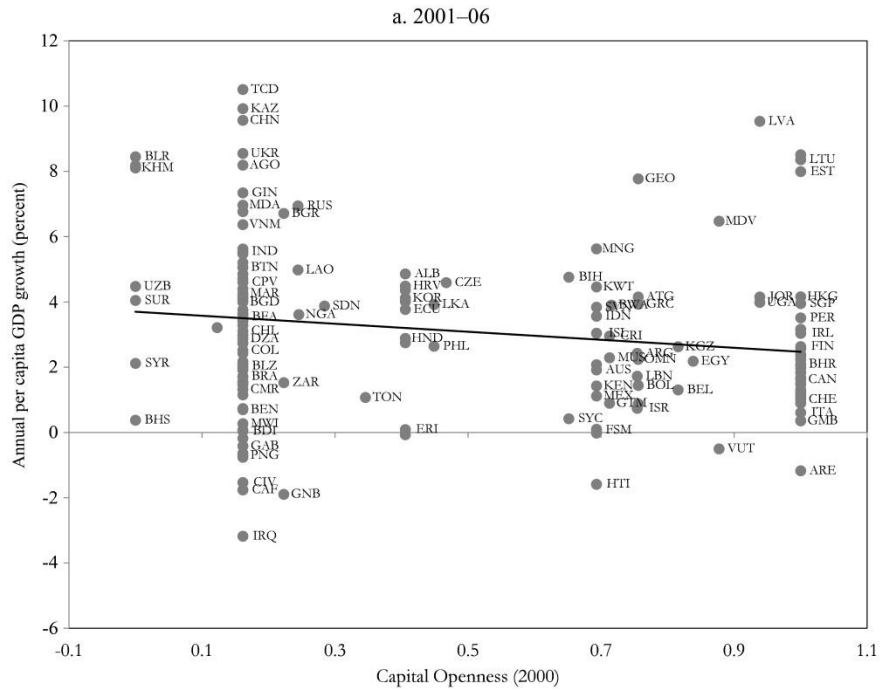
Not all firms are able to enjoy the benefits of financial globalization. Firms raising capital abroad are larger, slower growing, more leveraged, and more profitable, and they export more than firms that raise capital only domestically (Gozzi, Levine, and Schmukler 2010). Moreover, liberalizing the capital account benefits firms with limited access to foreign currency—namely, firms producing nontradables—significantly more, as Prati, Schindler, and Valenzuela (2012) show.

Despite the large body of research on how effective capital account restrictions are and the channels through which they may affect long-run economic growth, robust conclusions remain largely elusive. Although theory predicts a number of benefits from financial openness—access to cheaper capital, portfolio diversification, consumption smoothing, emulation of foreign banks and institutions, and macro policy discipline among others (Frankel 2010)—results from empirical studies report evidence in favor of and against capital account liberalization. Several

empirical studies suggest that capital account liberalizations are often associated with higher economic growth, investment, and equity prices; lower consumption growth volatility; and reduced financial constraints (Bekaert, Harvey, and Lundblad 2005, 2006, 2011; Henry 2000a,b; Quinn and Toyoda 2008; Forbes 2007). But other empirical studies suggest that capital account restrictions make monetary policy more independent, alter the composition of capital flows toward longer maturities, reduce real exchange pressures, and reduce leverage and dependence on short-term debt (De Gregorio, Edwards, and Valdes 2000; Gallego and Hernandez 2003; Reinhart and Smith 1998).

In view of the multiple dimensions of financial globalization, Prasad and others (2003) argue that it is difficult to establish a robust causal relationship between the degree of financial integration and output growth. Rodrik and Subramanian (2009) argue that the benefits of financial globalization, even leaving financial crises aside, are hard to find. In fact, figure 3.4 shows a slightly negative unconditional correlation between capital account liberalization and growth in both periods of global financial stability and periods of global financial distress, although dispersion is very high.

Figure 3.4 Relationship between Economic Growth and Financial Openness during Periods of Stability and Crisis

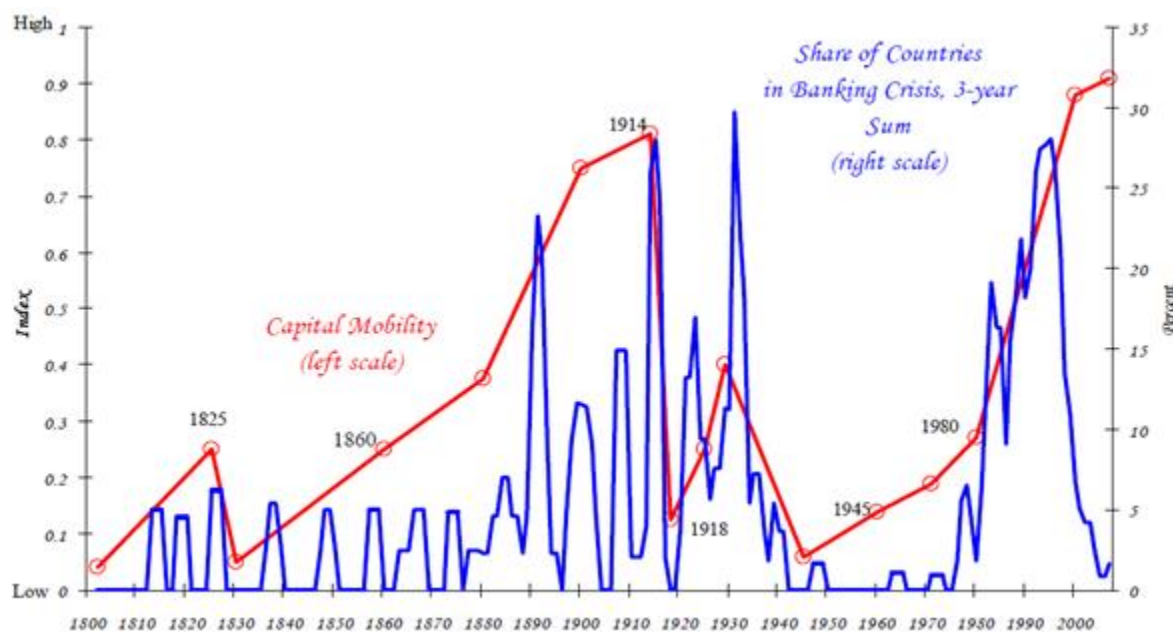


Sources: Authors, based on data from Chin and Ito 2008 and World Bank 2012.

Note: Capital openness corresponds to the KAOPEN index from Chin and Ito (2008), a de jure index of capital account openness. The index is normalized between 0 and 1. Higher values of the index indicate that a country is more open to cross-border capital transactions.

One of the main problems with financial globalization is that strong capital inflows have the potential to incubate bubbles that can burst as a result of unpredictable external contagion or liquidity shocks, triggering major credit disruption. Figure 3.5 illustrates the close relationship between capital mobility and the incidence of banking crises. Although the cost of occasional crises can be relatively small compared with the growth-enhancing effect of financial liberalization (Tornell, Westermann, and Martinez 2004), crises following bubbles in investment and asset prices seem to unleash extremely costly recessions. These observations suggest that a cost-benefit analysis of financial liberalization is needed. Occasional costly crises seem to be likely in a deregulated environment. At the same time, however, deregulation and globalization allow more risk taking, higher expected returns, and better allocation of capital.

Figure 3.5 Capital Mobility and the Incidence of Banking Crises, 1800–2000



Source: Reinhart and Rogoff 2008.

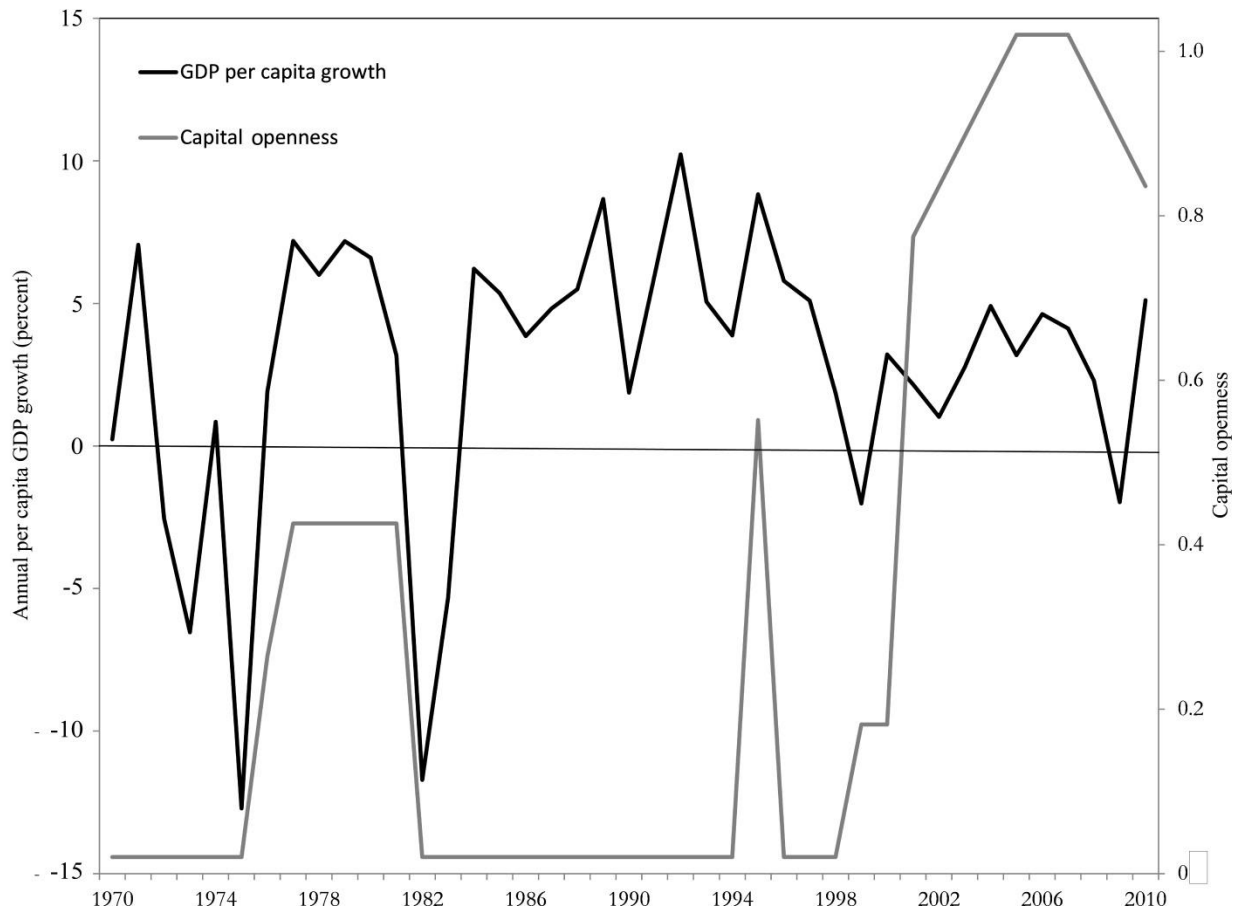
Note: Capital mobility is measured by the subjective index of the extent of capital mobility given by Obstfeld and Taylor (2004).

Among the many possible reasons for the lack of consistent empirical results, three factors are probably important. First, it is likely that financial globalization is effective only under certain conditions. Second, aggregate data may hide important heterogeneities in the extent to which subsets of an economy are affected, concealing significant underlying effects (Prati, Schindler,

and Valenzuela 2012). Third, different types of capital account restrictions aim to achieve different goals. Capital account restrictions on inflows are a crisis prevention tool; capital account restrictions on outflows seek to contain crises. Most studies do not distinguish capital account restrictions by the direction of flows, making it difficult to evaluate their consequences.

Understanding the effects of financial openness requires better knowledge of the specific conditions under which financial globalization is effective. Obstfeld and Taylor (2004) emphasize the role of good institutions in increasing productivity in an economy and hence increasing the benefit from financial opening. Chile is an interesting case study, for two reasons. First, the best-known example of a tax on capital inflows aimed at discouraging shorter-term borrowing is the *encaje* adopted by Chile from 1991 to 1998. IMF officials suggested that other emerging markets could benefit from adopting similar capital controls in certain circumstances (Forbes 2007). Stanley Fischer, the former First Deputy Managing Director of the IMF wrote, “The IMF has cautiously supported the use of market-based capital inflow controls, Chilean style.” Second, Chile is often cited as an exception, together with China and India, as a country that managed to prevent real exchange appreciation for a sustained period of time, thanks in part to reliance on capital controls. Figure 3.6 shows that Chile experienced an intense process of capital account liberalization during the last decade. Despite being a small open economy, Chile has been more resilient to the current episode of global financial distress than most of the rest of the world. Moreover, it has been less vulnerable to this crisis than previous ones. A potential reason for Chile’s resilience is that it invested in improving the quality of its institutions before liberalizing its capital account.

Figure 3.6 Relationship between Financial Openness and Economic Growth in Chile, 1970–2010



Source: Authors, based on data from Chin and Ito 2008 and World Bank 2012.

Note: Capital openness corresponds to the KAOPEN index from Chin and Ito (2008), a de jure index of capital account openness. The index is normalized between 0 and 1. Higher values of the index indicate that a country is more open to cross-border capital transactions.

Our take on the relationship between financial globalization and growth is that the benefit of financial opening may be much smaller in an economy facing agency problems and other market failures compared with first-best outcomes. In a second-best world with agency problems, excessive risk taking may result in bubbles in investment and asset prices that tend to form at the time of increased uncertainty from deregulation and structural change. These effects eventually increase the costs of subsequent financial crises. This view shares some elements with the Obstfeld-Taylor view, which emphasizes the role of better institutions and higher effective productivity in increasing benefits from financial opening. The agency problems we emphasize are based on underlying distortions, which give importance to institutional aspects, such as contract enforceability, shareholder rights protection, and rule of law.

Alternative Financing Channels

Financial markets and the intermediation sector are generally viewed as the main sources of funds for firms. However, in many emerging economies, the banking sector is limited and vulnerable to banking crises, and equity and bond markets are accessible only to large firms in a small number of industries. For firms without access to traditional financial markets, two financing channels become more relevant: internal finance (for example, retained earnings) and alternative (external) financing channels, defined as all nonmarket, nonbank external sources. The institutional structure that supports much of this alternative financing is not based on standard legal mechanisms but rather on a range of mechanisms such as reputation, relationship, and trust.

Allen, Carletti, Qian, and Valenzuela (2013) show that in most countries, small and medium-size firms, especially firms that are unlisted, rely more on alternative finance. This finding is consistent with the fact that a large proportion of firms—particularly small firms and firms in developing economies—lack access to credit from any financial institution (table 3.2). In low-income countries, only 17 percent of small firms compared with 66 percent of large firms have bank credit. In low-income economies, 44 percent of small firms identify lack of access to credit as a “major or “very severe” obstacle to the development of their businesses. Among large firms in high-income economies, the figure is 18 percent.

Table 3.2 Access to Bank Credit by Firm Size and Country Income Level (percent of firms)

<i>Type of firm/country income level</i>	<i>Small firms (5–19 employees)</i>	<i>Medium-size firms (20–99 employees)</i>	<i>Large firms (more than 10 employees)</i>
<i>Firms with line of credit or loan from a financial institution</i>			
High	45	60	66
Upper-middle	38	54	65
Lower-middle	25	39	51
Low-income	17	33	46
<i>Firms identifying access to finance as a “major” or “very severe” obstacle</i>			
High	22	18	18
Upper-middle	29	25	20
Lower-middle	31	28	23
Low	44	39	30

Source: Allen, Carletti, Qian, and Valenzuela 2013, based on data from World Bank Enterprise surveys (<http://www.enterprisesurveys.org>) for 2002–10.

Although many economists view financial markets as the ideal and most important source of funds for firms, this view of the world is not entirely supported in the data (table 3.3). Internally generated funds are the most important source of capital in all countries; these funds are far more important than external finance raised through markets, banks, and alternative channels. Internal financing is more important for firms in low-income economies than in high-income economies. Financial markets (equity and debt markets) provide the least important source of external capital; alternative finance is, on average, as important as bank finance.

Table 3.3 Internal and External Sources of Financing, by Country Income Level (percent)

<i>Country income level</i>	<i>Number of countries</i>	<i>Internal sources</i>	<i>External sources</i>		
			<i>Market finance</i>	<i>Bank finance</i>	<i>Alternative finance</i>
High	15	60	6	16	17
Upper-middle	27	64	2	18	16
Lower-middle	31	61	4	18	17
Low	24	72	3	14	11

Source: Allen, Carletti, Qian, and Valenzuela 2013, based on data from World Bank Enterprise surveys (<http://www.enterprisesurveys.org>) for 2002–10.

Note: Market finance includes funds from private and public equity. Bank finance includes funds from local and foreign-owned commercial banks. Alternative finance includes leasing, trade credit, credit cards, loans from family and friends, investment funds, development banks and other state services, informal sources, and other sources.

There are different views regarding whether alternative finance is as conducive as bank and market finance to supporting growth. The predominant view—as illustrated in cross-country studies (for example, Beck and others 2005, 2008) and within-country studies (for example, Ayyagari, Demirgüç-Kunt, and Maksimovic 2010)—states that firms with access to bank and market finance are of superior quality and grow faster than firms that rely only on internal and alternative finance. This evidence is more likely to support this view in developed economies with advanced markets, banks, and formal institutions. Alternative finance seems to have a strong relationship with economic growth in emerging market economies.

The very high rates of economic growth achieved by China and India, two of the largest and fastest-growing economies in the world, are difficult to explain in terms of finance provided by banks and organized equity and bond markets. Allen, Carletti, Qian, and Valenzuela (2013) argue

that, in both countries, alternative finance played a major role in funding fast growing small and medium-size enterprises. According to the World Bank's Enterprise Surveys, alternative finance accounts for 52 percent of funding in China; the rest comes from bank finance (15 percent), retained earnings (15 percent), market finance (12 percent), and other sources. In contrast to the conventional view that strong institutions and legal systems are important for growth, we suggest that alternative systems based on trust, reputation, and other mechanisms play a crucial role.

Allen, Chakrabarti, De, Qian, and Qian (2012) explore the impact of alternative finance on growth in India. Specifically, they test the null hypothesis that access to bank and market finance is associated with higher firm growth rates in India. Their main finding is that the positive relation between bank finance and firm growth does not hold for Indian firms, after controlling for firm characteristics including location and regional development and correcting for possible survivorship biases as a result of higher death rates among smaller firms. The results are robust to controlling for potential endogeneity associated with the fact that firms chose the type of financing.

An important issue is the extent to which alternative finance poses a systemic risk that could result in a crisis. This risk depends on the nature of the financing. Financing from family and friends does not pose a systemic risk. To the extent that chains of trade credit run through many firms to banks, trade credit may pose some systemic risk.

In China, there has recently been discussion of the risks posed by the shadow banking system. These risks depend on the nature of the transactions undertaken. One widespread form of transaction is loans brokered by financial institutions. This type of transaction creates little systemic risk, as the bank arranges a loan from the creditor to the borrower in exchange for a fee, without taking on any credit risk itself; the risk of default is borne by the lender. Another type of transaction is loans made by banks to entities set up by local authorities. These entities often have no revenue source. The total amount of these loans is substantial. The problem here is that local governments do not have proper funding sources, such as the ability to tax. If they did, there would be no systemic risk. Ultimately, these debts are likely to be the responsibility of the central government. Given its strong fiscal position, they should not pose a systemic threat.

Formal versus Alternative Institutions

Economists have long argued that efficient institutions that facilitate business transactions are a key driver of long-run economic growth (see, for example, Coase 1960; North and Thomas 1973; Williamson 1979). Much of institutional economics developed over the past two decades has emphasized the role of two types of formal institutions, a legal system and a financial system. The law and finance literature, pioneered by La Porta and others (1997, 1998), posits that a strong legal system that enforces contracts and resolves disputes is important for finance and growth. Similarly, a developed financial system, in particular, financial markets and a banking sector, are vital sources of external financing to fund firm growth.

Allen, Qian, and Qian (2005) argue that China provides a significant counterexample to the literature. During China's high growth period (1980–2005), neither its legal nor its financial systems were well developed, and the government was regarded as autocratic and corrupt. Yet its economy grew at the fastest pace in the world.

Other research shows that the legal system plays a very limited role in finance and commerce in other successful Asian economies, including Taiwan, Korea, Vietnam, and Japan. Despite India's English common law origin and a British-style judicial system, formal legal and financial institutions are of limited use there (Allen, Chakrabarti, De, Qian, and Qian 2011). Even in developed countries such as the United Kingdom and Germany, where financial markets and formal legal and financial institutions were first developed, the importance of the role of the law and legal system during their early stages of economic development is debatable.

The conventional wisdom would characterize the economic performance in China as “successful despite the lack of Western-style institutions.” By contrast, Allen, Qian, and Zhang (2011) argue that China has done well because of this lack of Western-style institutions: conducting business outside the legal system in fast-growing economies, such as the current economies of China and India and the economies of Taiwan and Korea in the 1960s–80s, can be superior to using the law as the basis for finance and commerce. In China and India, state-owned enterprises and publicly listed firms have much easier access to legal institutions and banks and financial markets than nonstate, nonlisted firms. Even these nonstate, nonlisted firms conduct business outside the legal

system and do not rely on financial markets or banks for most of their financing needs. Instead, they use methods based on reputation, relationships, and trust to settle disputes and induce good behaviors and rely on alternative financing channels such as trade credits and funds from family and friends to finance their growth, as discussed in the previous section. In both countries, especially in China, it is the nonstate, nonlisted firms that provide most of the economic growth and employ most of the labor force. To a large degree, similar alternative institutions are also behind the success of other Asian economies, and they have played an important part in developed countries, such as the United Kingdom and Germany, at least during early stages of their growth.

Allen, Qian, and Zhang (2011) argue that alternative finance backed by nonlegal mechanisms can actually be superior to bank and market finance backed by the legal system. Research on political economy factors (for example, Rajan and Zingales 2003a, 2003b; Acemoglu and Johnson 2005) suggests that rent-seeking behavior by interest groups can turn the legal system, a monopolist institution, into a barrier to change. These problems are expected to be much more severe in developing countries. The “alternative” view thus argues that by not using the legal system, alternative finance can minimize the costs associated with legal institutions. These papers also point out that in a dynamic environment, characterized by frequent fundamental changes in the economy, alternative institutions can adapt and change much more quickly than formal institutions.

Alternative finance has important implications. The first is that in rapidly growing economies and during the early stages of economic growth, the disadvantages of using the legal system can overshadow its advantages. Thus, conducting business without using the law and legal system and relying on alternative finance as the main source of external funds for corporate sectors can be a superior model. A second important implication is that alternative finance is likely to become a more important source of financing during periods of financial distress, when access to credit and financial markets becomes more difficult. Nilsen (2002) shows that small firms are more likely to rely on trade credit during episodes of financial distress.

4. Financial Crises

High growth may well require that firms and entrepreneurs take significant nondiversifiable risks in order to obtain high returns. This risk taking may lead to high growth but also to financial crises. The main problem is that in some cases, the negative effects of boom-bust cycles are so extreme that the variation in growth is harmful, as the current crisis illustrates. Moreover, as Bordo and others (2001) emphasize, in recent decades financial crises have occurred twice as often as during the Bretton Woods period (1945–71) or the Gold Standard era (1880–1993); only during the Great Depression were they as frequent. Since 1970, the world has experienced 147 banking crises, 218 currency crises, 67 sovereign debt crises, and multiple double and triple crises (table 4.1).

The empirical research on crises and growth is sparse. One of the few studies is by Loayza and Rancière (2006), who note that the growth literature finds a positive relationship between financial development measures, such as private domestic credit and liquid liabilities, and economic growth, whereas the currency and banking crises literature (Kaminsky and Reinhart 1999) often finds such variables useful in predicting crises. Loayza and Rancière find that a positive long-run relationship between financial development and output growth coexists with a mostly negative short-run relationship. Rancière, Tornell, and Westermann (2008) document that on average, countries that have experienced occasional crises have grown faster than countries with smooth credit conditions.

The following subsections explore some of the most important causes and consequences of financial crises as well as policies to try to prevent them.

Systemic Risk, Financial Crises, and Macroprudential Regulation

Asset price bubbles are by no means the only form of systemic risk that can trigger crises. This subsection examines four categories of systemic risk:

- panics (banking crises as a result of multiple equilibria)
- banking crises as a result of asset price falls
- contagion
- foreign exchange mismatches in the banking system.

Table 4.1 Annual Number of Financial Crises, by Type, 1970–2012

<i>Year</i>	<i>Banking crisis</i>	<i>Currency crisis</i>	<i>Sovereign debt crisis</i>	<i>Double crisis</i>	<i>Triple crisis</i>
1970	0	0	0	0	0
1971	0	1	0	0	0
1972	0	5	0	0	0
1973	0	1	0	0	0
1974	0	0	0	0	0
1975	0	5	0	0	0
1976	2	4	1	0	0
1977	2	1	1	0	0
1978	0	5	3	0	0
1979	0	3	2	0	0
1980	3	4	3	3	0
1981	3	10	6	1	0
1982	5	5	9	1	1
1983	7	12	9	2	1
1984	1	10	4	0	0
1985	2	10	3	0	0
1986	1	4	3	0	0
1987	6	6	0	1	0
1988	7	5	1	0	0
1989	4	8	3	1	1
1990	7	10	2	0	0
1991	10	6	0	1	0
1992	8	9	1	1	0
1993	7	8	0	1	0
1994	11	25	0	2	0
1995	13	4	0	2	0
1996	4	6	0	1	0
1997	7	6	0	4	0
1998	7	10	2	3	3
1999	0	8	2	0	0
2000	2	4	0	0	0
2001	1	3	2	1	1
2002	1	5	4	0	0
2003	1	4	1	1	1
2004	0	1	1	0	0
2005	0	1	0	0	0
2006	0	0	0	0	0
2007	2	0	0	0	0
2008	22	3	2	2	0
2009	1	5	0	0	0
2010	0	1	1	0	0
2011	0	0	0	0	0
2012	0	0	1	0	0
Total	147	218	67	28	8

Source: Laeven and Valencia 2012.

Note: A twin crisis indicates a banking crisis in year t and a currency crisis during $[t-1, t+1]$. A triple crisis indicates a banking crisis in year t , a currency crisis during $[t-1, t+1]$, and debt crisis during $[t-1, t+1]$.

This subsection also examines macroprudential regulatory measures and policies that could be put in place to counter these risks. What is important is that the new macroprudential regulation deal with systemic risk, that the focus of regulation not be solely on the risk of failure of single financial institutions. The current crisis has clearly shown that the microprudential approach to financial regulation does not suffice to prevent financial crises. Systemic risk is a complex phenomenon that needs to be combated with a wide range of policies.

Panics (banking crises as a result of multiple equilibria)

The importance of panics in the current crisis is unclear. However, historically there is evidence that panics have been an important source of systemic risk. In the seminal work by Bryant (1980) and Diamond and Dybvig (1983), panics are self-fulfilling events. Agents have uncertain needs for consumption, and long-term investments are costly to liquidate. They deposit their endowment in a bank in exchange for a demand deposit contract that provides insurance for their liquidity needs. If all depositors believe that other depositors withdraw their funds only according to their consumption needs, then the good equilibrium is reached in which the bank can satisfy all depositors' demands without liquidating any of the long-term assets. If, however, depositors believe that other depositors will withdraw prematurely, then all agents find it rational to redeem their claims and a panic occurs.

In their classic book, Friedman and Schwartz (1963) argue that the systemic risk and financial instability in the United States in the late 19th and early 20th century were panic based, as evidenced by the absence of downturns in the relevant macroeconomic time series before the crises.

Introducing deposit insurance for retail depositors is one policy measure that can prevent panics. However, it covers only small depositors. As shown in the recent crisis, large deposits and wholesale funding constitute the majority of funding for many financial institutions. As a result, deposit insurance alone is no longer adequate to solve the problem of panics.

Deposit insurance could be extended and all forms of short-term debt guaranteed. Although doing so could prevent panics, it would generate moral hazard (if banks have access to low-cost funds

guaranteed by the government, they have an incentive to take significant risks). A better solution may be to remove deposit insurance and deal with the problem of panic runs through lender of last resort policies. If depositors know that the central bank will provide the needed liquidity if they attempt to withdraw early, they will not do so.

The other significant problem with deposit insurance and short-term guarantees is that they can be extremely costly to implement if there are other types of systemic risk. In Ireland, for example, the blanket bank debt guarantees of September 2008 effectively bankrupted the country and forced the government to seek funds from the European Financial Stability Fund.

Banking crises as a result of asset price falls

The prices of assets held by banks can fall for many reasons. Some of the most relevant for causing financial crises include the following.

- fluctuations in the business cycle
- bursting of real estate bubbles
- mispricing as a result of inefficient liquidity provision and limits to arbitrage
- sovereign default
- increases in interest rates.

Fluctuations in the business cycle. A longstanding alternative to the panic view of banking crises was that such crises were not random events but a natural outgrowth of the business cycle (see the survey by Allen, Babus, and Carletti 2009). The idea is that an economic downturn will reduce the value of bank assets, raising the possibility that banks are unable to meet their commitments. As Gorton (1988) explains, if depositors receive information about the impending downturn in the cycle, they will anticipate financial difficulties in the banking sector and try to withdraw their funds prematurely, precipitating the crisis. In contrast to the Friedman and Schwarz (1963) view of crises as panics, Gorton (1988), Calomiris and Gorton (1991), and Calomiris and Mason (2003) provide evidence that many of the crises that occurred in the United States were based on fundamentals.

One of the goals of macroprudential policy is to prevent fundamental crises. Standard macroeconomic measures designed to mitigate the depth of the recession may be helpful. Deposit insurance and other forms of guarantee may also help prevent a fundamental crisis but may have large fiscal consequences, as in the case of Ireland discussed above. The nature of this trade-off is not yet well understood.

Bursting of real estate bubbles. Herring and Wachter (1999), Reinhart and Rogoff (2009), Glick and Lansing (2010), and Crowe and others (2011) provide persuasive evidence that collapses in real estate prices (residential, commercial, or both) are one of the major causes of financial crises. In many cases, these collapses occur following bubbles created by loose monetary policy and the excessive availability of credit.

Allen and Carletti (2010) argue that the main initial cause of the current crisis was the bubble in real estate in the United States and a number of other countries, such as Ireland and Spain. When the bubble burst in the United States, many financial institutions experienced severe problems because of the collapse in the securitized mortgage market. Problems then spread to the real economy.

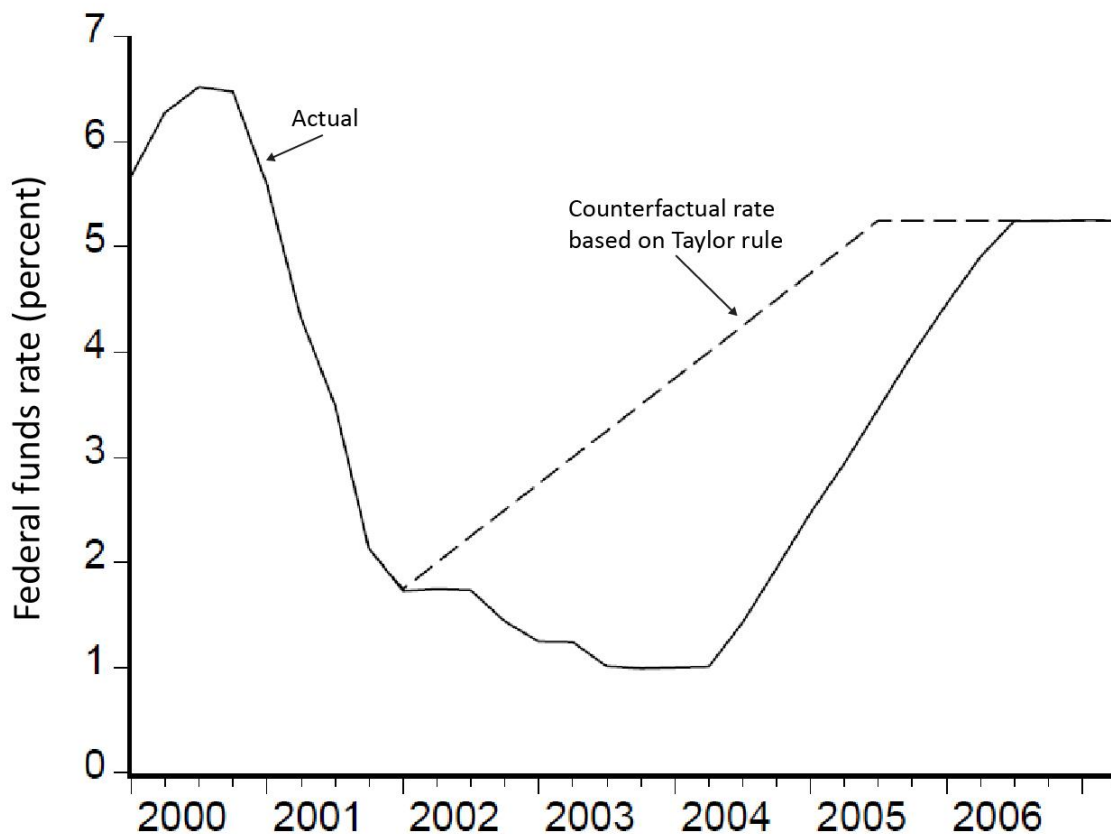
It can be argued that the real estate bubble in these countries was the result of loose monetary policy and a build-up of foreign exchange reserves that led to excessive credit availability. Central banks, in particular the Federal Reserve, set very low interest rates during 2003–04, to avoid a recession after the bursting of the tech bubble in 2000 and the terrorist attacks of September 11, 2001. As Taylor (2008) argues, interest rates were much lower than in previous U.S. recessions relative to standard economic indicators as captured by the Taylor Rule, which describes the historic relationship between interest rates and various macroeconomic variables.

Figure 4.1, taken from Taylor (2007), reports the effective federal funds rate and its counterfactual according to the Taylor Rule. The rate was cut to the very low level of 1 percent in 2003 and stayed there until 2004. For almost four years, it fell well below what historical experience would suggest it should have been. This deviation of monetary policy from the Taylor

Rule was unusually large; no greater or more persistent deviation from actual Fed policy has been observed since the 1970s.

This loose monetary policy was adopted during a period in which housing prices were still growing at significantly more than the inflation rate of about 3 percent. During 1997–2005, the Case-Shiller 10 City Composite Index, one of the most frequently used house price indexes, rose annually by 5–15 percent. Given the positive serial correlation in housing prices documented by Glaeser and Gyourko (2007) and others, this low level of interest rates created an incentive for people to buy houses, as they could borrow at 1 percent and buy assets whose value was growing much faster.

Figure 4.1 Actual and Taylor Rule Federal Funds Rate, 2000–06



Source: Taylor 2007.

Like the United States, several European countries exhibited deviations from the Taylor rule. These deviations explain an important fraction of the cross-country variation in housing booms in Europe, measured by the change in housing investment as a percentage of GDP (Ahrend, Cournède, and Price 2008).

Growth in credit also plays an important role in asset price bubbles (Allen and Gale 2000a, 2007). During the recent crisis, credit expanded rapidly in countries with loose monetary policy as a result of the investment of large foreign exchange reserves accumulated primarily by Asian countries since the late 1990s and oil producers since the mid-2000s. Allen and Hong (2011) suggest that the Asian countries affected by the crisis of 1997 started accumulating reserves in response to the tough conditions the IMF imposed on them in exchange for financial assistance. The motivations for the reserve accumulation of China, the largest single holder, are probably more complex. In addition to the precautionary reason, China started accumulating reserves to prevent its currency from strengthening, in order to protect its exports. Perhaps most important, reserves increased China's political influence significantly.³ Most of the accumulated reserves were invested in U.S. dollars and euros. The large supply of credit in the United States helped drive down lending standards in order to ensure that there was enough demand for debt from homebuyers and other borrowers. Funds did not flow only to the United States; Spain and Ireland also ran large current account deficits, which helped fuel their property bubbles.

When real estate bubbles burst, the financial sector and the real economy are adversely affected. Mian and Sufi (2009) show that zip codes in the United States that experienced the largest increases in household leverage tended to experience the sharpest jumps in loan defaults and the most severe recessions.

Asset price bubbles typically go through three phases. The first starts with financial liberalization, a conscious decision by the central bank to increase lending, or some other similar event. The resulting expansion in credit is accompanied by an increase in the prices of assets

³ For example, before the 2008 Beijing Olympics, many European leaders met with the Dalai Lama to protest China's human rights policies in Tibet. Since the start of the Eurozone crisis in 2010, European leaders have been much more interested in borrowing from China and have refrained from drawing attention to its human rights policies.

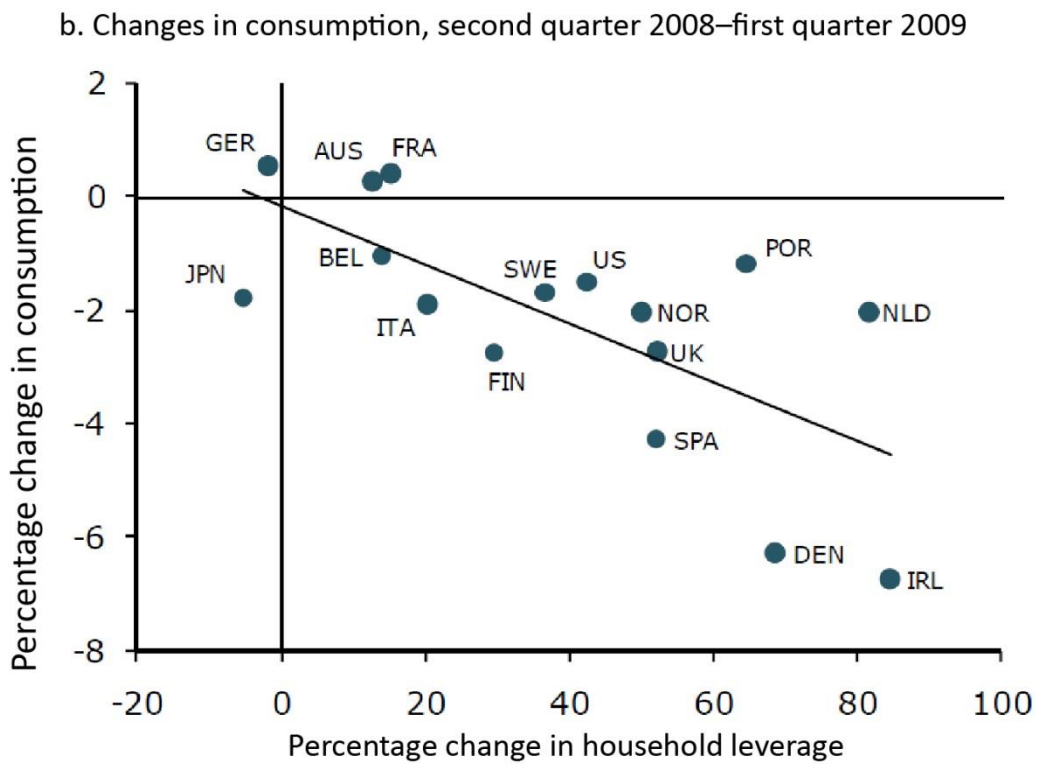
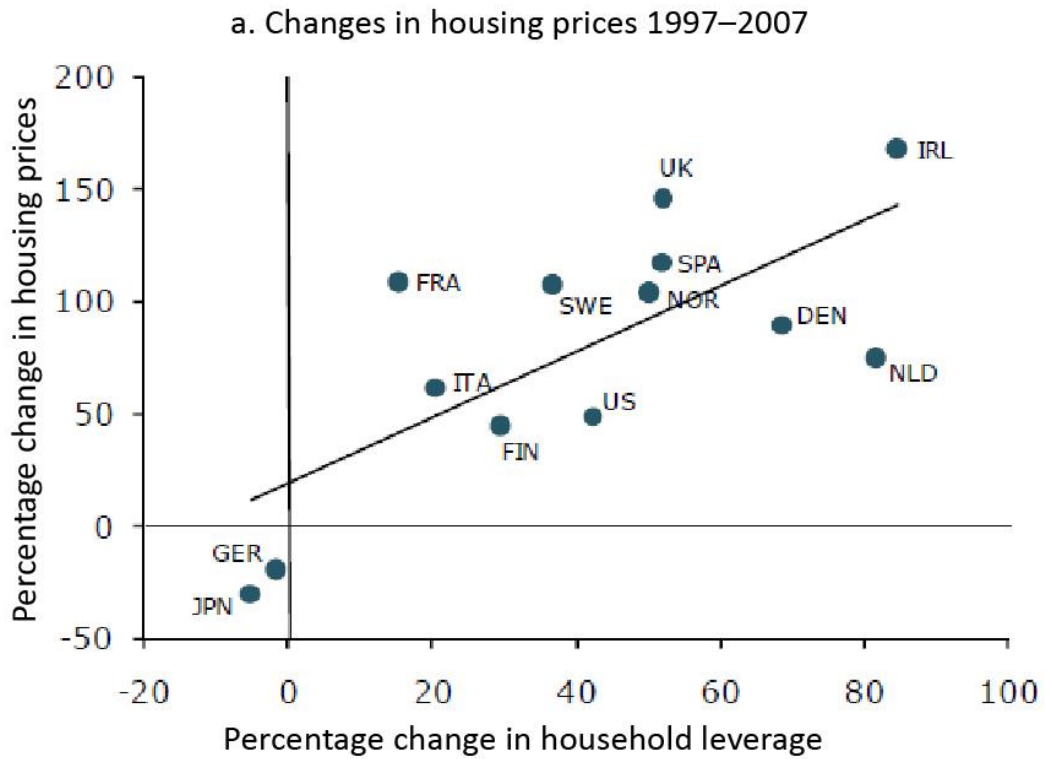
such as real estate. This rise in prices continues for some time, possibly several years, as the bubble inflates. During the second phase, the bubble bursts and asset prices collapse, often in a short period of time, such as a few days or months, but sometimes over a longer period. The third phase is characterized by the default of agents that borrowed to buy assets at inflated prices. Banking and/or foreign exchange crises may follow this wave of defaults. The difficulties associated with the defaults and banking and foreign exchange crises often cause problems in the real sector of the economy that can last for years. There is significant interaction between the financial system and growth.

Consistent with the first phase, figure 4.2 shows that countries that experienced significant increases of household debt in 1997–2007 experienced significant increases in housing prices. This relationship suggests that the link between easy household credit and rising property prices held globally. Consistent with the second phase, figure 4.3 shows that countries that experienced excessive increases in housing prices exhibited a significant drop in those prices once the bubble burst. Consistent with the third phase, figure 4.4 shows that GDP per capita in the United States significantly dropped after the bust of the real estate sector.

In order to avoid crises, it is very important for macroprudential policymakers to be able to predict bubbles and prevent their emergence. Borio and Lowe (2002) argue that although it is difficult to predict asset price bubbles, particularly real estate bubbles, it is not impossible. They provide evidence that rapid credit growth combined with large increases in real estate prices can lead to financial instability. They suggest that in low-inflation environments, inflationary pressures can first appear in asset prices rather than in the prices of goods and services. In such cases, it may be appropriate to use monetary policy to prick bubbles and preserve financial and monetary stability.

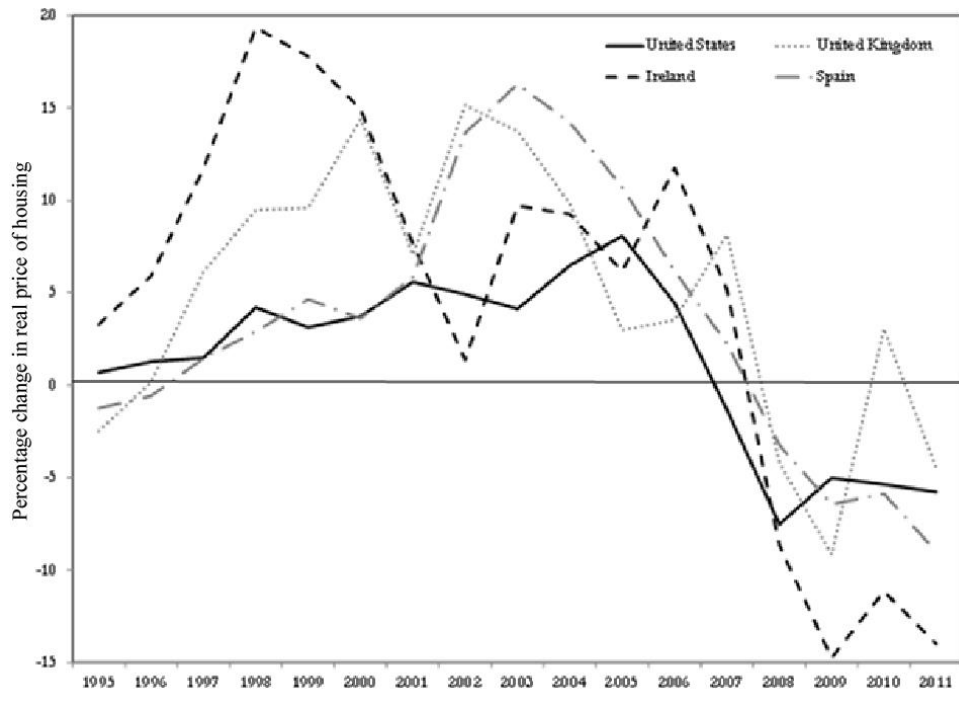
Bubbles, in particular real estate bubbles, seem to be associated with loose monetary policy and excessive credit supply. One way to prevent them is then through interest rate policy. In particular, interest rates should not be kept very low when property prices are surging.

Figure 4.2 Housing Prices and Household Leverage, 1997–2007



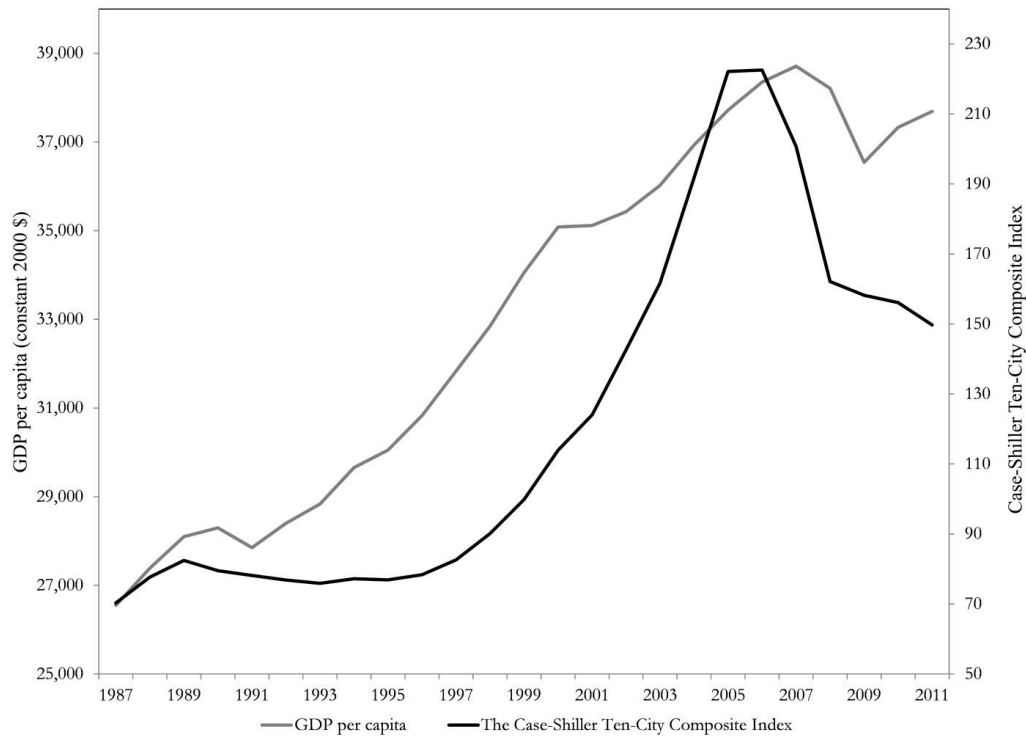
Source: Glick and Lansing 2010.

Figure 4.3 Annual Change in Real Prices of Housing in Ireland, Spain, the United States, and the United Kingdom, 1995–2011



Source: OECD 2012.

Figure 4.4 Real GDP and Index of Real Housing Prices in the United States, 1987–2011



Sources: Standard and Poor's 2012; World Bank 2012

Note: The Case-Shiller 10-City Composite Index is a widely used indicator of changes in house prices.

Once bubbles begin to form, it may be possible and desirable to raise interest rates in economies with a high degree of homogeneity, such as small countries like Sweden or possibly the United Kingdom. However, doing so may be difficult for political reasons. In particular, when such policies are first introduced, it may be difficult to explain why it is worth causing a recession to burst a property bubble.

The problem is more complicated in heterogeneous economies like the United States, China, and the Eurozone, where economic fundamentals and the rate of property price increases differ across regions. Using interest rates to prick bubbles would adversely affect areas that do not have them. Recent events in the Eurozone constitute a clear example. The interest rate policy followed by the European Central Bank was correct for countries like Germany, where there was no bubble, but inappropriate for Spain, where it helped inflate the bubble. A tighter policy might have been effective in preventing the bubble in Spain—but at the cost of a recession or at least slower growth in some other countries.

When interest rates cannot be used, it may be better to use other forms of macroprudential regulation to prevent bubbles. One example is limits on loan-to-value ratios, which could be lowered as property prices increase at a faster pace. Using this tool can be effective for residential property, but it may be difficult to enforce for commercial property, because firms may be able to use pyramids of companies that increase leverage. Another option is to impose property transfer taxes that rise with the rate of property price increases. A more direct measure is to restrict real estate lending in certain regions.

These measures have been tried in several Asian economies, including, Hong Kong, Korea, and Singapore. Crowe and others (2011) show that they appear to have been effective in the short term but less so in the medium and long term.

Saying that monetary policy should not be used to prick bubbles in larger economies or in monetary unions where countries have different economic conditions does not imply that

monetary policy should not be constrained. Loose monetary policy is arguably one of the main causes for the emergence of bubbles, as the recent crisis has shown. One of the most important macroprudential measures should be constraining monetary policy so that it does not trigger bubbles. Interest rates should not be kept excessively low, particularly when real estate prices are rising.

During the recent crisis, excessive credit emerged because of large global imbalances in foreign exchange reserves. To prevent bubbles in the future, it is important to solve this problem. Although it is individually advantageous for countries to self-insure by accumulating reserves, this mechanism is inefficient from a global perspective. What is needed to solve this problem is a reform of the international financial system, as discussed in section 5.

Mispricing as a result of inefficient liquidity provision and limits to arbitrage. Asset pricing theory relies on the assumption of fully rational agents and perfect and complete markets. Under these assumptions, assets are always correctly priced at their fundamental values. The recent crisis illustrated the flaws in this theory in practice.

Theories explaining the role of liquidity in creating systemic risk combine the functioning of financial institutions and markets in a model of liquidity (see, for example, Allen and Gale 2007; Allen, Carletti, and Gale 2009). Financial intermediaries provide liquidity insurance to consumers against their individual liquidity shocks. Markets allow financial intermediaries (and hence their depositors) to share aggregate risks. If financial markets are complete, the financial system provides liquidity efficiently, by ensuring that banks' liquidity shocks are hedged. By contrast, where markets are incomplete, banks cannot hedge completely against shocks, and the financial system stops providing an efficient level of liquidity. This inability to hedge can cause assets to be mispriced, with the prices of even safe assets falling below their fundamental values.

An illustration of this phenomenon in the current crisis is the fact that many securitized products appear to have been mispriced. The challenge for macroprudential policy is to design interventions that allow this problem to be corrected, as the Troubled Asset Relief Program (TARP) program in the United States sought to do. The idea was that by buying large volumes of toxic assets, the

Treasury could restore the functioning of the market. In practice, the Treasury was unable to implement the program effectively. This type of direct intervention seems problematic. Political economy issues are clearly important. It is also not clear that such a scheme can restore the market to proper functioning. No convincing proposals have yet been suggested for this critical area of macroprudential policy.

Given the lack of an immediate solution to this problem, what should governments do? A major problem is that recent reforms have ensured that financial institutions mark their assets to market. In normal times, this system is undoubtedly the best. Financial institutions have traditionally used historic cost accounting for many of their assets. This system has the disadvantage that it allows institutions to conceal declines in asset values for significant periods of time. A good example is the savings and loans crisis in the United States in the 1980s. This kind of episode encouraged the move to mark-to-market accounting by the International Accounting Standards Board and U.S. Financial Accounting Standards Board (FASB) (see, for example, Allen and Carletti 2008a; Plantin, Sapra, and Shin 2008). The divergence between asset prices, particularly prices of securitized products, and apparent fundamentals in the current crisis meant that mark-to-market accounting came under severe criticism by financial institutions and was relaxed by the FASB under political pressure from Congress.

How should the advantages and disadvantages of mark-to-market accounting be balanced? As long as markets are efficient, mark-to-market accounting dominates. When, during times of crisis, they cease to be efficient, market prices do not provide a good guide for regulators and investors. The key issue becomes how to identify whether financial markets are working properly. Allen and Carletti (2008b) suggest that when market and model-based prices diverge significantly (by more than, say, 5 percent), financial institutions should publish both. If regulators and investors see many financial institutions independently publishing different valuations, they can deduce that financial markets may no longer be efficient and can act accordingly.

Sovereign default. The introduction of the euro led to significant integration of the European bond market. The spread on the sovereign debt of different euro countries decreased significantly over the last decade, reflecting the idea that the monetary union together with the fiscal rules of

the Maastricht Treaty and the Growth and Stability Pact would suffice to increase fiscal harmonization across Europe and thus the solvency of all euro countries.

Since May 2010, it has become clear that the architecture embedded in the Maastricht Treaty, and in particular the Growth and Stability Pact, is not sufficient to achieve its goals. The Greek default in 2012 showed that there is credit risk in sovereign debt—a serious problem in its own right but also a critical problem because of its effect on the stability of the banking system. The relation works both ways: the Eurozone crisis puts pressure on the financial system, and the financial crisis in Europe puts pressure on the Eurozone.

The Growth and Stability Pact contained rules on the amount of current public deficits and overall debt. The possibility that a country would go into default was not even contemplated in the architecture of the Eurozone. When the Greek crisis emerged, there were no guidelines or regulation that could be used. In the end, the European Union and the Eurozone dealt with the problem by setting up a bail-out fund. This response creates moral hazard, by changing the incentives of governments to deal with fiscal excesses. In addition, there is the question of how sustainable the bail-out mechanism is politically. If Greece and any other countries default, Germany will pay a large share of the cost. How much German voters—and voters in other countries that make large contributions to bail-out funds—will be willing to subsidize defaulting countries remains to be seen.

Interest rate risk. Perhaps the most immediate systemic risk going forward is that of a sharp rise in interest rates. In many countries, both short- and long-term interest rates are at all-time historical lows. When they start to rise, as a result of either policy moves by central banks to restrain inflation or market moves in anticipation of inflation, the price of all securities, including government debt, will fall. In many countries, this decline in security prices has the potential to cause significant solvency problems for banks.

If central banks raise rates, they should do so over an extended period, so that the effects on financial stability are limited. One of the risks of pursuing low interest rate policies is that a crisis could lead to a rise in long-term interest rates that would be very difficult for central banks to prevent. For example, foreign holders of U.S. Treasuries could decide to sell at the same time,

creating a financial crisis. In designing plans for an exit from low interest rate and quantitative easing policies, it is very important to take into account financial stability.

Contagion

One source of systemic risk that appears to have been important during the recent financial crisis is contagion: the possibility that the distress of one financial institution propagates to others in the financial system, ultimately leading to a systemic crisis. Central banks often use the risk of contagion to justify intervention, especially when the financial institution in distress is big or occupies a key position in particular markets. Fear of contagion is the origin of the term “too big to fail.”

The recent crisis abounds with examples of fears of contagion. Federal Reserve chairman Ben Bernanke (2008) argues that the takeover of Bear Stearns by J.P. Morgan arranged by the Federal Reserve in March 2008 was justified by the likelihood that its failure would lead to a chain reaction that would have caused many other financial institutions to have gone bankrupt. Contagion could have spread bankruptcy throughout the network of derivative contracts that Bear Stearns was part of.

When Lehman Brothers failed, in September 2008, the Federal Reserve presumably expected that its failure would not generate contagion. In fact, there was contagion, but the form it took was complex. The problem spread first to money market funds. The government had to intervene rapidly by guaranteeing all money market mutual funds. The failure of Lehman also led to a loss of confidence in many financial firms, as investors feared that other financial institutions might also be allowed to fail. Volumes in many important financial markets fell significantly, and there was a large spillover into the real economy. World trade collapsed. In trade-based economies such as Germany and Japan, GDP fell significantly in the fourth quarter of 2008 and the first quarter of 2009. This dramatic decline in GDP in many countries underlines the importance of contagion.

The effects of contagion are not well understood. The literature has provided a few explanations of the mechanisms at play, but much work is still needed. Research on contagion takes a number of approaches (see the survey by Allen, Babus, and Carletti 2009). In looking for contagious effects

through direct linkages, early research by Allen and Gale (2000c) studied how the banking system responds to contagion when banks are connected by different network structures. They show that incomplete networks are more prone to contagion than complete structures. Following research focused on network externalities created from individual bank risk, they applied network techniques to the study of contagion in financial systems. The main result in this theoretical literature is that greater connectivity reduces the likelihood of widespread default. However, shocks may have a significantly larger impact on the financial system when they occur.

Wagner (2010); Ibragimov, Jaffee, and Walden (2011); and Allen, Babus, and Carletti (2012) consider a second type of contagion, in which systemic risk arises from common asset exposures. Diversification is privately beneficial but increases the likelihood of systemic risk as portfolios become more similar. The use of short-term debt can lead to a further significant increase in systemic risk.

Several macroprudential policies and regulations may be needed to address the different channels and types of contagion. Capital regulation has been the main tool for regulating banks in recent years, coordinated internationally through the Basel agreements. It is the main tool for ensuring stability in the international financial system. The traditional justification for capital regulation has been that it is needed to offset moral hazard from deposit insurance (for an example of an exception, see Hellmann, Murdock, and Stiglitz 2000). Because banks have access to low-cost funds guaranteed by the government, they have an incentive to take significant risks. If the risks pay off, banks profit; if the risks do not pay off, the government bears the losses. Capital regulation is needed to offset the incentives for banks to take risks, as it ensures that shareholders will lose significantly. Moreover, capital acts as a buffer to absorb losses, thus making banks more resilient to shocks and losses and, perhaps most important, reducing the risk of contagion.

There is a longstanding debate over how much capital banks should hold (for a recent contribution, see Admati and others 2010). The recent crisis and the discussions of the proposal for a new regulatory framework have highlighted the difficulties embodied in these proposals. The starting point of the discussion is usually that capital is a more costly form of funding than debt, so that, left unregulated, banks minimize the use of capital; regulation is needed to force

banks to hold minimum capital levels. The same argument is typically assumed in the academic literature (see, for example, Gorton and Winton 2003).

Modeling the cost of equity finance for financial institutions is one of the major problems in designing capital regulation. The first issue is whether equity is in fact more costly than debt. If it is, the second issue is whether equity is more costly only in the financial industry or in all industries. Financial institutions hold much less equity (about 10 percent) than industrial companies (30–40 percent). Understanding the reasons for this large difference in capital structures is of crucial importance in designing capital regulation.

One simple answer as to why equity is more costly than debt is that in many countries interest on corporate debt is tax deductible but dividends are not. It is not clear why this is the case or whether it should be the case. There does not seem to be any good public policy rationale for the deductibility of interest on corporate debt, which seems to have arisen as an historical accident. When the corporate income tax was introduced, interest was regarded as a cost of doing business, in the same way that paying wages to workers was a cost. However, from a modern corporate finance perspective, equity and debt are just alternative ways of financing the firm. If tax deductibility is the reason why firms prefer to use debt rather than equity, then the simple solution is to remove it. If without deductibility, financial institutions are willing or can be induced through regulation to use more equity, then financial stability could potentially be considerably enhanced.

Other possible rationales for the high cost of equity are agency problems within the firm. According to this rationale, equity does not provide the correct incentives to shareholders or managers to provide the right monitoring. High leverage is needed to ensure such monitoring. There is little empirical evidence that this problem is severe in the banking sector. In private equity and venture capital firms, where the agency problem seems much greater, leverage is typically lower than in banks.

A final point concerns the reason why financial institutions hold so little capital relative to other industries. Debt in the financial industry is implicitly subsidized through government guarantees

and bail-outs. If this implicit subsidy explains why financial institutions rely so heavily on debt, then it is necessary to limit guarantees and create credible enforcement mechanisms such as proper resolution procedures.

In the current debates on capital regulation, two main proposals have been put forth. The first concerns countercyclical capital regulation. The second concerns the use of hybrid instruments in the form of contingent convertible debt (CoCos).

The idea behind countercyclical capital regulation is that during normal times, banks and other financial institutions can accumulate capital reserves and buffers that will allow them to survive serious shocks to the financial system. These measures are related to countercyclical loan reserves that have been implemented by the Bank of Spain for some time. The accumulation of loan reserves in the period before the crisis helped Spanish banks weather the crisis, suggesting that countercyclical capital ratios may be helpful. However, the accumulation of loan reserves did not prevent the credit boom in Spain or the bubble in property prices, so not too much reliance should be placed on them.

It has been widely suggested that banks should issue convertible debt that could be converted into equity in the event of a crisis. The Royal Bank of Scotland and Lloyds in the United Kingdom and Unicredit in Italy have issued this kind of security. CoCos have two main advantages: they obviate the need for banks to raise capital in difficult times, and they allow losses to be shared with debt holders. This possibility of conversion would also have a disciplinary role, inducing bank managers to behave more prudently.

Another way to stabilize markets and prevent contagion is through a combination of public and private financial institutions. Chile's Banco Estado is a publicly owned commercial bank that competes with private sector banks. In times of crisis, it can expand and help stabilize the market, as all market participants know that it is backed by the state and will not fail.

Many central banks have been playing this role by buying large quantities of commercial paper. These central banks have become like large commercial banks—but the officials in charge of

central banks do not usually have much expertise in running a commercial bank or know much about credit risk. It would be better to have expertise in the public sector that allows the state to perform commercial banking functions during times of crisis. These state institutions would act as firebreaks, limiting the damage that can be done by contagion.

Currency mismatches in the banking system

One of the major problems in the 1997 Asian crisis was currency mismatch. Banks and firms in Korea, Thailand, and other countries had borrowed in foreign currencies, particularly dollars. When the crisis hit, they were unable to borrow. Central banks did not have enough foreign exchange reserves and were unable to borrow in the markets. As a result, a number of countries had to turn to the IMF.

During the current crisis, the major central banks agreed on foreign exchange swaps. These swaps eased the international aspects of the crisis compared with 1997. Allen and Moessner (2010) describe the problems raised by banks lending at low interest rates in foreign currencies. The foreign currencies that were typically used to make loans were the U.S. dollar, the Japanese yen, and the Swiss franc. These loans were funded in two ways. The first was through the international wholesale deposit market. The second was by taking deposits in domestic currency and then using the foreign exchange swap market to convert them into the required foreign currency. The largest currency-specific liquidity shortages were \$400 billion in the Eurozone, \$90 billion worth of yen in the United Kingdom, \$70 billion worth of euros in the United States, and \$30 billion worth of Swiss francs in the Eurozone. The central bank foreign exchange swaps ended the problems these mismatches posed.

Allen and Moessner (2010) document how the swap system worked. There were four overlapping networks:

- the Federal Reserve's network to supply U.S. dollars
- the European Central Bank's network to supply euros
- the Swiss franc network
- the Latin American and Asian networks.

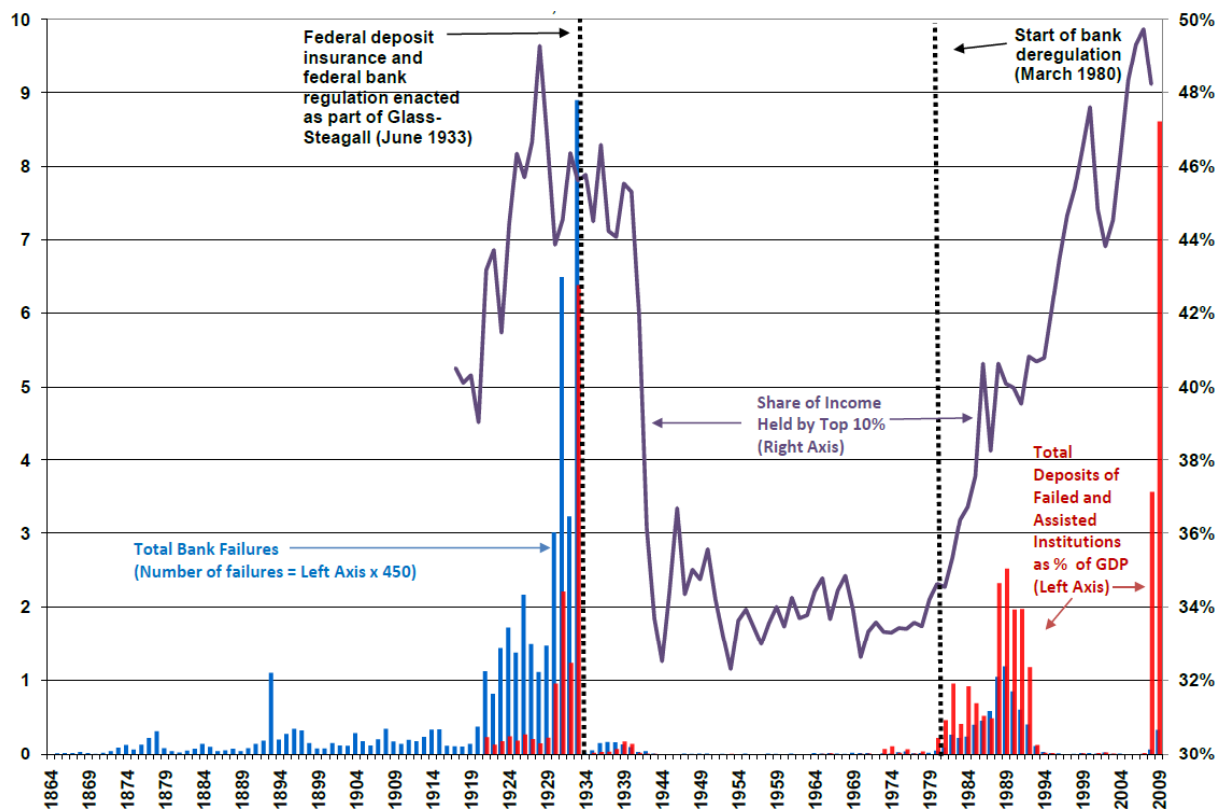
These swap networks involved considerable overlap (see Allen and Moessner 2010). As they were organized between central banks, the credit risk borne was sovereign rather than

commercial. The receiving central bank then passed on the foreign currency to firms and financial institutions, which bore the commercial credit risk. Some of the swaps between central banks were collateralized with the currency of the counterparty central bank. These swaps considerably eased foreign exchange problems during the crisis and are widely regarded as having been successful.

Domestic Financial Deregulation

The experience of the United States suggests that there is a significant relationship between financial deregulation and financial crises (figure 4.5). Until 1933, a period characterized by very little financial regulation, bank failures were frequent in the United States. After financial regulation was dramatically strengthened, bank failures practically vanished for nearly 50 years. When financial deregulation began in the 1980s, bank failures reappeared.

Figure 4.5 Banking Crises, Financial Regulation, and Income Inequality in the United States, 1864–2009



Source: Moss 2010. Note: The left y-axis measures two variables. The first is total deposits of failed and assisted institutions. It is measured as a percent of GDP. The second variable is total bank failures. The number 1 represents 450 failures, 2 represents 900 failures, and so on. The right axis measures the share of income held by the top 10 percent.

The international evidence is not much different from the experience of the United States. The negative experience of the Great Depression was so severe that extensive financial regulation and other measures were put in place around the globe to prevent another Great Depression. These measures, particularly the measures implemented in much of Europe and Asia, restricted risk taking to a great degree and prevented banking crises. From 1945 until 1971, there was only one banking crisis in the world, which occurred in Brazil in 1962 together with a currency crisis.

One way to stop crises is thus to prevent financial institutions from taking risks. However, the prevention of crises during this period was achieved at a high cost. The measures were so severe that they effectively prevented the financial system from allocating resources.

As shown in table 4.1, starting in the 1970s and accelerating in the 1980s, financial systems were deregulated and banking crises returned. Kaminsky and Reinhart (1999) document the importance of financial liberalization and deregulation in causing crises in a wide range of circumstances. Their results suggest that great care needs to be taken in deregulating financial systems and ensuring that it does not lead to credit booms and other excesses that result in financial crises.

Income Inequality

Income inequality in the United States has followed a similar pattern to the frequency of banking crises and financial deregulation. The two peaks in inequality occurred in 1928 and 2007—immediately before the Great Depression and the Great Recession (figure 4.6). As a consequence of these stylized facts, a series of theories argue that income inequality may create incentives that put the financial system at risk.

Rajan (2010) and Kumhof and Rancière (2011) investigate how high leverage and financial crises can arise as a result of changes in income distribution. Rajan (2010) argues that the subprime crisis was a manifestation of an underlying and longer-term dynamic driven by income inequality. The main argument is that increased income inequality created political pressure to encourage easy credit in order to keep demand and job creation robust despite stagnating incomes. Kumhof and Rancière (2011) argue that in periods of high inequality the rich lend a large part of their increased income to the low-income segments of the population. In this way,

investors allow workers to smooth the drop in their consumption following their loss of income, at the cost of a large and highly persistent increase in workers' debt. These high levels of debt create financial fragility, which eventually makes an economy more vulnerable to financial crises. Their findings suggest that a reduction in income inequality, through an increase in the bargaining power of the lower income group or other redistributive policies, can lead to a sustained reduction in crisis risk.

In contrast to U.S. economic history, the international empirical evidence on the relationship between income inequality and crises is not conclusive, suggesting that the experience of the United States may be an outlier by historical standards. For example, the experiences of some Scandinavian countries that underwent financial crises without much inequality suggest that other factors may play a more important role. Using a panel of 14 advanced economies for the period 1920–2008, Bordo and Meissner (2012) find that after controlling for a number of variables, income inequality plays no significant role in explaining credit growth. The two key determinants of credit booms are economic expansion and low interest rates.

A main lesson from these studies is that income inequality or high levels of debt (caused by income inequality) can lead to financial crises. However, as Bordo and Meissner (2012) emphasize, an increase in the supply of credit that incubates a financial crisis requires different policy responses from the responses that might be prescribed for an increase in the demand for credit. In the former case, financial regulations and reforms to limit excessive credit seem to be more appropriate actions to achieve financial stability.

Financial Globalization

Financial globalization can trigger financial crises. Episodes of strong capital inflows could incubate bubbles, which could burst as a result of unpredictable external contagion or liquidity shocks, triggering major credit disruption. Figure 3.5 shows a strong correlation between capital mobility and the incidence of banking crises. The cost of occasional crises can be small compared with the growth-enhancing effect of financial liberalization (Tornell, Westermann, and Martinez 2004). But crises that follow the bursting of bubbles in investment and asset prices seem to be followed by extremely costly recessions. The costs and benefits of financial liberalization thus need to be considered. Occasional, costly crises seem to be inevitable in a

deregulated environment. At the same time, deregulation and globalization allow more risk taking, higher expected returns, and better allocation of capital.

Consequences of Crises

Financial crises have pernicious consequences. According to Reinhart and Rogoff (2009), on average, financial crises result in the following:

- 35 percent real drop in housing prices over six years
- 55 percent drop in equity prices over three and a half years
- 9 percent decline in output over two years
- 7 percent increase in the unemployment rate over four years
- 86 percent increase in central government debt over its precrisis level.

Laeven and Valencia (2012) also find significant costs associated with financial crises. Output losses (measured as deviations from trend GDP) of systemic banking crises can be large, averaging about 20 percent of GDP during the first four years (table 4.2). Output losses and increases in public debt tend to be larger in advanced economies, consistent with the fact that with deeper financial systems, a banking crisis is more disruptive. In contrast, fiscal costs are larger in developing and emerging economies, whether measured as a percent of GDP or as a percent of financial system assets (to account for differences in the relative size of financial systems).

Table 4.2 Outcomes of Banking Crises in Advanced, Emerging, and Developing Economies, 1970–2011 (percent)

<i>Countries by income level</i>	<i>Output loss</i>	<i>Increase in debt</i>	<i>Fiscal costs</i>	<i>Duration in years</i>
All	23.0	12.1	6.8	2
Advanced	32.9	21.4	3.8	3
Emerging	26.0	9.1	10.0	2
Developing	1.6	10.9	10.0	1

Source: Laeven and Valencia 2012.

The greater reliance on macroeconomic tools may also explain why crises tend to last longer in advanced economies. If macroeconomic policies are used to avoid a sharp contraction in economic activity, they may discourage more active bank restructuring that would allow banks to recover more quickly and renew lending to the real economy, with the risk of prolonging the crisis and depressing growth for a prolonged period of time.

5. Reforming the International Financial System

As the discussion of financial globalization in the previous sections makes clear, the international financial system has an important effect on the average global citizen. The most important institution in the international financial system since the end of World War II has been the IMF.⁴ With regard to growth, finance, and crises, it can be argued that the IMF needs to be reformed to reduce the need for large foreign exchange reserves that many countries, particularly in Asia, apparently feel.

As Allen and Hong (2011) argue, the accumulation of reserves by the Asian countries was at least partly a response to the policies the IMF imposed on a number of countries during the late 1990s. For example, although Korea was one of the most successful economies in the world in the preceding decades, the IMF forced it to raise interest rates to maintain its exchange rate and to cut government expenditure. This prescription was the exact opposite of what the United States and many European countries did when faced with similar circumstance in the current crisis. Given that Korean firms used significant amounts of trade credit, the rise in interest rates was very damaging, driving many thousands of firms into bankruptcy. Unemployment rose from about 3 percent to 9 percent, and there was a long recession. It was this experience that impressed upon the Koreans that they must accumulate sufficient reserves going forward in order to avoid being forced to go to the IMF.

Since its foundation at the end of World War II, the IMF has been dominated by the United States and European countries. Its head has always been a European, and the deputy head has always been an American. Nobody from Asia or any other part of the world has held either of these posts. In addition, the voting shares of European countries exceed their share of world GDP, particularly when measured in purchasing power parity terms, whereas the shares of China and many other Asian countries are significantly below their GDP weight. During the 1997 Asian crisis, Asians were not well represented among the senior staff of the IMF. Their underrepresentation contributed to the problems from the policies pursued, as there was effectively no appeal mechanism.

⁴ In her paper on this website, Birdsall considers the role of the IMF and its governance at some length.

Going forward, it is therefore important to reform the governance structure of the IMF and the other international economic organizations so that Asian countries are properly represented. Doing so would help ensure that they receive equal treatment when they need financial help. It would also reduce the need of these countries to accumulate reserves as a self-insurance mechanism. This self-insurance is very wasteful from an economic point of view. It involves some of the economies with the best investment opportunities in the world, such as Taiwan, Korea, and China, investing substantial amounts in low-yielding U.S. Treasuries and Eurozone government securities. These funds would be much better employed by domestic firms.

Although such reforms are desirable, they seem unlikely to be implemented in the short or even medium term. To reduce the large accumulation of reserves, particularly by China, other measures are necessary. For example, senior Chinese officials have proposed replacing the dollar with a global currency as a reserve currency. Reserves could be created initially without large transfers of resources and the attendant risk of a crisis. All countries could be allocated enough reserves in the event of a crisis to survive shocks. The problem with this proposal is that an international institution like the IMF would need to implement the currency. There would then again be the issue of whether all countries, in particular the Asian ones, are properly represented in the governance process.

A more likely medium-term scenario is that the yuan becomes fully convertible and joins the U.S. dollar and the euro as the third major reserve currency. With three reserve currencies, there would be more scope for diversification of risks, and China itself would have little need of reserves. This idea is perhaps one of the most practical solutions to the global foreign exchange reserve imbalance problem. The Chinese have already taken some steps in this direction. They have started to allow the settlement of trade in yuan and the issuance of yuan-denominated bonds by Western companies such as McDonalds in Hong Kong. Of course, the most important aspect of being a reserve currency is full convertibility. Capital controls thus need to be removed and unrestricted capital movements allowed. The Chinese government has made moves in this direction by increasing the amounts Chinese citizens can invest overseas citizens and foreigners can invest in China.

Convertibility of the yuan and establishment of it as a reserve currency are arguably the most important reforms of the international financial system. These reforms would allow countries to manage their foreign exchange reserves much better, because there would be one currency for each of the three major economies in the world. Countries, particularly China, could reduce their foreign exchange reserves, as countries with a reserve currency do not need significant foreign exchange reserves. These reductions in holdings would considerably increase the financial stability of the global financial system.

6. Finance and the Global Citizen

This section analyses how finance affects the global citizen in a variety of dimensions. It explores how financial inclusion is related to demographics and examines the impact of financial inclusion on education, labor, poverty, and income inequality. It also describes how financial crises are likely to have heterogeneous effects in the population, with the underprivileged segments of the population suffering the longest-lasting effects. It closes by examining how the process of financial globalization has affected income inequality.

Financial Inclusion and Demographics

Access to financial services plays an important role in economic development and poverty reduction. Financial inclusion permits vulnerable segments of the population to save and to borrow. Through these financial services, individuals can build their assets, invest in human capital, and improve their standard of living.⁵ Inclusive financial systems allow poor people to smooth their consumption and insure themselves against negative shocks such as illness, unemployment, and natural disasters. Burgess and Pande (2005) find that financial development has a significant impact on economic development in rural areas. Given the potential impact of access to finance on the life of the poor, the role of financial inclusion cannot be ignored.

With low levels of development, there is evidence that some financial services matter more for people's welfare than others. In their research on the financial lives of poor households, for example, Collins and others (2009) find a pattern of intensive use of savings instruments.

⁵ Behrman and Kohler examine these demographic and human capital issues in their paper on this website.

Payment services may also allow people to avoid problems of theft associated with the use of cash. In contrast, the granting of credit is more problematic, particularly among people with low incomes, suggesting that savings and payment services may be more important than credit for a poor people and low-income countries. The path for development may involve opening up the savings markets before the credit and other financial markets.

Karaivanov and Townsend (2012) develop a range of dynamic models of constrained credit and insurance that allow for moral hazard and limited commitment. They compare these solutions with full insurance and exogenously incomplete regimes. Using data from Thai households, they find that savings only and borrowing regimes provide the best fit to data for rural households; data from urban households suggest they are considerably less constrained.

Financial inclusion varies significantly across regions and countries. Although finance is likely to benefit the underprivileged segments of the population (for example, women, young people, and people in rural communities) more, these segments of the population face more difficulties in accessing financial services. Table 6.1 reports four measures of access to financial services by country income levels and individual characteristics. At least three stylized facts emerge from the table. First, the use of formal financial services is more common in higher-income economies. Second, women, the poor, rural residents, and people with less education have less access to both formal and alternative financial services. Third, the use of alternative finance mechanisms, such as loans from family and friends, is more common in lower-income economies.

Table 6.1 Financial Inclusion, by Country Income Level and Individual Characteristics, 2011

<i>Measure/country income level</i>	<i>Gender</i>			<i>Income</i>		<i>Location</i>		<i>Education</i>	
	<i>Men</i>	<i>Women</i>	<i>Total</i>	<i>Top 60 percent</i>	<i>Bottom 40 percent</i>	<i>Urban</i>	<i>Rural</i>	<i>Secondary or more</i>	<i>Primary only</i>
<i>Has account at formal financial institution</i>									
High	92.3	88.9	90.5	93.3	87.4	90.8	88.0	93.5	75.7
Middle	48.0	38.5	43.3	53.2	30.9	50.5	39.9	53.8	36.8
Low	27.0	20.4	23.7	29.3	16	34.8	21.9	36.4	15.1
<i>Has loans from family or friends</i>									
High	11.9	11.9	11.9	10.3	13.7	12.5	9.6	13.3	11.1
Middle	26.0	23.3	24.7	23.2	26.2	24.9	24.5	23.8	24.9
Low	32.1	28.5	30	31.2	29.1	28.4	30.6	28.8	30.5
<i>Has account used to receive government payments</i>									
High	45.2	41.9	43.5	42.4	44.7	40.7	41.2	44.6	38.3
Middle	7.2	5.8	6.5	7.4	5.3	8.5	5.6	8.5	5.3
Low	3.4	1.6	2.5	3.4	1.2	3.6	2.3	4.5	1.0
<i>Has account used to receive remittances</i>									
High	14.8	12.2	13.5	14	12.9	14.9	6.2	15.6	9.8
Middle	6.1	5.9	6	7.5	3.9	8.5	4.4	6.8	5.5
Low	5.4	4.1	4.7	7.0	1.7	8.2	1.9	8.5	4.1

Source: Global Financial Inclusion Dataset from the World Bank (<http://datatopics.worldbank.org/financialinclusion>).

Note: Figures are for people 15-years-old and older.

Despite the low penetration of formal financial services in some low-income areas, latent demand for financial services is strong. In Kenya, for example, even rural poor respondents mention a “commercial bank” as their preferred saving mechanism if they had access to all the alternatives (Dupas and others 2012). Two innovations in Kenya have expanded access to finance to isolated areas and minority groups. Equity Bank is a pioneering commercial bank that devised a banking service strategy targeting low-income clients and traditionally under-served territories. Its branch expansion targeted clients speaking minority languages and a key part of its strategy involved the use of low-cost services that were possible because of the use of computers (Allen, Carletti, Cull, Qian, Senbet, and Valenzuela 2012). M-Pesa is a mobile phone-based service that greatly facilitates money transfers and remittances by the poor. It has been used primarily to transfer money from individual to individual rather than as a vehicle for saving. Mbiti and Weil (2011) find that the use of M-Pesa also increased the probability of people having bank accounts.

The examples of Equity Bank and M-Pesa illustrate the possibilities for using new technologies to leapfrog. These examples suggest ways around the current financial markets and institutional structure that can also help deal with vested interests. Mobile phones and the development of low-cost banking through the use of computers seem a good way for many banks to pursue strategies that increase financial inclusion. Both of these strategies were profitable and thus can be left to the private sector. There is no need for public subsidies. However, it is necessary that regulators permit the use of such strategies.

Financial markets can also hurt the poor, through financial crises. Paxson and Schady (2005) explore some of the consequences of the crisis of 1988–92 in Peru. They find that spending on health contracted sharply during the crisis, resulting in a significant rise in infant mortality. Ferreira and Shady (2008) find that in poorer economies, child health is procyclical: infant mortality rises and nutrition falls during recessions.

Finance, Education, and Labor Markets

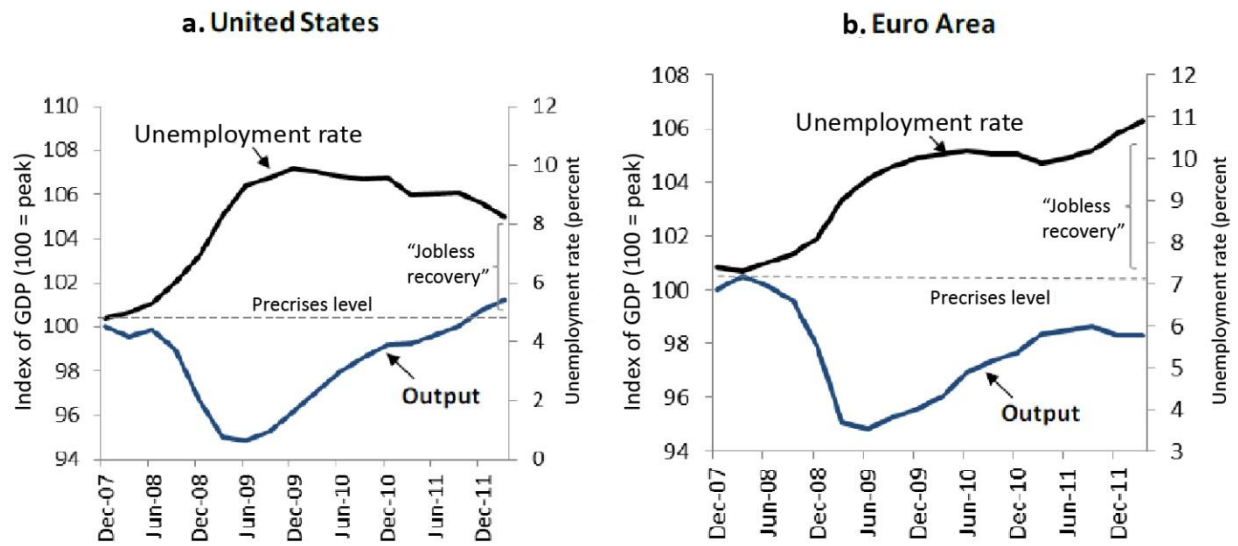
Empirical evidence suggests that access to financial services such as saving and credit accounts promotes investment by parents in the education of their children, especially when negative shocks reduce household income. Jacoby and Skoufias (1997) show that households from Indian villages without access to credit markets tend to reduce their children's schooling when they receive transitory shocks. Using cross-country data, Flug, Spilimbergo, and Wachtenheim (1998) find that lack of access to financial markets reduces average secondary school enrollment rates.

Excessive finance is likely to have a negative effect on education, through the effects of financial crises. Financial crises generally have heterogeneous effects, across and within countries. Ferreira and Schady (2008) show that in low-income countries, schooling rates tend to drop during a macroeconomic or agro-climatic crisis. In contrast, in middle- and high-income countries, schooling tends to increase.

The impact of financial crises on children and young people is of great concern. Pulling children from poor families out of school in response to negative income shocks has a lasting impact on poverty, because drop-outs tend to earn less as adults. Therefore, providing schooling and training support to the underprivileged segments of the population should be a policy response in times of financial crisis.

Labor markets are also directly affected by financial crises. The persistence of unemployment following recessions has preoccupied economists and policy makers since at least the Great Depression. The Great Recession, with its high and persistent unemployment in advanced economies, has brought the jobless recovery to the fore once again. Although by the first half of 2012, output had reached its precrisis level in the United States and was nearing its precrisis levels in Europe, the unemployment rate was still significantly above its precrisis level (figure 6.1). Calvo, Coricelli, and Ottonello (2012) explore the hypothesis that the joblessness nature of the recovery from a recession is related to the financial nature of the episode. They find that financial crises tend to be followed by jobless recoveries in the presence of low inflation and by “wageless” recoveries in the presence of high inflation.

Figure 6.1 Jobless Recovery following the Great Recession, 2007–11



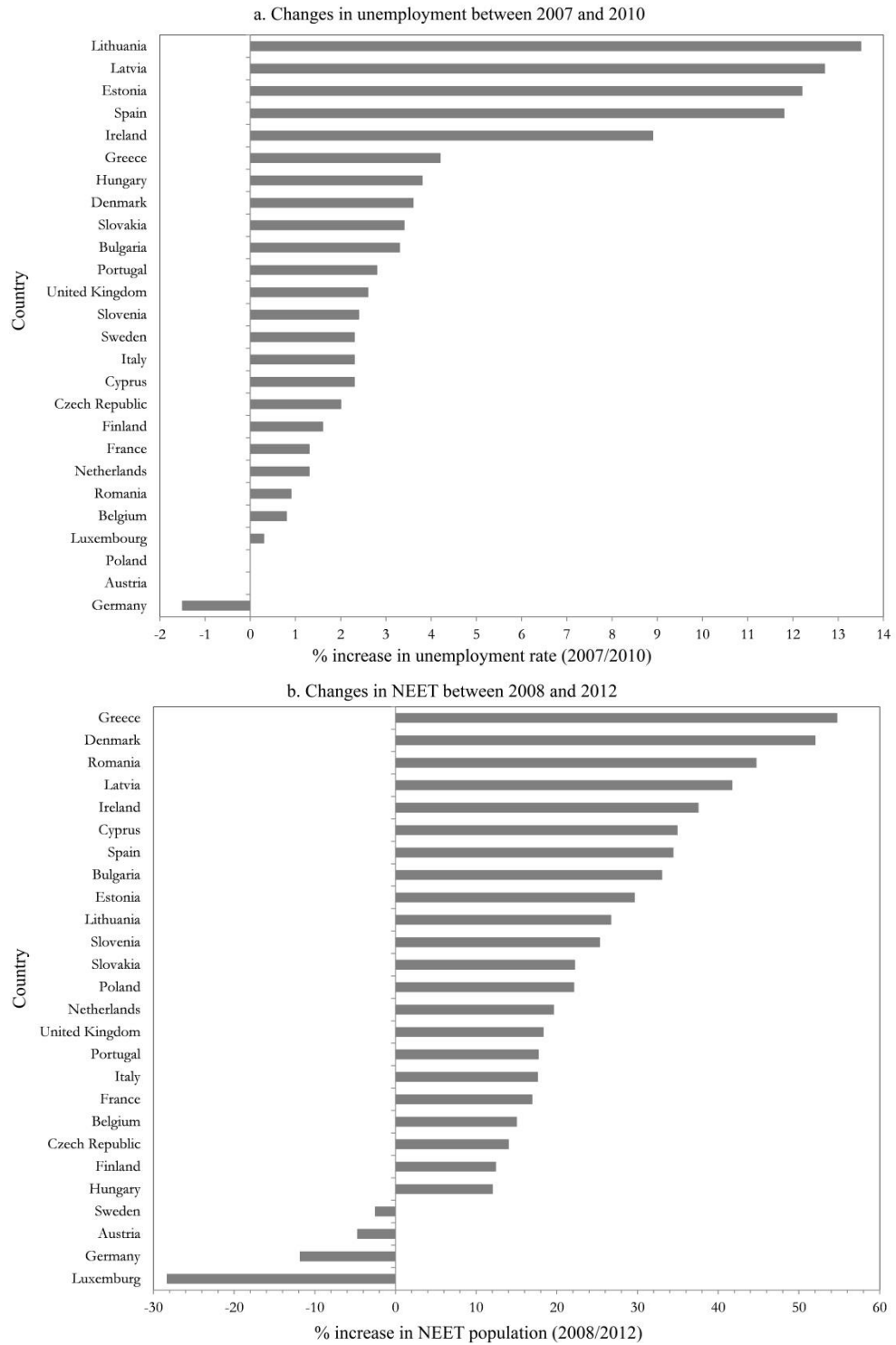
Source: Calvo, Coricelli, and Ottonello 2012.

Note: Figures are seasonally adjusted.

The European debt crises had a significant effect on the unemployment rate between 2007 and 2010, with several countries increasing their unemployment rates by more than 5 percentage points (top panel of figure 6.2). During financial crises, young people are particularly vulnerable. They are often the first to exit and the last to enter the labor market, because they have to compete with job-seekers who have more experience in a market with fewer job opportunities.

As a consequence of the debt crisis, a group of people has emerged in Europe that is at high risk of social exclusion, namely, young people not in employment, education or training (the so-called NEET group). This group typically includes people between the ages of 16 and 24 who disengaged from both education and work. The bottom panel of figure 6.2 shows that most European countries experienced a significant increase in this group. Among the worst-affected countries are Greece, Denmark, Ireland, and Spain. According to Eurofound (2011), people with a higher probability of being NEET include people with disabilities, immigrant backgrounds, low education levels, low household income, and parents who experienced unemployment and people who live in remote areas.

Figure 6.2 Changes in Unemployment and Share of Population Not in Employment, Education or Training (NEET), by European Country



Sources: World Bank 2012; Eurofound 2011.

Finance, Income Distribution, and Poverty

Access to finance affects income distribution, because it affects individuals' economic opportunities. Access to credit is an important determinant for paying for education or starting a business, for example.

The direction of the impact of access to finance on income distribution is not obvious. On the one hand, access to finance may improve income distribution, because access to saving and credit instruments should allow underprivileged individuals to increase their human and physical capital. Access to finance may also reduce the pernicious effects of external negative shocks (such as natural disasters), which in general affect low-income segments of the population more than other segments. On the other hand, because the poor do not have the same access to financial services as higher-income segments of the population (for example, as a result of lack of collateral), financial markets may actually exacerbate income inequality. Similar to the finance-growth nexus, excessive finance is likely to increase the incidence of financial crises, worsening the distribution of income.

According to Baldacci, Mello, and Inchauste (2002), financial crises adversely affect the distribution of income for at least three reasons. First, they typically cause significant currency depreciations, which may increase the cost of imported food, which mainly hurts poor people. Second, a financial crisis can cause workers' earnings to fall as jobs are lost in the formal sector, demand for services provided by the informal sector declines, and working hours and real wages are cut. When formal sector workers who have lost their jobs enter the informal sector, they put additional pressure on informal labor markets. Third, governments often respond to crises by spending on social programs, transfers to households, and salaries. However, Ravallion (2002) finds that the nonpoor benefited significantly from countries' main antipoverty programs; such changes may thus actually exacerbate income inequality. Something similar is apparently happening in the current European debt crisis, in which budget cuts are directly affecting the most underprivileged sectors of the population.

Financial Globalization and Income Distribution

Although financial globalization is likely to affect income inequality, the net effect is not clear. Some economists argue that greater financial globalization may increase access to resources for

the poor; others suggest that by increasing the incidence of financial crises, greater financial globalization may hurt the poor. Greater inequality can lead to more financial opening, however, so the direction of causation is unclear. Possible perverse effects on inequality have to control for that possibility. Open markets have also been shown to help overcome vested interest.

International evidence suggests that both globalization and income inequality increased significantly in most countries and regions over the past two decades. Jaumotte, Lall, and Papageorgiou (2011) find that increasing trade and financial globalization have had separately identifiable and opposite effects on income distribution. Trade liberalization is associated with lower income inequality; increased financial globalization is associated with higher inequality. However, their combined contribution to rising inequality has been much lower than that of technological change at the global level, especially in developing countries. The impact of financial openness (felt mainly through foreign direct investment) and technological progress on income inequality appears to be working through similar channels by increasing the premium on higher skills rather than limiting opportunities for economic development. This observation is consistent with evidence in the United States and the United Kingdom.

A large body of research suggests that the quality of institutions plays a significant role. Financial globalization may allow better consumption smoothing and reduce volatility for the poor in countries with good institutions. In countries with weak institutions, however, financial access is biased in favor of the better-off; the increase in finance from tapping global and not just domestic savings may exacerbate inequality.

7. Ethical Issues

The interaction of growth, finance, and crises raises a number of important ethical issues. One is the intergenerational distribution of the fiscal burden. In the long run, growth raises living standards. In general, fiscal burdens should therefore be borne more by future generations than current ones; the old should be protected relative to the young. However, in the short run, financial crises can place heavy fiscal burdens on governments. How should such burdens be split between younger and older generations? Currently, the young appear to be bearing a

considerable part of the cost. They will have to pay down large amounts of government debt, directly or through inflation. Youth unemployment rates are also much higher than overall unemployment rates. High unemployment will make it difficult for today's younger generation to deal with the government debt burden it will have to bear. For these reasons, young people today may not be better off than the generation that preceded them, suggesting that older people should bear a large proportion of the burden than they are currently bearing. Cuts in pension benefits and health care would ensure that they did so.

Another important ethical issue is the extent to which the poor versus the rich should bear the burden. Typically, it is the rich who benefit from the boom phase of the cycle. Although they may suffer in the bust phase, many of them will often still be better off than they were at the start of the boom. The poor suffer through increased unemployment and, to the extent they are homeowners, by the decline in the price of their homes. In most countries, the rich have not borne a greater burden than the poor. For example, very few countries have suggested a one-off wealth tax to solve the fiscal problem.

A third ethical issue is the extent to which people in the financial services industry should be singled out for special treatment after financial crises. The recent restrictions imposed by the European Union on bankers' bonuses are one example of negative special treatment. The paucity of criminal prosecutions of financial executives after the crisis in response to apparent fraudulent behavior such as the LIBOR scandal may be an example of positive special treatment. Whether such special treatment is appropriate is a very important issue going forward.

8. Lessons, Policy Implications, and Conclusions

The main conclusion in the literature surveyed is that there is an optimal depth in financial structure. Too little finance is not desirable—but too much is not desirable either. The policy implications of this literature can be summarized as follows:

- The global financial crises of 2007–09 and the current debt crisis in Europe highlight the fact that excessive finance may have undesirable effects on economic growth. A growing literature finds not only a vanishing effect on the positive impact of financial

development on economic growth but also a negative effect of excessive finance on growth.

- Long-run economic growth is positively correlated with bank credit to the private sector as a percentage of GDP. In low-income economies, however, this effect is relatively small, and it vanishes in some periods, possibly because these economies may have reached the point at which financial development no longer affects the efficiency of investment.
- Economies with small and medium-size financial systems relative to their GDP tend to do better as they put more of their resources into finance, but this effect reverses once the financial sector becomes too large.
- Although the literature traditionally focuses on financial depth, financial structure is also important. Recent contributions focus on the optimal financial structure, which depends on a country's stage of development and endowments. Early on, for example, small banks may be appropriate for providing finance to small firms.
- Although theory predicts a number of benefits from financial openness—access to cheaper capital, portfolio diversification, consumption smoothing, emulation of foreign banks and institutions, and macro policy discipline among others—results from empirical studies report evidence in favor of and against capital account liberalization.

The literature these conclusions are drawn from is based on the experiences of a wide range of countries. From the perspective of the average global citizen, it might be better to base policy advice on success stories. The experience of Taiwan, Korea, and China suggests that countries can grow quickly for many years. Within 50–60 years, per capita income can rise from African levels to Western European and possibly U.S. levels. Hong Kong and Singapore, which achieved this kind of improvement are small city-states, but Taiwan and Korea have substantial populations. The problem from the global citizen's perspective is to understand how these countries achieved these spectacular growth paths and to implement their policies in other countries.

In China, alternative finance and institutions rather than traditional strong institutions and rule of law have allowed this growth. One of the most important policy conclusions is that alternative

finance and the enforcement mechanisms associated with it should be encouraged rather than hindered. The conventional wisdom characterizes the economic performance in China as “successful despite the lack of Western-style institutions.” We argue that China has done well because of this lack of Western-style institutions: conducting business outside the legal system in fast-growing economies can be superior to using the law as the basis for finance and commerce. Research on political economy factors suggests that rent-seeking behavior by interest groups can turn the legal system, a monopolist institution, into a barrier to change. The “alternative” view argues that by not using the legal system, alternative finance can minimize the costs associated with legal institutions. In a dynamic environment, characterized by frequent fundamental changes in the economy, alternative institutions can adapt and change much more quickly than formal institutions.

There is also a dark side to finance, excessive levels of which can lead to asset price bubbles and financial crises. Other systemic risks that can lead to financial crises include panics (banking crises as a result of multiple equilibria), banking crises as a result of asset price falls, contagion and foreign exchange mismatches in the banking system. Macroprudential policies are designed to counter these systemic risks. The most important of these policies include the following:

- Deposit insurance and government debt guarantees can prevent banking panics. However, they create moral hazard and can be extremely costly if in fact the systemic risk is not from a panic but is from the collapse of an asset price bubble or some other source.
- On some occasions it may be possible to use interest rates to burst real estate bubbles. However, in large diverse economies such as China, the Eurozone or the United States, doing so will not usually be possible, because bubbles tend to be regional and higher interest rates may cause slowdowns in regions without bubbles. When interest rates cannot be used, policy makers can limit loan-to-value ratios, which could be lowered as property prices increase at a faster pace; impose property transfer taxes that rise with the rate of property price increases; or restrict real estate lending in certain regions.
- If limits to arbitrage and other market failures lead to a serious malfunctioning of markets, it may be necessary to suspend mark-to-market accounting for financial institutions.

- One of the most significant systemic risks is the raising of interest rates by central banks and markets as normalcy returns. These increases will cause asset values to fall and pose a significant risk to the stability banking system. The return to normalcy needs to be carefully planned and carried out over time to minimize systemic risk.
- Contagion is one of the most serious and least understood forms of systemic risk. Several macroprudential policies and regulations may be needed to address the different channels and types of contagion. Perhaps the most important is capital regulation.
- Implementing permanent swap facilities for foreign exchange between central banks is an important policy to prevent currency mismatches in the banking system and reduce the need for large foreign exchange reserves.

The global imbalance in foreign exchange reserves was a significant contributor to the financial crisis, because these funds helped fuel the real estate bubbles that triggered the crisis. Going forward, it is important to reform the governance structure of the IMF and the other international economic organizations so that Asian countries are properly represented. This reform would help ensure that they receive equal treatment when they need financial help. It would also reduce their need to accumulate reserves as a self-insurance mechanism. Self-insurance is very wasteful from an economic point of view.

A more likely medium-term scenario is that the yuan becomes fully convertible and joins the U.S. dollar and the euro as the third major reserve currency. With three reserve currencies, there would be more scope for diversification of risks by central banks holding reserves and China itself would have little need of reserves.

With regard to financial inclusion, two innovations in Kenya have expanded access to finance to isolated areas and minority groups. Equity Bank is a pioneering commercial bank that devised a banking service strategy targeting low-income clients and traditionally underserved territories. Its branch expansion targeted clients speaking minority languages. A key part of its strategy involved the use of low-cost services that were possible because of the use of computers. M-Pesa is a mobile phone-based service that greatly facilitates money transfers and remittances by the poor. It has been used primarily to transfer money between individuals rather than as a vehicle

for saving. Equity Bank and M-Pesa illustrate the possibilities for using new technologies to leapfrog. Both strategies were profitable and thus can be left to the private sector. There is no need for public subsidies. However, it is necessary that regulators permit the use of such strategies.

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