Chapter 1 Housing Finance and the Economy

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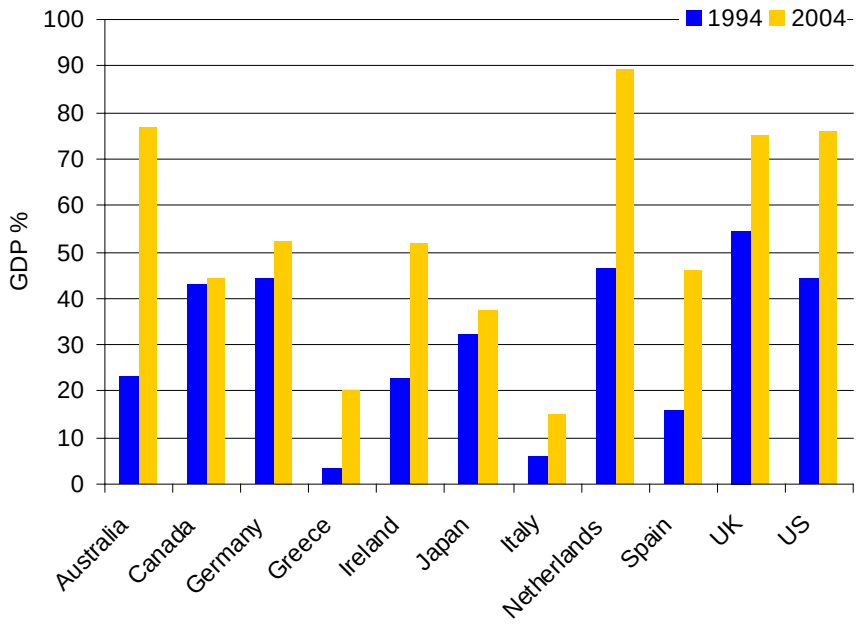
1. Introduction

On a worldwide basis, housing finance is growing at an unprecedented rate. In the last decade, outstanding mortgage debt has increased by more than $7 trillion. Figure 1 suggests that the majority of developed economies have experienced a strong surge in debt levels used to finance housing. This is also the case for a significant number of emerging markets, such as China, India, and Mexico, although housing finance remains underdeveloped in many parts of the developing world. This chapter provides an overview of this experience and shows the various linkages between housing finance and the broader economy, in order to identify some of the opportunities and challenges when developing a housing finance system.

Developed Economies. Housing finance was once an underdeveloped segment of domestic financial markets. It now occupies a very significant place, not only in the financial system of individual economies, but as part of the global financial system as well. For example, U.S. mortgages are now financed through securitization on a significant scale by Chinese and Indian savers, among others.[1]

Figure 1: Mortgage Debt/GDP—Developed Markets



Source: RBA, EMF, GHLC, Federal Reserve

[1] The U.S. Treasury estimates that nearly 19 percent of U.S. Agency and GSE securities were held by overseas investors in 2007.

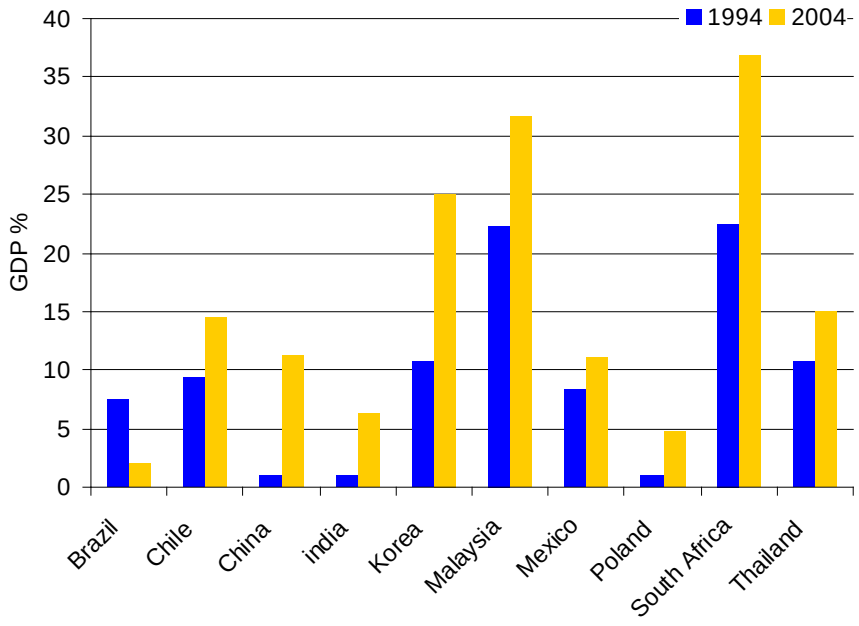
The size of residential mortgage markets has been growing in developed economies relative to the overall economy (at least one-third of their GDP, and often considerably more). For example, as recently as 1984, residential mortgage debt was one-third of U.S. GDP, but this ratio increased to 75 percent by 2007. In recent years, Australia, Netherlands, Ireland, and Spain have seen annual growth rates in excess of 20 percent per year, fueled by strong economic growth and lower market interest rates.

Improved macroeconomic circumstances have played a big role in the emergence of housing finance. Over a longer historical perspective, however, another crucial factor has been the ongoing and seemingly relentless liberalization of financial markets, including of housing finance.[2] Instead of specialized, frequently publicly owned lenders providing limited amounts of often-subsidized credit to a similarly limited number of borrowers, new lenders using new kinds of instruments coupled with new ways of accessing finance and managing risks have emerged in both developed and emerging markets.

Emerging Economies. In contrast to the situation in developed countries, the size of the mortgage market in most emerging markets is still small, often accounting for less than 10 percent of GDP, as shown in Figure 2. Despite starting from such a low base, the pace of growth has often been considerably faster. For example, the Chinese mortgage market, which only started in the early 1990s, has been growing at an annual pace of more than 40 percent since 2000, reaching 11 percent of GDP in less than 10 years. Similarly, the Indian market has been growing at 30 percent per annum, and some transition countries such as Hungary, the Baltic countries, and Kazakhstan have seen growth of more than 20 percent per annum. Once again, the common factors in these countries have been a growing economy, low inflation, declining interest rates, and most importantly, liberalizing financial sectors. This has permitted a growing number of households in these countries to invest in better housing.

[2] Abiad and Mody (2005) measured the financial liberalization of 35 countries between 1972 and 1996. Until 1982, liberalization in developed countries was modest and, in emerging markets, almost nonexistent. Over the next 14 years, liberalization increased rapidly and continuously in all developed markets. A similar pattern characterizes liberalization in less developed countries. By 1996, however, despite significant improvements, low-income developing countries had not yet reached the level of liberalization achieved by developed economies in the early 1970s.

Figure 2: Mortgage Debt/GDP—Emerging Markets



Source: IUHF, Central Banks, World Bank

There are a number of reasons for the relatively small size of housing finance systems in developing countries. They include a history of macroeconomic instability with high and volatile inflation and interest rates, low growth rates, weak legal systems that do not adequately protect the interests of lenders, and, more broadly, an underdeveloped infrastructure for housing and housing finance markets, as well as some underdeveloped and poorly regulated banking and capital markets.

A significant reason for the lack of development in housing finance was the widespread reliance on the directed credit systems and public banks to finance development policy. This view of the public role in allocating credit toward strategic sectors was not unusual and was held by many leading scholars. This view was predominant despite the empirically documented weaknesses of the public role in generating either financial sector development or growth. This approach continued to be a commonly used approach, particularly in low-income countries, up to the mid-1990s. The "market failure" argument eventually succumbed to the inability of the directed credit approach to mobilize sufficient resources and manage risks related to housing lending.

While the drivers of growth in institutional mortgage finance are clear, questions remain about how and why housing finance fits into the economy and the financial system. For example, how does growth (or lack thereof) in the housing finance system relate to the performance of the economy and to housing market and financial system policies? What are the costs and consequences of a poorly performing housing finance system in exacerbating economic instability or misallocating resources? This chapter will explore these issues in order to create a context for the broader housing finance book.

2. The Importance of Housing Finance

One of the main reasons why housing finance is important is that the asset it finances, housing, is such a significant part of wealth and the fixed capital stock, as documented in Goldsmith's seminal works on *Comparative National Balance Sheets* (1984), for example. When a good accounts for 50 percent of national wealth, a majority of the fixed capital stock, and for more than 80 percent of the wealth of most households in almost all economies, the way that it is financed clearly has significant effects on the economy.[3]

Housing also represents a large proportion of most households' consumption. In the United States, for example, housing rent and utility expenses account for 25–30 percent of personal expenditures. Residential investment is a major component of GDP, typically amounting to 4–8 percent of GDP and 20–30 percent of total investment. In rapidly growing countries, the share going to housing can be much higher (e.g., Spain and Ireland in recent years). Therefore, the ability to efficiently finance such an important component of the economic system will have a significant effect on overall levels of investment and growth.

Despite its importance, the use of institutional mortgage finance for housing is a rather recent phenomenon. Until well into the 20th century, such finance was the exception rather than the rule. The use of mortgage debt was limited. Up to the 1920s, the majority of U.S. homes were self-financed (out of savings accumulations) or financed outside of formal financial-sector channels.[4] At that time, the urban population of the world only accounted for about 15 percent of world population, around 250 million people, with the resulting lower demand for mortgage credit.[5]

In much the same way, housing remains mostly self-financed by households' equity in many emerging economies. This limits access to home ownership and leads to expanding incremental construction and informal housing. Frequently, the only alternative is finance provided by developers through deferred installment sales. The major difference, however, from the historical experience comes from today's increased urbanization, which requires extraordinary levels of

[3] Real estate represents the great majority of the tangible capital stock, and housing is the great majority of the stock of real estate. Real estate accounts for approximately 50 percent of world wealth, of which one-quarter is commercial and three-quarters residential (Source: 1993 study by Ibbotson and Associates). Not sure this is the source *Global Investing: A Professional's Guide to the World's Capital Markets*, with Gary P. Brinson, McGraw-Hill Book Company, New York, 1993.

[4] Including construction companies, real estate bond companies, fraternal organizations, developers, or previous owners of properties. (Source: R. Ratcliff, Urban Land Economics, McGraw Hill, 1949). Should this source have the same format as below? In 1925, these non-institutional sources were nearly as important as savings and loan associations and mutual savings banks, from which the majority of institutional mortgage borrowing occurred.

[5] The U.S. experience is by no means unusual, as Boleat (1985) relates. The U.S. savings and loans followed a similar development path as the U.K. building societies as did the Swedish co-ops and non-bank institutions in a number of other European countries. Neither, however, was it universal. Many of the housing finance systems in place today in developed economies bear the hallmark of path-dependent reactions to shocks. For example, the destruction of Copenhagen by fire in 1795 was instrumental in developing the Danish mortgage bond system, as was the effect of destruction of the Seven Years' War on the German system. Baron Haussmann's redevelopment of Paris in the mid-19th century created the French system, and the Great Depression created many of the housing finance institutions observed in the United States.

housing investment. Urban population growth between 2000 and 2030 will exceed 2 billion people; that is more than eight times the total urban population at the beginning of the 20th century [Source?]. In 1950, there was one city, New York, with a population in excess of 10 million. By 2015, there will be 21 of these cities, 17 of which will be in developing countries. By 2030, Asia alone will have to house 2.7 billion people in cities. This inexorable demographic trend means housing demand must be met through significant improvements in housing finance systems.

Mortgage finance improves the operation of the housing market and the economy in a number of ways, both directly by facilitating transactions and indirectly by improving the environments in which transactions take place. Consider first the direct effects.

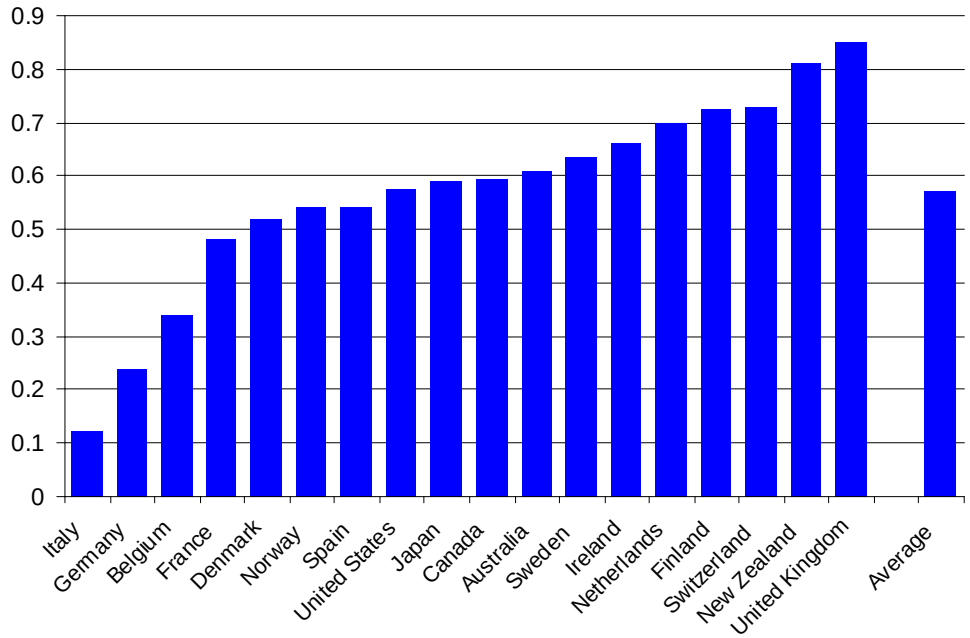
The use of debt allows households to better match the timing of their housing expenditures with the flow of services they receive. Housing is a long-lived, durable asset that provides a flow of services over a long period (frequently outliving its occupants). A household can purchase more housing at an earlier stage in the life cycle using debt, as opposed to paying for it all at once through accumulated savings. Furthermore, because housing provides such good collateral, mortgages are usually the lowest-cost way for households to finance general borrowing for consumption, non-housing investment, or business formation. Housing investors (e.g., for rental housing) use leverage to increase the returns on investment, as well as to expand and diversify their investment opportunities. In sum, for a number of reasons, housing finance can help smooth consumption expenditures and help households flexibly adjust their wealth.

Housing finance also affects the economy in indirect ways that go beyond the specific transaction. For instance, a number of studies have suggested that housing wealth has a stronger effect on consumption expenditures than do other forms of savings. If this is so, then house-price increases can lead to stronger increases in consumer demand than do rising stock markets, with the result that housing market trends may be more closely related to overall macroeconomic cycles. As mortgage markets deepen, there are greater opportunities for households to access this wealth. In particular, the ability to refinance allows families to spend the capital gains realized on rapid house-price increases.[6]

Organization for Economic Co-ordination and Development (OECD) research confirms the existence of significant housing wealth effects on consumption in the United States, United Kingdom, Canada, Netherlands, and Australia, as shown in Figure 3. In France, Germany, and Italy, however, the association has been weaker. The estimated long-run marginal propensity to consume out-of-housing wealth is in the range of 0.05 to 0.08 for the first group of countries.

[6] A number of studies have highlighted the role of equity withdrawal in consumption. While this ability undoubtedly provides households with considerably more flexibility in arranging their expenditures over time, there are also problems that can arise with widespread equity withdrawals. This concern has led the European Central Bank (2003) to examine the implications of this phenomenon for the development of the single currency market. In Australia, housing equity went from positive (accumulation) to negative (withdrawal) during the late 1990s and early 2000s. Mortgage debt rose sharply; however, residential investment recorded only a modest gain. Rather, the increase in indebtedness went to consumption that fueled growth in the macro economy. Similar results were recorded in the United States and United Kingdom.

Figure 3: Correlation of Private Consumption Growth with Real House Price Changes

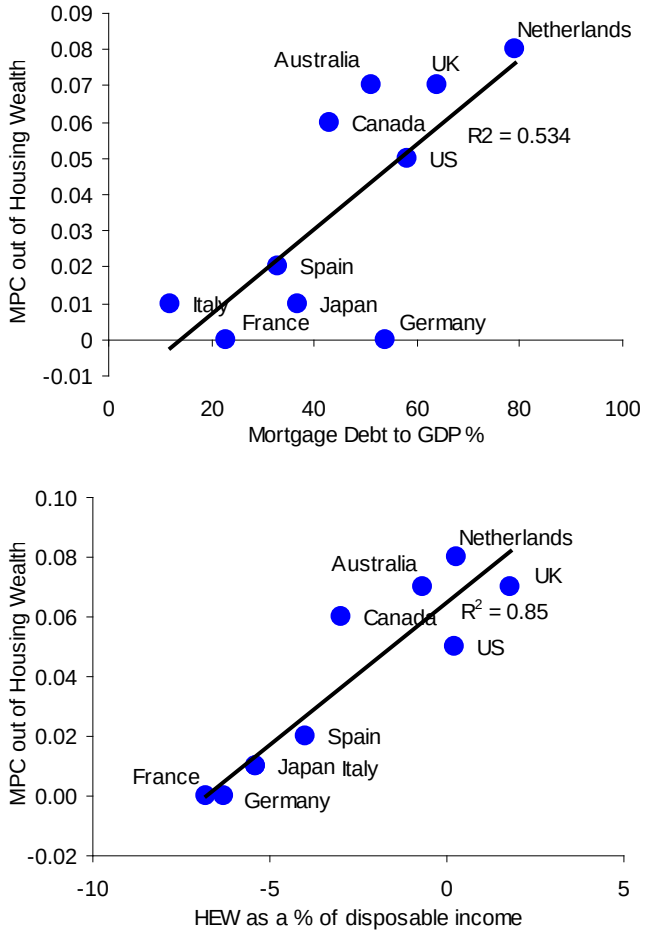


Source: OECD—Economic Outlook No. 78, December 2005
Note: Contemporaneous correlation coefficients are calculated from annual data, 1971 to 2002. House prices are deflated using the private consumption deflator.

The size and direction of the consumption effect appears to be positively correlated with mortgage-debt ratios across countries, suggesting that the mortgage market is pivotal in translating house-price changes into spending responses (Figure 4). This effect depends on the extent to which housing wealth can be accessed; in particular, through the ability of homeowners to borrow against housing wealth through mortgage equity withdrawal. The OECD finds that the size of housing equity withdrawal is correlated with the impact of housing wealth on consumption. In turn, the degree of mortgage market completeness plays an important role in housing-equity withdrawal through the ability to serve a broader range of borrowers, offer a greater variety of mortgage products and higher loan-to-value (LTV) loans, and pass on lower mortgage interest-rate spreads (Mercer Oliver Wyman 2003).

Two important constraints emerged from the OECD analysis. Higher administrative costs and greater amounts of time required to realize collateral in the event of default significantly reduced the completeness of the market and the house-price consumption nexus. Additionally, regulatory constraints on LTV ratios also reduced this effect.

Figure 4: Marginal Propensities to Consume Out-of-Housing Wealth and Mortgage Market Indicators



Source: OECD —Economic Outlook No. 78, December 2005
Notes: MPC = marginal propensity to consume; HEW = home equity withdrawal

A number of factors are likely to have contributed to this trend. The shift to a low-interest-rate environment over the past decade or so gave households an enhanced capacity to service any given level of debt, allowing the household sector in aggregate to carry a higher level of debt in relation to income. In addition, most countries where equity withdrawal took place had experienced an increase in the relative price of housing, sometimes of a substantial amount. A period of equity withdrawal might be viewed as part of the process of shifting from relatively low to higher levels of debt over time, or a rearranging of a household's portfolio in line with increased wealth.

While there are a number of undesirable features of such increases in indebtedness, including higher default rates, there are also a number of significant advantages as well. For example, in the wake of the 9/11 attack, *The Economist* described the U.S. housing market as the vehicle that saved the world from depression in 2001 and 2002. Similarly, in a review of the 2005 Economic Report of the President, Martin Feldstein (2006) argues that the household expenditures, which were enabled by mortgage refinancing, kept the U.S. economy going strongly in 2005.

Therefore, in many ways, the accessibility of mortgage finance adds flexibility to consumer choices. Whether or not that increased flexibility is or (as we will discuss) can be used effectively is an important issue that the chapters in this book address.

A broadened access to housing finance can also have a strong impact on urban development, as suggested by Renaud's (1990) aphorism that **"**cities are built the way they are financed." In countries with underdeveloped housing finance systems, most households either build their house individually over long periods or settle for a low-quality structure that does not comply with planning and building regulations. This leads to poorly planned and serviced urban areas. Moreover, the lack of housing finance for resale markets prevents the recovery of costs of housing assets; hinders mobility, particularly in low- and moderate-income housing markets; and negatively affects the quality of urban neighborhoods, hence the fiscal situation of cities. Consequently, the lack of effective housing finance hinders both local-government service provision and labor markets.

Housing finance can also have desirable spillover effects on both the financial system and social cohesion. With respect to the latter, it has been shown that homeownership, which is made more accessible by housing finance, has positive externalities for neighborhood development, empowerment of households through communities, and children's educational achievements.

As for the financial sector, because housing is so durable and provides good collateral for developed countries and for developing countries, it can be important in promoting long-term bond markets. And, it is also important as a source of innovation for different financing techniques. In the United States, for instance, housing finance began the move toward securitization and improved efficiency of bond markets. It was instrumental in developing some financial derivative markets. Financial innovations, however, are not always unequivocal gains. The ability to move money into a country or a sector is matched by the ability to move it out quickly; hence, if not done prudently, mortgage market development, like other financial development, may fuel instability. Before discussing the potentially destabilizing role of housing finance, we first provide a perspective on the prospects for housing finance development.

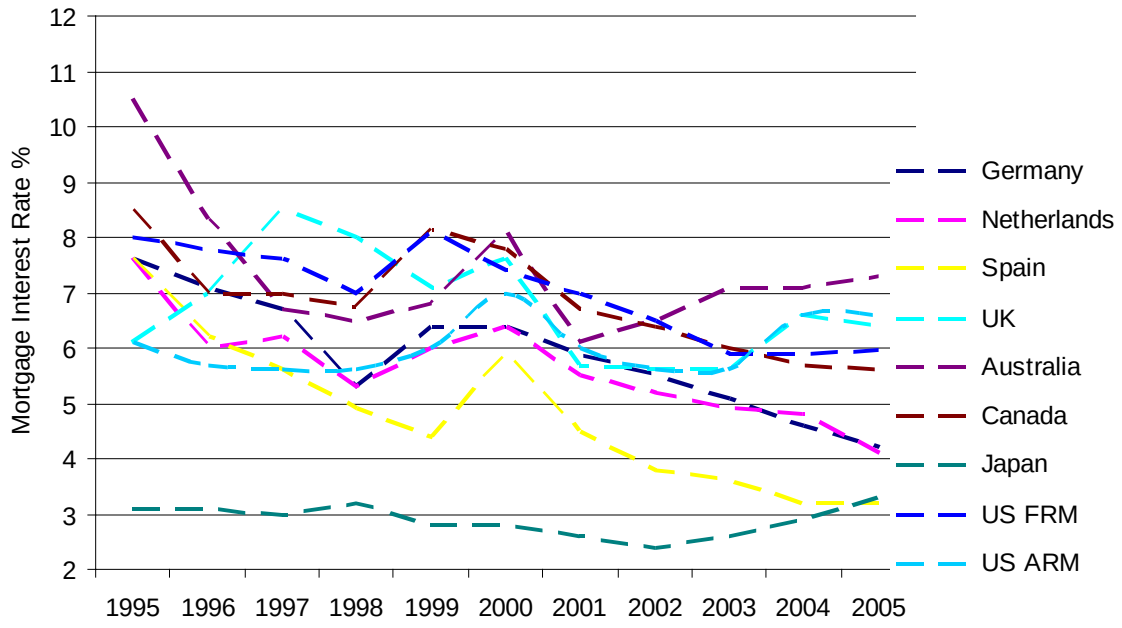
3. The Demand for Housing Finance

Macroeconomic Factors. What is behind the significant growth in housing finance in recent years? Clearly, the growth in overall income and wealth has been a major contributing factor. It is perhaps not surprising that countries such as Germany and Japan, which have exhibited slower growth and, in the latter case, considerably slower financial liberalization, have also experienced lower rates of growth of housing finance.

Once again, stable and low interest rates and stable growth appear to be the key factors in mortgage market expansion. Over the past decade, interest rates in most countries have fallen significantly with a parallel increase in mortgage debt outstanding (Figure 5 and Figure 6) a longer trend would show greater change. Mortgage rates, although falling, remain high in a number of emerging markets, thereby accounting for the relatively slower growth in their mortgage markets (e.g., Brazil and Colombia). In such countries, the combined effect of lower market rates, liquid banks, and an improved regulatory environment for lenders can result in an

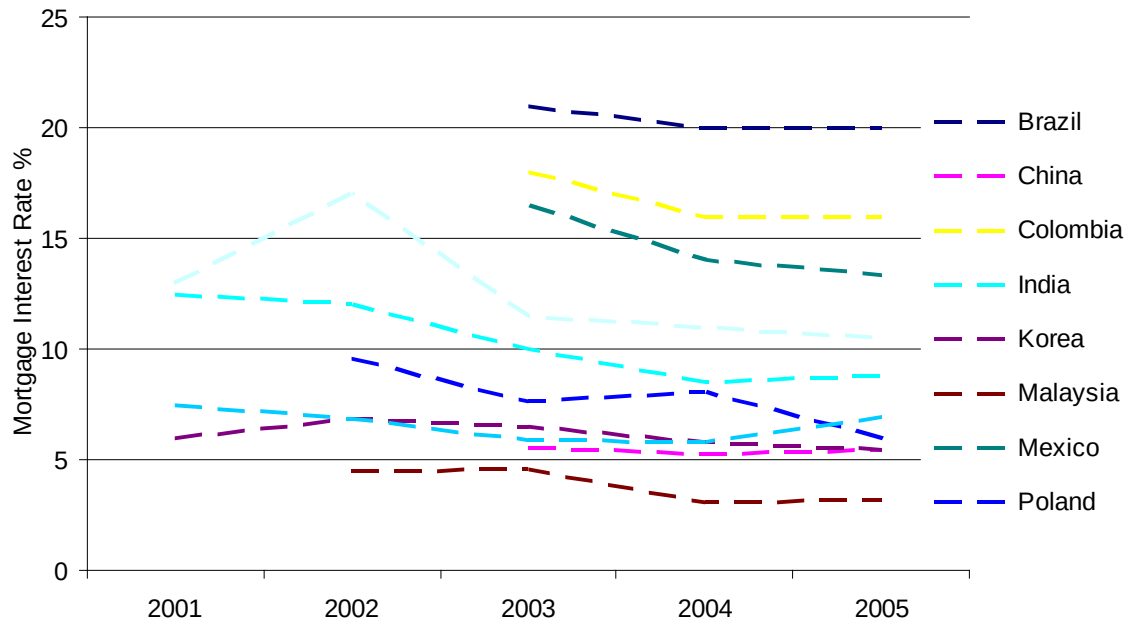
effective kick-start of residential mortgage markets, as has been seen in India. A stable, benign macroeconomic environment is a prerequisite for the expansion of sustainable housing finance, but other conditions are also required. Two other factors that come into play are financial liberalization and technological innovation.

Figure 5: Mortgage Rates in Developed Countries



Source: European Mortgage Federation, central banks

Figure 6: Mortgage Rates in Emerging Markets



Sources: Central banks and national statistical agencies

Financial liberalization is the most fundamental factor in housing finance's growth. As noted earlier, throughout the developed world, the 1980s was a period of substantial liberalization of the financial markets, including (and often specifically focused on) housing finance. The financial architecture of the postwar period was one of financial control, interest rates ceilings, and limited competition. But this paradigm broke down and has been increasingly replaced by a more competitive and integrated world financial system. In their study of the provision of mortgage finance in five major developed markets in 1993, Diamond and Lea chronicled the breakdown of special circuits for housing finance and the resultant integration of housing finance into the broader financial markets in five major developed markets.

Technological Change. At the same time that the world was liberalizing in its financial delivery systems, the innovations in technology were driving down the costs of intermediation and, particularly, mortgage intermediation. No longer was it necessary to have a depository institution to be able to underwrite and monitor mortgage loans. Mortgage specialists have realized significant cost savings through automated underwriting and servicing. These changes mean that mortgage lending no longer has to rely simply on the costly collection of small deposits for repackaging in larger mortgage loans. Now, small mortgage loans can be repackaged in large and diversified mortgage-backed securities (MBSs), which can access large investors with appetites for non-recourse, long-term investments (such as pension funds) and life insurance companies.

In sum, financial liberalization and technology improvements have had an important effect on the growth of the demand for housing finance. Furthermore, if one argues that the underlying financial-sector institutional development and macroeconomic stability are increasingly being achieved in emerging economies—as suggested by the growth rate of more than 7 percent for developing countries (the highest in more than 30 years) and a median inflation rate of less than

7 percent (less than half that of a decade earlier)—then one can expect a rapid growth rate in the supply of housing finance going forward. Indeed, with housing finance in China and India, which together account for more than one-third of the world's population, growing at compound annual rates in excess of 35 percent per year; and in Europe, where it has been growing at more than 8 percent a year, it is clear that the growth of housing finance still has substantial momentum.

4. Concerns and Opportunities

Even under conservative assumptions**,** it is reasonable to expect that in emerging economies, housing finance should grow rapidly in the coming years. What risks and opportunities are associated with such a trend? What steps can be taken so that the benefits realized by the 20 or so rapidly growing emerging systems can be not only sustained, but also prudently extended to the far larger number of countries where growth remains stagnant?

The Effect of Mortgage Finance on Savings. Japelli argues that increased access to housing finance can have a negative effect on saving and investment. Financial repression in the form of borrowing constraints on young borrowers can force them to borrow less than they would otherwise. This clearly has a negative effect in terms of inter-temporal management of consumption, inducing suboptimal timing of consumption. But it also increases saving, which may be welcome in some markets where there is too little saving and investment. Alternatively , an argument can be made that improved housing finance can actually increase rather than decrease savings. Mortgage amortization represents a significant source of savings. New financial instruments, such as mortgage securities (safe, but also providing better returns than government bonds), that provide a relatively attractive financial instrument can stimulate saving, contributing to the development of a sustainable pension and life insurance industry.

The Effect of Mortgage Finance on Investment. Mortgage finance could also have an effect on the structure of capital formation, moving it toward housing and away from other investments. For example, residential investment in the US increased from 4 to 6 percent of GDP between 1994 and 2006, coincident with a?The effects of a change in portfolio composition, however, are difficult to infer. Among other things, the degree to which the shift occurs ultimately depends on the extent to which mortgage markets are integrated with the broader capital markets, as well as, importantly, on factors such as the elasticity of savings with respect to interest rates.[7] In a highly developed financial system such as in the United States, it has been argued that increases in the supply of mortgage funds have little to no effect on the amount of housing investment. In this view, mortgage debt is simply the lowest-cost way for households to issue the fungible debt that is used to finance relatively constant investment demand.

On the other hand, one study of the welfare costs attributable to the existence of an inadequate mortgage financing system has been undertaken by Kim (1990) for Seoul, Korea. Using a long-run equilibrium model that compares returns to housing and non-housing capital, Kim found that

[7] For example, Van Order (2006) shows that with a positive elasticity of savings with respect to interest rates, tax subsidies for housing may increase, rather than decrease, total savings, as the increase in total savings more than offsets the portfolio shifts toward housing. Like many studies, however, the results are linked to quite specific and often intractable assumptions about behavior and a specific time frame of analysis.

Korea's housing finance system—or lack thereof—skewed investment away from housing sufficiently to engender significant welfare losses. Point estimates varied with assumptions, but his estimates of the equivalent variation of losses because of this inadequacy could be 10 percent of household income or more.

Mortgage Finance and Growth. As has been shown by Levine and Demirgu-Kunt (2003) and others, financial systems promote economic growth by channeling capital to its most productive use. That is, deeper financial systems lead to higher levels of growth. As financial systems grow and become deeper, housing finance emerges as an increasingly important part of the financial system. In other words, housing finance tends to account for an increasing share of the financial system as it matures and provides a broader range of financial services. From this perspective, the process of maturation of financial systems appears to lead to the development of housing finance, and this deeper, more extensive financial system, in turn, contributes to higher rates of growth.

While difficult to quantify, as are sources of growth generally, this result has a good deal of intuitive appeal for two reasons:

- First, the provision of finance only allows, not mandates specific investments. As a result, the growth in the supply of housing finance should largely be self-limiting by the value consumers place on housing investments relative to other assets. In urbanizing countries where the development process generates sharp increases in the demands for mobility and relocation, empirical evidence shows that housing investment increases as a share of GDP until middle-income status is achieved. In these countries, it is reasonable to expect that the demand for mortgage credit would therefore also rise.

- Second, increasing access by small businesses and households to the lowest-cost source of funds through liquefying savings they have accumulated in housing—by improving their access to market-rate mortgage finance—seems to be an effective locus for government policy. In many ways, it mines an intellectual vein developed by Hernando de Soto (2002**),** who has emphasized the importance of unlocking wealth through improved property rights. He argues that in this way low-income borrowers, who have few prospects for borrowing in the formal financial sector, can raise money for businesses by pledging their property as collateral.[8]

In sum, it is possible that the increased ability of households to become indebted has had some undesirable side macroeconomic effects. But it is also important to keep in mind that the instruments used to offset or discourage this sort of behavior have usually had much worse effects on savings, investment, and economic growth.

Housing Finance, Business Cycles, and Economic Fragility. The experience of the 1990s suggests that increased attention should be given to helping countries avoid some of the

[8] World Bank experience suggests that improving and formalizing property rights is a necessary, but not sufficient condition to greatly expand mortgage lending. Banks may still have concerns about lending to lower income households with informal income even if they have good title to their property.

precipitous drops in income that were experienced during that period.[9] The achievement of higher growth by itself is no longer the unambiguous target of macroeconomic management, as the welfare costs of macroeconomic instability are far higher than was thought to be the case. The effects that the provision of housing finance can have on contributing to or exacerbating macro volatility is an important dimension of housing finance's broader effects on the economy.

Housing has always played a role in business cycles, as suggested long ago by Keynes (1937) in his Great Depression advice to President Roosevelt, and subsequently by Harberger (1974), who labeled the housing sector "the handmaiden of monetary policy."[10] This is primarily because it is a very interest-sensitive asset, so that changes in interest rates have big effects on housing demand and production. These kinds of shifts can either help or hurt in terms of stabilizing. They can hurt because increases in interest rates lower housing production. This might not be such a bad thing.[11] If business cycles come from the "real side" (e.g., fluctuations in demand for capital goods), then housing can be an "automatic stabilizer," falling in expansions and rising in contractions. For example, in the United States, declining interest rates resulting from a combination of central bank policy and lower demand for funds by businesses caused the housing demand to increase, partially offsetting output declines in other sectors. On the other hand, if a decline comes from the financial side, such as a loss of confidence in the financial sector and a "liquidity crunch," leading to higher rates and/or less availability of funds, then housing contractions will exacerbate the contraction. This process is under way in the United States today (2008).

Improving the housing finance system may or may not make much difference in volatility. In the United States, removing deposit-rate ceilings probably diminished the effects of interest rate increases on housing. Nevertheless, housing is likely to be cyclical in any system simply because it is so durable. The durability implies that annual housing production is typically on the order of 4 percent of the housing stock. Hence, if there is a 1 percent change in housing demand and adjustment to this lower demand is made in one year, then housing production will fall by 25 percent (from 4 percent to 3 percent of the stock). This change suggests that under any circumstances, housing output will be more volatile than that of other goods.

Regular business cycles, however, are not the only cyclical problem. A major part of the relationship between housing and the macro economy has been its negative role in affecting macro stability through major financial instability (e.g., through bubbles in asset prices affecting collateral value and inducing rapid changes in financial structure and interest rates). In many emerging economies, housing finance systems remain too underdeveloped to fuel the creation of any real estate bubble. Yet, the real estate sector has been an important part of the financial fragility seen in Asia and other places in the past few decades. The instability related to real estate lending has been greater in some emerging markets relative to the size of their economies. In Thailand, real estate lending was a major contributing factor in the 1997 "Asian crisis."

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[9] The IMF's increased emphasis on financial-sector assessments for all developing countries reflects the increased policy interest in the costs of macro volatility.

[10] Keynes' recommendation to Roosevelt was in an open letter to him in which he called for Roosevelt's focus on housing as a means of stimulating the Depression-constrained economy.

[11] We are explicitly *not* considering the role of housing as a provider of jobs. In the long run, there is nothing special about construction as a form of employment ***[in fact this sentence is not clear at all]***. Instead, we focus on cyclical elements where housing is important, and on the role of housing in resource allocation.

Quigley (2001) and Mera and Renaud (2004) trace the channels by which housing finance problems helped to propagate the financial crises. China's central bank has instituted controls on mortgage lending (maximum LTV ratios, restrictions on lending against speculative investment) in order to slow the pace of house-price increase and reduce the likelihood of a destabilizing bursting of any possible bubble.

Mortgage bond or secondary markets might be a particularly good way of tapping international capital markets for long-term loans, because the collateral is, with the right legal structure, both good and long-lived. This can be a significant contribution to emerging markets both in terms of funding nd the required degree of standardization in collateral and securities. Mortgage-backed securities have been developed in many countries not only to improve the housing finance system, but also to help develop resilient private bond markets for institutional investors, as seen in Malaysia, for example. One of the things that has characterized financial breakdowns such as the one in Asia in the late 1990s has been reliance on short-term international borrowing, which can be cut off rapidly if there is a loss of confidence in the country in question. Foreign investors want a chance to get out fast (which is not possible if they all try to do so at once). Because mortgages are potentially good collateral—at least where foreclosure can be enforced—and can be expected to be a way of getting more long-term foreign money, they can decrease the dependence on hot money.

Because of its multiple interfaces with the broader economy and financial sector, housing finance (more broadly, real estate finance) plays a significant lever role, either positively or negatively. Under some circumstances aggravated by the adoption of an improper model, housing finance can be a major contributor to macroeconomic instability in both developed and emerging markets. For example, both the United Kingdom and United States mortgage markets were substantially liberalized during the 1980s and suffered significant stress on their housing finance systems, housing markets, and broader economies by the end of the decade. In theUnited Kingdom, where floating rate mortgages are prevalent, an exogenous event turned a boom into a bust, , when short-term interest rates increased from 7 percent to 15 percent in conjunction with the decision to bring the pound into the European exchange-rate mechanism. The shock resulted in a record level of arrears and repossessions, a sharp decline in lending, and a decline in nominal house prices. In the United States, the long-delayed resolution of the savings and loan (S&L) crisis coincided with an economic downturn—the real damage had been done during the preceding decade because of lax oversight and aggressive lending by bankrupt thrifts. The collapse of the of subprime market in the US has precipitated a global economic crisis.

Box 1-1: Real Estate and Financial Crises: Thailand

The performance of Thailand's economy was remarkable during the 1965–95 period; however, the economy suffered a major setback with the currency devaluation in 1997. Poor credit risk management and excessive lending to the real estate sector played a major role in the financial sector crisis in the late 1990s.

The property boom started in the late 1980s, when Thailand was enjoying double-digit growth. With that kind of growth rate, there was indeed a shortage of office and residential space, particularly in Bangkok. The resulting construction spree was only to be expected and, in the beginning, justified by demand, at least until about 1992–93 (Renaud, Zhang, and Koeberle 1998). By 1994, it was becoming obvious that supply was overshooting

requirements. By the mid-1990s, the level of oversupply and vacancy rates in Bangkok became among the highest on record.

Lenders collaborated closely in fueling the property boom. Bank of Thailand data indicate that the banks' share of real estate lending in their overall portfolio went up from 6.3% at the end of 1988 to 14.8% at the end of 1996. Over the same period, the share of real estate in the portfolios of the finance companies went up from 9.1% to 24.3% (cited in Renaud, Zhang, and Koeberle 1998).

These figures actually underestimate the role of property in the Thai financial system. The majority of Thai bank loans were based on collateral with property as the asset of choice. With rapidly rising prices, even to non-property companies, the property placed as collateral could be used to raise more loans, whose proceeds could in turn be used to purchase yet more property, fueling asset price rises even further. Rising interest rates associated with attempts to defend the baht, combined with restrictions on lending, sent the property markets into a downward spiral. When the inevitable currency devaluation came, unhedged foreign currency borrowers went bankrupt, further destabilizing the system.

Mortgage Finance and the Distribution of Risk. Another core issue is the nature of the mortgage instrument promoted by the system and the way the political system deals with its implications. Miles (2004) discusses the U.K. system, which is bank-based with almost exclusive use of variable rate mortgages linked to short-term deposit rates. This system places considerable interest-rate risk on borrowers who are not able to hedge it. In the long run, this situation may lower the housing demand relative to what it could be with a wider range of instrument choice, or expose households to the sorts of macroeconomic risks that could wipe out their housing equity. In many emerging economies, long-term FRMs remain a relative luxury good, and floating or indexed loans still prevail, exposing households to interest-rate risk and banks to credit risk.

Another perspective is that a system where everyone's housing costs are tied to short-term rates it is more difficult to control inflation. This is because controlling inflation will require, from time to time, increases in interest rates that can be politically difficult to realize if they raise mortgage rates and the cost of housing for most homeowners. Hence, a benefit of a more bond- or capital-market-oriented system (whether done via banks or secondary-market facilities) is that it will allow borrowers to take less interest-rate risk, placing it in capital markets where it is easier to handle, and making the political costs of effective monetary policy less costly and more likely to be realized.[12] The fiscal costs of an underdeveloped or poorly designed housing finance system can be significant, as evidenced by the bailout of insolvent housing lenders and many borrowers in Argentina, Brazil, and Mexico.

Box 1-2: Mexican Past Crises and the Role of Housing Finance

In Mexico, there have been several episodes of currency devaluation leading to sharp increases in inflation and interest rates. In the early 1980s, Mexican banks were required to make fixed-rate loans at administered rates. A sharp spike in inflation and

[12] The recent experience with the U.S. subprime market suggests that the dispersal of risk in the capital markets led to imprudent lending, leaving in particular many borrowers with excessive interest-rate risk.

interest rates because of the 1982 devaluation left the banking system undercapitalized and led to nationalization. In 1995, the cycle repeated albeit with a floating rate regime. There was a sharp spike in inflation and interest rates because of devaluation leading to cessation of bank lending, eventual sale of most banks to foreign competitors, and a burden to the economy in the form of bailout subsidies to banks and consumers. The downturn in the economy precipitated a banking crisis in which the share of nonperforming assets grew to over 40 percent. Individual residential mortgages comprised a large portion of the delinquent portfolio, and were a major focus of government intervention. Banks had 30 percent of portfolios in housing loans, mostly price-level adjusted. In 1995, when the government began aiding banks to restructure loans, half of the total funds available—an amount over US$7 billion—were directed to restructuring mortgage credits. Government aid to the mortgage sector grew to nearly US$18 billion by the end of 1996. Since this experience, the Mexican housing finance system has been restructured. It has been expanding rapidly and soundly thanks to better macro conditions, private market competition, new funding and risk management tools, and more efficient housing-policy authorities.

5. House Prices, Housing Finance, and Economic Activity

There has recently been a great deal of interest in the evolution of house prices and their economic effects. Most OECD countries have experienced a substantial run-up in real house prices in recent years. An important question is whether such house-price booms will inevitably be followed by a house-price bust with reverse effects on consumption and output. An International Monetary Fund (IMF) analysis of asset-price booms and busts in the postwar period suggested a significant likelihood of a reversal.[13] The current dire situation of many housing markets tends to verify this analysis.

Their analysis found that housing-price busts on average occurred about once every 20 years, lasted about four years, and involved price declines of about 30 percent. While only about one-quarter of equity-price booms were followed by busts, about 40 percent of housing-price booms ended in busts. Both types of busts were highly synchronized across countries.

Both equity- and housing-price busts were associated with output losses (relative to the simple extrapolation of the pre-bust growth rate), reflecting declines in the growth rates of all the main components of private final domestic demand: consumption, investment in machinery and equipment, and investment in construction. The output loss associated with the typical housing-price bust (about 8 percent of GDP) was twice as large as that associated with a typical equity-price bust (about 4 percent of GDP). Output started to recover about nine quarters after the start of either an equity- or a housing-price bust.

Bank-based financial systems tended to suffer larger output losses than capital market-based financial systems during housing-price busts, while capital market-based systems tended to suffer larger output losses than bank-based systems during equity-price busts. This is consistent

[13] World Economic Outlook 2003, Chapter 2.

with the high exposure of banks to real estate lending, and the importance of equities in household assets in capital market-based systems.[14]

As shown in Table 1-1, crises have resulted in major reductions in GDP and damage to banking systems.

Table 1-1: Real Estate and Banking Crises—Selected Cases

Financial crisis/stress	Consequences	Contributory factors
1973–75 U.K. secondary banks. Speculative development boom, largely in London offices.	Rash of failures and weakness among secondary banks. Bailout by group of clearing banks at a total cost of GBP 1.2 billion, equivalent to half their shareholder's equity, or 1.5% of GDP.	Proceeding planning restrictions on supply. Extreme credit boom. Financial intermediaries.
1984–91 U.S. savings and loans. Speculative development boom in Southwest.	1,400 savings and loans. 1,300 banks failed. Cleanup costs estimated at US$180 billion, 3.2% of GDP.	Interest rate mismatch. Inexperienced lenders through deregulation of savings and loans. Moral hazard through deposit insurance.
1987–93 Norway. Bank crisis.	State took control of three largest banks with 85% of banking system assets. Recapitalization costs estimated at 5%–8% of GDP.	Combined oil boom and problem real estate loans.
1991 Swedish banks. Lending boom for domestic and overseas investment/development.	Two of six major banks, 22% of banking system assets, insolvent. Three further banks in difficulty. Nonperforming real estate in special vehicles. State recapitalization costs estimated at 4%–6% of GDP.	Deregulation of domestic and international investment. Credit boom. Financial intermediaries.
1991–94 Finland savings bank crises.	State took control of three banks accounting for 31% of bank deposits. Nonperforming real estate in special vehicles. Recapitalization costs estimated at 11%–15% of GDP.	As in Sweden.
1990s–ongoing Japan. Systemic banking crisis.	Nonperforming loans estimated at up to 25% of GDP. Bank nationalizations, closures, mergers. Cleanup costs by late 1990s around 12% of GDP. Liquidation of intermediaries (Jusen) at a cost of US$6.3 billion.	Long preceding land-price boom. Special real estate financial intermediaries (Jusen). Moral hazard through state support for large banks.
Mid-1990s France. Bank crisis.	Stress bordering on insolvency in several major banks. Range of	Unreliable valuations. Bank exposure to real estate through

[14] The current crisis may be different due to the unparalleled growth in the "shadow financial system" based on securitization and wide distribution of risk. However it is too early to tell what the final impact on banks may be.

	government-support measures; final costs estimated at the equivalent of 1% of GDP.	shareholdings in development and construction subsidiaries.
1997–2000 Asian crisis. Malaysia, Thailand, Korea…	Malaysia: two banks insolvent, nonperforming loans 25–35% of banking system assets.	Long preceding land-price booms. Extreme credit booms and deregulation of international capital flows. Financial intermediaries (especially Thailand).
Systemic banking crises linking asset price and real estate bubbles with foreign capital flows.	Thailand: State intervention in 70 finance companies and six banks. Nonperforming loans 46% of total loans. Net losses equivalent to 42% of GDP. Korea: Two banks nationalized, five closed, seven under special supervision. Nonperforming loans 30–40% of total. Fiscal costs estimated at 34% of GDP.	

Source: Mostly from Barth, Caprio, and Levine 2001**,** Banking systems around the world; World Bank.

The role of house prices in macro instability points to the importance of mortgage market regulation. Information systems, monitoring capabilities, and understanding of mortgage markets are much better today in most countries. In addition, the establishing of a futures market in housing prices has been attempted in the US, following the work of Robert Shiller, which could theoretically, if it develops, allow homeowners and lenders to hedge the risks of house-price declines.[15] However, a faulty regulatory system has been blamed for the current subprime mortgage crisis. Policy makers allowed the lightly regulated shadow banking system to grow exponentially, in part due to political pressures to expand homeownership in the US. Ineffective regulation of the Government Sponsored Enterprises contributed to the instability of the system and the ultimate loss.

The volatility of house prices and the potential for a boom-bust is higher if the housing supply is severely constrained by land access and urban regulation problems, which drive housing prices up to unaffordable levels (see Glaeser and Gyourko 2003 for the United States and Malpezzi and Mayo 1997 for a number of developing countries). A highly elastic mortgage supply can exacerbate housing cycles as has been the case recently in the UK and the US. The potential for destabilization may also be high in less mature financial systems (e.g., Russia, Ukraine) experiencing mortgage market growth. . Under tight supply conditions, the expansion of housing finance—often through middle- and higher-income groups—may even worsen the overall housing affordability problem. Creating a more elastic supply of housing can reduce the probability of adverse real estate cycles and sharp run-ups in house prices.

6. Lessons for Emerging Markets

The first and perhaps the clearest lesson is that the performance of the macro economy, the legal system, and housing market regulations are inextricably linked to the development of housing

[15] See http://www.macromarkets.com/csi_housing/

finance. A stable, growing economy will encourage the growth of the housing finance system through lower inflation, lower interest rates, and lower systemic risk. In this evolutionary perspective, beyond a certain level of per capita income, housing finance will emerge with household demand for it; that is, as long as the macro, legal, and housing-market regulation environments are conducive to its emergence. In such cases, a virtuous circle can emerge as growth if the financial system promotes overall economic growth, and this higher growth, in turn, will encourage both further financial-sector and housing-finance development.

An important corollary of this first lesson is that housing finance does not work in unstable, volatile economies. Instability inevitability leads to less credit availability, less formal housing built, affordability problems for housing consumers, and greater risk for all concerned. In a word, macroeconomic instability creates a negative circle where less housing finance leads to less residential investment and slower growth in the economy. Attempting to break the vicious circle by promoting housing finance will almost certainly fail. Macroeconomic stability and a strong legal environment have to be present for housing finance to develop.

Macroeconomic stability and legal clarity alone are not enough though. Indeed, the evidence of the past decade suggests that housing finance policy is of fundamental importance in determining the resilience and vibrancy of the sector. After years of stagnation, across many countries, a thriving and buoyant supply of housing finance has emerged with remarkable speed. This development is more than just the unintended consequence of improvements in the macroeconomic and legal environments. The world financial system, as Calomaris (2000)[16] described it, is entering a new, liberalized financial paradigm at a time when liquid banks actively develop retail activities. In this regime, policy will no longer systematically deny households access to credit through direct or indirect restrictions. In the places where these restrictions are reduced, housing finance systems can and have emerged very rapidly.

Thus, the second lesson is that in the many countries with nascent supplies of housing finance, the development of coherent, sustained efforts to develop a more transparent, competitive supply of housing finance, be it bank-based or bond-based, is likely to have high economic and social returns. A strong housing finance system cannot only contribute to a broader, more resilient financial sector, it can also promote housing development, particularly of informal settlements, and improve labor mobility and the construction industry. In so doing, it can contribute to growth and stability in the economy. The growth and increased availability of mortgage credit can also be influential in creating better-planned urban environments with lower congestion, improved services, and less crowding. These positive effects of system development, however, will only come about with an appropriate policy framework. Indeed, in the wrong policy environment, unfettered private-housing finance development can be a causal factor in macro instability. The use of the wrong instrument, excessively risky lending, and unsustainable, badly targeted subsidies can lead to the collapse of housing finance institutions and markets, with large costs both to government (bailouts) and the economy (lost productivity, lower growth).

Hence, the third lesson is the need for a strong but nimble and delimited public role in sector development. Without a clear and focused public role, it is all too easy for financial liberalization and development of the housing finance system to be incomplete, with consequent adverse

[16] Calomaris, Charles U.S. Bank Deregulation in Historical Perspective, Cambridge University Press, 2000, 2006

effects on the housing market and economy. Of course, greater competition leads to lower interest rate spreads, greater product variety, and more affordability. Further, the increased ability to borrow against housing wealth can increase consumption and investment, producing economic growth. On the other hand if the newly supplied credit carries implicit interest rate subsidies, or is financed through the taxation system together with the use of regulatory directives, as continues to be the case in many countries, it can lead to very costly financial sector problems. Similarly, the international experience has demonstrated that caution is warranted whenever there is rapid growth in lending of any sort. For mortgage lending, a concern with rapid growth may be even more pronounced, as mortgage borrowing typically involves a moderate-income family financing its largest purchase ever in a transaction with a financially sophisticated lender. Once again, experience has shown that in such environments consumer information and protection are necessary. Hence, while the private sector must be the chief risk bearer in any sustainable system, a strong and transparent public role is essential.

The final lesson relates to the importance of making sure that expanded access to finance does not result in unsustainable over-lending that exacerbate housing cycles and contribute to broader economic cycles. The bursting of the bubble is having dramatic consequences on the US and international financial markets. The US sub-prime market may have extended the housing cycle beyond its natural end. The foreclosure crisis was worsened by several years of high LTV lending to households with weak credit at the top of the house price cycle. Although other countries like Australia, Spain and the UK did not have sub-prime lending, an expansion of mortgage supply most likely amplified their house price cycles and is a cause of current distress. While the full dimensions of this process are not yet understood, it is clear that the unprecedented availability of mortgage credit and housing supply conditions combined to produce a worldwide house price cycle of unprecedented proportions. In the future financial regulators will have to pay close attention not only to mortgage underwriting but also the underlying housing market conditions and policies.