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Housing Finance Systems

Sock-Yong Phang

Market Failures and Government
Failures



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Sock-Yong Phang

Professor of Economics, Singapore Management University

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Foreword © Changyong Rhee 2013

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For Andrew

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Foreword

Urbanization has been extremely rapid in many emerging countries, especially in Asia, where the speed and scale have been unprecedented. This has resulted in increasing stress on cities, which is likely to hamper these economies' future growth prospects. There has been much discussion on the impact of this accelerated demographic movement on transportation, power and water supplies. Dr. Phang's timely book, *Housing Finance Systems: Market Failures and Government Failures*, expands the urban growth dialogue and discusses the need for adequate housing and healthy housing finance systems.

Housing shortages are acute in many countries. In India, the government estimates that the current urban housing supply falls 24.71 million units short of actual nationwide needs. The dearth of housing forces many people to live under difficult substandard conditions in the urban slums that have proliferated throughout the country. Other countries in Asia, including the Philippines and Pakistan, have similar deficient conditions. This problem, already acute, is expected to worsen due to the growing demand that will result from continued rapid urbanization and population growth, amongst other factors.

Directly linked to the lack of housing is the nascent stage of many emerging countries' housing finance markets. Housing systems are complex; they have a number of interrelated components that impact the degree to which these markets function. Dr. Phang's book is a valuable tool for policymakers, regulators and private sector practitioners and investors. It discusses the building blocks of sound housing finance systems and provides an international perspective on housing policy, as well as on regulatory and market failures in several countries. The book provides a useful roadmap for moving forward and also introduces some innovations in private-public partnerships in this sector. One of the new and critical contributions of this work to the ongoing dialogue on global housing finance is the discussion on housing cycles, bubbles and macroprudential policy. As many emerging markets expand their housing finance systems

to meet rapidly growing demand, it will be important to carefully monitor housing cycles, introduce sound policies and assimilate lessons learned from the global financial crisis.

Because of their high development impact in terms of financial sector advancement, contribution to economic growth, pro-poor job creation, and improvement in living standards, multilateral and bilateral development banks are increasingly active in this sector. The Asian Development Bank has a 20-year history of working to support the housing finance sector through both public and private sector activities. I am pleased that Dr. Phang's book contributes to the academic and practical discussion on the healthy growth of this important sector.

Dr. Phang used to be my classmate in Harvard University, and even then, she was deeply interested in public transportation and housing finance issues. This book reinforces her firm commitment to play a personal role in economic development, and I am certain that both the public and private sectors will benefit from her findings and insights.

Changyong Rhee
Chief Economist
Asian Development Bank

Preface

In the aftermath of the global financial crisis of 2008, many questions have been raised by policymakers, in both emerging and developed countries, on housing policies – the goals, the selection and appropriate design of policy instruments, the architecture of housing finance systems, and regulating for financial stability. *Housing Finance Systems: Market Failures and Government Failures* has been written with the aim of providing an international perspective on these important issues. It has been motivated by my consultancy work with the World Bank, the Asian Development Bank, and various government agencies over a period of more than two decades.

It is intended to be used by people who are interested in the debate on these issues: university professors, undergraduate and graduate students, researchers, analysts, and consultants and, in particular, policymakers in countries that are in the process of setting up housing finance systems or reforming them. There are many books and academic analyses of housing finance instruments and housing finance systems. However, many of these are either theoretical in nature or overwhelmingly country specific, with many specialized books focusing on the secondary mortgage market in the USA. Comparative literature and analysis of housing finance systems in different countries are relatively rare, and those with an Asian focus even rarer. This book is intended to help fill this gap.

Its purpose is to bring together the varied experiences with distinct housing finance systems in the United States, Europe, and Asia – with particular focus on the solutions adopted in Asian countries. A wide range of case studies from many countries is used to illustrate points that are important for the sustainability of housing finance systems or as examples of good policy design. The social, political, and economic realities of housing finance systems and their integration with the broader housing policy framework and financial system in each jurisdiction are so complex that there are no simple “best practices” templates. An in-depth understanding of economics, institutions, and politics is necessary for good housing finance policy

design. Yet there is much that can be learnt from both the positive and negative experiences of various countries in their design and implementation of housing policies, housing finance systems, and housing institutions. It is hoped that this book can assist in some small way in this learning process.

Acknowledgments

I began writing this book in early 2012 during a sabbatical year that was made possible by the Singapore Management University (SMU), for which I would like to thank SMU President Arnoud De Meyer and Provost Rajendra Srivastava. I spent part of the year at the University of Gothenburg, Sweden, where the School of Business, Economics and Law was kind enough to offer me a Visiting Professor appointment. I would like to thank Maureen McKelvey, Sara Stendahl and Robin Biddulph for making my visit to Gothenburg possible. I am grateful to the Department of Economics at the school, in particular to Thomas Sterner, for providing the ideal intellectual space where the initial chapters of the book took shape.

My interest in housing finance systems would not have grown into a book without the various housing finance projects in different countries that I have been involved in over the past two decades. While working on these assignments, I benefited a great deal from my discussions with Bertrand Renaud, Loïc Chiquier, Friedemann Roy, Elaine Glennie, Kyung-Hwan Kim, and Özgür Öner. I would like to thank them for sharing their insights and for the stimulating conversations on housing finance systems and policies.

Various parts of the manuscript were earlier presented at the World Bank's Global Housing Finance Conference, at the Monetary Authority of Singapore and Bank for International Settlements' Property Markets and Financial Stability Workshop and at conferences and seminars in Adelaide, Beijing, Gothenburg, Seoul, Singapore, and Stockholm. Thanks are due to the participants for their useful feedback.

I am also grateful to the Sim Kee Boon Institute for Financial Economics at SMU, which provided partial financial support for this project. Vishrut Dhirendra Rana, Pearly Ue, and Oliver Yuen provided excellent research assistance at various stages. Lim Soon Chong and Chng Sok Hui, both veteran bankers, read parts of the manuscript and offered valuable comments. I am also indebted to

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Above all, I am grateful to my husband, Andrew, and my daughters, Rachel and Christine. They have been enthusiastic in their support throughout the project and are a constant reminder to me of life's real priorities. Despite his busy schedule, my husband, Andrew, read the entire manuscript and provided many helpful comments and suggestions. This book is dedicated to him.

1

Background and Overview

Cities have historically served as centers of religion, politics, commerce, education and economic growth. They are the locations where agglomerations of activities facilitate the unleashing of energies of creativity, innovation and entrepreneurship. Cities offer the hope of education and learning, employment, social relationships and stimulating leisure activities.¹ Dense social and business networks and close interactions lead to unforeseen opportunities that transform individual lives and the future of start-ups.

In 2010, the world entered a new urban age. For the first time in the history of mankind, more than 50 per cent of the world's then population of 6.9 billion people lived in urban areas (see Figure 1.1).² The United Nations has projected that more than two-thirds of the 9.3 billion people in the world in 2050 will live in cities. The expected increase of 2.7 billion urban dwellers over the next four decades, averaging over 69 million per year, poses unprecedented challenges as well as opportunities for governments, urban planners and businesses in the provision of infrastructure and real estate and in meeting the demand for goods and services of the growing urban class.

Urban population growth is forecast to be highest in the emerging economies of Asia and Africa. In the three decades from 1975 to 2005, China has overtaken India as the more urbanized giant, with this trend expected to continue into the future. In 1975, only 17.4 per cent of China's population lived in cities. In 2010, the figure had risen to 49.2 per cent, and it is projected to increase to 61.0 per cent by 2020. In India, the corresponding figures are 21.3, 30.9 and

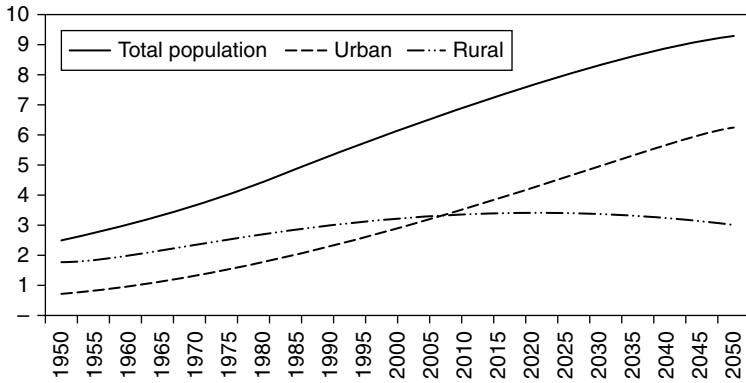


Figure 1.1 Projected growth in world's urban population (in billions)

Source: Chart data from United Nations, Department of Economic and Social Affairs, Population Division (2012). *World Urbanization Prospects: The 2011 Revision*. CD-ROM Edition.

34.8 per cent in 1975, 2010 and 2020, respectively. In absolute numbers, the urban population of China is forecast to increase from 660 million in 2010 to 846 million in 2020, while India's urban population is expected to increase from 379 million to 483 million over the same decade.

Mass urbanization will require investments in transportation, power, water and industrial and residential infrastructure on an unprecedented scale. This trend presents countless opportunities for investments by both governments and corporations, as well as opportunities to shape the growth, development and quality of life in cities.

However, this rapid urbanization also presents tremendous challenges for the provision of infrastructure, adequate housing, public health, social services and safety. The responsibility for mobilizing the trillions of dollars of finance required for urban infrastructure investment lies predominantly with the public sector.³ The adequate financing of cities is a crucial aspect of their sustainable growth and development. While an extremely important component of what makes for a good quality of life in cities, housing is nevertheless very much a private good; hence the norms and expectations for the government's involvement in its provision and financing vary greatly.

With the equivalent of 69 million people moving from rural villages to cities every year, the majority today face the problems of housing affordability, the daily grind of living in slums and squatter settlements, and/or the harsh reality of homelessness. Meeting the housing aspirations of the middle class and providing shelter for the urban poor present enormous social, political and economic development challenges as well as opportunities. On the housing finance front, which is the focus of this book, the housing welfare of urban dwellers provides the imperative for getting housing finance policies and systems right.

Challenges for housing policymakers

Accessibility to adequate and affordable housing is extremely important for the happiness, productivity and well-being of all segments of society. The links among the rental sector, the asset sector, the housing production sector and the financial sector, as well as distinct segments of the housing market, are complex and important to understand. A list of broad questions (with answers that differ from city to city) will include the following: Does a housing shortage exist? What is the magnitude of the squatter slum problem? Is housing affordable? Does homeownership matter? How responsive is housing supply to changes in demand?

The fact that governments intervene (in some cases massively) in housing production, transaction and service delivery processes in multifaceted ways, ways that differ from country to country, raises policy questions on the appropriate role of government in the housing market, again with answers that vary greatly across the world. What is the range of policy options in the choice of housing finance systems? How does housing finance impact housing debt, cycles and housing asset bubbles? What are the linkages between housing debt and financial stability? What are the features of a good and sustainable housing finance system?

Current problems with housing finance

The global financial crisis of 2008 that had its roots in the US housing crisis has radically changed the answers both to the above questions and to the world's understanding of the linkages between housing

finance and the financial system. In the aftermath of the crisis, numerous unanswered questions remain. How well we learn from the lessons of past failures will determine the sustainable development of our cities and the housing welfare of future urban dwellers.

For the USA and Europe, the term “housing crisis” has, in recent times, been associated with rising foreclosure rates, bankrupt or tottering financial institutions and financial market instability. In many developing countries, on the other hand, the housing crisis is about high levels of urban poverty, unplanned settlements, overcrowded slums and homelessness. These faces of the housing crisis require solutions for the housing finance mechanisms and systems that lie at the root of each.

It was not too long ago that housing finance was a domestic (if not altogether local) lending activity, with the limited literature on housing finance tending to be country-specific. However, the extent of globalization of housing finance through financial markets hit home in a major way in 2008 and in the Eurozone crisis that followed. The repercussions as a consequence of getting housing finance policies wrong have global ramifications that are now widely recognized. While the attention of the best economic minds in the developed world has been engaged with redesigning the architecture of the global financial system, the governments of many developing countries continue to struggle with decisions on the selection and design of appropriate policy instruments to facilitate a long-term flow of much needed capital into the housing sector. Policy choices need to be carefully considered and decisions carefully made and effected with the historical knowledge of successes, failures and risks.

Overview of the book

Given the pivotal importance of housing finance, as explained above, the present book attempts to tackle the various (and related) issues in a systematic and integrated manner, bearing in mind that the relevant differences in various countries simultaneously necessitate a comparative perspective as well. Part I of the book discusses why a well-designed and well-functioning housing finance system matters for societal welfare. Part II provides a review of the housing finance policy instruments that have been commonly used in various countries on both the supply and demand sides. The special challenges

posed by the cyclical nature of housing markets and the proclivity for housing booms to develop into bubbles are discussed in Part III. Part IV considers the various sources of risk for housing finance systems based on case studies from the experiences of various countries. Part V, drawing on the lessons learned from the previous parts, concludes with suggestions on smart practices for housing finance systems.

Part I: Why Housing Finance Policy Matters

A number of international human rights instruments and organizations, most notably the United Nations Human Settlements Programme,⁴ as well as most societies, regard the right to adequate housing as a basic human right. The availability of long-term finance for the housing sector is critical to ensuring improvements to the quantity and quality of the housing stock over time and in meeting the goal of access to adequate housing for all. Chapter 2 begins with the topic of affordable housing – how affordability is often defined and measured – and presents estimates for housing affordability for different countries and cities. Chapter 3 examines the sources of market failures in the housing sector, failures frequently used to justify government intervention in this sector.

Part II: Review of Policy Instruments

The housing market is subjected to more policy initiatives than any other consumer good. The main objective of Part II is to illustrate the categories of available policy instruments for housing finance and how they operate on the supply and demand sides of the housing sector. Chapter 4 deals with the range of taxes and subsidies used. Regulation of the housing market and of housing finance is discussed in Chapters 5 and 6, respectively, and housing finance institutions established by governments in Chapter 7. The government may also enter into collaborative agreements with the private sector with the objective of attracting private financing and expertise under Public-Private Partnerships (Chapter 8).

Part III: Housing Cycles and Bubbles

That real estate markets are prone to cyclical behavior is a phenomenon that has been recognized for centuries. Chapter 9 provides an overview of the features of the housing market which explains its proclivity to booms and busts. Market volatility and cycles naturally

attract speculators, especially if the market concerned is supported by ready access to borrowing. Overinvestment is thus accentuated and housing asset price bubbles emerge. The hotly debated issue of whether (and how) governments should intervene to prevent the development of bubbles is considered in Chapter 10.

Part IV: Government Failures

While governments may have the best of intentions in putting in place housing finance policies to ensure access to housing and/or address the problems of market failures, there are, unfortunately, numerous examples of policy and regulatory failure in the housing finance sector. The fallout from such failures ranges from the manageable (from a fiscal standpoint) to global ramifications with losses in trillions of dollars – as seen in the global financial crisis of 2008, which had its roots in failures within the US housing finance market. Part IV of the book presents examples, from both developed and emerging countries, of government failure in the area of housing. Chapter 11 focuses on the risks associated with housing policies, and Chapter 12 discusses regulatory failure and regulatory capture.

Part V: Complexity and Risks

A well-functioning housing finance system can play an important role in helping to fulfill multiple objectives – promoting social and political stability, enhancing housing market performance, contributing to financial sector stability and development. However, the complex system within which it is embedded is also vulnerable to the risks from multiple sources of market, political and regulatory failures. Part V of the book, comprising Chapter 13, draws from the lessons learned to provide a list of smart practices for building more resilient housing finance systems.

Part I

Why Housing Finance Systems Matter

The first part of this book, comprising Chapters 2 and 3, is dedicated to explaining why housing finance policy matters for the quality of life in cities and for the sustainable development of the cities themselves. The housing sector encompasses numerous stakeholders who view the sector through differing lenses. Urban planners and architects focus on spatial parameters, design and aesthetics. Environmental groups concentrate on environmentally friendly practices in housing and urban development. Developers, bankers, speculators, investors and other businesses interests, on the other hand, are on a constant lookout for profitable opportunities. Local governments and politicians, regulators and providers of social services have their distinct agendas. Each of these viewpoints is vital to our collective understanding as to why housing finance systems matter.

These two chapters will concentrate on conveying how *economists* view the issues of housing affordability, tenure choice and market failures. Housing standards, affordability and homeownership rates vary widely across countries as well as regionally within a country. Chapter 2 reviews the definition of housing adequacy and the various measures of housing affordability. It then compares homeownership trends and housing affordability internationally and seeks to explain the wide variation in international homeownership rates. The costs of land, housing and major upgrading of homes all represent sums of money that can be multiples of annual incomes and that will require relatively long loan terms in order to keep payments within the reach of the average household. We will also review the housing finance instruments that are available to households, as well as the

variations in the terms and conditions that can make a major difference to homeownership affordability. Not surprisingly, therefore, homeownership is a major financial decision for most households, and the costs and risks of homeownership need to be carefully weighed against the benefits.

Governments in many countries intervene to make homeownership more affordable; they justify such intervention by arguing that homeowners are better citizens, are more involved in their communities, maintain housing and community properties better and have children who are happier and healthier and who perform better in school. Amongst the developed countries, the USA has a long tradition of government support to promote homeownership, a tradition which dates back to the 1930s. In a speech in 2002, President George W. Bush described “encouraging folks to own their own home” as putting “light where there’s darkness, and hope where there’s despondency”.¹ In this regard, Chapter 3 is dedicated to the discussion of market failure in the housing sector and the debate on the need for policies that are biased toward homeownership.

2

Affordable Housing

Definitions and measures

Defining housing

Housing is not “just another commodity”. It is distinguished from most other goods by its heterogeneity, its durability and the high transaction costs of moving. Because of this heterogeneity, it is a challenging task to define what is meant by a unit of housing for purposes of comparison across space and time. Individual dwelling units differ in size, layout, style, utilities and the quality of the interior and the exterior. Choice of housing also involves choice of neighborhood and location, choices which in turn impact access to jobs, schools, local public goods, social networks and amenities, as well as environmental quality. The United Nations Human Settlements Programme (UN-HABITAT) has as its most laudable mission “to promote socially and environmentally sustainable human settlements development and the achievement of *adequate* shelter for all”. Given its heterogeneity, the “right to adequate shelter” has been defined by the UN to comprise seven key criteria:

- legal security of tenure;
- availability of services, materials, facilities and infrastructure;
- affordability;
- habitability;
- accessibility;
- location; and
- cultural adequacy.¹

Canada, for example, defines “adequate housing” as housing that does not require any major repairs according to residents, while the criterion of “suitable housing” is satisfied only if there are enough bedrooms for the size and makeup of the resident household – in accordance with National Occupancy Standard requirements.² Any attempt to compare housing norms and housing standards internationally is, in fact, fraught with difficulties, given different levels of wealth, incomes, household needs and societal norms. In the absence of appropriate benchmarks and datasets, indicators of housing quality are often based on what is available rather than what is correctly defined but unavailable.

The heterogeneity of housing presents a particular challenge for the construction of housing price and rental indices to track changes over time. Within a given country, housing price indices are necessarily regional or city specific. For a particular city, in addition to a city house price index, sub-price indices often exist for specific housing market segments by location and house types. There are a number of established methods for tracking changes in rents and prices, each with its own benefits and shortcomings. These include using (a) median price of transaction data; (b) repeat sales data (i.e., data for which an earlier record of sale exists); and (c) a hedonic price methodology which requires the attributes of a constant quality housing unit to be defined. Median, or average, transaction prices, while easiest to compile, do not, however, adjust for the quality of the homes sold.

In the USA, the most widely followed house price indices are those published by the National Association of Realtors (NAR) and the Federal Housing Finance Agency (FHFA), as well as the S&P/Case-Shiller Home Price Indices (C-S). The NAR index uses the median home price, covers all markets and is not quality or size adjusted. The FHFA index adjusts for quality and size by using repeat sales transactions on single-family properties whose mortgages have been purchased or securitized by Fannie Mae or Freddie Mac. The C-S indices are computed from public records of repeat sales of single-family properties and are available for 20 specific metropolitan areas, with composite indices for the top 20 and top 10 metro areas and nationwide. The C-S indices are published monthly, and options and futures based on the indices are traded on the Chicago Mercantile Exchange.

Housing affordability indicators

The importance of housing in determining the quality of life for a household also makes it one of the most, if not the most, important item in a household's consumption basket. Tenure choice – whether to rent or own – is a major financial and investment decision for most households. Owning a property often requires an overall outlay involving multiples of the annual income for the average household. Given the high cost of a long life asset as well as the high transaction cost of moving, the decision to purchase a property is often not taken lightly. The *rental* market therefore serves a useful economic function in any city, and rental housing also constitutes a viable asset class for investors.

Housing affordability indicators are used to track the affordability of renting and homeownership. For rental affordability, the share of income spent on housing or the rental expenditure-to-income ratio is widely used. For policy purposes, such as intervention in setting rents, providing rental subsidies or measuring the proportion of tenants in housing stress, it would be necessary to set a benchmark ratio. What would be considered an “acceptable rental expenditure to income benchmark” is rather subjective, though 25 to 30 per cent of income has come to be commonly accepted as the upper limit of affordability for lower-income households.

For the majority of households in countries with high homeownership rates as well as for policymakers tracking homeownership affordability, housing affordability is about homeownership affordability. The most widely used and cited indicator of homeownership affordability is the ratio of median house price to median income (median multiple or price-to-income ratio [PIR]), due to its simplicity and ease of understanding. The median house price to median income ratio is tracked for 325 metropolitan markets in seven countries by the *Demographia International Housing Affordability Survey*.³ The authors of the survey consider a PIR of between 4.1 and 5.0 as “seriously unaffordable”, and 5 and over as “severely unaffordable”. These benchmarks represent normative ratings of affordability.

Other income measures, such as the use of permanent incomes or residual income (which measures the adequacy of income after deducting housing payments to meet minimum levels of

non-housing needs), have been proposed.⁴ These are, however, more difficult to compute. When timeliness in tracking housing markets is at a premium, simpler income measures, such as average individual income or per capita income (instead of median household income), are often used instead. PIRs are relatively easy to calculate and allow assessment of changes to overall housing affordability as well as cross-country comparisons. The PIR, however, presents a limited picture of affordability as it fails to consider differences or changes in access to housing finance which are affected by the term of mortgage loans, interest rates and loan-to-value (LTV) ratios.

The monthly mortgage payments to gross monthly household income ratio is used by mortgage underwriters or lenders to determine how much a household will be allowed to borrow, based on a set upper limit for the ratio and the prevailing interest rate. The maximum ratio of housing costs (mortgage principal and interests, property taxes and heating costs, if relevant) is generally set at around one-third, although it can vary, depending on the lender as well as on regulations that may be in place. When calculated using a given house price, mortgage terms, down payment and current interest rates, the mortgage payment to income ratio can serve as a useful housing affordability indicator. The US NAR, for example, uses the national median-priced existing single-family home as the reference home; it assumes a 30-year fixed-rate fully amortizing mortgage, down payment of 20 per cent, prevailing mortgage interest rate, and an upper limit for monthly payment to income ratio of 25 per cent. It then considers whether the median income family has sufficient income to afford the monthly mortgage payment. We will consider the structure of mortgage instruments and the implications for housing affordability in the last section of this chapter.

Each of the measures of affordability briefly described above has its benefits and limitations. Housing markets are local and also segmented. We would expect the wealth and income disparities that exist in most cities to also be correspondingly manifested in the structure of the housing market. As such, no one measure of housing affordability is adequate on its own, and a basket of measures would be required to obtain a complete picture of affordability trends.⁵

Comparing homeownership rates and housing affordability

There is, surprisingly, no international agency that collects and publishes up-to-date statistics for homeownership rates for different countries. Based on the latest available data from a variety of sources, Figure 2.1 shows the significant variation of homeownership rates internationally for over 30 countries.

There appears to be little correlation of the relevant homeownership rate with per capita income levels or with the quality of the housing stock. Amongst the developed countries, Australia, Canada, New Zealand, the UK, the USA and Sweden have homeownership rates in the range of 65 to 70 per cent, while Germany and Switzerland are notable for having rates below 45 per cent. The Latin American and southern European countries have rates of 70 per cent or higher, as do China, Thailand and Singapore. In eastern Europe and China, privatization of the housing sector in the past two decades has resulted in significant increases in homeownership rates over relatively short periods of time.

What are the main factors that explain these significant variations in homeownership internationally? Studies have found that *legal, economic, political* and *cultural institutions* matter more in explaining homeownership rates than do income, ethnicity and demographic variables.⁶ In short, the relative costs of renting versus owning and hence homeownership rates are strongly impacted by housing institutions and policies. Table 2.1 shows the median house price to median annual household incomes as a measure of homeownership affordability for a selection of countries and cities. Within a country, the range of price-to-income ratios can vary widely. In the USA, for example, the house price-to-income ratio ranges from 1.3 for Saginaw, Michigan, to 8.7 for Honolulu, Hawaii. For Hong Kong and Singapore, the 36 percentage point difference in homeownership rates can be attributed in part to the large difference in their respective housing policies and PIRs.

The snapshot of price-to-income ratios at a given point in time is useful for comparing housing affordability in different locations. Tracking changes to the PIR over time for a particular market is also widely used in gauging housing market conditions in relation to

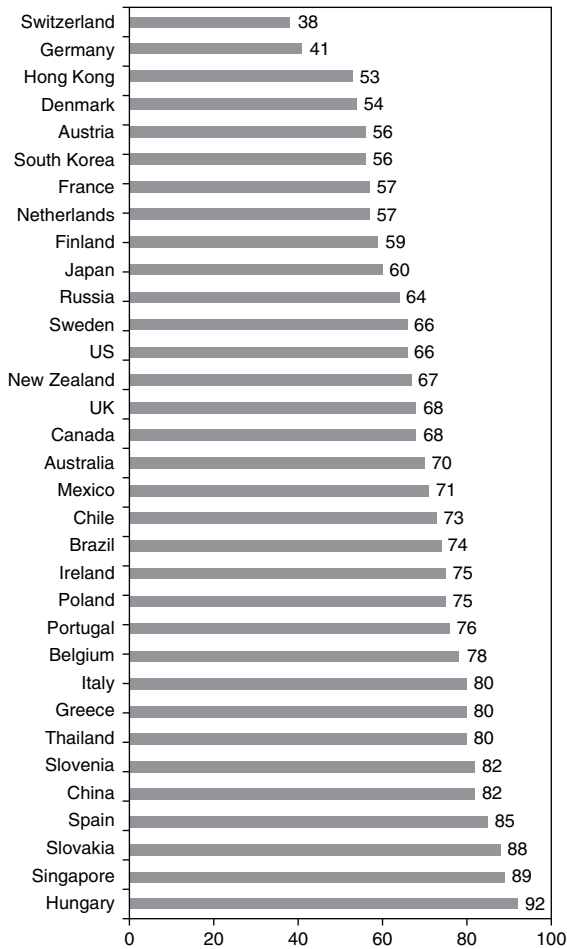


Figure 2.1 Variations in homeownership rates

Notes: 2011 data for Austria, the USA, the UK, Canada, Australia, Chile, Poland, Thailand, Slovenia, Slovakia, Singapore and Hungary; 2010 data for Hong Kong; 2009 data for Denmark, Ireland and Greece; 2008 data for the Netherlands, Finland, Japan, Sweden, Brazil and Spain; 2007 data for China (for urban hukou holders or people with official registration at cities of residence), Germany, France, Portugal and Belgium; 2006 data for Russia and New Zealand; 2005 data for South Korea; 2004 data for Switzerland and Mexico; 2002 data for Italy.

Sources: IMF (2011); OECD (2011); Gao (2011) for China; Ronald and Jin (2010) for South Korea; government websites for Brazil, Hong Kong, New Zealand, Singapore and Thailand.⁷

Table 2.1 Median house price to median income ratios

Country	Home-ownership rate %	Housing price to household income ratio (3rd quarter, 2011)	Ratio for selected metropolitan areas
Hong Kong	53%	12.6	-
United States	66%	3.0	Honolulu 8.7 San Francisco 6.7 New York City 6.2 Boston 5.3 Chicago 3.3 Saginaw 1.3
New Zealand	67%	5.2	Auckland 6.4
United Kingdom	68%	5.1	London 6.9 Edinburgh 5.6 Birmingham 4.9
Canada	68%	3.5	Vancouver 10.6 Toronto 5.5 Montreal 5.1
Australia	70%	5.6	Sydney 9.2 Melbourne 8.4 Perth 5.7
Singapore	89%	4.9	

Sources: See sources for Figure 2.1 for homeownership rates; the ratios, with the exception of Singapore, are from Performance Urban Planning (2012); for Singapore the ratio is calculated from the average market price of a four-room government-built flat (the median house type) minus the housing grant divided by median household income for 2011.⁸

historical norms. For mature housing markets, large variations of the ratio from their historical levels could indicate either over- or undervaluation of housing or a shift in the equilibrium. Trends for price-to-income ratios for different cities in the same country also provide valuable information on the regional evolution of housing markets. During the latest housing boom in the USA, the ratio for Los Angeles reached a historical peak of 10.6 in 2005Q4 and then declined to 6.18 by 2011Q1.⁹ Detroit, on the other hand, is representative of once thriving industrial cities which now face shrinking populations and high vacancy rates. The PIR for Detroit peaked at 3.6 in 2004Q3 and then declined to 1.37 by 2011Q1.

However, as a measure of homeownership affordability, the price-to-income ratio suffers from a number of limitations. The most

important limitation is that it does not take into account a household's access to borrowing to finance a home acquisition. The availability of mortgages, mortgage interest rates, and the terms for mortgage loans are important factors which affect homeownership affordability. Beginning in the 1980s, the deregulation of financial markets in many countries brought about mortgage product innovations which led households to increase their borrowing. In the past decade, countries such as Greece, Ireland, Spain and Italy also experienced significant lowering of borrowing costs upon becoming members of the Eurozone, which led to increased cross-border flows of funds into their real estate sectors.

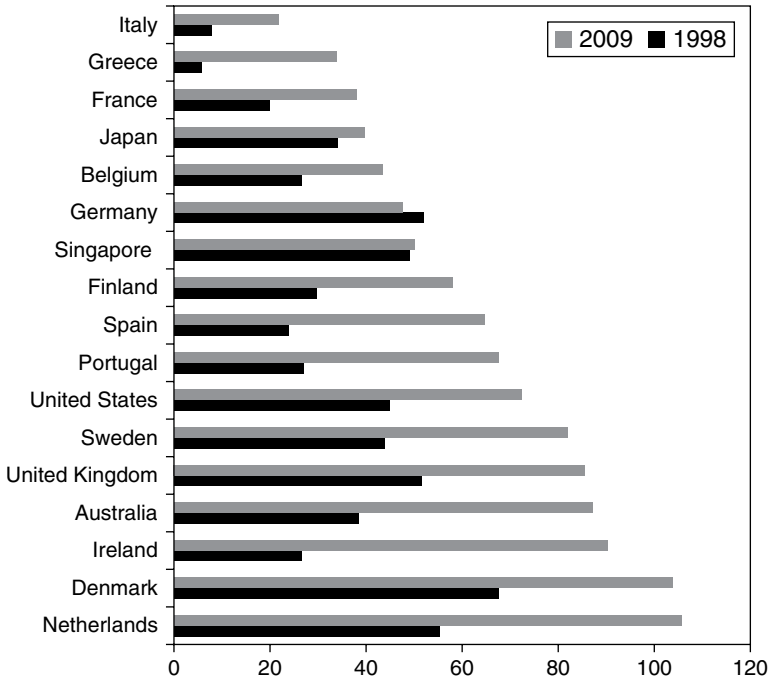


Figure 2.2 Residential mortgage debt to GDP ratios, 1998 and 2009

Sources: International Monetary Fund, *Global Financial Stability Report on Durable Financial Stability: Getting There from Here*, 2011, p. 134; and author's calculations for Singapore based on government website sources.

Figure 2.2 shows the increase in the residential mortgage debt to GDP ratios for selected countries between 1998 and 2009. The ratios more than doubled for Portugal, Ireland, Italy, Greece, Spain and Australia, the increase for Greece from 6 to 34 per cent being especially dramatic. Germany was the only country in the list that registered a decrease in the mortgage debt to GDP ratio from 1998 to 2009.

The increased availability of credit for housing purchases was the main driver of housing booms in many countries in the decade prior to 2007. The expansion of credit drove house price increases, which in turn increased investment in residential real estate. In countries or metropolitan areas where supply of housing is relatively inelastic, house price increases are much more pronounced in response to demand-side pressures of incomes and population growth and credit availability. The importance of the housing supply in determining how housing prices react to demand shocks will be discussed in greater detail in Part III of this book, which deals with housing cycles and bubbles.

Housing mortgage instruments

The availability of credit for housing purchase and investment is a key determinant of housing affordability. In this section, we will consider how variations in the design of mortgage instruments affect housing affordability.

Fixed-rate mortgage

The US 30-year, fixed-rate mortgage (FRM) provides a historical benchmark for international mortgage product comparisons. The US FRM is a 1934 post-Depression creation of the National Housing Act, which authorized the Federal Housing Agency to provide mortgage insurance for specific mortgage types. Often referred to as a “plain vanilla” mortgage loan, the FRM is a fully amortizing pre-payable mortgage loan where the interest rate remains the same throughout the term of the loan. This provides borrowers with nominal payment stability. If rates rise, borrowers are protected from the increase as the lender is unable to raise rates. In an inflationary environment when interest rates and house prices are rising, borrowers benefit from both house price inflation as well as a decline in real mortgage

payments. When interest rates fall, the free prepayment option allows the borrower to prepay and refinance without costs.

The above advantages of the FRM, however, expose lenders to both interest rate and prepayment risks. US government support for lenders to offer the FRM takes the form of government mortgage insurance and the creation of Fannie Mae and Freddie Mac to help lenders transfer and manage the risk involved in capital markets. Lea and Sanders¹⁰ have estimated that the costs of providing the free prepayment option raises US FRM rates by 0.5 per cent and is, in effect, a tax on all borrowers. Writing after the 2008 US housing and financial crisis, Lea and Sanders argue that continued government support for Fannie Mae and Freddie Mac in order for the FRM to be offered exposes the taxpayer to too much risk. We will consider in greater detail the problems posed by the FRM, Fannie Mae and Freddie Mac in a discussion on housing policy failure in Chapter 11.

Adjustable-rate mortgage

Deregulation of financial institutions in the 1980s led to the creation of the adjustable-rate mortgage (ARM), which is a loan with an interest rate that varies. With an ARM, the interest rate changes periodically (every month, quarter or year), usually in relation to an index, and payments may rise or fall accordingly. This reduces the risk faced by the lender as part of the interest rate risk is shifted to the borrower. Lenders generally charge higher initial interest rates for FRMs than for ARMs as a premium for the additional risk they incur. To limit the risk or payment shock to the borrower, limitations on changes (or caps) could be incorporated as features of ARMs. Caps could limit the amount the interest rate change from one adjustment period to the next. A lifetime cap could limit the total interest rate increase over the life of the loan.

Hybrid mortgages

Hybrid mortgages, which combine a fixed-rate period and an adjustable-rate period, are common. For example, in a 5/1 ARM, the interest rate is fixed for the first five years (corresponding to the first number), after which the rate adjusts annually (corresponding to the second number) until the loan is paid off. An interest-only (I-O) ARM payment allows a borrower to pay only the interest for a

specified number of years, typically for three to ten years. A rollover mortgage has an interest rate that is fixed for up to five years and rolls into a new fixed rate based on prevailing market rates at the end of the term.

Only the USA and Denmark housing mortgage systems offer the long-term FRM without a prepayment penalty. ARMs, or short- (1–5 years) and medium-term fixed-rate (5–10 years) hybrids or rollovers, are the dominant product for most other countries.¹¹ ARMs have also become the dominant product in Denmark in the past five years (see Chapter 6). The term of an FRM or ARM loan for most countries is typically over a 10-, 15-, 30- or 40-year payment schedule. Down payment for home purchases typically ranges between 5 per cent and 20 per cent of the purchase price.¹²

Nontraditional mortgages

Lenders have also offered a range of alternative mortgage products with different affordability and risk-sharing features. These include the following products or schemes:¹³

- Graduated payment mortgages (GPMs) are loans where monthly repayments start low in the early years, increase over time and then level off. This allows borrowers to make smaller payments initially and to make larger payments as their income increases over time. GPMs therefore match monthly repayments with the household's varying affordability capacity over the life cycle.
- Shared appreciation mortgages (SAMs) allow the lender to share in the future appreciation of the capital value of the property. In return, the home purchaser obtains an interest rate discount on the mortgage. SAMs have been available in the USA, the UK and Australia.
- Shared equity mortgages (SEMs) involve three parties to the mortgage contract, the homeowner, an investor and a mortgage lender, and have been offered in England and Wales.
- Home equity mortgage loans enable borrowers to obtain cash or a line of credit based on the accumulated value of the equity in their property, up to a predetermined amount. A housing investor may choose to use the extracted equity to invest in another property.
- Reverse annuity mortgages allow the homeowners (usually elderly) to borrow against the equity in their home and receive a monthly

payment from the lender. Upon the sale of the property, part of the proceeds is used to repay the lender, with interest.

- Islamic mortgages allow the lender to retain ownership of the asset and are comparable to financing leases. Ownership is transferred when the loan is paid off. Alternatively, a mortgage may be structured as a shared equity partnership arrangement between the lender and borrower.

Robert Shiller has advocated the introduction of a continuous workout mortgage (CWM) to help mitigate the systemic risk of foreclosures. Shiller's proposed CWM has principal balances (and therefore monthly repayments) that automatically adjust to the regional level of house prices and allows borrowers to transfer house price risk to lenders without relying on costly foreclosures to do so.¹⁴

Recourse versus nonrecourse

The prevalence of nonrecourse loans is another exceptional feature of the US housing mortgage market. A recourse loan allows the lender to pursue other assets of the borrower in the event of a default so as to recover the full value of the loan (subject to the protection provided to all individuals under the nation's normal bankruptcy laws). In contrast, in a nonrecourse regime, the lender is allowed to foreclose on the home but cannot seize other assets of the borrower, such as cars or bank balances, or require payment from future income. While recourse mortgage loans are the norm in most countries, nonrecourse loans are common in the USA, where up to 15 states are considered nonrecourse states.¹⁵

With a nonrecourse mortgage, moral hazard arises when borrowers, facing a negative equity rather than a cash-flow problem, strategically default on the property even when they are capable of maintaining mortgage payments. The higher the original loan-to-value ratio on the loan and the more severe the drop in the market prices of houses, the more likely is negative equity to occur. A recent study suggests that strategic default represented nearly 20 per cent of all US foreclosures in 2008, with the probability of default 20 per cent higher in nonrecourse states than in recourse states.¹⁶ US foreclosure rates in 2009 (4.6 per cent overall and 15.6 per cent for subprime mortgages) were also significantly higher than other countries with

recourse regimes, despite the fact that several countries had greater house price volatility.¹⁷

To rent or to own?

The decision to own or rent is one that is made by every household. Renting represents consumption demand for the tenant and investment demand for the landlord, whereas owning is a mix of both consumption and investment demand. For tenants, the relevant housing affordability measure would be the rent-to-income ratio. For would-be homeowners or first time homeowners, the price-to-income ratios and mortgage payments-to-income ratios provide an indication of the affordability of becoming homeowners.

For incumbent homeowners, the user cost of housing becomes the relevant cost to consider. The user cost of housing capital or the costs of holding the house for a year include the following components: interest cost, property taxes, and depreciation. These costs can be reduced or offset by capital gains from price appreciation. In its simplest form and ignoring income tax treatment of mortgages and capital gains taxes, transaction costs and inflation, the user cost equation may be represented by the following:

$$\text{User Cost of Housing Capital} = V * (i + t + d - g)$$

where V is the value of the property, i is the nominal interest rate, t the annual property tax rate, d the annual rate of depreciation and g the nominal annual rate of capital gains.¹⁸ The interest component in the above equation does not depend on whether the household has a mortgage loan; it includes mortgage interest cost and the foregone interest from housing equity and assumes there is zero spread in interest rates. With inflation, and assuming no income and capital gains taxes, the user cost of housing can be expressed as before, with real interest rates and real capital gains.

In equilibrium, rents, R , for an equivalent dwelling should equal the opportunity cost of using housing capital for each period; the household is then in a state of indifference between renting and owning.

$$R = V * (i + t + d - g)$$

The above equation has been proposed for use as a housing valuation model where the value of the property is given by the capitalized value of rent:

$$V = R/(i + t + d - g)$$

Alternatively, it is possible to compute a fundamental value-to-rent ratio from the above equation:

$$V/R = 1/(i + t + d - g)$$

The deviation of the actual price-to-rent ratio from the fundamental value-to-rent ratio can then be used as an indicator of housing price deviations from the fundamental values and thus provides a rough assessment of over- or undervaluation of housing prices.¹⁹

The above simplified model implicitly assumes that households would switch between renting and owning on the basis of changes in the price-to-rent ratio. However, in reality, a host of constraints, including high transaction costs, market imperfections, taxes and regulations, often distort housing markets and complicate the tenure decision. These frictions cause observed rents to differ from user costs. Moreover, in many metropolitan areas, rental housing and owner-occupied housing are highly segmented, and choice of tenure often constrains choice of house type or neighborhood, and vice-versa.

The factors that favor renting would include expected mobility, as housing is an illiquid asset and transaction costs for moving are often much higher for owners; life cycle reasons; and financial reasons such as down payment constraints, inability to borrow, and expectation of future house price declines. The decision to buy often involves a bundle of longer-term consumption decisions concerning house type, accessibility and neighborhood amenities, including schools, that are often tied to life cycle decisions. The financial benefits of homeownership also include its being a hedge against future rent increases and inflation, security of tenure and expectation of price appreciation.

Moreover, the existence of a spread between mortgage interest payments and foregone return on home equity means that user cost varies with loan-to-value ratios.²⁰ Housing policies in many countries

are also far from tenure neutral and often biased in favor of homeownership. Rental income from housing is taxable, whereas services from owner-occupied housing are not. Mortgage interest payments in some countries (such as the USA) are tax deductible, and capital gains from housing may be taxed differently from other forms of capital gains. We will consider the reasons for this bias in the next chapter and the institutional and policy factors affecting the tenure choice decision in Part II of the book.

3

Market Failures

Economists define market failure in a very specific way: market failure occurs when the allocation of a good or service by the free market is inefficient. In theory, competitive markets provide the conditions required for economic efficiency in production and consumption, as well as in exchange. Cities are generally viewed as being subject to market failures, with numerous situations where competitive markets do not work and where natural monopoly, externalities and public goods are commonly found. Government intervention, which is often justified on the grounds of efficiency, is supposed to result in an improvement in welfare for each of these traditional instances of market failure. Cities are also locations where poverty is often concentrated and where government intervention on grounds of equity, human rights and social justice is often called for. However, the presence of some form of market failure does not always justify government intervention. Taking into account regulatory, administrative and compliance costs, as well as the possibility of government failure, the outcome of an intervention may not always be superior to nonintervention.

Government intervention in housing markets is unusual in that there is no general agreement on the nature of market failures in the sector. Housing is very much a private good with production that cannot be characterized as natural monopoly. Those who view the housing market as reasonably competitive and efficient therefore support limited government intervention in the housing market; other than zoning at the local level to deal with housing-related neighborhood externalities and transfers to low-income households

to improve equity, the government should confine itself to the role of enabling markets to work.

Yet many societies recognize market failure in housing as going beyond the classic case of neighborhood externalities and argue that the government ought to play an expanded role in the housing sector. In this chapter, we consider the numerous and varied arguments for why housing markets are often viewed as inefficient and why government intervention is often called for and justified. We begin this chapter with the most oft-cited housing market failures – negative and positive externalities. We then consider housing market failures arising from holdouts, barriers to entry, non-insurable risks, transaction costs and information asymmetry. The debate on whether speculators in land and housing markets can be considered a cause of housing market failure can be traced back to the nineteenth century American economist Henry George and remains unresolved. The chapter concludes with a discussion on the implications of market failures for housing policy.

Negative externalities

Urban activities – in particular, those of industrial firms and transport – generate all sorts of obvious negative externalities, including emissions, odor, dust, vibration, noise and congestion. Retail activities generate their share of congestion, noise and parking nuisance for nearby residents. Likewise, high-density housing may generate negative externalities through an increase in traffic and noise, blockage of light or views and localized congestion. The blunt solution to such neighborhood externalities has been for local governments to zone land for different uses. Zoning laws for residential neighborhoods also often extend beyond land use to permitted densities, height restrictions, dwelling type restrictions, minimum lot size, and minimum space between houses.

While zoning is a powerful instrument in land use planning, local officials may come under pressure from their constituents to utilize zoning and land use regulations to restrict development. Homeowners understandably do not want anything located in their neighborhood that could generate negative externalities and affect the value of their homes. This “not in my back yard” (NIMBY) opposition, however, may affect development of any higher-density

construction, affordable housing, schools, hospitals and other facilities that are necessary for the community. Cities may also use open space zoning and urban growth boundaries to restrict urban development with its perceived negative externalities.

Positive externalities

Governments often justify intervention in a housing market on the basis of the positive externalities generated by housing for the neighborhood, as well as for social and political stability.

Preservation of historical properties

Cities grow through building upward and outward. Market forces in a rapidly growing city constantly bring about changes to land use and the intensity of its use. In the process, historic buildings face the constant threat of demolition to make way for skyscrapers and higher-density buildings. The need to preserve those with architectural merit and historical significance for society has become a rallying cry for growing preservation movements. Preservation boards are present in many cities, although their power to protect older buildings and districts vary. Europe's most historic and beautiful cities are beloved worldwide and attract millions of visitors each year. Edward Glaeser, however, warns of the "perils of preservation" as the benefits of protecting history comes at the price of restrictions on supply of space and, consequently, of higher costs.¹

Social and political stability

In many societies, a household's decision to become a homeowner is considered to generate a range of benefits. These relate to the dwelling itself (ownership dwellings are typically larger and of higher quality), the household's motivation to accumulate wealth, and the positive externalities for society and the local community. Positive externalities from ownership that are oft cited include better maintenance of property, increased political participation, being better citizens, and having children with higher levels of cognition and fewer behavioral problems.² Many governments also intervene to make homeownership more affordable to middle-income households to improve equity, as well as for political reasons.

In the USA, homeownership has come to be associated with the fulfillment of the American dream. In a speech in 2002, then US President George W. Bush associated American homeownership with freedom and neighborhood stability:³

All of us here in America should believe, and I think we do, that we should be, as I mentioned, a nation of owners. Owning something is freedom, as far as I'm concerned. It's part of a free society. And ownership of a home helps bring stability to neighborhoods. You own your home in a neighborhood, you have more interest in how your neighborhood feels, looks, whether it's safe or not. It brings pride to people; it's a part of an asset-based society.

On the other side of the globe (albeit in a similar vein), Singapore has a policy-driven homeownership rate of close to 90 per cent, and Lee Kuan Yew, the first prime minister of independent Singapore, remains a strong advocate of the social and political benefits of homeownership:⁴

My primary preoccupation was to give every citizen a stake in the country and its future. I wanted a home-owning society. I had seen the contrast between the blocks of low-cost rental flats, badly misused and poorly maintained, and those of house-proud owners, and was convinced that if every family owned its home, the country would be more stable...I had seen how voters in capital cities always tended to vote against the government of the day and was determined that our householders should become homeowners, otherwise we would not have political stability. My other important motive was to give all parents whose sons would have to do national service a stake in the Singapore their sons had to defend. If the soldier's family did not own their home, he would soon conclude he would be fighting to protect the properties of the wealthy. I believed this sense of ownership was vital for our new society which had no deep roots in a common historical experience.

Although the perceived social and political benefits generated by homeownership are by no means universal and the empirical evidence of positive externalities is not overwhelming,⁵ providing

subsidies to middle-income households to own their homes is often justified on the basis of these arguments.

Housing as a merit good

An extension of the positive-externalities argument for housing policy involves the idea of housing as a merit good. A merit good is defined as a commodity that an individual should have; it is based on society's judgment of need rather than on the individual's perception or ability and willingness to pay. Similar to basic education, housing is regarded by many societies as a merit good with minimum standards that should be accessible to households unable to afford the market price of housing. The merit good justification lies behind policies of targeted assistance for health, nutrition, housing and basic education for lower-income households. The argument, with its emphasis on inclusiveness, is implicit in the housing rights pronouncements of UN-HABITAT and housing policy goals of governments in most developed countries. The US Housing Act of 1949 states as a goal of housing policy "to provide decent, safe, and sanitary living environment...for every American". The provision of social housing constitutes an important component of welfare policies of many countries in western Europe and in East Asia.⁶ The minimum standards set, as well as the resources to make such housing available for everyone in the lowest income group, depend on the extent of redistribution policies and fiscal wealth in the country concerned.

Transaction costs and information asymmetry

A more recent view of housing market failure focuses on housing market imperfections and frictions arising from large transaction costs and incomplete information. Transaction costs in housing include search costs, moving costs and legal and real estate agent fees, as well as transaction or turnover taxes, depending on the jurisdiction. Asymmetric information can cause market failures when buyers doubt the quality of the assets (adverse selection) or when principals cannot closely observe the actions of their agents. Transactions may take place in the presence of asymmetric information about the characteristics of the housing unit, the reliability of the real estate agent and the traits of the landlord and tenant, as well as about market prices and uncertainty regarding future trends.

These costs result in imperfect competition and incomplete contracts that can lead to vacancy and turnover rates that deviate from the optimal outcomes.⁷ In instances when collective action may be in the interest of each member of a group, the absence of a means of coordination (which could be due to transaction costs and information problems) leads to this equilibrium being unattainable.

Housing market information

In the past decade, the Internet has played a major role in reducing search, information and coordination costs. In principle, governments can play an important role in enhancing the efficiency of local housing markets through appropriate intervention and regulations. These include the provision of timely information on local housing market conditions (rents, prices, vacancy rates, available stock and supply, etc.). The collapse of the real estate sector played a significant role in the Asian financial crisis of 1997. The quality and coverage in many Asian real estate markets prior to the crisis have been described as “grossly inadequate”. As has been observed, for example: “It was fragmentary, often of an approximate nature, and rarely timely... For instance, in Thailand the supply of new offices was a multiple of the actual growth of office employment for several years in a row. Vacancy rates were a well kept secret, as nobody seemed to worry about them...”⁸ Subsequent to the crisis, governments of countries most affected by the crisis made a concerted effort to create institutional arrangements for public agencies, financial institutions and real estate professional organizations to collect, share and publish information on a timely, as well as constant, basis. For example, REALIS, the comprehensive online real estate information database maintained by Singapore’s Urban Redevelopment Authority, was launched a few years after the Asian financial crisis, and many of the time series date back only to the 1990s.

Rental market information

The extent of government intervention in reducing transaction costs and information asymmetry, especially in rental markets, varies tremendously from one jurisdiction to the next and partly explains differences in perceptions of renting as a viable long-term option. Governments could establish legal frameworks for transactions and leases as well as require the maintenance of registers of landlords

and tenants and the regulation of real estate agents. Pro-tenant laws include habitability laws, laws against tenant discrimination, and rent regulations, as well as just-cause and anti-speedy eviction laws. In Switzerland, where more than 60 per cent of households rent, the system is designed to support long-term rental tenure, and landlord-tenant laws provide substantial protections for tenants, including restrictions on rent increases and eviction.⁹ A number of other European countries, notably Germany, Sweden and Denmark, have large rental sectors that are organized along social market lines, with rules to minimize landlord discrimination between households and the integration of profit and nonprofit forms of ownership in one market.¹⁰

The desirability of regulating landlord-tenant relationship and its implications for housing market efficiency continues to be open to debate. Within the UK, a landlord register exists in Scotland. Plans for a mandatory landlord registration scheme, compulsory written tenancy agreements and regulation of letting and managing agents for England were announced by the Labor government in 2009. The objective was to raise standards, protect deposits and improve conditions for tenants.¹¹ The proposals were, however, criticized by landlords for introducing excessive red tape, and the new coalition government in 2010 subsequently decided against turning the proposals into law.

Financial market information

Information frictions also featured prominently in the run-up to the 2008 financial crisis. Many financial institutions did not have the information to assess the risks they were exposed to in the event of one firm failing. In the face of such opacity of positions and great uncertainty and fear, the rush for the exit can lead to financial instabilities such as bank runs, retail and wholesale credit crunches, liquidity problems and asset fire sales. While rational for the individual depositor or financial institution, individual actions to protect assets, remain solvent or mitigate risk can have negative spillover effects for the rest of the financial sector. The belief that there is going to be a panic can itself become self-fulfilling and can lead to a systemic crisis. Chapter 9 will deal more extensively with bubbles and panics, and Chapter 10 with the implications for banking and financial sector regulation.

Risks

The real estate development process involves land assembly, construction, financing and eventual lease or sale to end users. The risks involved for the developer increases with the scale of the project and the length of the development process. The risks include those related to land values, holdouts in the land assembly, planning and building approval, construction costs, quality and delays, revenues, interest rates and financing availability, political and regulatory, partnership arrangements, incomplete contracts, legal difficulties, tax issues, market volatility and possibly unique project risk. Many of the risks involved are business risks that, while inherently higher for real estate developments, can be hedged or insured against or are compensated for by the higher interest rates that lenders charge and by expected higher returns for developers and investors. Other risk-mitigating measures, such as selling and letting before completion, allow a developer to test the market and also reduce financing costs and revenue risk.

Market failure could be present when risk is overpriced, when developers lack access to capital markets or when markets for insurance or hedging are inadequate or missing. Brownfield redevelopments, urban regeneration and low-income housing projects may be more vulnerable to the exaggerated public perception of risks.¹² A solution to this could be the government's involvement via a partnership arrangement or the setting up of a special semiautonomous authority to facilitate and coordinate private investment. Situations where capital and insurance markets are underdeveloped or missing may justify government involvement to provide access to capital for housing finance and to provide guarantees against default, respectively.

While overpricing of risk results in too little investment, underpricing risk because of incentive problems, excessive optimism, overconfidence or herd behavior can result in excessive leverage and the development of asset bubbles. We consider the arguments for why housing bubbles should be considered as market failure in Chapter 9.

Market power of large housing developers

High-density real estate developments, the main residential form in Asia's rapidly growing cities, are far more capital intensive and

complex than the building of low-density dwellings. In such a setting, large established firms enjoy an incumbent advantage over smaller firms or newer entrants. Lenders typically favor large, highly experienced firms that enjoy lower borrowing costs. Larger development firms could also be listed companies which have access to equity capital and which do not need to tap the capital markets on a project-by-project basis. Other advantages of size include possession of land banks that allow these firms to spread their activities across several cycles and permit longer-term planning. Large firms are also better able to deal with planning risks, land acquisition risk, market risk and financial risk, as well as capture the externalities of their own development.¹³

As local knowledge and networks are important, real estate firms have a competitive advantage and hence a preference for investing in their local area or submarket. As a consequence, real estate markets at the local level tend to be dominated by a small number of firms, while the market concentration level at the national level tends to be low. Shilling and Sing have also noted that in mass-market housing where properties are highly substitutable, it is less costly for the developer to increase capacity in order to capture market share, deter entry and earn a monopoly return.¹⁴ The low cost housing markets in many countries thus tend to be monopolized by a single developer. In the mid- and higher-priced condominium segment, housing is more differentiated and buyers more price sensitive and demand elasticity is high; this segment tends to be characterized by an oligopolistic market structure.

This oligopolistic structure of the real estate developer industry raises concerns which include possible collusive practices amongst developers and the potential for above normal profits and prices.¹⁵ Where such concerns are sufficiently significant, some governments have taken on the housing developer role or have pursued public-private contractual partnership arrangements (see Chapters 7 and 8).

Speculators

In his seminal treatise *Progress and Poverty*, which was published in 1879, the American politician and political economist Henry George theorized that land speculation results in large-scale land withholding, with serious consequences for efficiency and equity.¹⁶

Without the land speculator exerting any effort, economic growth, population growth and urban development cause land values to grow over time. Speculators buy as much land as possible in anticipation of increasing land prices. This leads to the formation of large landholders, or “land monopolists”, who withhold good land from use. The underutilization of land is not only inefficient but also regressive, as it prevents the working class from sharing in the benefits of population growth and improved technology. In the current context, in addition to “large land bank speculators”, “bandwagon speculators” exacerbate demand-driven swings in real estate by betting on additional price changes, leading to too many transactions rather than too few.¹⁷ The waves of speculation in real estate markets can be destabilizing, contributing to bubbles and bust cycles.

George’s solution to the perceived market failures was a proposal for a single 100 per cent tax on land values to replace all other forms of taxes. His view was that since the supply of land is fixed, a land value tax is the least distortive tax – it would allow the government to appropriate land values for social purpose and simultaneously eliminate speculation in land. Although George was unable to garner widespread acceptance of his single-tax proposal, his views on land value taxation and real estate speculation have found support in many countries around the world. The list includes the governments of many Asian countries such as South Korea, Hong Kong, Taiwan and Singapore. In the case of Singapore, land value appropriation through government acquisition of land and the leasing of state land via auctions constitute alternative forms of land value capture by the state. In Hong Kong, as well, where all land is state owned, receipts from government sale of leasehold land for development are an important source of government revenue.¹⁸

Gridlocks in real estate

The problem of negative externalities such as pollution, congestion and overutilization of common resources has been described by ecologist Garret Hardin as “the tragedy of the commons”.¹⁹ Other than government regulation, the main approach has been to privatize and assign clear property rights. Michael Heller in his 2008 book, *The Gridlock Economy*, expounds on the flip side of the problem – market failure when ownership rights and regulatory controls are

overly fragmented. Although Heller identifies “the tragedy of the anti-commons” in various sectors of the economy such as airwaves, runways and patent assembly, it is in urban real estate that the problem of gridlock is most visible.

Fragmented ownership and the tyranny of the minority

The skyscrapers that are synonymous with the modern cityscape enable cities to grow and industries and businesses to expand. While construction costs per square foot can be marginally higher for taller buildings, by building up and economizing on land use, skyscrapers can make a major difference to the supply and cost of urban space. Skyscrapers and other large urban development projects often require a developer to assemble a number of contiguous land parcels owned by different persons into a larger buildable site. Yet, in many instances, fragmented ownership of land can become an insurmountable barrier in the land assembly process. When developers try to purchase the required minimum area of land through a private bargaining process, a few owners may decide to hold out by refusing to sell or insisting on a higher price without taking into account the costs imposed on the other owners or on society at large. This situation can be described as the tyranny of the minority. The result is a gridlock; the land is underutilized, its real value cannot be unlocked and the redevelopment of the city is made more difficult.

Cases of holdout in the urban renewal process abound. There is an entire book devoted to the subject of architectural holdouts in New York City.²⁰ In Japan, holdouts delayed the rebuilding of Kobe after the 1994 earthquake, and at Narita Airport, the refusal of a few farmers to move has put the completion of a runway on indefinite hold. In China, the term “nail houses” is used to refer to residents who refuse to move out of an area that is being cleared for new real estate development. As land ownership tends to be more dispersed in built-up areas, the holdout problem could cause developers to be biased towards locations on the city fringe, where land ownership is more consolidated. This market failure could thus further contribute to urban sprawl.²¹

Government intervention can help solve these problems by public takings under the doctrine of eminent domain. Eminent domain allows a government to take a resource for public use after paying just compensation to the private owner. In 2002, the *New York Times* was

able to persuade New York City to use eminent domain to acquire a site in Times Square from fourteen landowners for its new headquarters.²² There is (understandably) heated debate on the appropriate extent of government's use of eminent domain powers in the USA, with several states enacting legislation to provide for stronger protection for property owners. A less blunt approach would be for governments to facilitate forms of common private property ownership and joint decisions via appropriate legislation. Examples include condominiums, cooperatives, ownership by large professional real estate companies and REITs, business improvement districts and land assembly districts.²³

BANANA

In the UK and the USA, NIMBY groups have evolved and grown into BANANA movements – a real estate acronym for “Build Absolutely Nothing Anywhere Near Anything”. Michael Heller uses the term “BANANA republics” to describe the obstacles to real estate development arising from the maze of regulations imposed by multiple layers of government and multiple departments within a single layer.²⁴ These regulatory constraints represent a form of government failure that holds up the construction of new housing and drives up housing prices.

Overcoming real estate gridlock in Singapore

In this section, we consider a case study of how Singapore overcame real estate gridlock in the 1970s in order to redevelop its historic central area into a modern financial district. Although the case involves commercial real estate, the policy changes and instruments deployed are also of relevance for residential real estate redevelopments.

Government land acquisition

Singapore is a tiny country – an island city-state with a population of 5.3 million and a total land area of only 714 square kilometers. With scarce land resources, over 90 per cent of the housing stock is in high-rise apartments, and there is little room or tolerance for holdouts, NIMBY and BANANA gridlocks. The state owns about 90 per cent of all land today, up from about 44 per cent in 1960. The approach of government land acquisition began in 1965, when the

country faced severe unemployment and an acute housing shortage and after separation from Malaysia. State ownership and control of land were considered essential to economic development and building public housing on a large scale.

In 1966 (Singapore became an independent nation-state in 1965), the government enacted the Land Acquisition Act, which permitted the state and its agencies to acquire land for any public purpose, for any work or undertaking of public benefit or utility or in the public interest or for any residential, commercial or industrial purpose. A 1973 amendment set payments independent of market conditions and the landowner's purchase price. Between 1973 and 1987, compensation for acquired land was assessed at the market value as at 30 November 1973 or the date of gazette notification, whichever was lower. Rent control (a legacy of the postwar housing shortage) further depressed land values for affected properties. Subsequent amendments to the act gradually changed the statutory date used for pegging compensation, which is currently at market rates. The Land Acquisition Act effectively reduced the cost and greatly simplified the process of urban renewal and housing provision, as well as the setting up of industrial estates and transport infrastructure.

Building a modern financial district

In 1968, with the impending withdrawal of British forces from Singapore in view, the government made the decision to establish the Asian Dollar Market in Singapore and to attract foreign financial institutions to set up operations there. This move provided the impetus to develop modern commercial space within a central financial district.

The Controlled Premises (Special Provisions) Act was enacted in 1969 to encourage private owners of properties to redevelop their properties. The act allowed rent controlled premises situated in a "designated development area" to be recovered by the owners for development purposes. Under this form of decontrol, known as block decontrol, the owners of controlled premises in the designated area could apply to the Tenants Compensation Board to recover possession of their properties. They also had to demonstrate that funds were available for the development. The act provided for the compulsory acquisition of these properties if the owner failed to begin improvements within six months of recovery of possession of the premises.

Thirty-five hectares of commercial land in the heart of the CBD involving 770 properties were designated for block decontrol in 1970. This tract of land became known as the “Golden Shoe” area due to its high value and shape. It was selected for decontrol because of its proximity to vacant reclaimed state land that was immediately available for development (Shenton Way) and because of its location in the traditional commercial district of Raffles Place.

The Tenants Compensation Board received a total of 209 applications for development of premises in the Golden Shoe area between 1970 and 1989. Of these applications, 112 were filed by the end of 1972. By 1975, 13 projects were completed, 14 were under construction and 9 were approved and waiting for work to begin.

The government, however, felt that the progress made was too slow. There were too many landowners, each having small plots. Where redevelopment did not occur, the government acquired, amalgamated and then sold the land concerned. A total of 215 lots of fragmented ownership (amounting to 31,700 square meters), which were considered unsuitable for private independent development, were acquired by the government in 1975. Despite the threat of compulsory acquisitions, some owners remain reluctant to amalgamate; others were absentee landlords living in India, Sri Lanka or Arabia.²⁵

In July 1979, the Ministry for National Development stated that if owners of private properties failed to respond to the government’s encouragement, the Urban Redevelopment Authority (URA) might have to step in to ensure redevelopment. In December 1979, the ministry issued policy guidelines on the size of development to achieve bigger and more comprehensive development:

- a) Proposed development smaller than 8,000 square feet (748 sq m) should not be approved unless the adjoining site had already been developed and there was no possibility of enlarging the site.
- b) For any proposed development with adjoining state land of a smaller size, the developer would be asked to purchase the state land for a larger development.
- c) If the proposed development was smaller than 8,000 square feet and adjoining another piece of private land, both parties should be advised to combine their land. If the agreement could not be reached, then the government would acquire both pieces of land.

- d) If there was any private land smaller than 8,000 square feet adjoining a larger piece of state land, then the private land should be acquired to be amalgamated with the state land for future development.

The government issued a second statement in January 1980 announcing that compulsory acquisition would be considered if plans were not submitted within three months. In March 1980, all lots belonging to owners who did not comply or whose proposals were refused were compulsorily acquired. In 1982, after the decision was made to build Singapore's first MRT system, another round of acquisition was implemented to facilitate redevelopment of properties at Raffles Place MRT station.²⁶ Between 1970 and 1985, more than 60 projects were completed, of which 80 per cent were by the private sector and the remainder on sites sold by the URA on behalf of the state. The Golden Shoe redevelopment is an example where the government provided a mechanism targeted at promoting private development and, when it did not occur despite all its best efforts, it stepped in with direct action, including compulsory acquisition, amalgamation of land, and its own sale.

Redevelopment of strata title properties

The Land Titles (Strata) Act of 1968 in Singapore governs buildings (primarily condominiums) that are divided both horizontally and vertically in accordance with an approved strata title plan. Such subdivision facilitates dealings or dispositions by the individual owners of their interests in the units which have been created by the subdivision. Prior to 1999, the act required that all the strata title property owners *unanimously* agree to a sale if the entire development were to be sold for redevelopment (known as an en bloc sale). Many sales had to be aborted when a minority (in some cases, just one) of the owners refused to participate in the sale.

Frustrated owners appealed to the government, and, in 1999, the Land Titles (Strata) Act was amended to facilitate collective sales. Parliament accepted the concerns of the majority as legitimate, and the actions of dissenting minority owners were described as "impeding efforts to maximize the development potential of en bloc sale sites and preventing the rejuvenation of older estates".²⁷ To make it easier for en bloc sales to succeed if the majority of homeowners in a

development wanted it, so that more prime land for higher-intensity development could become available, Parliament passed amendments to the act that changed the 100 per cent requirement to a majority vote. The new provisions applied only to strata developments with more than 10 units. Where a development is less than 10 years old, there must be 90 per cent agreement; for developments 10 years old or more, at least 80 per cent agreement will suffice for collective sale (both figures based on share values). The Strata Title Board would review applications for collective sales.

The amendments have been criticized as “radical in nature” and “an abrogation of fundamental property rights” as, unlike compulsory acquisition by the state, there is no self-evident “public interest/benefit/utility”; neither is the state involved in the “taking”. Despite these criticisms, the 1999 amendments did remove gridlock in many collective sales and facilitated the redevelopment of many sites.²⁸

Implications of market failures

This chapter has been devoted to an extensive review of the possible sources of market failure in housing markets. The perception of the housing sector as noncompetitive, inefficient and fraught with failures is often used to justify extensive government intervention in housing markets and in housing finance and financial systems. The next part of the book reviews the main categories of instruments used for the implementation of housing and housing finance policy.

Part II

Review of Housing Policy Instruments

The numerous housing market failures, as discussed in Chapter 3, serve as justifications for government intervention in housing markets. The extent of intervention and choice of housing policy framework for each country reflect a combination of factors spanning ideology, politics, history and culture, and the social-political objectives of governments. Part II of this book (comprising Chapters 4 to 8) presents the main categories of microeconomic policies used for intervention and includes short descriptions of how each works where it has been implemented. The housing finance sector impacts the financial sector as well as the wider economy, and, to this end, macro-prudential policies will be covered in Chapter 10. The first category of instruments we discuss in Chapter 4 relates to “taxes and subsidies”. These can work on both the supply (housing production) side and demand (household) side of the market. Supply-side policies play an important role, particularly in markets with serious housing shortages or a relatively inelastic supply of housing. Demand-side subsidies are more suited to markets with an elastic supply of housing and need to be carefully crafted to avoid escalation of house prices.

These market-based incentives (taxes and subsidies) are often complemented by direct regulations (discussed in Chapters 5 and 6), which include regulations on housing markets and housing finance mortgages and institutions. In some countries, governments intervene in the housing market or housing finance markets by establishing a government agency or state-owned enterprise (discussed in Chapter 7). The government could also choose to collaborate with the private sector for the delivery of housing services through a

public–private partnership agreement (discussed in Chapter 8). The rich diversity of instruments is summarized in Table II.1.

The choice of housing policy instrument is highly dependent on policy goals, the country's stage of development and specific market conditions. As early as 1919, Britain was the first country in western Europe to embark on a subsidized public sector housing program.

Table II.1 Classification of housing policy instruments

Taxes and subsidies (Chapter 4)	Market regulation (Chapters 5 and 6)	Housing institutions (Chapter 7)	Public–private partnerships (Chapter 8)
Supply-side subsidies: – Tax and other concessions for housing developers, construction industry and suppliers of inputs Supply-side taxes: – Betterment taxes or development charges Demand-side subsidies: – Rental allowances – Housing grants – Direct mortgage subsidies – Mortgage interest tax deduction – Shared appreciation mortgage Demand-side taxes: – Property taxes – Transaction taxes – Capital gains taxes	Housing market: – Rental regulations – Planning regulations – Price, quantity and quality regulations – Eligibility regulations – Transaction/mobility regulations Regulation of housing finance: – Mortgage product regulations – Housing finance institutions – Contractual savings for housing schemes – Securitization – Covered bonds – REITs Macro-prudential regulations (Chapter 10)	Government agencies, government sponsored private enterprises and state-owned enterprises: – Public housing authorities – Housing developers – Housing banks and non-banks operating in primary and secondary mortgage markets – Housing provident funds – Government insurance companies	Project specific: – Specific housing projects or housing schemes – Urban regeneration – Leasing of state land to private developers Mega PPPs: – Area development – City-scale – Charter cities

Countries with social housing policies where the government plays an important role in aiding selected groups in the population who cannot secure housing for themselves include Belgium, India, Ireland, Japan, Switzerland, the UK and the USA. Some countries have moved toward a comprehensive commitment, where governments play a major role in shaping and controlling the housing market to ensure housing affordability and welfare. These countries include Denmark, France, Germany, Hong Kong, People's Republic of China, South Korea, the Netherlands, Norway, Singapore and Sweden.

Housing policies may be tenure neutral or biased toward rental or homeownership. Within a housing system, it is possible for housing and tax policy to favor the rental sector for lower-income segments and for homeownership to be a great advantage for the middle- and higher-income segments.¹ A particular housing policy objective such as encouraging homeownership can be designed and implemented in many forms and using multiple instruments. These include direct interest rate subsidies, state support for housing-related savings schemes, mortgage interest payments that are tax deductible,

Table II.2 Government interventions to promote homeownership

Mortgage interest tax deduction	Direct interest subsidies	Contractual housing savings schemes	Housing provident funds	Insurance or guarantees	State-owned housing finance institutions
Belgium	Czech Republic	Czech Republic	Brazil	Brazil	Algeria
Finland	France	France	China	Canada	Brazil
France (abolished in 1998)	France (from 1977)	France	Malaysia	France	Chile
Hong Kong	Hungary (2000–2005)	Germany	Mexico	Hong Kong	India
India	Hungary	Hungary	Nigeria	Jordan	Iran
Netherlands	Japan	New Zealand	Philippines	South Korea	South Korea
Spain	India	Slovakia	Singapore	Lithuania	Japan
Switzerland	Japan (1950–2007)	UK		Malaysia	Singapore
UK (abolished in 2000)	USA (1968–1973)			Netherlands	Thailand
USA				Sweden	Tunisia
				USA	

Source: Sock-Yong Phang, "Housing Subsidies", Asian Development Bank, Housing for Integrated Rural Development Investment Program in Uzbekistan (RRP UZB 44318), 2011.

state-sponsored insurance or guarantees of credit risk associated with housing loans (or for securitization or liquidity facilities) and augmentation of finance to the housing sector through housing finance institutions.² An illustrative list of the countries that have adopted various forms of intervention to promote homeownership is provided in Table II.2.

4

Taxes and Subsidies

This chapter reviews the use of taxes and subsidies as instruments of housing policy as these are the most commonly utilized instruments that operate through markets. The housing sector is affected by a large variety of taxes and subsidies. Other than direct taxes and subsidies, in many developed countries, subsidies are funded through tax relief in the form of exemptions, deductions and credits (collectively known as tax expenditures). These provisions vary greatly across countries, depending on government policy objectives with regard to housing. These objectives include (i) support for low-income households; (ii) support for homeownership; (iii) housing supply and investment incentives that are tenure neutral or favor either renting or owning; (iv) raising revenue for local governments, (v) reducing housing wealth inequalities; and (vi) ensuring less-volatile house prices.

Taxes and subsidies for landlords and tenants, as well as for homeowners, can have a different impact on rent and user cost of capital and therefore for housing consumption and tenure decisions. The net welfare effects of such taxes and subsidies can be substantial with implications for income and wealth distribution, savings and investments, as well as intergenerational equity. We will first discuss subsidies that operate through the supply side of the housing market. We will then proceed to consider demand-side subsidies and taxes.

Supply-side subsidies

Supply-side subsidies increase the physical supply of housing and can be used by the government to incentivize the private sector to

develop, rehabilitate and/or manage affordable housing. Supply-side programs are location specific and lower market rents indirectly by increasing the overall supply of housing.

In the USA, tax credits provided to private developers to supply low-income housing is considered to be more efficient than direct government provision through public housing (this topic will be discussed in Chapter 7). In 1986, the US federal government instituted the Low Income Housing Tax Credit (LIHTC) program, which allows a builder of low-income housing to earn an annual credit of 9 per cent of the project cost attributable to low-income housing. The builder enjoys the annual credit for up to 10 years and needs to abide by set-aside restrictions for 15 years. The set-aside restrictions are for at least 20 per cent of the rental dwellings to be occupied by households with incomes no more than 50 per cent of the median area income, and 40 per cent to be occupied by households with no more than 60 per cent of the median area income.¹ The maximum rent that eligible low-income tenants can be charged is 30 per cent of the maximum eligible income, which is 60 per cent of the area's median income, adjusted for household size.

A review conducted after 25 years concluded that the LIHTC has had a successful track record. Between 1987 and 2008, more than US\$75 billion was estimated to have been invested in LIHTC transactions. Investors are generally sophisticated institutional investors, and the vast majority of projects receive in excess of US\$1 million in tax credit.² The foreclosure rate is low as is the incidence of noncompliance with program rules.

Under two other subsidy programs, Project Based Section 8 and Section 236, the US government signs long-term contracts to provide payments to property owners to encourage the supply of low-income rental housing. The owner is guaranteed fair market rent: the eligible tenant household contributes 30 per cent of its income, with the government making up the difference between this and the fair market rent. The subsidy remains with the property, and the residents receive the subsidy only while they live in that property.

Charges on new developments or redevelopments levied by local governments can be used as an instrument to affect the costs and profitability of projects. Known variously as development charges, impact fees and betterment tax, the revenues from these one-time

charges can be considered as user-related revenue to provide the necessary local public goods and infrastructure for a new development or as a tax on the value of land created by the community. The variation of these charges by type of development or within the same class of property can be used as an instrument to encourage new construction or redevelopment or to attract new business investments to a locality. Conversely, when set at unrealistically high levels, these charges can constitute the equivalent of a policy limiting urban growth.

Demand-side subsidies

On the demand side, housing enjoys a tax-favored status in most countries. A return on housing capital to homeowners, the imputed rent, is generally not taxed while return to business capital is taxed at a relatively high effective rate. If regarded as consumption, again, homeownership receives favorable treatment as imputed rent does not attract a consumption tax. New construction and/or repairs are also exempted from value-added taxes in many jurisdictions, although there is variation in treatment. In the low-income housing segment of the market, instead of subsidizing builders or owners to increase the supply of low-income housing, subsidies can be given to households in the form of rental vouchers or housing grants or subsidized loans or by way of tax benefits for homeowners.

Demand-side subsidies when introduced can indirectly raise market rents or prices when vacancy rates are low and supply of housing is inelastic. In countries or cities with inelastic housing supply, demand-side housing subsidies are likely to be offset via their capitalization into higher housing prices. This section provides some examples of the varied designs of demand-side housing subsidies.

US Housing Authority Section 8 rent vouchers

In the USA, Housing Authority tenant-based Section 8 vouchers constitute the foremost demand-side subsidy and are provided for an eligible household to occupy a dwelling that meets minimum quality standards. The value of the voucher is the fair market rent minus the 30 per cent of the household income. The fair market rent is defined as the 45th percentile of rents in the metropolitan area. Housing vouchers allow the recipients to make their own housing

consumption and location decisions. It can be combined with LIHTC subsidies as well as other subsidies.

Housing grants

The US Department of Housing and Urban Development has also developed programs that provide housing grants to assist first-time home buyers. This include the American Dream Down Payment Initiative (signed into law in December 2003 for fiscal years 2004–2008), which provided assistance for down payments and had a maximum limit of US \$10,000 or 6 per cent of the home's purchase price, whichever was greater.³

The Australian government introduced a first-time homeowner grant in 2000; the one-off grant of up to A\$7000 is payable to first-time homeowners that satisfy eligibility criteria. The government provided a temporary boost to the scheme between October 2008 and September 2009 to stimulate the housing market during the global financial crisis. An extra A\$14,000 was given to first-time homeowners buying or building a new home, and an extra A\$7,000 was awarded for purchase of established homes.

In 1994, the Singapore government introduced its first demand-side housing subsidies in the form of one-time CPF housing grants to assist first-time owners with the purchase of resale Housing and Development Board flats. This was a shift from total reliance on subsidies tied to new flats to a hybrid system where subsidies were also made available for resale flats. With the modifications and new schemes that were introduced after 1994, the current housing grants for eligible households vary on the basis of whether the flat is new or a resale and its proximity to the residence of parents or a married child, as well as citizenship status, marital status and household income (see Table 4.1).

US tax treatment of homeownership

The USA is well known for generous tax breaks for the promotion of homeownership. A homeowner's imputed rental income is not included as income for tax purposes, while mortgage interest payments for the first and second homes (up to a limit of one million dollars) are deductible as personal expenses from gross income. Capital gains are essentially untaxed, and property taxes on owner-occupied houses are also deductible as personal expenses. Mortgage interest

deduction represents the largest housing subsidy item provided by the US federal government and is estimated to cost the government US\$87 billion in tax expenditures (estimated to be around 0.6 per cent of GDP) for 2012.⁴ The benefits increase with household income under a progressive tax system as wealthier households also tend to have larger mortgage payments.

Beyond these subsidies to homeownership which benefit all owner-occupants, the USA also provides additional subsidies to specific groups of homeowners under programs administered by state and local governments.⁵ US states are allowed to issue tax-exempt mortgage revenue bonds and use the proceeds to provide mortgages at lower tax-exempt interest rates. Another program allows state governments to issue and distribute mortgage credit certificates (MCC), which recipient homeowners can use to claim a tax credit for some portion of the mortgage interest paid, rather than the tax deduction. The MCC program is the largest of all state-administered housing programs in California.⁶

Shanghai's tax incentive for housing

In May 1998, in the wake of the Asian financial crisis and with plans for the development of the Pudong district, the Shanghai municipal government provided generous tax incentives for local individuals and expatriates (who file returns in Shanghai) to purchase residential properties.⁷ During the five-year period 1 June 1998 to 31 May 2003, the entire purchase price, including payments of principal and interest on mortgage loans, could be deducted for individual income tax purposes. Spain allows an income tax deduction against the cost of purchasing a permanent home including mortgage payments (for both principal and interest). The deduction is 15 per cent of the expense up to a maximum expenditure of €9,015 in any given year.⁸

Direct mortgage interest subsidies

Countries that have utilized direct interest subsidies to promote homeownership include France, Hungary, the USA and Japan. In Japan, the direct interest subsidies were channeled through the state-owned Government Housing Loan Corporation.

A significant 42 per cent of French homeowners have been supported by a direct subsidy covering part of the mortgage payment and/or by

Table 4.1 Singapore's housing grants (2012)

CPF housing grant and amount in Singapore dollars	Grant as % of average price of 3-room new HDB flat*	Grant as % of average price of 3-room resale HDB flat*	Eligible housing schemes	Eligible households/individuals (The monthly income must not exceed S\$10,000 for households and S\$5,000 for singles.)
Family grant S\$30,000	17%	9%	Resale HDB New DBSS New EC	Married couples who are first-time applicants. The monthly household income ceiling for EC is S\$12,000.
Higher-tier family grant S\$40,000	23%	12%	Resale HDB	Married couples who are first-time applicants and buying a resale flat near their parents//married child's HDB flat or owner-occupied private residential property.
Singles grant S\$15,000	9%	5%	Resale HDB	For single applicants aged 35 and above who buy the resale flat to live on their own, or two to four single citizens aged 35 and above who jointly buy a resale flat. For married Singapore citizens aged 21 and above buying a resale flat under the noncitizen spouse scheme.
Higher-tier singles grant S\$20,000	12%	6%	Resale HDB	For single citizens aged 35 years and above buying a resale flat to live in with their parents.

Additional housing grant \$5,000 to \$40,000, depending on income	3–23%	2–12%	Resale HDB New HDB	Applying for a CPF housing grant for family or a CPF housing top-up grant. The average gross monthly household income for the one-year period must not exceed \$5,000.
Special housing grant \$5,000 to \$20,000, depending on income	3–12%	N.A.	New 2- or 3-room HDB flats in non-mature estates	Applying for an additional housing grant. The average gross monthly household income for a one-year period immediately before the flat application must not exceed \$2,250.

*The average price for a new 3-room HDB flat in 2011 (\$\$172,150) is obtained from the HDB Annual Report 2010/2011. The average price for a 3-room resale HDB flat in 2011 (\$\$328,224) is obtained from the CEIC Database.

Notes: Exchange rate in November 2012: US\$1 = S\$1.22. HDB refers to the Housing and Development Board. CPF refers to the Central Provident Fund through which the housing grants are disbursed. DBSS refers to Design, Build and Sell Scheme; EC refers to Executive Condominium Scheme. Both are PPP arrangements.

Sources: For details of the various schemes and prices, see the HDB website, <http://www.hdb.gov.sg/fi10/fi10321p.nsf/w/BuyingNewFlatSHG?OpenDocument>, and <http://www.hdb.gov.sg/fi10/fi10321p.nsf/w/BuyResaleFlatCPFGrant>,

loans at below market rates.⁹ Before the mid-1990s, help to low-income homeowners was mainly achieved through government-provided loans (PAP and PC). Between 1977 and 1984, nearly 60 per cent of the new mortgaggers benefited from them, and the ownership rate increased markedly as a result. Their popularity can be attributed to the fact that the high inflation during that period made real interest rates negative. From 1984 onward, the situation changed. Inflation fell, but not the interest rates of the government-provided loans. Thus, real interest rates increased sharply. The private credit system was able to propose loans at lower rates than subsidized ones, although the main problem for low-income families was perceived to be restrictive lending due to the perceived risk of default.

In 1995, PAP was replaced by an interest-free loan (PTZ)¹⁰ of around €15,000, granted to first-time buyers (eligibility is means tested) to complement the other credits. This is effectively an upfront down payment subsidy. It cannot exceed 20 per cent of the purchase value and 50 per cent of the total credit and can be repaid only after all other loans are totally repaid. PTZ is available along with PAS and PC. PAS is a government loan within income and house price limits, with a lower interest rate and a housing grant to cover part of the monthly payment. PC is a preferred-rate mortgage loan, made by banks or financial institutions under contract to the government. Dwelling but not income tests apply.

Demand-side taxes

Other taxes also affect housing demand and the functioning of the housing market. Many countries levy fees and taxes on real estate transactions and capital gains taxes, as well as property taxes.

Stamp duty

Real estate transaction taxes include stamp duties and transfer and cadastral taxes. Together with broker fees, transaction costs can contribute significantly to acquisition costs. These taxes may be levied on seller and/or buyer and vary widely across countries; they can be designed to vary by citizenship status, number of properties owned and value of the transaction, as well as the length of the ownership period (for sellers) in order to discourage speculative transactions. Stamp duty has also been used as a market stabilization

tool, whereby a higher rate is charged when prices are rising in order to dampen demand and a low or zero rate is charged when prices are falling (see Chapter 10 on macro-prudential policies).

VAT or GST

A value-added tax (VAT) or a goods and services tax (GST) is charged on most consumer goods and services in many countries which have implemented a consumption tax. Ideally, the tax should apply equally to the flow of housing services in the form of taxation on rents or imputed rental values. However, doing so may present practical as well as political difficulties. A second-best approach is to levy the tax on the value of new construction as a proxy for the VAT, payable on the future flow of housing services, although this means that future increases in the value of the exempt second-hand properties are left out of the tax base.¹¹ Housing also often enjoys favorable tax treatment vis-à-vis other categories of real estate. In the UK where the VAT is 20 per cent, construction of new residential dwellings is zero rated, and second-hand residential housing as well as rents for residential property enjoy exemption from VAT.

Capital gains taxes

Capital gains taxation may generate unintended lock-in effects. In many countries, realized capital gains from sale of housing assets are not treated in the same manner as capital gains from other assets such as shares. Profits made from the sale of first homes are often exempt from capital gains taxation (or taxed at a reduced rate), and homeowners also typically escape an inheritance tax for their principal residence. Before 1997, homeowners in the USA were subject to capital gains taxation when they sold their house unless they purchased a replacement home of equal or greater value. Since 1997, homeowners can exclude US \$500,000 of capital gains when they sell their houses.¹² Some countries vary realized capital gains taxes for residential properties by the length of period the property is held in order to discourage short-term speculation (see Chapter 10).

Property taxes

Depending on the tax regime, property tax can be based on rental income for landlords or estimated rental value for owner-occupiers or as a percentage of the assessed market value (with or without caps

on annual increases) or historical value of the property. The tax may be levied by the central and/or local government. Its importance as a source of revenue varies across jurisdictions and tends to be greater when relied upon as a source of revenue by local governments.¹³ In the USA, property tax is the most important source of tax receipts for local governments, accounting for more than 30 per cent of local tax revenue in 2009. The average property tax rate may then be viewed as a national tax on capital, and local deviations as user fees for local public services (of which public education ranks as the highest expenditure per capita item).¹⁴ The property tax remains a controversial proposal in China, where “under Chairman Mao, taxes on private property all but vanished along with private property itself”.¹⁵

In some countries, owner-occupiers may enjoy a concessionary property tax rate. Countries may also choose to adopt a progressive property rate structure with higher rates for properties with higher assessed values. Proponents of land value taxation have argued for the implementation of a two-rate variant of the property tax that imposes a higher rate on land than on improvements or taxes only the land value.¹⁶ Since land is in fixed supply, land value taxation cannot lead to a reduction in supply. It is thus both more efficient and more equitable than a property tax, which discourages investment in new structures as well as maintenance of existing structures.

5

Housing Market Regulation

This chapter reviews the government's market regulation of the housing industry and the purposes behind such regulation. Regulation is the use of government power to restrict or constrain the decisions of economic agents. Regulations and regulatory agencies can exist at both national and sub-national levels. Government regulation can be generally categorized into three main areas: regulation of competition (antitrust), economic regulation and social regulation.¹ *Antitrust* regulation supports competition and encompasses concerns with collusion or coordinated behavior, abuse of dominance and mergers that might arise when industries are concentrated. *Economic* regulation refers to government-imposed restrictions on firm decisions over price, quantity, quality, and entry and exit that are necessary in natural monopoly industries. *Social* regulation is justified where externalities, misaligned incentives or imperfect information may hamper decentralized markets from achieving the results deemed to be desirable by society.

In the traditional regulatory literature, housing markets are generally regarded as competitive markets with little need for antitrust or economic regulation. On the other hand, social regulation, which includes safety, environmental and planning regulations as well as newer regulations governing consumer protection and prevention of systemic risk, have become an increasingly prominent part of the regulatory mix. From the early 1980s, as part of the Thatcher government's privatization program, privatization of social housing has contributed to the transformation of housing tenure structure in the UK.² In the 1990s, privatization of previously state-owned housing

on a massive scale has also made major contributions to economic recovery and restructuring in eastern Europe and the former Soviet Union, as well as in China.³ In many of these instances, the government withdrew from these newly created housing markets and allowed market forces to subsequently determine prices, housing demand and supply.

Governments of most countries are extensively involved in regulating and intervening in housing markets. Well-designed and well-implemented regulatory policies are necessary to facilitate housing supply and stimulate private investment in housing. Conversely, poorly conceived regulations and deregulations can have costly consequences. This chapter reviews regulations in relation to the housing market: rental sector regulations, planning regulations, regulations on firm behavior, and regulations with regard to household eligibility and mobility. Rental sector and planning regulations have a long history, and in some form or other they are to be found in virtually all countries. More intrusive regulations, such as regulations governing pricing and output decisions of housing producers, as well as eligibility, resale and mobility regulations, are common in many East Asian countries.

Rental sector regulations

Rent control was first implemented in major Western European cities during World War I and subsequently throughout Western Europe and the USA during World War II. Much of the housing stock in Europe had been destroyed by the two wars, while the housing stock in the USA had been depleted as labor was diverted for the war effort. Rent control during this period was of the “first-generation” variety. It was a nominal rent freeze that resulted in a fall in real rents over time to levels significantly below the market levels. Without rent control, the severe housing shortage would have caused rents to skyrocket. A small group of landlords would then have been profiting at the expense of the majority.

Consequences of rent control

The two fundamental consequences of rent control are undersupply and misallocation of rental housing. Standard analysis of maximum price controls focuses on the problem of undersupply caused by a

simultaneous increase in the quantity of rental housing demanded and a decrease in the quantity of rental housing supplied. The lower rent attracts more renters but also deters landlords from letting. The latter situation manifests itself in a lack of maintenance and reduced construction of rental housing, thereby reducing the quantity of housing stock. This is accompanied by a decline in the quality of housing stock. This problem is mitigated when new construction and/or new tenancies are exempted from control, the result being the coexistence of a controlled sector with an uncontrolled sector.

In addition to the problem of undersupply, Glaeser and Luttmer⁴ draw attention to welfare losses from the misallocation of rental housing as another serious negative consequence of rent control in New York City. When shortages arise, a rationing mechanism, such as lotteries or queues, replaces the price system. An efficient rationing system will allocate the good to a consumer who values it most, but most rationing systems are unfortunately inefficient. For housing, rationing in the context of rent control does not ensure that the housing unit is leased to the tenant who values it most. Instead, the most evident rationing effect is that sitting tenants will hold on to their units at reduced rents even if their tastes and conditions change, while new renters are unable to find a desirable housing unit. The lack of incentive to move also leads to reduced household mobility.

Alternatively, misallocation can be caused by landlords who discriminate between tenants. Landlords may choose easy tenants (e.g., a widow) over “difficult” ones (students or a young family with children) or request “key money” from tenants (an illegal practice). Misallocation is further aggravated by the heterogeneity of housing as rent control may distort the relative prices of different types of housing. The study by Glaeser and Luttmer found that, among New York apartment renters, 21 per cent live in apartments with more or fewer rooms than they would have if they were living in a city without rent control. The misallocation was found to be most severe in Manhattan and greater for renters who had lived in their apartments for more than five years.

Rent control can indeed have perverse effects. In Mumbai, rent control, introduced in 1947, set rents for about 19,000 buildings at 1940 levels. As home prices climbed, rent-controlled tenants, who enjoy protection from eviction, became millionaires as developers

bought them out in order to tear down their crumbling properties to build high-rise towers.⁵

Rent regulation

Generally considered a bad policy in the long term because of their distortionary effects, pure rent freezes in most jurisdictions either have been completely abandoned or have been superseded by “second-generation” rent controls for which there are significant variations in design.⁶ Rent regulation entails a complex set of regulations governing not only allowable rent increases but also conversion, maintenance, and landlord-tenant relations. Rent regulation usually permits automatic percentage rent increases related to the inflation rate. It may also often contain provisions for other increases, such as cost-pass-through provisions, landlord-hardship provisions and/or rate-of-return provisions.

In many developed countries, regulations exist that prevent the eviction of tenants or their discrimination by landlords. In some US states, tenants can be evicted only for causes stipulated in the relevant just-cause eviction legislation; for instance, if the tenant fails to pay rent or if the landlord wishes to retire permanently. Anti-speedy eviction law protects tenants from sudden eviction by putting in place summary eviction proceedings. The US Fair Housing Act outlaws discrimination by race, color, religion, sex or national origin, and some states have statutes prohibiting age discrimination. However, laws that prohibit discrimination are difficult to implement in reality due to loopholes. Similar anti-eviction and anti-discrimination statutes or provisions can be found in other rental markets as well.⁷

Rent regulation offers much flexibility for governments to regulate and manage the rental housing market. Most European countries have adopted rent regulation in one way or another. In Sweden, for example, social precepts of entitlement and redistributive justice, as well as a sizable rental sector, have led to a highly regulated rent-setting framework that has often been criticized as inefficient and distortionary.⁸ Rent is determined by collective negotiation among private property owners, municipal property companies and tenant associations on the basis of a utility value system and is kept permanently below the market level, even for new tenancies.⁹ Tenant security and protection rules mitigate excessive rent increases. Sitting tenants hold an irrevocable lease and the right to stay in their

dwelling indefinitely, provided that they conform to the conditions of their lease and continue paying rent.¹⁰

Switzerland has one of the lowest homeownership rate among wealthy countries and the lowest in Western Europe. On its own, home ownership is expensive due to high housing prices (relative to household incomes and wealth), as well as to a tax on imputed rent. This is combined with rent regulation designed to support long-term rental tenure. Landlord-tenant laws offer tenants substantial protection, including restrictions on rent increases and eviction. Rents can be adjusted only to reflect higher operating and maintenance costs and interest rates. Evictions are allowed only when the landlord needs the housing unit for his or her family or when a major renovation requires the unit to be vacated. If the tenant can prove that an eviction would cause hardship for the tenant or the tenant's family, an extension of up to several years will generally be granted. Without government intervention, regulations that favor tenants would have resulted in an insufficient supply of rental housing as landlords are not encouraged to rent. Thus, on the supply side, the Swiss government bodies facilitate construction of buildings whose units can be rented out at below-market rents, such as through loans and subsidies.¹¹

Rent decontrol

In some jurisdictions, rent regulation has permitted rent decontrol. The common rent decontrol programs include the following measures:

- Exemption of new housing units from rent control helps mitigate the undersupply problem. The existence of a rent-controlled sector alongside an uncontrolled sector leads to higher free market rents in the uncontrolled sector.
- Under vacancy decontrol, a unit is decontrolled when it is vacated. As new tenancy leases would not be subjected to control, sitting tenants have an incentive not to move in order to continue to enjoy the lower rents in the controlled sector. This would affect household mobility.
- In rent-level decontrol, a unit is decontrolled when the controlled rent rises above a certain level. In what is known as high-rent decontrol in New York City, if an apartment becomes vacant and

the owner can raise the legal rent to US\$2,500 or more, the apartment is deregulated.¹²

- Luxury decontrol is also known as high-income decontrol in New York City. Owners can petition the New York State Division of Housing and Community Renewal to deregulate an occupied apartment if the rent is US\$2,500 or more a month and the tenant household earned US\$200,000 or more during each of the two preceding years.¹³
- Block decontrol occurs when landlords within a designated geographical area are allowed to recover possession of their properties from tenants who were once protected from eviction by rent control. In Singapore, before the complete phasing out of rent control, block decontrol was first used for the redevelopment of the central business district and subsequently for the preservation of designated historic districts.¹⁴

A recent study by Autor, Palmer and Pathak examines the effect of rent decontrol in Cambridge, Massachusetts, in the USA.¹⁵ Prior to decontrol in 1995, from 1970, non-owner-occupied rental houses built prior to 1969 were subjected to strict caps on rent increases and were restricted from being removed from the rental stock. Overall, controlled rents were at a discount of about 50 per cent relative to non-controlled rents for properties with comparable characteristics in the same neighborhood. With the rental caps, owners of controlled properties also lacked the incentive to maintain or upgrade their properties. With rent decontrol, other than encouraging long-deferred investments in previously controlled properties, the study discovered significantly large, positive and robust spillovers on the prices of never-controlled housing. This was due largely to the significant improvements in the desirability of the local neighborhoods in which previously controlled properties were located in. The authors estimated that of the US \$1.8 billion added to the value of Cambridge's total housing stock between 1994 and 2004, US \$1.0 billion of the appreciation was attributed to the never-controlled housing stock. Another study by Sims also found that rent decontrol led to substantial increases in the quality and quantity of rental housing available in the Massachusetts towns of Cambridge, Boston and Brookline.¹⁶

In summary, rental sector regulations need to balance the rights of both tenants and landlords. Regulations that overprotect tenants

can lead to a shrinking commercial rental sector as they affect investments and private financing for rental housing, thereby necessitating an increase in government involvement in housing provision.

Land use regulations

Land use regulations typically fall under the purview of local governments. There is a remarkable variety in land use regulations which include zoning plans to segregate land use, density, minimum lot sizes, subdivision rules, building setbacks, height restrictions, green belts and urban growth boundaries. Theoretically, land use regulations can be used as an environmental policy to minimize negative externalities, such as pollution from industries and to provide or preserve local public amenities such as parks and beaches. Land use regulation is a powerful instrument that can either facilitate or obstruct real estate development and determine local housing supply, as well as impact land and house prices.

Studies have shown that housing supply elasticity varies tremendously internationally and from city to city within a country.¹⁷ Although land supply constraints and geographical restrictions are contributory explanatory factors, land use regulations can either make it easier or more difficult for developers to build.¹⁸ As an example, Mumbai's height restriction (maximum floor area ratio of 1.33 in most of the city) has been an obstacle to the expansion of its housing stock and is to be contrasted with the rapid development of Shanghai (and other Chinese cities).¹⁹

Price, quantity and size distribution regulations

In this section, we consider the case of South Korea as an example of extensive government regulation with regard to housing prices, quantity and dwelling size distribution.²⁰

In the 1960s and 1970s, the Korean government viewed housing as producing a lower return compared with manufacturing and export industries and hence discouraged resources from flowing into housing. As the government controlled the entire process of large-scale land development, it consequently also determined the volume of new housing supply. Permits for land development were monopolized by the public sector in order to prevent private developers from enjoying

large windfall profits.²¹ The Korea National Housing Corporation was established in 1962 as a public-sector housing authority, and the Korea Housing Bank established in 1967 as a supplier of housing finance to assist home purchases by moderate-income families.

The housing shortage led to house price increases and rampant speculation; this led the government to introduce a price ceiling in 1977 to ensure that new housing was affordable. In 1978, the government also implemented size distribution regulations by making it compulsory to allocate at least 40 per cent of the residential land developed by public agencies to the production of dwellings of less than 85 square meters of floor area. This ratio was raised to 50 per cent in 1981, 70 per cent in 1991, and 75 per cent in 1992. This requirement was subsequently extended to private developers, as well.²²

Anti-speculation measures in the form of punitive taxes on capital gains from real estate transactions were imposed. These measures in the late 1970s caused housing prices to decline, and the industry suffered a severe recession in 1980. To help revive the industry, the government relaxed anti-speculation measures by lowering the capital gains tax rate. Strong anti-speculation measures were reinstated soon thereafter when prices increased, with “the Catch-22 situation repeated almost every three years”.²³ In 1981, price controls were suspended for housing with 85 square meters or more in floor space, which resulted in a 38 per cent increase from the previous 1,000,000 won/pyong ceiling in a few months in Seoul. In response to public criticism, the Seoul city government reestablished the price ceiling, albeit at 1,340,000 won/pyong.

The uniform price ceiling on new houses was modified in 1989 to take into account production (land and standard construction)²⁴ cost and also a profit margin for developers. As the housing shortage eased in the 1990s, the government began lifting price controls on new housing in phases, starting in 1995. The requirement of compulsory allocation for small-sized dwellings was removed in 1996 for regions where the housing supply ratio was more than 90 per cent. Housing prices took a downturn in 1998 during the period of the Asian economic crisis, when housing values decreased by 12.4 per cent. To support the housing market, sale price regulations, as well as compulsory allocation for small-sized dwellings for new developments, were removed.

Eligibility and ethnic-mix regulations

Regulations that restrict foreigners from purchasing housing or confine foreign demand to the higher end or new housing market segments are common in many countries. For countries with subsidized housing sectors, eligibility criteria usually include means testing and could include a variety of other conditions.

In the case of Singapore's housing markets, tenure forms are incredibly complex, with public-private hybrids defined by ownership or rental as well as by public or private housing developers. Four-fifths of the housing stock in Singapore have been developed by the public sector agency, the Housing and Development Board (or HDB), with 95 per cent of public-sector-built housing having been sold at subsidized prices on a 99-year leasehold basis. Land ownership is also further defined as freehold, state-owned leasehold (and number of years of remaining leasehold), fully owned or part owned (strata-title).

The housing market is highly segmented according to regulations on eligibility of households. Only citizen households are eligible for public housing rental and direct purchase (one unit per household), with monthly gross household income caps at S\$1,500 for rental and S\$10,000 for direct purchase, respectively. The resale HDB sector is open to all citizens and permanent residents regardless of income, with housing grants for purchaser households carefully calibrated according to citizenship, marital status and household income. The private housing sector caters largely to higher-income Singapore citizens, permanent residents, expatriates and foreign investors. Foreign demand for landed housing purchase is also restricted to Sentosa, a high-end seafront enclave. As such, foreign demand is largely confined to the private flats and condominiums and is also subject to an additional buyer stamp duty of 10 per cent of the price paid.

The large public-built-private-owned housing sector plays an extremely important role in the shaping of Singapore society. The physical plans of HDB new towns have been designed to integrate the various income and racial groups within the public housing program, and this has prevented the development of low-income or ethnic enclaves. Singapore is a multiracial society²⁵ where racial issues are considered potentially explosive and therefore carefully managed. The British colonial administration had, in its early days of town

planning, followed a policy of racial segregation. Together with the communist threat, the management of racial tensions (there were racial riots on a number of occasions) were major political challenges in the 1960s. Beginning in the 1970s, the HDB allocated new flats in a manner that would give a “good distribution of races” to different new towns. The public housing program provided the government with a potent tool to break up enclaves and, through such dispersion, to contribute to social integration and nation building.

However, by 1988, a trend of Malay regrouping through the resale market was highlighted as a housing problem which would lead to the reemergence of ethnic enclaves.²⁶ In 1989, the HDB implemented an ethnic integration policy under which racial limits were set for HDB neighborhoods. When the set racial limits for a neighborhood are reached, those wishing to sell their HDB flat in the particular neighborhood can only sell it to another household of the same ethnic group. The government emphasized that “our multiracial policies must continue if we are to develop a more cohesive, better integrated society. Singapore’s racial harmony, long term stability, and even viability as a nation depend on it.”²⁷

Housing policies have also been tailored to support the family institution and to discourage individuals, whether young or old, from living on their own. Singles remain ineligible to apply directly to the HDB for subsidized housing although they have, since 1991, been allowed to purchase resale flats and, more recently, have also been eligible for housing grants. To promote closer family relations, a variety of housing priority schemes allowed applicants residing with or close to their parents or children a shorter waiting period before being allocated flats. Households applying for the CPF housing grant also enjoy an additional premium if the resale flat purchased is within the same town or estate or within two kilometers of an adjacent town where parents or a married child resides (see Table 4.1).

Mobility regulations

Price subsidies to ensure homeownership affordability necessitate complex rules for allocation of the right to purchase as well as restrictions on resale for a period of time after purchase. These holding-period or mobility regulations may be for a period of time

(five to ten years) that is considered sufficient to deter short-term speculation.

For Singapore, resale regulations for subsidized HDB apartments were extremely onerous in the early days of the housing program. These regulations were eased as the housing stock increased over time and the housing shortage eased. The minimum occupancy period before resale on the market is permitted is five years. There is therefore no market for HDB apartments that are less than five years in age.

In South Korea, to curb real estate speculation, buyers of newly built government subsidized homes are required to live in them for a minimum of five years and are barred from selling them for seven to ten years.²⁸

In Brunei, land or housing is provided to citizens at highly subsidized prices and mortgage terms through various schemes administered by the Housing Development Department.²⁹ The waiting list is long, and the waiting period can be as long as 17 years.³⁰ However, as the property is regarded as a gift from His Majesty the Sultan, it cannot be sold.

Mobility regulations, if overly onerous, can restrict labor market mobility and lead to higher transportation costs, as well as have other negative effects on productivity and economic efficiency.

6

Regulation of Housing Finance

The housing finance system involves many households and firms, as well as industries which lie beyond the boundaries of the housing sector. Firm failure can generate disaster for affected customers, depositors and investors, as well as have harmful consequences for the rest of the economy. Regulation of financial institutions, including insurance companies and pension funds, is therefore imperative to prevent or mitigate the risk of firm failure. Government mandated deposit and mortgage insurance also necessitate additional regulatory oversight to keep lending institutions from taking on excessive risks. The regulation of financial products, institutions and markets is a major and highly complex topic in itself and has become a policy issue of global concern since the financial crisis of 2008. This chapter focuses on those aspects of the regulation of housing finance that have an impact on affordability and investments: the mortgage instrument and its origination, contractual savings housing schemes, as well as alternative methods of funding housing via mortgage securitization, covered bonds, liquidity facilities, real estate investment trusts and institutional funds. Macro-prudential regulation of the housing market will be considered in Chapter 10.

Housing mortgage product

There exists a wide variety of mortgage instrument designs (the basic features of which were discussed in Chapter 2). The set of mortgage instruments available in a country or at a particular time depends on demand and supply considerations, historical experiences and

government involvement, as well as legal and regulatory effects. Regulation can have an important influence on the availability of different designs if it dictates or bans certain features.

The US fixed-rate mortgage (FRM) is a product of post-Depression housing policy and regulations. In 1934, the US National Housing Act authorized the Federal Housing Administration (FHA) to provide mortgage insurance on specific types of mortgages. The FHA specifications for the features of mortgages it would insure became the “standard” dominant instrument. The specifications include full amortization, fixed annual rate for the maximum term, a minimum down payment as percentage of the appraised value of the property and no prepayment penalty. Savings and loans institutions that were federally insured were also restricted to offering only FRMs until 1980. The FRM is further subsidized through the securitization activities of US federal government sponsored enterprises (GSEs) such as Fannie Mae and Freddie Mac, which buy packages of conforming FRMs from mortgage originators and provide mortgage default risk and timely payment guarantees on mortgage securities. As a result, the FRM enjoys government support as well as regulatory favoritism in the USA.¹ Many US states have regulations permitting only non-recourse loans that confine the ability of lenders to collect upon default to the secured asset.

A recent survey of international comparison of mortgage product offerings by Michael Lea² revealed that, with the exception of the USA, where FRMs are common, adjustable rate mortgages (ARMs) or a fixed rate for a short term (1 to 5 years) which rolls into a new fixed rate at the end of the term (the rollover) are dominant in other countries. Interestingly, the FRM was dominant in Denmark until 1 July 2007, when a new regulatory framework for Danish covered bonds came into force. The market underwent a rapid transformation, and by June 2010 the 30-year ARM (with an interest rate that changes once a year) made up nearly two-thirds of all outstanding residential mortgages and almost 90 per cent of all new mortgages.³ The ARM is also dominant in Australia, Ireland, Korea and Spain. For those countries with FRMs, it is also more common for these loans to have a shorter amortizing period of between five to ten years, as compared with the USA, where loans are for a term of greater than ten years. Most countries also allow recourse mortgages (including Canada, Europe, Japan, Israel, Singapore and Australia), and

collection on personal assets and future income in the event of default is permitted.⁴

Regulating housing mortgage originators

Depending on the regulatory environment and the extent of government involvement, mortgages can be originated by deposit-taking institutions (such as commercial banks, housing finance companies, savings and loans, building societies, and credit unions) or by non-deposit-taking institutions (such as state housing agencies and specialized mortgage lenders).

The regulatory and supervisory authority for the different types of institutions may reside either with a single agency or with different authorities at different levels of government.⁵ Regulation and supervision may apply in similar forms to other types of housing mortgage lending institutions, or there could be differential treatment. In some economies, a segment of the market could be lightly regulated or unregulated. Depending on policy objectives, regulations could restrict or require funding for mortgage lending or incentivize lending to favored categories of borrowers (e.g., for low-cost housing). In the USA, the Community Reinvestment Act (CRA), enacted in 1977, requires federally regulated banking institutions to meet the full range of needs in the community in which they are chartered, albeit in a safe and sound manner. "Community needs" have been defined to include access to affordable housing by low-income households and minority groups. Federal banking agencies conduct regular examinations of individual banking institutions for CRA compliance; their findings are then made publicly available.⁶

In most countries, changes to regulations governing mortgage lending have been frequent. The 1980s, in particular, was a period of financial deregulation in many developed economies. Regulators often acted to tighten mortgage lending either after the economy had suffered a financial crisis associated with a housing market bust or prudentially to prevent the development of housing bubbles.

Until 1988, deposit-taking institutions such as commercial banks had traditionally been risk regulated and supervised by national regulatory agencies under rules and guidelines specific to the countries' needs. International banking regulations took shape after 1988, when the Basel Committee on Banking Supervision released

the Basel I Accord. A new capital framework, Basel II, was introduced by the same committee in 2004 (implemented in 2006); it relied on risk-management practices of banks to set capital and leverage requirements.⁷ The global financial crisis of 2007–2008 led to the development of Basel III, which was agreed upon by members in 2010–2011.⁸ In 2009, governments of the G20 countries established the Financial Stability Board (FSB), an international organization that coordinates the work of national financial authorities and international standard-setting bodies in order to promote the stability of the international financial system.⁹ In the USA, where the financial crisis originated, the Dodd-Frank Wall Street Reform and Consumer Protection Act was passed in 2010 to overhaul financial regulation and reduce the likelihood of future recurrence.

Here, we consider, specifically, the regulation of residential mortgage underwriting and origination practices. This was an area of regulation that did not attract much attention in the USA until 2007, when poorly underwritten subprime loans became the epicenter of the global financial crisis. In most other jurisdictions, underwriting practices are more tightly regulated and supervised.¹⁰ In a recent report, the Financial Stability Board categorizes prudential regulation of underwriting practices into three approaches: a prescriptive approach, a regulatory incentives approach, and the use of guidelines and market practices (see Table 6.1).¹¹

- **Prescriptive approach:** Under a prescriptive prudential supervision approach, financial authorities may establish explicit limits and restrictions, such as maximum loan-to-value and debt-servicing ratios, and mandate lenders to request proof of income and maintain records that validate the request.
- **Regulatory incentive approach:** Some jurisdictions incentivize prudent underwriting through differentials in risk weights for the provisioning of loan-loss reserves and capital requirements.
- **Guidelines and market practices:** Consumer protection laws and regulations constitute another regulatory pillar that can also promote responsible lending practices and reduce the incidence of unfair, irresponsible or predatory lending behavior.

One of the main causes of the US housing crisis exposed during the financial catastrophe of 2008 was the almost non-existent verification

Table 6.1 Approaches to prudential regulation of underwriting practices

Prescriptive approach: Explicit limits on LTV and DSR ratios, manda- tory documentation of income	Regulatory incentives approach: Differential risk weights for different types of loans	Guidelines and market practices: Legal and regulatory provisions
Canada	Australia	Argentina
China	Brazil	Australia
France	France	Canada
Hong Kong	Germany	Netherlands
India	Hong Kong	UK
South Korea	Italy	USA
Netherlands	Japan	
Singapore	Mexico	
Turkey	Spain	
	Switzerland	

Source: Financial Stability Board, “Thematic Review on Mortgage Underwriting and Origination Practices: Peer Review Report”, 2011.

of income levels and relevant financial information of borrowers who took on subprime loans. Before the crisis, these borrowers were able to apply for “low doc” loans which dispensed with the need to provide any kind of income information in return for a higher interest rate. These loans were often coupled with teaser rate or interest-only products or with high LTV ratios that included negative amortization. Since most US loans were offered on non-recourse terms, subprime borrowers had every incentive to take on these low doc loans.

The Financial Stability Board has advocated the prescriptive approach in the regulation of mortgage originators. Lenders should be required to verify income streams of borrowers, as well as take into account all other debt commitments of the borrower to ensure that a sufficient portion is left for borrowers to cope with living expenses. Governments should also place loan-to-value (LTV) caps on mortgage lending as this provides an equity portion as a buffer for lenders against default and also helps to incentivize borrowers to repay their debt obligations. Currently, LTV limits are in place in many countries – China (50%–70%), Hong Kong (50%–70%), India (80%), Korea (40%–60%) and Singapore (60%–80%).

Contractual savings for housing schemes

Countries which encourage contractual savings for housing schemes require a separate set of regulations for banks offering such contracts. Contractual savings for housing (CSH) relies on the potential homeowner who desires to borrow to first save money with a bank offering such a scheme over a number of years. In the process of building up equity, potential borrowers demonstrate their reliability and capacity to repay a debt.¹² The interest rate is usually below the market rate. After the minimum savings period which could be from three to seven years, the saver is entitled to a housing loan which typically is some low multiple of the amount already saved (say 1 to 1.5). The loan is similarly below market rates, and this provides the incentive to accept lower rates for contractual savings.

In Germany, CSH (known as *Bausparkassen*) has a long history dating back to the 1920s, and works well as a complement to bank finance mortgage loans. *Bauspar* funds may account for roughly 30 per cent of the purchase price of a home, with the down payment constituting 20 per cent and a mortgage loan the remaining 50 per cent. The German CHS has been exported in recent years to central and eastern European countries, China, India, the Middle East, North Africa and parts of Latin America.¹³ CSHs may be closed schemes, relying solely on resources provided by the savings, or open schemes which permit the use of capital market funds for loans. The German *Bausparen* is closed while the French *Epargne-logement* is an open scheme.

Depending on the relevant legislation, CSH may be offered by universal banks or specialist banks. CSHs require formal, separate and detailed regulation to monitor executing banks and terms of contracts. This is necessary to guide against the misuse of funds and to ensure sufficiency of risk management, especially if fixed rates have been promised in volatile interest rate environments. In many countries, subsidies have been attached to CSHs to address liquidity and interest rates risks as well as to mobilize savings for housing finance. CSHs are popular and easy to implement but, as they depend on a constant flow of new savers for sustainability, it is difficult to cut back subsidies to the scheme without causing a crisis.

Tapping capital markets for housing finance

Other than mobilizing savings for housing finance, governments can play a major role in facilitating the flow of private capital into housing mortgages or directly into the housing sector. In this section, we consider how this can be achieved through policies and regulations on mortgage-backed securities, covered bonds, and real estate investment trusts. Institutional investors such as pension funds and insurance companies, which hold these financial assets in their portfolios, may also choose to invest directly in the housing sector under the right market conditions.

Mortgage securitization and development of the secondary mortgage market

Mortgage securitization has its roots in Europe in the late 18th century. Its introduction in the USA in the 1970s and product innovations in the 1980s led to the growing popularization of its use in mortgage finance. Today mortgage securitization is a common form of housing finance in many European, Latin American and Asian countries, as well as in Canada and Australia. Institutions to develop mortgage-backed securities (MBS) markets were also recently established in Japan and Korea. The concept of securitization has been well received as governments recognized its potential to increase the flow of funds to the housing sector, as well as to diversify the risks of housing finance.¹⁴

In essence, securitization creates a “wholesale” or secondary mortgage market through the pooling of mortgage loans for sale to investors as mortgage-backed securities. Securitization achieves multiple objectives simultaneously: it injects liquidity into the housing market, provides long-term funding for housing, reduces (or often removes) risks for loan originators and increases competition in the primary market. The process helps lower interest rates of mortgage loans, making housing purchase more affordable. With securitization, issuers are also better able to tailor cash flow to the needs of institutional investors. MBSs are usually sold to financial institutions operating in the secondary mortgage market, and they do not remain on the balance sheets of the mortgage originators.

The government plays a central role in facilitating the process of securitization, as a suitable legal, regulatory, and institutional

infrastructure capable of supporting the efficient operation of the securities market must first be put in place. Government institutions and regulations are crucial in the start up and growth of the market as illustrated by the US experience as well as in the recent case of South Korea.

The role of US GSEs in the development of the secondary mortgage market

In the aftermath of the Great Depression banking disaster, several steps were taken to reform the US housing finance system. The Federal Housing Administration (FHA) was established in 1934 to provide mortgage insurance. The Federal National Mortgage Association (Fannie Mae) was created in 1938 to purchase mortgages from lenders in order to allow them to reinvest their assets into more lending and reducing the reliance on thrifts. In 1968, the then Fannie Mae was split into a “mixed-ownership public traded corporation” (also known as Fannie Mae and listed on the New York Stock Exchange) and the Government National Mortgage Association (Ginnie Mae). The conversion of Fannie Mae into a private company removed its debt from the federal government’s books. Ginnie Mae, which remained a government organization, was created to provide a secondary market for FHA (Farmers Home Administration) and Veterans Administration insured mortgages. To provide competition for Fannie Mae, Congress established the Federal Home Loan Mortgage Corporation (Freddie Mac) in 1970 as a private corporation (eventually listed on the New York Stock Exchange) to buy and securitize mortgage loans.

Ginnie Mae and Freddie Mac first issued pass-through MBS in 1970 and 1971, respectively; Fannie Mae issued its first MBS in 1981.¹⁵ The securities created by these three government-sponsored enterprises (GSEs) gave birth to the US mortgage securitization market, allowing investors to invest in bundles of home mortgages that the GSEs had purchased from the original lenders. Both Fannie Mae and Freddie Mac provide guarantees to investors in their MBS against the risk of default by borrowers of the underlying mortgages. As vehicles for promoting affordable homeownership for all Americans, both companies, though privatized, enjoyed special status and regulatory treatment. They paid no taxes and enjoyed lower capital requirements for holding similar risks compared with private-sector counterparts.¹⁶

High inflation in the late 1970s led to financial sector deregulation, including the phasing out of interest rate caps. The 1980s also witnessed major innovations in the structure of MBS products, including the first collateralized mortgage obligations (CMOs) offered by Freddie Mac in 1983 (see Box 6.1). Tax, accounting and regulatory obstacles that faced the first CMO issues were resolved by the Tax Reform Act of 1986. The act also allowed for other structured financial innovations such as STRIPs, floaters and inverse floaters.¹⁷

From the early 1980s, the role of private securitization expanded alongside GSE securitization and was supported by the activities of investment banks as well as private sector insurers in the credit default swap market. Non-agency MBS share of mortgage financing increased rapidly in the first half of 2000, from under 8 per cent in 2000 to 20 per cent in 2006, with the increase in securitization of subprime mortgages.¹⁸ The rapid growth of the market then was linked to demand for MBS from investors around the world, which included banks, institutional investors, hedge funds, financial firms and sovereign wealth funds, as well as governments investing their reserves.

Box 6.1 Plain Vanilla Collateralized Mortgage Obligations (CMOs)

First issued by Freddie Mac in 1983, CMOs are in essence multiclass securities backed by a pool of pass-throughs or by mortgage loans. The mortgage cash flows are distributed to investors by the MBS issuer based on a set of predetermined rules. Some investors will receive their principal payments before others according to the schedule.

The issuer structures the security in classes, called *tranches*, which are retired sequentially. With the payments from the underlying mortgages, the CMO issuer first pays the coupon rate of interest to all the investors in each tranche. After that, all the principal payments are directed first to the bond class with the shortest maturity. When the first bond class is retired, the principal payments are directed to the bond class with the next shortest maturity. This process continues until all the tranches are paid fully and if there is any collateral remaining, the *residual* may be traded as a separate security. In Figure 6.1, class A is the class with the shortest maturity. After class A is retired, principal payments go to class B. The last class D has the longest maturity. The above described CMO is known as *sequential pay* or *plain vanilla* CMO.

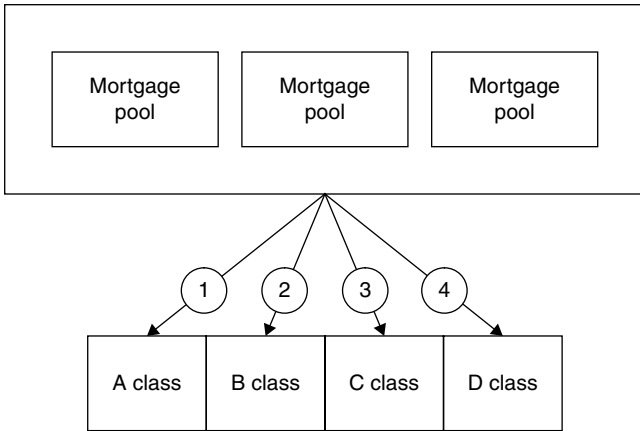


Figure 6.1 Collateralized mortgage obligations

Source: Financial Policy Forum, "Primer: Mortgage Backed Securities", 29 July 2004, <http://www.financialpolicy.org/fpprimermbs.htm>.

The global financial crisis of 2008 was caused by a confluence of market, institutional and government failures in the US housing finance market and financial sector (see Part IV for further discussion of this matter). At the height of the crisis in June 2008, the shares of Fannie Mae and Freddie Mac were delisted from trading. Both GSEs were put under conservatorship of the US federal government on 6 September 2008.

South Korea's secondary mortgage market

Until February 1998, the central bank (Bank of Korea) prohibited financial institutions from lending to finance land purchases, as well as lending to finance the purchase and construction of houses with more than 100 square meters of floor space.¹⁹ The lifting of the regulation and the liberalization of interest rates in the aftermath of the Asian financial crisis provided a major boost to the mortgage market. Legal, tax and regulatory impediments to securitization were removed. Liberalization of interest rates was a prerequisite for the establishment of a secondary mortgage market to tap capital market funding.

The Korea Housing Finance Corporation (KHFC) was established in 2004 to make longer-term mortgages available and to facilitate the development of the secondary mortgage market. KHFC is jointly owned by the Bank of Korea and the Korean government, and there is a formal government guarantee to cover the annual losses should the situation arise. KHFC provides long-term mortgage loans and housing guarantees to individual borrowers and purchases mortgages from mortgage originators that follow underwriting guidelines (with a maturity up to 20 years and maximum loan-to-value ratio of up to 70 per cent). It issues MBS and, more recently, covered bonds to fund these mortgage purchases and guarantees investors timely payment of principal and interest.²⁰ Institutions investing in the secondary market of KHFC-MBS include banks, insurance companies, pension funds, securities companies and investment trust companies.

The mortgage market has expanded significantly since 2004 and has been transformed from one dominated by two housing finance institutions – the Korea Housing Bank and the National Housing Fund – to one dominated by commercial banks. The development of the secondary mortgage market also increased the share of loans with terms of ten years or longer from 20.7 per cent in 2004 to 59.6 per cent in 2008 and the share of loans with principal amortization from 23.2 to 60.9 per cent over the same period.²¹

Mortgage covered bonds

The Nordic and European countries have an extensive legal infrastructure that supports the covered bonds market.²² In the European Union, Article 22(4) of the 1988 Directive on Undertakings for Collective Investments in Transferable Securities (UCITS) defines the minimum requirements that govern the regulation of covered bonds.²³ The covered bond market has become the most important privately issued bond segment in Europe's capital markets. In 2011, the market comprised 26 different countries and 319 issuers, with an outstanding volume of €2.7 trillion. The share of mortgage covered bonds was 75 per cent while the share of bonds with public assets as collateral was 21 per cent.²⁴

Covered bonds are secured funding instruments, typically with a two- to ten-year maturity period, that enjoy high credit ratings. Bonds are issued by a credit institution which is subject to public supervision and regulation. Bonds are secured by a cover pool of

financial assets which could include mortgage loans (with property as collateral), and bondholders have a priority claim over unsecured creditors of the credit institutions. For mortgage covered bonds, matching rules between bonds and cover pool ensure that investors have the certainty of obtaining interest from an identifiable source of mortgages for projected cash. Assets included must pass strict eligibility criteria so as to ensure the pool contains only collateral of high quality. The issuer has an ongoing obligation to maintain sufficient assets in the cover pool to satisfy the claims of bondholders at all times so that nonperforming loans and prematurely paid debt are required to be replaced in the pool. The pool is also subject to ongoing supervision carried out by bond trustees, government bodies and rating agencies.²⁵

The attractiveness of mortgage covered bonds as an investment lies in the relative security it provides to investors. In the case of default or insolvency by the originator of the loans, collateral is ring fenced, and investors have dual recourse to both the pool of assets as well as to the bond issuer. They also enjoy a preferential claim over other investors. In contrast to mortgage-backed securities, the underlying assets of covered bonds remain on the balance sheet of the originator so that lenders have stronger incentives to provide loans which they believe will continue to do well over time. In lowering the risk for investors, covered bonds increase the supply of funds for housing and reduce the cost of mortgage finance.

Covered bonds have a long-established history in Germany (where the Pfandbriefe market first originated in 1769) and in Denmark (after the Copenhagen great fire in 1795), as well as in Switzerland (since 1930). Chile is notable amongst emerging countries for introducing mortgage covered bonds for housing finance in 1977; they were also introduced in Hungary (in 1998) and the Czech Republic (in 1996).²⁶ Spain and France issued their first mortgage covered bonds in 1999.²⁷ In the past decade, numerous countries have introduced mortgage covered bonds: Finland and Ireland in 2004, the UK in 2003, the USA, Portugal and Sweden in 2006, Norway and Canada in 2007, and Italy and Greece in 2008. In Asia, South Korea took the lead with a first issue in 2009. It is interestingly to note that the three countries with the longest history of mortgage covered bonds appear to be the high-income countries with relatively low homeownership rates. Notably, Switzerland and Germany have homeownership

rates below 44 per cent. In Denmark, the homeownership rate is 54 per cent.

Denmark's mortgage system

In Denmark, 100 per cent of residential mortgages are funded through mortgage covered bonds, with the ratio of mortgage debt to GDP exceeding 100 per cent. During the recent financial crises, the Danish mortgage system has continued to function and has been identified by several economists as providing a promising model for the much needed reform of the US housing finance system. The Danish model shares some similarities with the US model but also differs on many important points. Similarities include (i) reliance on tapping capital markets for housing finance through mortgage pools traded in sophisticated capital markets and (ii) the historical dominance of long-term loans at fixed rate with penalty-free prepayment options. However, there are many important differences between the Danish and US mortgage systems which show that the Danish model is a far more conservative model.²⁸ The differences include:

- i) The mortgage loan remains on the balance sheet of the mortgage bank (or universal bank) that issues the mortgage covered bonds. Thus credit risk is retained by the lender while market risk, including prepayment risk, is required to be passed on to bond investors who are better able to bear the risk. Bonds that are backed by a specific pool of loans are issued on an ongoing basis by the mortgage bank.
- ii) Prior to 1 July 2007, under the *strict* balance principle, mortgage banks had to fund their mortgage lending by issuing new mortgage bonds *exactly* matching in cash flow and maturity characteristics. A 30-year callable FRM would be funded by a pass-through callable mortgage bond. Thus the repackaging and selling of mortgages, as in the US mortgage-related securities market, is not a common practice. Since 1 July 2007, to level the playing field for Danish banks as compared with other European banks, covered mortgage bonds are allowed to be issued under a *general* balance principle which does not require strict cash-flow matching. With the 2007 regulatory changes and given the recent low-interest environment, retail mortgages have become

dominated by 30-year ARMs, with rates that change once a year. These are funded by the issuance of one-year non-callable bullet bonds.

- iii) Credit risk to lenders is mitigated by strict loan underwriting regulation, including an LTV cap of 80 per cent for residential properties. As credit risk is retained, conservative underwriting is incentivized under the covered bond system.
- iv) Danish residential mortgages are recourse, while US mortgages are mostly non-recourse.
- v) Mortgage banks do not price discriminate based on the credit risk of the borrowers and thus do not offer subprime loans.
- vi) When interest rates rise, the Danish borrower is able to buy back his or her loan by purchasing corresponding bonds in the secondary market and delivering them to the mortgage bank. The 30-year mortgage loan contract also does not require the mortgage to be repaid in the event of a house sale but can be assigned by the mortgagor to the new homeowners. These features help contribute to the liquidity and stability of the mortgage covered bond market.

Mortgage liquidity facilities

MBS and covered mortgage bond markets require the establishment of a sophisticated legal infrastructure as well as the presence of risk-management infrastructure. In countries where such infrastructure or financial environment is insufficiently developed, mortgage liquidity facilities (MLFs) can play a valuable role as an intermediary between the primary mortgage market and the capital markets.²⁹ Two examples of MLFs are Cagamas Berhad in Malaysia and the Jordon Mortgage Refinancing Company. Cagamas was established in 1986 under a public-private joint ownership structure (the Central Bank having a 20 per cent share and financial institutions 80 per cent). Cagamas provides liquidity to the primary mortgage lenders through the purchase of their mortgages and funds itself mainly through the issuance of unsecured bonds.³⁰ The government supported Cagamas through significant tax and prudential advantages in the initial setting-up phase. These advantages were reviewed and removed in 2004, when the mortgage market was considered sufficiently developed.³¹

Housing REITs

Real estate investment trusts (REITs) are real estate companies that own and manage a portfolio of properties (or mortgages) and are normally listed on the stock market. Regulations governing REITs often require a high proportion of income (90 to 95 per cent) from building ownership to be paid directly to investors as dividend on a regular basis. REITs were first launched in the USA in the 1960s and in Australia in 1971, and, in the past decade, many governments in Asia and Europe have passed REITs legislation, granting tax privileges as encouragement for their establishment (see Table 6.2). REITs in the USA are based on US tax laws and can be both internally and externally managed by corporations and trust vehicles. Today US REITs account for over half of total global market capitalization of REITs. In contrast, under the Australian system, REITs are established through an investment trust law where closed-end funds are managed by a separate external asset manager.³² This is the model adopted by many countries, including Japan, Singapore, Thailand and Malaysia.

REITs offer a much needed liquid alternative investment vehicle to investors and are particularly relevant for high-density cities, where fragmented ownership of large-scale developments is neither efficient nor desirable. Their focus has been on commercial property such as offices, hotels, retail malls and industrial parks, although residential REITs are also available in several markets. In the USA in 2011, apartment REITs were concentrated in the 25 largest urban core areas, and they owned an estimated 4 per cent of the nation's 17.5 million multifamily rentals.³³ The UK government is currently

Table 6.2 Spread of REIT Model

1960	USA
1969	Netherlands
1971	Australia
1993–1995	Brazil, Canada, Belgium
2001–2003	Thailand, Singapore, Japan, France
2004–2006	Hong Kong, Taiwan, Malaysia, South Korea
2007–2011	Germany, Italy, UK, Finland, Mexico

Source: Details of regulatory and taxation treatment for each jurisdiction may be found in European Public Real Estate Association (EPRA), *EPRA Global REIT Survey 2012* (<http://www.epra.com/regulation-and-reporting/taxation/reitsurvey/>).

looking into how REIT rules can be relaxed to make it attractive for REITs to own residential properties as well as to invest in social housing.³⁴

Institutional investors and pension funds

Housing policy plays a major role in tenure choice decisions as well as in the returns on housing for investors. Policies which favor owner occupation for middle- and high-income groups and social housing for the lower-income group may have negative effects on the attractiveness of private rental housing as an asset class. In several countries, including the UK, Portugal and Ireland, there is low or virtually non-existent institutional direct investment in private rental housing. The Netherlands, Sweden, Switzerland and Germany stand out for large institutional ownership of rental housing. The relative size, stability and quality of the rental housing sector in these countries is largely attributable to the commercial viability of large rental housing projects as an asset class that yields a rate of return that is sufficiently attractive for long-term investors.

In Switzerland, where private renting dominates, half of the rental stock is owned by individuals and approximately 30 per cent by institutions such as pension funds, insurance companies, property investment companies and asset management companies, among others.³⁵ Housing constitutes over 52 per cent of the Swiss institutional property portfolio.³⁶ As explained by Montezuma, Switzerland is a small country where assets of institutional investors easily exceed the entire domestic equity market. Quantitative regulations of portfolio holdings are imposed on life insurance companies and pension funds to protect fund beneficiaries. Pension funds face ceilings on holding certain assets, such as a 50 per cent limit on shares, 50 per cent for real estate and 20 per cent for foreign assets. Independent of portfolio regulations, strict accounting standards further limit investment in shares by life insurers and funded pension schemes.

7

Housing Institutions

The previous chapters on “taxes and subsidies” and “market regulation” considered market-based instruments which are utilized to solve the problem of market failure. In this chapter, we examine housing institutions that are established and owned by the government in order to facilitate the flow of financial and other resources into the housing sector. Governments may set up housing institutions as a strategic instrument, particularly when there is a need to grow an embryonic market and/or where there is a gap in the coverage of provision. There are many variants of state-owned housing institutions that differ in scale, powers and scope – driven by financial policies and shaped by the local environment and its evolution. These include public housing authorities as well as government housing banks. Some agencies operate in the retail housing finance market, others in the wholesale market with or without regulatory powers. Some are specialized housing banks, yet others are part of a universal commercial bank. Some combine retail housing loan services with real estate developer functions. Others are state-owned enterprises competing in the same market space as private housing developers or commercial banks.

Drawing on examples from the diverse range of housing institutions in various countries, this chapter reviews the following categories of housing institutions: public housing authorities, state-owned housing developers, state housing banks, housing provident funds and government mortgage insurance companies.¹

Public housing authorities

The UK introduced the concept of public housing (known as local authority or council housing) for the “working classes” in 1919 after World War I. After World War II, the replacement of the housing stock, particularly through clearances, became council housing’s main role, with mass building and increased public housing provision. Housing policy changed after 1970, when political support for council housing was withdrawn by the Conservatives. In the 1970s and 1980s, the role of council housing diminished; the numbers were further reduced through sale to tenants and mass transfers of stock to housing associations. The remaining public and not-for-profit housing has been increasingly associated with lower-income households. Homeownership has been promoted through different policies – privatization of public housing, deregulation and mortgage interest tax relief (1969–2000) and special schemes aimed at first-time buyers and others.²

In the former British colonies of Hong Kong and Singapore, where public housing was first introduced by the British governments, the public housing authority model has evolved into one that encompasses the development of housing by the government for sale.³ The dominant role of the state in providing housing in both Hong Kong and Singapore has been facilitated by the state’s ownership of land.⁴ All land in Hong Kong is owned by the government, while more than 90 per cent of land in Singapore is state land. Supply of land for development is controlled by the government; government land sales are regular events and constitute a significant source of revenue for the state.

Hong Kong Housing Authority

In Hong Kong, the state plays a major role in housing provision through the Hong Kong Housing Authority (HKHA), which was established in 1954. The HKHA has taken the lead in the development of public housing estates and new towns. It also promoted homeownership through schemes to encourage tenants to purchase their flat, as well as building subsidized units for sale. However, the HKHA has ceased building new housing for sale since 2003. Rental remains the dominant tenure form in the HKHA sector. In 2011, 48

per cent of Hong Kong's population resided in public housing – 30 per cent of the population were public housing renters, whilst 18 per cent lived in subsidized sale flats.⁵

Singapore's Housing and Development Board

In Singapore, the colonial town-planning authority, the Singapore Improvement Trust, built some 21,000 housing units between 1947 and 1959. Upon attaining self-government in 1959, the Singapore government established the Housing and Development Board (HDB), a statutory board, which, over the next few decades, grew to become the dominant housing developer in Singapore. Four-fifths of the present housing stock in Singapore (over a million units) has been built by the HDB, which enjoys grants and loans from the Ministry of Finance. HDB housing comprises high-rise apartment blocks located in HDB-planned towns with comprehensive community, commercial and public facilities. Affordable homeownership is an important social-political objective for the government. Currently, only 5 per cent of HDB stock consists of rental units, with 95 per cent having been sold at subsidized prices on a 99-year leasehold basis. HDB also functions as a non-deposit-taking housing finance institution as it is also funded by the government to provide 30-year mortgage loans with loan-to-value ratio of up to 90 per cent. Eligible buyers interested in obtaining an HDB loan must first have a valid HDB loan eligibility (HLE) letter, which certifies one's future financial capabilities in paying off the loan.

An active resale market for HDB flats exists that facilitates mobility and realization of capital gains from asset appreciation. To further ensure affordability, housing grants are given to Singaporean households for the purchase of both new and resale flats (see Table 4.1). In order to prevent speculative capitalization of the subsidies in the resale market, a minimum occupation period (MOP) is imposed on subsidized HDB flats (both new and resale), where flat buyers can sell the flat in the open market only after occupying it for a stipulated minimum five year period. For the sale of nonsubsidized flats (resale flats bought without any CPF housing grants) in the open market, the MOP is three years.

The dominance of the public housing sectors in Singapore and Hong Kong implies government decisions on public housing supply, policies and regulations significantly impact households' savings,

mobility and housing decisions. There are also spillover effects for the private housing market as subsidized sale flats are substitutes for private housing. In these two cities, public housing policies play an important role in determining housing affordability, housing equity and welfare and in the economic development of both cities, although the impact is more significant in Singapore relative to Hong Kong.

State-owned housing developers

We can consider the Singapore and Hong Kong housing authorities as fully state-owned housing agencies established via legislation. There are other variants of state-owned enterprises (SOEs) engaged in housing development; these may be government agencies or corporations, wholly or partially owned by the state, joint ventures with local or foreign private investors or enterprises listed on a stock exchange. In theory, SOEs can be a strategic investor in new industries, help fill a market gap, or reduce the concentration ratio and potential abuse of dominance by real estate oligarchs.

After World War II and right up to the 1970s, SOEs played an enormous role in production throughout the world, even in market economies. Government ownership was more restrained in the USA, Japan and Germany and was significant in countries such as the UK, Italy, France and Austria, as well as in former colonies in Africa and Asia. In the socialist economies, the state owned and controlled everything.⁶ In practice, SOEs were often “highly inefficient, inflexible, poorly performing employment agencies, politically pressured to maintain and expand employment far beyond what was needed”.⁷ The stagflation of the 1970s led to a serious rethink of the failings of SOEs and the mixed economy beginning in Chile and the UK. After the Conservative Party election victory in 1979, Margaret Thatcher subsequently moved to get the government out of running businesses – a policy that became known as privatization.

The wave of privatization was to spread around the world, to the rest of Europe, Latin American and India, accelerating after the collapse of communism in the USSR and Eastern Europe. In Asia and the Middle East, many governments have adopted a *partial* privatization model whereby the state sets up an investment holding company or sovereign wealth fund that owns and invests in businesses.

The Singapore government has its Temasek Holdings; Malaysia's is known as Khazanah Nasional; China's State Asset Supervision and Administration Commission (SASAC) is responsible for managing China's vast SOE system. Many of these SOEs are simultaneously partially listed on stock exchanges. In Singapore, companies involved in real estate development which are listed on the Singapore exchange and also owned by Temasek Holdings include CapitaLand, Surbana and subsidiaries of Sembcorp and Keppel.

SOEs also played a major role in the development of infrastructure, utilities, real estate and housing for China's urbanization. In Shanghai Pudong's transformation from an underdeveloped farmland to a modern city, development companies were often SOEs that operated as commercial enterprises. Acting as mediator and implementer in land development, they were directly involved in developing the land, selling the land lease rights, providing infrastructure and arranging relocation of affected residents or factories. As listed companies with private shareholders, the real estate development companies are profit driven and are required to raise investment capital themselves. However, at the same time, they work closely with agencies that represent the public interest or the interests of the local authority concerned. In fact, in many instances, the local authority and/or its agencies are also major shareholders. Partnerships between SOEs and private companies are also common (see Chapter 8).⁸

State housing banks

In the housing finance sector, state-owned housing banks (SHBs) are common in many countries.⁹ The sources of funding for SHBs could include deposits (such as voluntary or mandatory savings), the sale of bonds, central bank facilities, and government grants and loans. Governments view SHBs as an institutional solution to meeting unaddressed social or economic needs arising from underlying deficiencies in the market environment and infrastructure. In providing a financial service that the market fails to offer, SHBs could help kick-start the housing market by introducing mortgage products and improving the financial infrastructure, as well as showcasing the commercial feasibility of mortgages. They may cater to segments of the population underserved by the commercial financial sector, such as the lower- or informal-income groups or households residing in areas

not served by bank networks. Due to state support, SHBs have lower profitability goals than do private lending institutions and are thus willing to lend to groups that entail higher origination and servicing costs, higher risks and fewer cross-selling opportunities. As a visible and easily created state institution, SHBs can be very useful in public policy implementation.

SHBs can be found all over the world.¹⁰ Governments in sub-Saharan Africa (for example, Ivory Coast, Congo, Mali, Senegal, Gabon, Namibia and Rwanda) have established or revitalized SHBs to resolve the problems of a small commercial banking sector and a partially developed mortgage finance infrastructure. While many SHBs have either been closed or privatized in Latin America, a few surviving ones can be found in some of the smaller economies, including the Dominican Republic, Guatemala and Nicaragua. Many SHBs, such as those in Brazil and central and eastern Europe, have since evolved, particularly in their charters, mandates, sources of funds, regulations and operations. We consider the following examples of Asian SHBs below: the model provided by Thailand's Government Housing Bank and the role of India's National Housing Bank as a second-tier lender.

Thailand's Government Housing Bank

Thailand's Government Housing Bank (GHB) was established in 1953 to provide housing finance to both housing developers and home buyers, with special focus on lower- and middle-income households.¹¹ It is fully owned by the Ministry of Finance, with formal government guarantee of its bonds under the Government Housing Bank Act. Although state owned, the GHB is soundly managed and operates on a commercial basis. As Thailand's largest housing loan provider, the GHB has a network of over 140 branches, and 38 per cent share of the housing mortgage market.

Deposits constitute the dominant source of funding for the GHB. Account holders (which include the government, private companies and households) are incentivized to place their savings with the GHB, as its deposit interest rate is higher than that offered by commercial banks. Other sources of funding include government guaranteed bonds and MBS issues. The GHB provides housing loans on a long-term basis, with amortization periods of 20 to 30 years. Various schemes exist to make mortgage loans more accessible to

lower-income households. Except for mortgage loans given to those with low income, most loans are adjustable rate mortgages, where initial interest rates are fixed for short periods of two to three years before they are adjusted periodically to market rates.

The GHB also provides financing for the National Housing Authority and participates in government-led social housing and slum upgrading programs. Its activities have not crowded out commercial mortgage lending, which is provided by 17 other players. Instead, the GHB has played an important market-enhancing role through spearheading the establishment of a retail credit bureau, a real estate information center and a mortgage insurance scheme. During the 1997–2001 Asian economic crisis, the GHB played a countercyclical role, maintaining its level of market activity even as commercial lending dropped.¹²

India's National Housing Bank

Since independence in 1947, successive Indian governments have highlighted the priority of housing in government planning through a series of five year plans for state intervention to meet the housing requirements of its vast population. The early emphasis was on institutional building, the provision of subsidized housing for the poor, the provision of loans to state governments to acquire and develop land for construction, and improving the infrastructure and housing of smaller towns and new urban centers. The seventh plan (1985–1990) placed greater emphasis on the role of the private sector and set up the National Housing Bank (NHB) under the aegis of the Reserve Bank of India in 1988. The NHB regulates the specialized housing finance companies and acts as a second-tier lender to all mortgage originators. A cash subsidy and housing loan program was also launched for rural housing to provide assistance to rural families to construct dwelling units. Housing finance, however, remains underdeveloped (with housing mortgages at 7 per cent of GDP in 2008).¹³

Housing Provident Funds

Housing Provident Funds (HPFs) are specialized financial institutions that collect mandatory savings, in amounts determined as a percentage of salary, from employees.¹⁴ Sometimes the employers are also required to make additional proportional contributions.

The HPF then manages these accrued long-term savings, which are often remunerated at below-market yield. This permits the contributing members of the HPF to withdraw the savings as a down payment for a housing investment and to receive a long-term housing mortgage loan, usually at a preferential rate (either from the HPF or through another lending institution). Where contributions rates are excessive, HPFs may result in overallocation of resources to housing, crowding out consumption and investments in other sectors, as well as commercial bank lending. HPFs may also lead to a situation of horizontal inequity when low-income households, that cannot afford homeownership or can only obtain small loans, cross-subsidize the homeownership of high-income households. Countries which have established HPFs include Singapore, China, Malaysia, Nigeria, the Philippines, Mexico and Brazil.¹⁵ The next section provides, as an illustrative case study, a discussion of Singapore's housing provident fund.

Singapore's Central Provident Fund

The Central Provident Fund (CPF) is Singapore's national savings scheme. Under this scheme, all employed Singaporean citizens and their employers are required to make mandatory monthly contributions into three accounts – ordinary, special, and medisave accounts. The CPF was originally established as a pension plan in 1955 by the British colonial government to provide social security for the working population in Singapore. The scheme mandated contributions by both employers and employees of a certain percentage of the individual employee's monthly salary toward the employee's personal and portable account in the fund. All employers are required to contribute monthly to the fund. The bulk of contributions can be withdrawn only for specific purposes (of which housing dominates), at age 55, or on permanent incapacitation of the contributor concerned. The interest rate on CPF ordinary account savings is based on a weighted average of one-year fixed-deposit and month-end savings rates of the local banks, subject to a minimum of 2.5 per cent. Savings in the special and medisave accounts earn additional interest of 1.5 percentage points above the normal CPF interest rate.

The CPF became an important institution for financing housing purchases in September 1968, when legislation was enacted to allow withdrawals from the fund to finance the purchase of housing

sold by the HDB, with mortgages also offered by the HDB (see the earlier section on public housing authorities). Premiums for CPF mandated mortgage insurance are also deducted automatically from the ordinary account. In 1981, the scheme was extended to allow for withdrawals for mortgage payments for the purchase of private housing. Since 1984, rules governing the use of CPF savings have been gradually liberalized to allow for withdrawals for medical and education expenses, insurance, and investments in various financial assets.

The contribution rates at the inception of the CPF in 1955 were five per cent of the monthly salary for employees and five per cent for employers. In 1968, the rates were adjusted upward and peaked at 25 per cent of wages for both employers and employees from 1984 to 1986 (see Figure 7.1). Contribution rates, as of September 2012, are at 20 per cent of wages for employees and 16 per cent of wages for employers, up to a salary ceiling of US \$5,000. Contribution rates are lower for workers above 50 years of age, and the proportion of contributions allocated for investments, retirement, and health care also varies with age.¹⁶ Rates have varied depending on economic conditions, and changes to contribution rates have been used as a macroeconomic stabilization instrument in order to limit inflation or to reduce wage cost.

CPF collects member contributions and invests them in special non-tradable government securities that earn the same interest that it pays out to its members. The HDB is a recipient of government

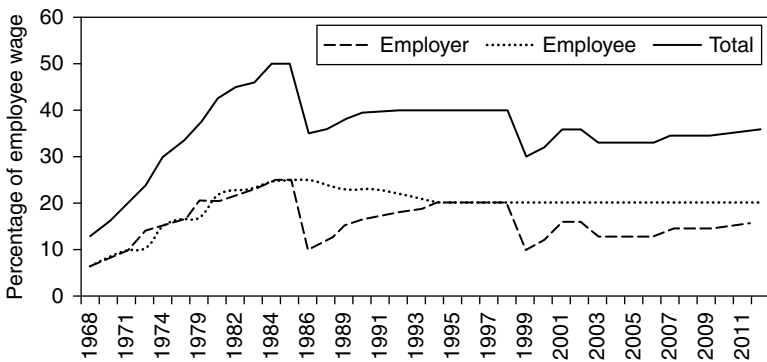


Figure 7.1 Changes in CPF contribution rates

Source: Chart data from Central Provident Fund website, <http://www.cpf.gov.sg>.

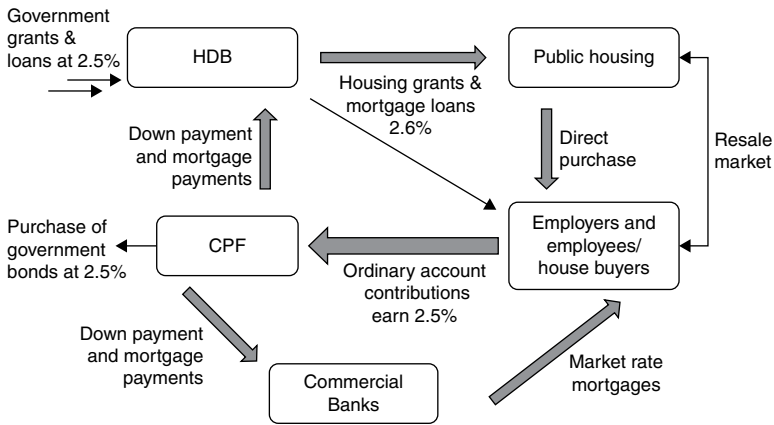


Figure 7.2 Singapore's CPF mobilization of savings for housing

grants and loans to finance its mortgage lending, the interest payable of which is pegged to the prevailing CPF savings rate. The mortgage lending rate charged by the HDB to homeowners is 0.1 percentage point higher than the rate that it borrows from the government in order to ensure the sustainability of the financing arrangement (see Figure 7.2). During the past decade, housing loans for both new and resale public housing have been provided by commercial banks.

Singapore's housing finance system has evolved over time as a symbiotic relationship between the HDB and the CPF, with generous support from the Ministry of Finance. Factors that contribute to its stability and growth include the following:

- i) The macroeconomic environment has been one of high savings and income growth, low unemployment, inflation and interest rates, and government budgetary surpluses, as well as exchange-rate appreciation.
- ii) Government support for the HDB is evident from the annual grants it receives to cover deficits incurred for development, maintenance and upgrading of estates, generous loans for mortgages and long-term development purposes, land allocation for HDB housing and comprehensive HDB town planning.
- iii) On the housing finance side, CPF savings rates are pegged to commercial rates with a minimum rate of 2.5 per cent,

government loans to HDB at the CPF savings rate; the HDB offers mortgage loans at an interest rate equal to the CPF savings rate plus 0.1 per cent.

- iv) Cycles aside, there has been a long-term trend of housing price appreciation.

The HDB-CPF system has contributed to high savings and high homeownership rates and very effectively mobilized savings for housing and growth of housing loans. The provision of affordable housing has contributed to social stability, economic growth and the development of communities. The large HDB sector, with its regulations on ownership and resale, contributes to reducing speculative demand for housing. The CPF rate adjustments, with their impact on inflation and wage costs, have been useful as a macroeconomic instrument for a very open economy.

The system is not, however, without its critics. The mandatory nature of the CPF, together with the dominance of the HDB, could have resulted in overallocation of resources to housing. The CPF collects from members more than what is required for housing. This could have crowded out consumption, and, as savings are illiquid, it has been cited as a reason behind a weak domestic start-up sector. The large allocation of savings for housing and the risk of housing price declines pose risks for retirement financing. Some present concerns of the aging population include the lack of unemployment safety nets and the possible inadequacy of personal resources for both retirement and health care in the future. The phrase “asset rich and cash poor” neatly captures the basic problem, and the initiation of policies to help households monetize their housing equity is therefore the next phase for a system that has overemphasized housing for the past four decades.

While the state-driven system has attracted much interest from emerging economies, the transferability of Singapore’s experience to other countries needs to be juxtaposed with the local political and social context. A housing provident fund is relatively simple to set up if designed as a savings and payments institution. The more complex institution to replicate is the HDB; in particular, its town planning and estate-management capabilities, as well as its attention to developing good-quality affordable housing on a large scale. Moreover, the tactics on which Singapore relies – compulsory savings, state

land ownership, and state provision of housing, complemented with an extensive public sector – could easily have spawned widespread inefficiency and corruption.

Singapore's effective implementation of such planning and regulation is attributable to a network of competent and reliable organizations that together provide rich public-sector capacity. The quality of public administration in Singapore is a result of recruitment based on merit, competitive pay benchmarked against private-sector salaries, extensive computerization and a civil service culture of zero tolerance for corruption. Where governments and public-sector leadership are weak and/or corrupt, such extensive intervention and government control over resource allocation can be potentially abused and may carry a higher cost than inaction.

Despite its rather unique context, there are elements of Singapore's housing system that can provide helpful pointers for housing policy-makers generally. First, despite the very visible hand of government, markets are very important, and creating and/or enabling markets to work more efficiently is a very important aspect of housing policy. Second, government involvement can be very helpful for providing timely real estate market information, for establishing sustainable housing supply regimes and mortgage institutions, and in improving the liquidity of housing assets. The short- and long-term implications of housing subsidies, explicit and implicit, supply- and demand-side, within the entire system, need to be fully understood. Third, retirement savings may be mobilized for housing mortgage payments. However, it should be noted that the CPF itself does not make loans to its own members. It is not a good idea for a housing provident fund to become a direct lender for housing due to potentially conflicting objectives. Fourth, the government regulates the housing markets and has in place a set of instruments to reduce speculative demand and prevent asset bubbles, which it uses as and when necessary. Finally, the need for strong legislation and a proper fund governance structure to ensure that the interests of provident fund members are adequately protected cannot be overemphasized.

Mortgage insurance and guarantees

Government involvement in mortgage default insurance (MI) can be traced to US housing legislation in the 1930s post-Depression period.

MI protects mortgage lenders against loss in the event of borrower default. MI schemes have become available in many countries in recent decades, including the UK, Australia, Canada, New Zealand, France, Spain, Italy, Mexico, Singapore, Hong Kong and the Philippines.¹⁷ On top of primary market coverage of credit risk, the state in many countries may also provide implicit or explicit guarantees on timely cash flows for mortgage-backed securities or against default by lenders who borrow from a liquidity window. Other than the government, MI can also be provided by the private sector or through a public–private partnership arrangement where the public provider is supported by private reinsurer(s). The US government-sponsored enterprises Fannie Mae, Freddie Mac and the Federal Home Loan Banks guarantee, for a fee, repayment of the mortgage pools they buy and securitize.

MI schemes are useful to meet a number of objectives, as follows:¹⁸

- expanding homeownership by reducing the risk to lenders of making loans to low-income households or loans of higher LTV ratios;
- developing mortgage and capital markets;
- strengthening credit-risk management in the banking system; and
- offering protection against economic catastrophe.

As with any insurance scheme, regulators need to be on guard against moral hazard behavior by lenders and investors. In addition, there is a need to ensure that risk models are sound and that default risk is properly priced. Moral hazard risk can be considerable, leading to excessive risk taking and systemic crises, as is well illustrated in the recent US financial crisis, in which Fannie Mae and Freddie Mac played a prominent role.

While MI programs usually start off as state-sponsored programs, it is necessary for a government to monitor and properly account for its fiscal exposure in sponsoring insurance and guaranteed schemes. In particular, there is a need to guard against inadvertent expansion of core social housing objectives. In Australia, the government exited the MI market in 1997 through the sale of its MI entity to a foreign-owned private MI firm. In New Zealand, the public sponsored MI

program, established in 2003, targets the low income, mostly rural and small town borrowers.¹⁹

Exit strategies for SOEs

It is appropriate to end this chapter on state housing institutions on a cautionary note. Although SOEs are seen as a possible solution to market failure, it bears repeating that SOEs have their share of problems and failures. Inefficiency is a major failing. Excessive governmental control over SOEs may result in a more bureaucratic culture instead of a more corporate one. This often leads to weak accounting systems, lax risk-management practices, accountability deficiencies and lack of innovation. More seriously, there may be corruption and rent-seeking activities. Also, being more susceptible to political interferences, SOEs may be hindered from achieving their initial social and economic objectives. SOEs may crowd out or prevent the emergence of more efficient private-sector enterprises, particularly private developers and commercial banks in the case of housing institutions. SOEs may require subsidies for their continued operation – resources which could be better allocated elsewhere.

Once established, there is a need to periodically review the performance, market impact and continued relevance of SOEs. Where SOEs are dominant in the industry, they may need to be subjected to regulatory oversight. Exit strategies need to be considered for poorly performing SOEs and even for successful ones which have fulfilled their initial purposes and objectives. A larger-scale reorganization or transformation of SOEs may entail partial or full privatization.

On the surface, partial privatization or a hybrid type organization may appear to be an attractive solution; it involves private partners or shareholders who will require profitable results and risk-based management, whilst the shareholding government can guide the general strategy of the institution. This arrangement supposedly encourages market discipline and sound economic business strategies while enabling social objectives to be met. However, the risks of agency and moral hazard problems remain and could even be amplified. Private investors/management may be rent seekers who exploit privileges rather than pursue sound business or development strategies. The dual mission enterprise may lead to moral hazard risk-taking behavior as both management and investors implicitly

believe that profits would be privatized and losses socialized. In the words of Paul Volcker, these hybrids are “neither fish nor fowl, half-public, half-private; when things are going well, they take care of their private responsibilities; when things are going poorly, they get the public support”.²⁰

The government may also need to consider if the tax and other advantages (such as regulatory treatment and government guarantees) that an SOE may enjoy need to be withdrawn in order to level the playing field. Complete liquidation and full privatization allow the government to exit completely from the market and are strategies that should be on the table in the necessary periodic review of SOEs.

8

Public–Private Partnerships

A public–private partnership (PPP) is a formal contractual arrangement entered into between the public sector and the market in order to deliver a well-defined output or service. It is distinct from privatization inasmuch as there is the continuation of government engagement through some form of regulation by contract. PPPs have deep roots in the USA, where the scope of state-owned enterprises has been limited. In the 1980s, privatization of state-owned enterprises and assets started in the UK under the Thatcher government and subsequently became a worldwide phenomenon. Recognizing that complete privatization was not possible or desirable in some sectors, PPPs were first popularized in the early 1990s in the UK as private finance initiatives (PFIs) for asset-based infrastructure. During the past two decades, the PPP has been widely embraced by many governments as a method for the delivery of a wide range of services in sectors such as roads, rails, electricity, water and health.¹

The use of PPPs in housing provision is, however, much more limited and context specific. Housing is not a monopoly industry and does not have the increasing returns to scale issues generally associated with utilities and infrastructure projects. In most market economies, government involvement in direct housing provision is generally limited to public housing schemes. However, despite these limitations, PPPs can be and have been useful as a policy instrument in order to attract private finance for social housing, housing development and urban regeneration projects.²

The rationale for PPPs

PPP strategy has been described as combining the best of the public and the private sectors. As has been aptly observed, "Through PPPs, the advantages of the private sector – innovation, access to finance, knowledge of technologies, managerial efficiency, and entrepreneurial spirit – are combined with the social responsibility, environmental awareness, and local knowledge of the public sector in an effort to solve problems."³ PPP detractors have, however, raised concerns over the high transaction costs, potential abuse of market power, lack of transparency and potential for corruption of these arrangements.

Given that the debates on the issue are often driven by ideology, how are governments to assess whether PPP can be an efficient mechanism for the delivery of services in a sustainable manner in a given situation? We can consider a PPP project as a simple extension of vertical disintegration or contracting out by government.⁴ However, it differs from simple contracting out, firstly, in the larger number of tasks contracted out and, secondly, in the privatization of the finance function. A PPP project may be roughly broken down into four principal tasks: (i) defining and designing the project, (ii) financing the capital costs of the project, (iii) building or procuring the physical assets, and (iv) operating and maintaining the assets in order to deliver the product and service.

The following sequential questions arise with regard to the PPP decision: (i) Should the project or service be provided by the public sector or through a PPP? (ii) If the decision is in favor of PPP, what are the considerations in the choice of PPP strategy? The answers to the above questions depend on a detailed understanding of the benefits and transaction costs involved in contracting out, the risks involved, an objective assessment of whether the private or public sector is better able to manage the risks (which differs according to local environment or contexts) and, finally, a policy decision as to how the tasks and risks should be allocated.

It has been the norm for large-scale public sector construction in most market economies to be contracted out through competitive tendering to the private sector. This is attributed to the bidding process, which is common for construction contracts and which allows competition for the market and optimal allocation of risks, as

well as scale and/or learning economies of the construction process. This conventional provision – that only the private sector builds – is used for the procurement of public or social housing although estate maintenance and management, allocation and pricing remain with the public sector upon project completion.

PPP housing arrangements differ from conventional procurement or “design-build” contracts in the involvement of private finance and in its *combination* with construction, marketing, allocation and/or management/maintenance tasks. It may be the case that the public sector by itself simply does not have the capacity to provide the amount of funding needed. The view that the private sector is a cheaper source of financing or insurance than the public sector may appear strange as “it is hard to imagine an agent that is more able to borrow or to provide insurance than the government (with its enormous powers of taxation)”.⁵ However, it is not at all clear that a government (especially a sub-national one) will be able to borrow at a lower cost than the private sector or even to borrow at all in the case of some cities. One of the most frequent reasons governments employ PPPs is that they are cash-strapped and too debt-laden already. While that is true for many developing economies, the argument is increasingly made by governments in developed country, as well.

Packaging the financing function with other tasks also recognizes the complementarities that can exist between private financing and building; in particular, that of reducing the risks of construction delays and project cost overruns. Under public procurement, public sector managers are often so far removed from their principals (taxpayers) that project cost overruns may be more likely. Moreover, if delays are caused by the government (owing to design changes or environment or zoning issues), if the situation involves a PPP, the private partner may recover damages, thus reducing the risks of such delays.

The benefits of a PPP (which include private sector financing, expertise and efficiencies and complementarities across tasks and risk sharing) will thus need to be weighed carefully against the transaction and governance costs of setting up a PPP (including the risks of loss of government control and the need to renegotiate incomplete contracts and deal with potentially opportunistic private sector partners).

PPP strategies for housing development

Having considered the costs and benefits of entering into a PPP, the government that decides in favor of a PPP will have to consider the appropriate strategy to adopt. PPPs can be useful as a strategy for the development of greenfield sites as well as in the transformation and regeneration of inner cities into attractive, livable spaces with affordable housing. Local governments with planning and building preservation powers, as well as eminent domain authority to purchase land, can play a strategic role in urban regeneration. To attract private sector investments in urban real estate, a clear vision and commitment from the local government and confidence in its ability to bring the vision into reality is essential. Revenues from land sales or leasing can be used to finance local goods and infrastructure assets. A comprehensive master plan that has been developed with private sector input would create certainty and predictability and harness the tremendous synergies amongst various developments.

There is no simple paradigm as to how PPPs should be structured, and the choice of strategy appropriate for local requirements requires great care as the consequences of the wrong choice can be costly and long lasting. A broad range of PPPs strategies have been utilized in urban housing development and include leasing of state land by private developers, partnerships for social housing projects, and inner-city regeneration. We consider here some specific examples of PPPs for the delivery of affordable housing.

Toronto's redevelopment of Regent Park

Built more than 50 years ago, Regent Park, known locally as one of the poorest neighborhoods in Canada, is a social housing development in downtown Toronto. Under a PPP, redevelopment is taking place in six phases over a 12- to 15-year period that began in 2005.⁶ The partners in this project are the City of Toronto, Toronto Community Housing Corporation (TCHC), which owns and operates the property in Regent Park, and Daniels Corporation, which is a well-established developer in the area. As TCHC lacked the capital reserves to repair and replace the housing stock, it was believed that PPP could help raise the additional funds required and also realize significant financial gain for the partnership. On top of the sharing of risk and awards, each partner has clearly defined roles. The City of Toronto

has waived developmental fees and realty taxes on all supportive housing units and also absorbed much of the infrastructure costs for the construction of new parks and roads. The TCHC conducted a number of feasibility studies to decide on the best approach for the regeneration of the community and provided some of the funding for the supportive housing units. As the private developer, Daniels helps finance and oversee the design, construction and completion of all the housing units.

The project has been managed and executed effectively and systematically, guided by good governing principles of transparency and inclusiveness. After redevelopment plans were finalized, TCHC invited a number of private developers to a transparent and competitive procurement process. Daniels was chosen for the first phase, and a formal contract agreement was signed, clearly stating the financial and legal responsibilities of each partner. TCHC embedded control mechanisms into the agreement to ensure that the private developer fulfills its contractual obligations. Developers who do not satisfy the project requirements would not be invited back to build the subsequent phases of the project. In addition, the community is consulted and regularly updated on the progress of the partnership. Although the full implications as well as the results of this PPP remains to be seen, the first phase of the project has been completed successfully.

Nigeria's PPP strategy for low-income housing

The positive example of Toronto's Regent Park PPP is to be contrasted with the challenges posed by Nigeria's mass housing scheme (MHS), a PPP strategy for low-income housing.⁷ Over the years, Nigeria has developed and implemented a number of housing policies and strategies for the low-income group, including housing provision by both the public and private sectors. While the private sector has concentrated on developing housing for the higher-income groups,⁸ the public sector expended large amounts of resources without alleviating the housing shortage among the low-income group. The PPP framework was adopted for the MHS in 2000 and presented as a solution to solve the accessibility and affordability problems associated with the public housing scheme. However, institutional failures have caused the PPP to fall short of expectations. Although procedures were stipulated, some of these were not followed, which inhibited successful execution of the plan. The key institutional failure was

the lack of coordination and inadequate monitoring by the government agencies involved. This led to confusion and encouraged non-compliance. The case of Nigeria thus reiterates the need for sufficient regulatory capacity and good governance and for strong institutions to undergird a PPP.

Singapore's executive condominium housing

The Singapore government introduced the executive condominium (EC) scheme, a hybrid public-private housing type in 1995. The rationale was to fill a gap in the market by providing affordable homeownership for the upper-middle income families which were ineligible for the public housing homeownership scheme but who found private housing beyond their reach. Executive condominiums are classified as private housing after 10 years, but purchasers of new units face many of the restrictions that apply to homeowners of subsidized housing developed by the Housing and Development Board (HDB). The government auctions state land on a 99-year leasehold basis for the development of EC units to housing developers (private as well as government-linked companies). As with private sector condominium projects, the successful bidder is responsible for design, construction, pricing, arrangements for development finance, sale and estate management. However, applicant households have to satisfy eligibility conditions (household income must be below S\$12,000 per month) and abide by the resale and other regulations governing these units. The units can be sold after five years only to Singaporeans and permanent residents but can be sold after ten years to foreigners. Buyers of ECs cannot buy an HDB flat directly from the government again, although first-time homeowners are eligible for a housing grant, which can be used toward the down payment (see Chapter 4, Table 4.1).⁹ As of 2010, the stock of EC housing comprised approximately ten thousand units.¹⁰

Leasing of state land for private housing development in China

Local government's ownership of land and its power to create new supplies of urban land through acquisition or conversion of rural land are perhaps the most strategic instruments in driving urban expansion. A *Newsweek* story on China's megacities concluded, "No single factor has been more powerful in driving urban expansion than the freedom cities have had to buy and sell land."¹¹ In 1988,

China's constitution was amended to permit land leasing to the private sector while retaining public ownership of land. By 1992, Beijing and Shanghai had adopted land leasing as a local practice, whereby the purchaser can acquire land rights for a period of 40 to 70 years.¹² The practice has since been emulated by the rest of the country. This Chinese model of leasing of state land for private developments has been adapted from that used in Hong Kong and Singapore (where governments are major landowners and government land sales via auction is the main source of land supply).¹³

Beginning in 1992, the Shanghai government launched plans for the development of the new Pudong District, east of the Huangpu River. Within two decades, Shanghai Pudong has developed into an area spanning 1,210 square kilometers, with a population of over 4 million people.¹⁴ The Draft Pudong New Area Planning and Construction Administration Regulation and the Pudong New Area Land Administration Regulation (1990) required organizations and real estate developers to purchase or lease land-use rights by negotiation, by tender or at auction at a price based on standards established by the local municipality.¹⁵ The aim was for PPP to provide private finance, speed up urban development and redevelopment, improve efficiency in public services and create social benefits far beyond the interests of the private sector. Involvement of private finance, particularly foreign investment, was fundamental in facilitating Pudong's rapid development. It allowed the public sector to circumvent the problem of a budget deficit, to generate capital for infrastructural development and to fund new housing for existing residents, mainly in suburban locations. By 2000, more than 100 billion RMB (US\$ 12.08 billion) had been raised from land transfer fees in Pudong to be used for infrastructural development.¹⁶ In less than 20 years, Pudong was transformed rapidly from an underdeveloped agricultural area to a financial hub with comprehensive urban facilities and amenities.

The public sector played a central and dominant role in the transformation of Pudong. It exhibited pragmatism and exercised flexibility in ensuring that the PPPs achieved their social and economic goals. It undertook initiatives to attract private sector investors; for example, by improving the legal framework to allow the private sector more flexibility and control and to remove obstacles that impeded progress. The central and local governments also

implemented a series of preferential policies such as tax deductions, cheaper land prices and a “one-stop” service for approving investment. An exception was made to allow the leasing of land-use rights for an indefinite period during the Asian economic crisis.¹⁷ The aim was to provide flexibility for developers who were finding difficulty in obtaining financing because of the then prevailing economic climate. This change in land-leasing policy demonstrated the flexibility with which the Shanghai government reacted to the change in market conditions.

Once development was successfully underway and key infrastructure projects had been completed, the Shanghai government turned its attention to urban renewal projects. These projects were considered less attractive for the private sector compared with green-field projects as they offered high risk and low return. In the late 1990s, the public sector used its co-financing strategy to boost the attractiveness of low-cost low-return urban renewal projects and was able to interest private developers to invest in these projects. As an example, the Pudong New Area Administration Centre’s real estate bureau provided 400 million yuan (US\$48.31 million) to co-finance the redevelopment of Chrysanthemum Park (a housing development of 1,109 apartment units and 30,000 square meters of green space) under the terms of a contract entered into with the developers.¹⁸ Construction began in April 1997 and the project was completed in 2001.

While the Pudong model has been successful and replicated across China in the past decade, the Chinese PPP has been criticized for lacking transparency and fairness. Land transfer by negotiation is a flexible yet opaque process that favors developers with better contacts in local government, as well as local officials, who tend to acquire land in better locations at cheaper prices. Critics have alleged that such deals are the main source of corruption, with subsequent revenue loss to the government.¹⁹ A new regulation enacted in 2001 stipulates that the granting of land-use rights for commercial land should be via public bidding. As a result, the proportion of land transfer by means of public bidding in Shanghai increased from 17 per cent in 2001 to 76 per cent in 2003. While the Chinese PPP for urban development and renewal is by no means perfect, the commitment of the public sector to continually improve the process is noteworthy.

New mega-PPPs

This chapter on PPPs would not be complete if we did not also consider the recent wave of PPPs for the development of an entire city or a large district within a city of which housing is but one component of each mega project.

Governments have initiated PPPs to build cities with private sector partners that include real estate developers, architects, technology experts, financial institutions and other service providers. The balance of private and public sector involvement varies across projects, as illustrated in the following examples: the China-Singapore Suzhou Industrial Park, the Tianjin Eco-City and the New Songdo City.

Both the Suzhou Industrial Park and the Tianjin Eco-City were established as joint collaborations between China's and Singapore's governments in 1994 and 2007, respectively. The two projects are, in effect, led by joint ventures between a Chinese consortium and a Singaporean consortium, which are also the master developers of the cities. Each consortium is led and managed by a state-owned company and includes private sector corporations such as real estate-focused firms and energy and technology companies. Both Chinese and Singaporean sovereign wealth funds provide the capital required for the long-term development of the cities, which typically takes 10 to 15 years to complete. Such farsighted capital is not necessarily typical of either the private or public sectors when working alone. In the long run, the capital invested by both the Chinese and Singaporean sovereign wealth funds will, at least in theory, be returned directly in the form of fees to the master developers as well as in participation in subsequent smaller projects.²⁰

Problems with the Suzhou PPP surfaced in 1999, when the Singapore government sparred publicly with Suzhou municipal authorities. The latter had simultaneously built a rival Suzhou New District (SND) and focused on promoting the SND instead.²¹ While the partnership structure behind the Tianjin Eco-City appears to be working relatively well, there have been reports of "disharmony" between the Singaporean and Chinese consortia, possibly caused by friction from different work cultures and differing opinions on how fast the project should develop.²²

The PPP approach to New Songdo City entails less public sector involvement. New Songdo City is supported by the Korean government

but spearheaded by private companies driving financing and development and working to recruit other partners. In 2001, the City of Incheon gave development rights to a 70–30 partnership between a US-based real estate developer, Gale International, and a construction manager, POSCO E&C, a Korean steelmaker. The project has an estimated cost of US\$35 billion. In 2006, Morgan Stanley was the first financial institution to make an investment of \$350 million in cash. At that particular point in time, US\$1.5 billion in construction had already been financed through a syndicated loan extended by a group of 26 financial institutions.²³

The charter city represents another form of partnership arrangement between governments and private sector consortia, albeit on the scale of a city-state large enough to accommodate up to ten million people. A brainchild of Paul Romer, a New York University economics professor, charter cities are envisioned to be quasi-independent city-states built in developing countries.²⁴ Romer's vision is for the charter city to have its own autonomous constitution, legal framework, government and even currency. The aim is to replicate the successful rules and institutions of successful cities in developing countries which lack good rules and institutions. Locals will be able to migrate voluntarily to these charter cities to live and work and will be free to exit. Romer's hope is for the charter city to lead institutional reform in its host country. Although reservations have been expressed about the feasibility of creating such charter cities, in 2011, the national legislature of Honduras legalized the creation of "special development regions" modeled on Romer's charter city concept. A suitable coastal city, Trujillo, has been identified as the first special development region, and the Honduras government has begun appointing foreign members to the "transparency commission".²⁵

PPPs: an evaluation

The high costs inherent in developing sustainable cities have provided strong motivation in many developing countries for governments to seek private sector co-financing. PPPs have been embraced as the means of financing infrastructure without burdening fiscal accounts; this approach allows governments to access private sector capabilities as well as to help improve the efficiency, quality and

reliability of urban services. However, PPPs in infrastructure sectors have also been perceived by the private sector as being high risk due to long contract length, complexity and lack of transparency, as well as to regulatory risks. Compared with the infrastructure sector, these downside risks are less apparent in the real estate sector.

The cases discussed above suggest that PPPs can be used as an effective instrument to increase housing supply in urban regeneration projects and, on a mega scale, for the development of entire cities. Government partnership can help in reducing gridlock risks as well as project risks, thus lowering the costs of housing. There is, however, a clear need for accountability and good governance in order to attract private funding, to justify the use of state land and public funds and to ensure value for money, as well as project sustainability. The UK, Canada and Australia are examples of developed countries which have established specialized institutions to address PPP governance issues in an explicit and comprehensive manner (e.g., Partnerships UK, Partnerships BC and Partnerships Victoria). Most developing countries, however, have yet to do so. Practices that would limit corruption in PPPs would include competitive bidding, disclosure policies, transparency and public reporting, as opposed to unsolicited bids and direct negotiations.²⁶

There are no unique solutions or templates to follow. Each PPP procurement will reflect the needs and characteristics of the city concerned, including its capacity to formulate, manage and regulate, as well as its risk preference given the multiple trade-offs involved. PPPs are not “best practice” institutions but rather “second-best” institutions – they take into account context-specific market failures and government failures that cannot be removed in short order.²⁷ In arriving at a decision, policymakers will need to have a clear vision of objectives as well as a deep understanding of context in order to fully appreciate the advantages and limitations of PPPs.

Although numerous problems with infrastructure PPP transactions have been documented,²⁸ PPPs have worked in real estate development when the government is a major landowner or when government involvement is needed in order to remove gridlock. In some cases that call for a PPP, project scale, scope and risk may be beyond the capacity of either the public or private sector to implement and/or manage. Sustainable urban development in the 21st century is a challenging task, and PPPs can be an important

instrument in urban development policy. Their long-term success is dependent on an array of political, economic and institutional factors, amongst others. Sustainability requires careful planning and management, good governance practices and appropriate design, institutions and regulation; most important of all, citizens must ultimately benefit.

Part III

Housing Bubbles, Crashes and Policy

Prior to 2007, housing rarely featured in macroeconomics textbooks or in policy debates at international forums. There was general consensus on the roles of a central bank, the elements of monetary policy and the prudential supervision of the financial system – none of which considered housing in any significant way. In the USA, housing policy and housing prices were considered to be regional or urban issues that would be better dealt with by metropolitan governments. However, the global financial crisis of 2007–2008, which had its origins in the US subprime crisis, led to a new focus on the linkages amongst house prices, the financial sector and the macroeconomy, as well as the implications of these linkages for macroeconomic policymakers. These are the topics that will be covered in the chapters in Part III.

Chapter 9 begins with the housing cycle and its drivers. It then looks at the conditions under which housing booms are predisposed to develop into bubbles, which when they burst, can have grave consequences for financial stability and the economy as a whole. The chapter will explore the nexus between housing and credit markets and the macroeconomy, as well as international transmission mechanisms. Although the US housing crash of 2007–2008 was very visible because of its global ramifications, history is replete with examples of the joint occurrence of housing crashes and financial crises which were more contained in their effects. The evolution of the international capital markets during the past quarter of a century has also led to increasingly easy international transmission of real estate-based credit bubbles through capital imbalances.

Chapter 10 examines the rationale for policy action to deal with housing booms. In the recent postcrisis period, governments in several East Asian countries have proactively intervened to curb house price increases using a range of policy tools. We will consider the role of monetary, fiscal, and macroprudential options that can be used to manage housing booms, as well as the benefits and challenges associated with each category of instrument. Although there has yet to be international consensus in practice, the increasing acceptance of the need for intervention to deal with housing booms implies the corresponding need to develop tools to monitor the housing cycle, to detect bubbles, and to determine triggers for intervention. Chapter 10 concludes with a review of the ongoing developments in this new and expanding area of research.

9

From Housing Cycles to Financial Crises

Housing cycles

Housing markets have always been cyclical with regular booms and busts. Similar to other assets, housing asset prices should equal the discounted stream of expected future housing returns in the long run. To the extent that actual and expected rents and components of the discount factor (in particular interest rates and capital gains) are affected by macroeconomic shocks, policy and sentiments, these shocks are reflected in house price changes.

What distinguishes the real estate market from the stock market, which is similarly affected by exogenous shocks, is the intrinsic tendency toward cyclical fluctuations. Several empirical studies of housing markets¹ find evidence of the following: price changes exhibit positive serial correlation in the short run; in the long run, they tend to show negative serial correlation, with trend-reversion back to fundamental values. As such, housing (and real estate) price changes correct after a disturbance, but slowly, and thus do not generally satisfy the efficient capital markets hypothesis. Once a boom has started, it is likely to persist for some time. Similarly, once prices have started to fall, declines are likely to continue for some time.

Housing cycles are not regular in duration or amplitude and depend on the interplay of equilibrating and disequilibrating market and policy forces in a particular country or metropolitan area within a country. A 2008 IMF study of housing cycles using quarterly data for 19 OECD economies for the period 1970 to 2007 indicates that the run up in house prices in the period prior to 2007 on average

lasted twice as long and was three times stronger than for previous upturns (see Table 9.1).²

House price fluctuations further affect the economy through their direct impact on construction activity, household budgets and overall wealth. Another IMF study of OECD countries for the period 1960 to 2007³ showed that output losses in recessions accompanied by housing busts were two or three times greater than they would otherwise have been. Housing busts also prolonged recessions; such recessions averaged 18 quarters (consistent with the housing downturn duration data in Table 9.1) as compared with 4 quarters for the typical recession. These prolonged recessions were a consequence of falling asset prices and debt overhang, which acted to drag down consumption and investment, while the increase in nonperforming loans placed further stress on banking sector balance sheets.

Table 9.2 shows the Singapore data for purposes of comparison with the OECD figures in Table 9.1. On average, Singapore cycles have been of shorter duration and with larger amplitudes as compared with the average for OECD countries. Upturns averaged 18 quarters in duration with average trough-to-peak increases of 150.4 per cent,

Table 9.1 Features of house price cycles for 19 OECD countries, 1970–2007

	Duration	Amplitude
Upturns	26 quarters, or 6.5 years	39.2%
Downturns	17 quarters, or 4.25 years	20.4%
Most recent upturn prior to 2007	59 quarters, or 14.75 years	116.6%

Source: International Monetary Fund, *World Economic Outlook: Housing and the Business Cycle* (Washington DC: International Monetary Fund, 2008), p. 111.

Table 9.2 Features of Singapore's house price cycles, 1975–2012

	Duration	Amplitude
Upturns	18 quarters, or 4.5 years	150.4%
Downturns	8 quarters, or 2 years	26.7%
1986–1996 Upturn	40 quarters, or 10 years	441.5%

Source: Estimated from the Private Residential Price Index obtained from the real estate database of Urban Redevelopment Authority, Singapore: REALIS (<https://spring.ura.gov.sg/lad/ore/login/index.cfm>).

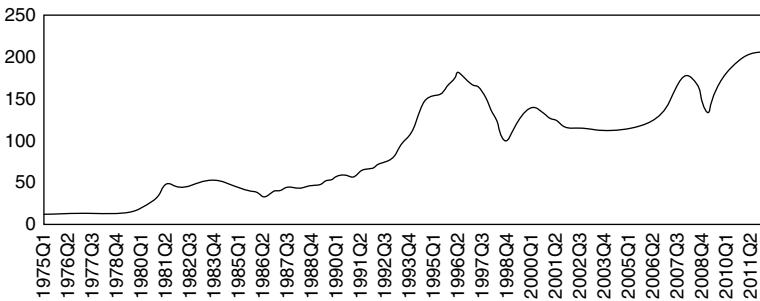


Figure 9.1 Singapore's nominal private residential price index

Source: Chart data from Urban Redevelopment Authority, Singapore: REALIS (<https://spring.ura.gov.sg/lad/ore/login/index.cfm>).

and downturns averaged 8 quarters with average price declines from peak to trough of 26.7 per cent.

The longest run-up in housing prices was from 1986Q2 to 1996Q2 (40 quarters), with the price index increasing from 33.5 to 181.4, an increase of 441.5 per cent in amplitude (see Figure 9.1). The index subsequently declined to a trough of 100.0 over 10 quarters (1998Q4). The longest duration of housing price decline was fairly recent, occurring over 15 quarters between 2000Q2 and 2004Q1.

The cyclical characteristic of housing markets can be attributed to a number of characteristics, including short-term rigidities in housing supply leading to the build-up of imbalances, the formation of market expectations and the integration of housing and financial markets.

Housing supply

In the short run, housing prices adjust quickly to equalize demand and supply. However, adjustments to supply occur only slowly, as buildings are durable, and there are time lags for approval and construction. Construction of new housing in any given year typically represents a very small addition to the existing housing stock. Housing supply in any time period is thus determined by previous period expectations and decisions on production of new units, as well as by decisions concerning conversion of existing housing stock. The durability of housing stock means that elasticity of housing supply is

asymmetric in response to increases versus decreases in demand. A decline in housing demand does not result in an immediate contraction of housing stock because housing depreciates slowly.⁴ For the same demand shock, a more elastic housing supply results in smaller price fluctuations, as compared with the case of inelastic housing supply. Housing price volatility is thus strongly related to supply conditions, and speculative activities, which can have a large impact on housing cycles, are more likely when supply is inelastic.

Long-term local price elasticity of housing supply varies widely depending on land availability, construction costs and technology, and government regulations.⁵ Not surprisingly, empirical estimates of price elasticity of housing supply have a very broad range. Housing supply in the USA is estimated to be price elastic on the whole, although the variation across metropolitan areas ranges from inelastic to very elastic. Estimates for Asian cities are in the range of inelastic supply to around 1.6.⁶ This is in contrast to the range for price elasticity of housing demand, which is much smaller, at values between -0.5 to -1 .

High-density housing developments, which represent the typical housing form in East Asian cities, are scale intensive and are characterized by high technology content and capital-intensive supply processes. They also involve high transaction costs, which make projects irreversible once begun. Extensive planning approval and construction lags, which can be up to five years, mean that developers start projects on the basis of expectations of future demand, rather than current observed demand. Since future demand is difficult to forecast, developers make supply decisions under conditions of considerable uncertainty. Moreover, in the local oligopoly market that tends to characterize high-density construction, the decision of one developer affects the decision of other developers. These characteristics of housing production common in East Asian metropolises differ substantially from that for low-density housing and from economies where land supply is not as constrained.

While developers typically rely on banks for working capital and the stock exchange for equity capital, another source of development and construction finance is in the form of presales. Presale allows developers to sell a residential unit in a development prior to completion of the unit, with conditions allowing for the phased payment of the purchase amount over the period from purchase to

completion. Yet-to-be-completed condominium projects have been pervasively marketed through this particular channel in Singapore, Hong Kong, Taiwan, China and Korea over the past few decades. In the USA, presales also featured in many residential markets during the subprime housing boom, including condominium markets in San Diego, Washington, DC, and South Florida.⁷

As the time gap between the start of presale and the time of project completion can be a few years, the presales system allows developers and purchasers to mitigate and share in the risks of future price uncertainty. From the purchasers' perspective, the cash deposit to secure a transaction in the presales market could also be lower than the down payment required for an immediate purchase in the secondary market; thus cash-constrained households can enter the market and save towards the eventual full down payment. The low deposit also attracts speculators, who frequently enter and exit these futures contracts prior to project completion. There is a growing literature on the impact of presales indicating that developers will tend towards oversupply and markets will be more volatile when compared with markets without the presale system.⁸

Formation of house price expectations

Other than of housing supply imbalances, another contributory factor to house price booms and bust is the variability in the formation of house price expectations. Studies of real estate markets have indicated that the expectations formation process tends to be better characterized by myopic backward-looking expectations rather than rational expectations.⁹ While the anticipation of capital gains through rising prices stimulates demand, the anticipation of further price declines causes buyers to defer demand.

Keynes's view of animal spirits as the main cause of economic fluctuations is of even greater relevance when explaining asset booms, bubbles and busts. (In economics, the term "animal spirits" has come to mean noneconomic motives and irrational behaviors.) Akerlof and Shiller expand on animal spirits as comprising elements of overconfidence, corruption or fraud, money illusion, and storytelling.¹⁰ Inefficiency and irrational price expectations in real estate markets have also been attributed to high transaction and high information costs.

Housing prices and credit markets

In the real estate sector, where housing assets are commonly used as loan collateral, the supply of credit for both buyers and speculators by the banking system or capital markets further amplifies price fluctuations. The integration of housing markets with the financial sector has increased since the deregulation of domestic financial markets, which occurred in many countries in the 1980s. Numerous studies have shown a close correlation between house prices and credit growth.¹¹ There are various potential causes of this, with the strength of the correlation dependent on the pace of financial liberalization and key institutional features of the mortgage markets.

The most direct cause is the effect of house prices on the value of collateral which borrowers can offer and thus the availability of credit for borrowers. The typical mortgage product usually allows households to borrow a fixed multiple of their down payment (the leverage ratio). This fixed "leverage ratio" creates an "accelerator" mechanism where a positive or negative shock to income or net worth is amplified by an expansion or contraction in borrowing capacity, which in turn influences house prices.¹² Where prevailing leverage ratios are higher, positive shocks translate into larger house price increases. Phang posits that the same accelerator mechanism is at work in the Singapore housing market, where the dominant government developer, the Housing and Development Board, provides housing loans with a fixed leverage ratio *as well as* directly fixing new housing prices as a multiple of household income.¹³

In countries where housing equity withdrawal products are allowed, these withdrawals can also allow households to borrow against their housing wealth through increasing or refinancing existing mortgage loans.

Another channel through which house prices affect credit supply is through the effect on banks' balance sheets.¹⁴ Increases in house prices increase the capitalization of banks via their effect on the value of loans secured by housing collateral as well as banks' ownership of real estate. Increases in the capitalization of the banking system increase banks' supply of credit. This, in turn, leads to further increases in house prices. This feedback mechanism goes into reverse when real estate prices decline, amplifying the real estate cycle. Countries where secondary markets for mortgage loans are more

developed also enable mortgage lenders to tap funding via capital markets to provide credit to households.

It is also possible for lending standards and lenders' perception of risk to evolve in a pro-cyclical fashion, contributing to swings in house prices. When lending standards (loan-to-value ratios) are relaxed in good times, this drives up both credit and house price growth, and a tightening of lending standards in falling markets puts downward pressure on house prices. Geanakoplos emphasizes this endogeneity of the loan-to-value ratio as a cause of credit and asset price cycles.¹⁵ The increase in incidence of foreclosures and mortgagee sales in a falling market where lending standards have been tightened can further drag down house prices.

Internationally, capital market liberalization and financial deregulation which occurred in several countries in the late 1980s and early 1990s also removed obstacles to cross-border investments, leading to increased synchronization of different national cycles. Renaud pinpointed the massive investment outflows from Japan in the late 1980s as the international factor behind the European real estate boom in the late 1980s. The effect of falling property values on Thailand's banks during the Asian crisis of 1997/8 was quickly transmitted to the rest of the region's financial sectors.¹⁶ Allen and Carletti have attributed the rapid growth in US residential mortgage-backed securities between 2000 and 2006 to investment demand from China from its accumulation of large amounts of reserves.¹⁷

Given the characteristics of the housing market as described above, a small exogenous shock would be sufficient to generate large movements in housing prices. The shocks or waves of shocks that could potentially set off a housing cycle are numerous and could include demand shocks (changes in population and incomes and shifts in asset portfolio allocations), supply shocks (construction costs, regulatory constraints), loan supply shocks (changes in the interest rate, down-payment ratio or loan-to-value ratio, debt-service ratio) and financial innovation, as well as changes in sentiments, economic policy or financial regulation.

From housing boom to bubble

The term "bubble" is commonly used to describe an asset market that is experiencing overinflated and non-sustainable prices which

are inconsistent with intrinsic values. Bubbles can occur with regard to specific products, stocks of companies or real estate in specific locations; they can affect the entire asset class of stocks or real estate. Since 2008, a large number of books and articles have been published on housing bubbles and the financial crises. Eight centuries of bubbles and crashes are documented in Carmen Reinhart and Kenneth Rogoff's *This Time Is Different*.¹⁸ The 1978 classic *Manias, Panics and Crashes: A History of Financial Crises* by Charles Kindleberger has been recently updated to its sixth edition by Robert Aliber.¹⁹ Kindleberger divided the evolution of a typical bubble into five stages: displacement, boom, euphoria, peak, and bust. A displacement is an exogenous shock that gets the process started and needs to be of sufficient importance to alter how investors and other financial players conceive the future.

A bubble exists in the real estate context if there is an ever-increasing deviation between the price of the property and the present discounted value of rents. The occurrence of a housing boom can be perfectly consistent with underlying economic fundamentals; in particular, when a positive shock occurs in a region with short-term supply rigidities, price expectations are myopic, and developers make decisions about future housing supply under uncertainty. While mild housing booms are common, housing bubbles in major industrial countries are infrequent.

What then are the conditions which would predispose a rational housing boom to develop into a bubble? The literature furnishing explanations for the development of housing bubbles can be broadly categorized into those emphasizing real, psychological, and monetary factors.

Rational bubbles

Urban economists such as Edward Glaeser, Joseph Gyourko and Albert Saiz emphasize the importance of housing supply in understanding housing bubbles.²⁰ Using median house prices for US metropolitan areas from 1982 to 2007, they present evidence that price volatility was higher in places where housing supply was more price inelastic, and housing price booms in elastic places were much shorter in duration than those in inelastic places. Variations in housing supply price elasticity thus, to some extent, determine the geographical variation in housing bubbles.

There are also times when actions that are rational at the individual level are irrational when considered at the market level or when decisions that are rational in one period turn out to be irrational in hindsight. People making a rational individual decision may fail to take into account the fact that other people will make the same decision. For instance, it may be rational to buy a house in a boom period with the intention of selling it the following period. Many other agents may make the same choice, however, so that there are no buyers when the following period arrives. This bubble is an irrational outcome at the market level. A developer's decision to undertake a housing project in a boom period is rational during that period. When the developer completes the project, though, there might be a lack of enough demand.²¹

Rational bubbles could also be the result of financial friction. This could be in the form of minimum collateral requirements that limit the borrowers' credit capacity to the value of their housing assets. Collateral constraints thus effectively restrict the amount of investable assets in the economy. In a low-interest-rate environment or one where assets and collateral are scarce, speculative buy-to-sell housing investments may become an optimal investment option, thus fueling housing bubbles.²² However, rational bubble hypotheses alone cannot explain the large magnitude and erratic timing of bubble booms and crashes.

Irrational bubbles

Economists coming from the Keynesian tradition explain bubbles as driven by animal spirits or mob psychology. Robert Shiller's best-selling books *Irrational Exuberance* and *Animal Spirits* (with George Akerlof) and Kindleberger's *Manias, Panics and Crashes* fall within this particular category.²³ An exogenous positive shock triggers optimism that develops into a mania that is exacerbated by a lack of data, attracting buyers and speculators who buy to resell for a quick profit. This demand-side speculative euphoria, however, cannot be sustained unless it is fuelled by the supply of credit.

Credit bubbles

Hyman Minsky, an avowed Keynesian, advanced the view of the financial sector as constituting the primary source of instability in free market capitalism.²⁴ Minsky highlighted the problem that even

as investors became more optimistic, lenders' assessment of risks of individual investments and risk averseness declined, leading them to make loans that previously may have been considered too risky. Most real estate bubbles have in common easy access to low-cost credit, which stimulates demand and drives up prices. Even as "inflation always is a monetary phenomenon", the counterpart is that "real estate bubbles always are a credit phenomenon".²⁵ Here, many factors could be at work to drive credit growth. Low credit costs could be the result of monetary policy. Another factor could be lenders' underpricing of borrower default risk for mortgage loans, resulting in lower rates and/or relaxation of underwriting standards. This underpricing could lead to inflated asset prices so that, following a demand shock, markets that have underpriced risk experience deeper market crashes than markets with correct risk pricing.²⁶

An increase in the supply of credit could also result from financial deregulation and innovation. Levitin and Wachter attribute the 1997–2006 US housing bubble to a fundamental shift in the structure of the mortgage finance market from regulated securitization to unregulated private label securitization.²⁷ Fostel and Geanakoplos suggest that the bubble could have resulted from the financial innovation of tranching and securitization of subprime mortgages, which caused the underlying housing collateral to become more valuable.²⁸ They further raise the possibility that the subsequent introduction of credit default swaps in 2005 and 2006 was the "tiniest spark" that brought prices crashing down.

International economists, such as Robert Aliber,²⁹ see the four waves of credit bubbles in the past three decades (Latin America, Japan, Asia and the USA) as constituting a succession of waves linked by capital imbalances and international bubble contagion. This is attributable to the increasingly large volume of money that can move from one country to another at relatively low cost. The reversal in the direction of cross-border money flows that follows the implosion of one bubble may contribute to the next wave. Thus, the implosion of the bubble in Japan in the 1990s led to a surge in the flow of money from Tokyo to Thailand, Indonesia and other Asian countries. This led to overvalued currencies and real estate. After the Asian crisis and currency depreciation, large deficits reversed into large surpluses. This resulted in a surge in the flow of money to the USA as Asian countries repaid loans and invested accumulating reserves.

While there are many explanations for housing bubbles, the essential components for the development of a housing bubble are (i) rigidities in housing supply, (ii) a positive shock that leads to a sharp increase in anticipated rates of return or a significant reduction in risk and (iii) availability of credit supply and a group of lenders who are willing to extend more credit to borrowers. As the bubble inflates, a negative shock or reversal in the supply of credit sets off liquidity problems for households and lenders, leading to a bubble burst or crash.

From bubble burst to financial crises

Not all housing bubble crashes lead to financial crises. However, financial crises in recent decades have often been associated with housing bubbles and bursts. Of the big ten financial bubbles identified by Kindleberger and Aliber that took place between 1636 and 2007 (see Table 9.3), six occurred between the 1970s and 2007. Except for the US stock bubble of 1995–2000, the other five episodes of financial crisis were all associated with a real estate bust. Reinhart and Rogoff studied a vast range of financial crises in 66 countries over eight centuries.³⁰ They found that systemic banking crises in both advanced and emerging economies are typically preceded by credit booms and housing price bubbles. High default rates for mortgages following a crash can put considerable stress on lending institutions. The risk of insolvency of weaker institutions can trigger bank runs and panics, leading to system credit crunch and widespread failures.

Table 9.3 Big ten financial bubbles

1636	Dutch Tulip bulb bubble
1720	South Sea bubble
1720	Mississippi bubble
1927–1929	Stock price bubble
1970s	Mexico and developing countries bank loans
1985–1989	Japan real estate and stocks
1985–1989	Finland, Norway and Sweden real estate and stocks
1992–1997	Asian financial crisis
1995–2000	US over-the-counter stocks
2002–2007	USA, Britain, Spain, Ireland, Iceland real estate

Source: Charles Kindleberger and Robert Aliber, *Manias, Panics and Crashes: A History of Financial Crises*, 6th ed. (UK: Palgrave Macmillan, 2011), p. 11.

Table 9.4 and Figure 9.2 show some characteristics of recent housing bubbles in Japan, Singapore, Hong Kong, Spain and the USA. The bubble amplitude is very large (900 per cent in the case of Hong Kong, for example), and the crashes are steeper than the upturns during the boom periods. Financial features lead to faster and deeper crashes as credit that flowed freely to bubble sectors dries up quickly when the boom fades. Spain and the USA had relatively smaller bubble amplitudes because the housing markets were already mature. Japan, Hong Kong and Singapore were still growing economies during the period when their housing bubble was forming. Since 2003, Hong Kong's housing price index is up 213 per cent, and there is concern of another property bubble. Spain's housing downturn is still in progress, and the weak economic environment, including a high rate of unemployment, suggests that the housing contraction will be a long-drawn-out process.

In the mid-1980s, the Bank of Japan came under pressure from western governments to address the problem of its persistent trade surpluses by effecting an appreciation of the yen. Under the Plaza Accord of 22 September 1985, Japan agreed to a policy of strengthening the yen vis-à-vis the US dollar and the German mark, in order

Table 9.4 Housing bubbles

Housing bubble (peak)	Upturn		Downturn	
	Duration	Amplitude	Duration	Amplitude
Japan (1991)	16 years	447.6%	14 years	-65.2%
Singapore (1996 Q2)	40 quarters	441.5%	10 quarters	-44.8%
Hong Kong (1997 Q3)	52 quarters*	903.0%*	24 quarters	-65.0%
USA late (2006 Q2)	43 quarters	195.5%	13 quarters	-32.5%
Spain (2008 Q1)	48 quarters	202.4%	16 quarters**	-20.2%**

*As the chart below shows, the upturn had one or two brief pauses leading up to the 1997 peak.

**As of end October 2012, Spain's housing downturn was still ongoing.

Sources: Figures are based on analysis of price data from the following sources: Japan Real Estate Institute, urban residential land price index for 6 largest city areas; Singapore: REALIS, Urban Redevelopment Authority of Singapore; USA: Standard and Poor's Case-Shiller index; Hong Kong: Rating and Valuation Department, Hong Kong; and Spain: European Central Bank Residential property price index statistics (new dwellings).

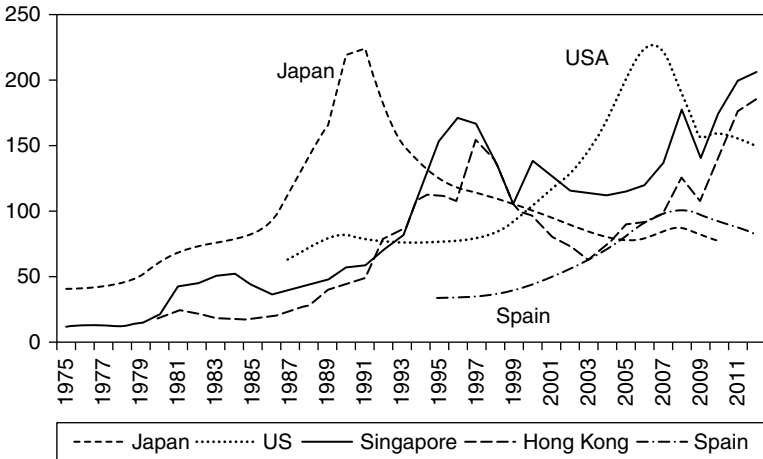


Figure 9.2 House price indices

Source: Chart data are from the same sources as for Table 9.4.

to ward of threats of protectionism by the USA. Within a period of two and a half years, the yen appreciated from about 240 yen to the US dollar to a low of 120 yen to the US dollar by December 1987. To counter the recessionary effects of a strengthening yen, the Japanese central bank adopted an expansionary monetary policy. A series of interest rate cuts reduced the Japanese official discount rate to 2.5 per cent per annum by February 1987, a historical low at that particular point in time.³¹

A strong yen and prolonged low interest rates following the Plaza Accord contributed to the inflation of the real estate bubble. Financial deregulation occurring during the same period also allowed banks to take on more risk. In addition to their own direct exposure to speculative real estate, banks in Japan also lent heavily to favored and highly leveraged developers to buy real estate against inflated collateral values, further fuelling the bubble. By 1989, the value of real estate in Japan reached staggering levels – estimated at US\$24 trillion, or four times the value of real estate in the USA.³²

A belated reversal in monetary policy began with an increase in the official discount rate in May 1989 (with the rate peaking at 6 per cent by August 1990), which resulted in the bursting of the real estate

bubble. The recession that followed was slow, painful and persistent and led to weak bank balance sheets for an extended period. In the aftermath of the housing crash, the Japanese economy did not recover for over a decade.

It is noteworthy that although Singapore and Hong Kong (two tremendously land-constrained cities that are also global financial centers) have witnessed their share of housing bubbles and crashes, the banking systems of both cities have proven remarkably resilient to the effects of housing price volatility. One explanation for why Singapore and Hong Kong financial sectors escaped serious financial sector damage from the housing bubbles is the governments' close monitoring of housing prices and credit flows and the willingness to undertake macro-prudential intervention in the housing market (see next chapter). In contrast, the financial sector in the USA had a large exposure to real estate in general and highly leveraged exposure to real estate derivatives such as mortgage-backed securities (MBS) and collateralized-debt obligations (CDO), in particular. When the housing bubble burst, many financial institutions became insolvent, leading to a financial crisis.

Spanish banks also had large balance sheet exposures to real estate. Weak economic growth in Spain from 2007 led to housing price declines which also contributed to the fragility of the financial sector. In June 2012, the European Union agreed to lend the Spanish government €100 billion, equivalent to 10.5 per cent of Spain's total output in 2011, to recapitalize Spanish banks in order to avert a full-scale financial crisis.³³

The ongoing Eurozone crisis provides fresh examples of how a housing bubble can have consequences for financial sector instability and exact very large costs on the economy. The legacy of banking crises include losses to depositors, shareholders and bondholders, the decapitalization of banks and the bailout costs for insolvent banks, government debt buildup, slowdown in spending, increased unemployment and reduction in economic growth. While the need for prudential regulation of the financial sector is virtually unquestioned, there remains considerable debate as to whether changes in the housing cycle should lead to policy action. This policy debate will be the subject of the next chapter.

10

Policy Response to Housing Booms

Should governments react to housing price changes?

Recent studies provide extensive evidence that housing booms and busts are an important cause of banking crises.¹ The IMF has devised four measures to estimate the costs of financial crises: fiscal costs arising from financial sector rescue packages, output losses, increase in public debt, and peak non-performing loans. In 2009, an IMF estimate placed the total cost of the 2008 world financial crisis at an astonishing US\$11.9 trillion, or the equivalent of approximately one-fifth of the entire globe's annual economic output,² while another estimate was that up to 45 per cent of the world's wealth had been destroyed in less than 18 months. Although costs estimates have since been revised downwards substantially, the potential outlay still dwarfed any previous cost estimates of financial crises.³

Should governments therefore react to forestall increases in housing prices so that the subsequent crash will be less severe? Should governments act to prick a bubble? When housing prices begin to decline, should there be policy measures to dampen the decline? There are no consensus answers to the above questions; a large literature has, in fact, grown around whether central banks should react by raising interest rates to prick asset price bubbles. Before the 2007 crisis, there was broad consensus that central banks should pursue a form of flexible inflation targeting while assuming a dichotomy between monetary policy and financial stability policy.⁴ Monetary policy instruments would focus on broad macro-economic aggregates of targeting inflation and minimizing output

gaps. Prudential regulation and supervision of financial institutions would focus on preventing excessive risk taking that could result in financial instability. Although house price changes can clearly have grave consequences for the economy, setting targets for asset prices, including housing prices, is certainly not amongst the mandated objectives of central banks.

Those who argue against central bank intervention in the housing sector view housing markets as local and generally efficient, although institutional factors could create frictions. This view was certainly the conventional wisdom in the USA and has often been described as the “Greenspan orthodoxy” (after the former chairman of the US Federal Reserve Board, Alan Greenspan). Greenspan was of the view that since it was difficult to identify asset bubbles, it was preferable to allow them to burst and clean up the mess after the event. Greenspan’s view of housing bubbles is best captured in the following excerpt from his testimony before Congress in 2002:

The ongoing strength in the housing market has raised concerns about the possible emergence of a bubble in home prices. However, the analogy often made to the building and bursting of a stock price bubble is imperfect. First, unlike in the stock market, sales in the real estate market incur substantial transactions costs and, when most homes are sold, the seller must physically move out. Doing so often entails significant financial and emotional costs and is an obvious impediment to stimulating a bubble through speculative trading in homes. Thus, while stock market turnover is more than 100 per cent annually, the turnover of home ownership is less than 10 per cent annually – scarcely tinder for speculative conflagration. Second, arbitrage opportunities are much more limited in housing markets than in securities markets. A home in Portland, Oregon is not a close substitute for a home in Portland, Maine, and the “national” housing market is better understood as a collection of small, local housing markets. Even if a bubble were to develop in a local market, it would not necessarily have implications for the nation as a whole.⁵

Greenspan’s preference for “mopping up or cleaning up” after the bubble has burst has been characterized as the “clean” view in the debate as opposed to the “lean” view or leaning against the bubble

position. The following are the main elements of Greenspan's doctrine:⁶

- (i) Asset prices are based upon unobserved variables, and so bubbles are hard to detect. Empirical predictions are subject to wide margins of error, and the central bank has no informational advantage over the market.
- (ii) Raising interest rates may be ineffective in restraining a bubble given the high rates of return from buying bubble-driven assets.
- (iii) As bubbles may be present in only a fraction of assets or a small number of locations, monetary policy is too blunt an instrument to use in such cases. It could thus be extremely costly in terms of reductions in GDP to use monetary policy to deal with real estate bubbles.
- (iv) Pricking a bubble through raising interest rates may cause it to burst more severely, thus increasing the damage to the economy.
- (v) Monetary authorities have the tools to manage the effects of a bubble bursting and to keep the costs low, as long as they respond in a timely fashion.
- (vi) Statements on house prices by a central bank could lead to public confusion about its objectives.

During the pre-subprime crisis period, Nouriel Roubini was notable for being amongst the minority in the USA who advocated that central banks should burst bubbles.⁷ His counterarguments against the Greenspan doctrine include the following:

- (i) A wide range of analytical models suggest that optimal monetary policy should react to asset prices, above and beyond reacting to inflation and output gaps.
- (ii) Uncertainty about the existence and size of a bubble is no excuse for inaction as monetary policy is always implemented under conditions of data uncertainty.
- (iii) A wide body of evidence suggests that bubbles and their aftermath can have severe financial and economic consequences.
- (iv) A moderate interest rate response can have an impact on bubbles and reduce the distortion caused by them without causing severe recession or financial distress.

- (v) Greenspan's favored asymmetric response of not reacting to rising bubbles and cleaning up after a bubble burst is inefficient, conceptually flawed and possibly a source of moral hazard.

Following the 2008 financial crisis, there has been increasing acceptance of the lean view that housing bubbles constitute a form of market failure that justifies government intervention. The risk of doing nothing is to accept the large potential costs of financial instability and recession that follows a crash. Central bankers in Australia, New Zealand, the UK and Sweden did choose to react to housing bubbles via a moderate and gradual monetary policy tightening in the period from 2002 to 2006.⁸

Marginal monetary tightening however may not be effective in reining in a housing bubble. In addition to monetary policy, there exists an array of policy tools that can be utilized to dampen the housing cycle in order to reduce the risks of systemic financial crises. In the next section, we consider the various policy instruments that have been utilized.

(It is notable that some economists, such as Robert Shiller, have advocated market-based solutions that involve the use of financial instruments for house price risk transfer or risk sharing. Examples include establishing housing derivatives markets for hedging, as well as the use of alternative mortgage products such as shared equity mortgages and continuous workout mortgages.⁹ These market approaches can provide individual homeowners and investors with instruments for hedging or risk mitigation; however, they are unlikely, by themselves, to be effective for stabilizing the housing market.)

Policy instruments for managing the housing cycle

The two main objectives of policies to deal with real estate booms are (i) prevention of real estate booms and associated buildup of leverage at households and banks and (ii) increasing the resilience of the financial sector to a real estate bust. Table 10.1 provides a summary of the countercyclical monetary, fiscal and macroprudential tools available that can be effective in dampening the housing cycle.¹⁰

In the wake of the 2008 global financial crisis, the US Federal Reserve Board's monetary easing and zero-interest-rate commitment led to a massive flow of capital into Asian countries and contributed

Table 10.1 Countercyclical policy options to dampen the housing cycle

Monetary policy	Fiscal instruments	Macroprudential regulation
<ul style="list-style-type: none"> • Interest rates 	<ul style="list-style-type: none"> • Transaction taxes • Capital gains taxes 	<ul style="list-style-type: none"> • LTV and DTI caps • Bank leverage and loan-to-deposit caps • Capital requirements and risk weights • Dynamic provisioning

to the Asian housing boom. The policy responses of many Asian governments were reflective of their awareness of such tools. In 2010 alone, the list of Asian countries which carried out housing market stabilization intervention included China, Hong Kong SAR, India, Korea, Malaysia, Singapore and Thailand. In some countries, measures specifically targeted cities and even districts within a city, as well as specific market segments within the housing market. As supply elasticity numbers can vary widely across a country and housing bubbles are often localized geographically, these targeted policies on lending are rational and understandable once a macroprudential decision has been taken to intervene.

Monetary policy

Although monetary policy could dampen a boom, it is considered too blunt an instrument to use, given its effects on GDP growth. From a panel vector auto-regression model using 1990–2007 data for 22 countries, a recent study found that a 100-basis-point hike in policy rate would be required to reduce house price appreciation by only 1 percentage point but would result in a decline in GDP growth of 0.3 percentage points.¹¹ Another recent study for OECD countries found that, to offset a 10 per cent rise in housing prices (not an unusually large increase by the standards of many housing booms), the central bank concerned might be required to depress real GDP by 4 per cent, a substantial amount.¹²

In addition, there are many instances where monetary policy is either ineffective or effective but too blunt an instrument to use in order to lean against a housing bubble. When risk premiums are adjusting rapidly, risk-free interest rates may be ineffective in

influencing risk-taking behavior. Although the central banks of Australia and Sweden did increase policy rates in response to house price increases, house prices in both countries increased substantially by 80 per cent in real terms between 2000 and 2007.¹³ Monetary policy may be limited in small, open economies with free capital mobility, especially for non-fully flexible exchange-rate regimes, such as Hong Kong's. Central banks, such as Singapore's, may choose to target inflation rates through the exchange rate rather than interest rates. Moreover, real estate bubbles could also be restricted to specific regions and within those regions to specific segments of the market.

Fiscal instruments

Fiscal instruments such as transactions taxes and capital gains on real estate gains can be adjusted in a countercyclical manner in order to dampen the housing cycle and to discourage speculative activity during the boom phase. These measures have been used in South Korea since the late 1970s; they have been geared towards being location specific; for example, being applicable only to Seoul or even districts within Seoul.¹⁴ More recently, Singapore, Hong Kong SAR and China have introduced higher stamp duties to discourage speculation during the recent boom. The suspension of stamp duty in the UK and the use of time-limited tax credits linked to house purchases in the USA helped stabilize declining prices during the recent bust.

Macroprudential regulation

Macroprudential policy has become a buzzword in policy circles in the wake of the 2008 global financial crisis. Macroprudential regulation concerns itself with the stability of the financial system as a whole, while micro-prudential regulation concerns itself with the risk of individual asset classes, the stability of individual entities and the protection of individuals. Micro-prudential regulation ignores endogenous risks such as feedback effects and the interconnectedness of the system, as well as the systemic importance of individual institutions.

The recent financial crisis has led to growing global consensus on the importance of macroprudential regulation to safeguard against financial instability. There are comprehensive surveys on the topic by the Bank for International Settlements, the Bank of England and

the IMF.¹⁵ The US Dodd-Frank Wall Street Reform and Consumer Protection Act was passed by Congress in 2010, while Basel III, the global regulatory standard on bank capital adequacy, stress testing and market liquidity risk, was agreed to by members of the Basel Committee on Banking Supervision in 2010–2011. The reach of these reforms extends to the whole of the financial sector, the consideration of which is beyond the scope of this chapter. The focus of this section will be on the macroprudential policies relevant to dealing with housing and housing credit booms.

Instruments for macroprudential regulation to address the systemic risk of housing price changes include the following:

(i) *Caps on LTV and DTI ratios*

Changes to caps on loan-to-value (LTV) ratio and debt-service-to-income (DTI) ratio can be used to limit mortgage loans to individuals, thus reducing pressure on housing prices and containing speculative demand. These can be further fine-tuned to target housing booms by location as well as by market segments.

(ii) *Leverage and loans-to-deposit caps*

As part of micro-prudential regulation, pre-bust Basel rules required bank assets to be risk weighted for the calculation of capital requirements. However, there was little correlation between risk weights and crisis-related losses during the crisis. Relative to their Basel II risk weights, mortgages and AAA-rated mortgage-backed securities inflicted heavy losses on banks. The Basel III framework introduced a non-risk-based leverage ratio cap to supplement the risk-based capital requirements. Caps on leverage ratio (loan-to-capital ratio) or caps on ratio of loans to deposits can be used to constrain the buildup of leverage in the system.

(iii) *Countercyclical capital charge*

Unchanging capital requirements for financial institutions can amplify the housing cycle, with a rise in asset price leading to higher capital for banks and increased lending. Countercyclical capital requirements that rise with credit growth and fall with credit contraction can help to promote financial stability. Requiring banks to hold more capital against loans during booms can reduce the supply of loans and help contain housing

prices. Basel III includes a framework for a countercyclical capital charge of up to 2.5 per cent of capital during periods of high credit growth with credit-to-GDP ratio as the cyclical indicator. However, disagreements amongst countries meant that the countercyclical capital charge would be introduced at the discretion of national regulators in the range of 0 to 2.5 per cent.

(iv) *Dynamic loan loss provisioning*

Dynamic, or forward-looking, loan loss provisioning is targeted at promoting the resilience of the banking system in the event of a bust. It requires banks to build up in good times a loss-absorbing buffer in the form of provisions at the time of making the loan. In a period of booming housing prices, banks would be required to increase provisioning, which they could then be allowed to wind down during the busts. This approach was pioneered by the Bank of Spain in 2000 and was subsequently adopted in Uruguay, Colombia, Peru and Bolivia.¹⁶

Recent macroprudential regulation of the housing sector in Hong Kong and Singapore

From 2007 to the first quarter of 2012, Hong Kong's private house prices almost doubled (the housing index increased by 91.6 per cent). As the Hong Kong dollar has been firmly pegged to the US dollar since 1983 (trading within a narrow band), the Hong Kong Monetary Authority (HKMA) is unable to use the exchange rate or monetary policy to stabilize the economy. The rounds of post-2008 quantitative easing by the US Federal Reserve combined with the strong economic performance of the Hong Kong economy have resulted in a property boom in Hong Kong. To reduce the risk brought by the booming housing market on the banking sector, the HKMA has been proactive in implementing multiple rounds of policies to contain property speculation. These policies provide good examples of the options available to policymakers to contain housing bubbles.

The Hong Kong government has a stamp duty transaction tax on house sales. This is a blunt fiscal policy for all housing transactions. In April 2010 the stamp duty was increased, especially for more expensive housing, with a top rate of 4.25 per cent. Hong Kong introduced a *special* stamp duty in November 2010 for houses resold within two years of purchase, with a large 15 per cent special stamp duty for

houses sold within six months of purchase, being reduced to 5 per cent for houses sold between one and two years after purchase.¹⁷ The advantage of the differentiated resale stamp duties is that they target speculative purchases as opposed to people purchasing housing to live in.

Hong Kong also uses specific macroprudential policies to counter house price increases. LTV caps for expensive housing (defined as housing costing 10 million Hong Kong dollars (HKD) or more) were reduced first to 60 per cent in 2010 and then to 50 per cent in June 2011. The LTV cap was 60 per cent for housing valued at HK\$7 million to HK\$10 million. The LTV caps for housing valued at less than HK\$ 7 million was reduced to 70 per cent. Hong Kong further targeted loans to applicants based on net-worth mortgage lending by reducing their maximum LTV to 50 per cent in late 2010 and to 40 per cent in June 2011.¹⁸ The policies appear to have had some effect as the rate of house price increases moderated in 2012.

When the third round of quantitative easing was announced by the US Federal Reserve on 13 September 2012, within the next day, the HKMA introduced a 30-year limit on loan tenor for all new property mortgage loans and new caps for LTV and debt-servicing ratios for applicants with one or more mortgage loan outstanding.¹⁹ For the latter, the maximum debt-servicing cap was lowered from 50 to 40 per cent for loans assessed on the basis of the debt-servicing ability of a mortgage applicant. For loans based on the net worth of the applicant, the LTV ratio was reduced from 40 to 30 per cent. For applicants whose principal income was derived from outside Hong Kong, the applicable LTV ratio was lower by 20 percentage points instead of 10 percentage points.

Singapore has also adopted policy measures to counter increases in private property prices after sharp increases in house prices in 2010. It increased the seller's stamp duty in early 2011 to a maximum duty of 16 per cent for a sale within the first year of purchase, with the rate declining to 4 per cent for properties sold within four years of purchase. In addition, Singapore capped the LTV at 60 per cent for individuals purchasing a house who already have a housing loan.²⁰ In December 2011, the government introduced an additional 10 per cent stamp duty for foreigners and corporate entities buying a residential property, as well as an extra 3 per cent stamp duty for both permanent residents purchasing a second home and for citizens buying their

third residential property. These measures are intended to discourage short- and medium-term speculative purchases and also to curb investment demand by both domestic and foreign buyers.

Detecting bubbles

There is now widespread recognition among policymakers and economists of the necessity to intervene in housing booms and busts. The challenge for implementation remains as to how to identify a housing asset bubble – in particular, which indicators and models to use for monitoring housing prices and valuations?

A prerequisite for housing market bubble detection is the existence of long-dated time series of housing market data on rents, prices, supply and vacancy, both by location and market segment. For Asian countries, there was only a concerted effort to develop relevant housing market datasets during the post-Asian financial crisis period. This was after gaps in market information were identified as contributing to the market frenzy prior to the collapse. The need for reliable and timely data on the housing market for market efficiency and for timely intervention cannot, in fact, be understated.

What are the methods that can be used to monitor the state of the housing market?

A first category of bubble-detection methods models the probability of booms and bust episodes occurring by centering on the relationship between rents and fundamental value. We return to the present value equation for determining housing asset value:

$$V = R/(i + t + d - g)$$

where V is the fundamental value of the property, R is the rent, i is the nominal tax-adjusted interest rate, t is the annual property tax rate, d is the annual rate of depreciation and g represents the nominal annual rate of capital gains.

Let P be the asset price of the property. Assuming no bubble, P is equal to V . At the most basic level, the price-to-rental (PR) ratio trend has been used to investigate whether increases in price reflects fundamental increases in rental values. An increasing PR ratio could be indicative of a bubble in the housing market, assuming that the discount rate remains constant. However, the discount rate may not

be constant, and a fundamental increase in housing prices could also be a result of a decrease in interest rate, i , or increase in expectations of capital gains, g . Rational bubbles can result when investors are willing to pay more than the fundamental value to purchase the asset because they expect the asset price will significantly exceed its fundamental value in the future.

While it may be difficult to distinguish between rational and irrational bubbles, a persistent and increasing divergence between P and V provides anticipatory empirical evidence of a developing bubble. Phillips and Yu have proposed a recursive regression technique to analyze bubble characteristics of various financial time series. Their method has been applied in the dating of housing bubbles in Singapore and Hong Kong.²¹ The method has the advantage of using formal statistical evidence of the divergence between prices and rents for bubble detection.

The second category of studies seeks to explain deviations of market prices from implied prices derived from a structural model of the housing market. This requires a detailed specification of the underlying equilibrium model of housing prices, a specification which includes modeling supply as well as the effects of income, financing and demographic explanatory variables on demand. For instance, Glindro et al. consider a large number of variables grouped into supply, demand, external assets and external environment factors.²² The effectiveness of this approach for bubble detection rests crucially on the model being correctly specified. Some of these models also have to address the concern that the behavior of agents in the model may change over time and in response to changing environments and policy, and hence the structure of the model changes. This is a version of Lucas's critique of econometric models.²³ A successful model would have to capture the major factors that could change model structure.

A third category of studies adopts data-driven techniques to detect booms and bust using a dataset of fundamental indicators. An example of this approach is clustering analysis. Clustering analysis is a statistical method to sort observations into different groups. Leung et al. and Chan et al. use clustering to try to identify exuberance in property markets.²⁴ The method involves observing indicators such as asset price changes, volume of transactions and capital inflows, amongst several others. The set of observations at a given point in

time is then grouped into clusters, with “high” clusters identifying times when several indicators signal exuberance. It is a less formal method and should be used along with other bubble identification techniques for inference about exuberance.

A major objective of policymakers’ monitoring of housing market conditions is to improve the financial sector’s resilience to a housing downturn. A significant challenge, however, is that the risk of financial instability could build up even when bubbles are mild. If the financial sector expands credit and increases leveraged exposure to the housing sector, even a mild downturn could lead to financial distress. Conversely, a boom in housing prices does not always signal the buildup of risks in the financial system and the economy at large. The emerging international policy consensus is that countries need a wide range of indicators and models to assess systemic risks. This includes aggregate indicators of imbalances, with increased attention to measures of credit growth and leverage in the household and in corporate and financial sectors. Quantitative indicators need to be combined with qualitative information and market intelligence for an effective macroprudential framework.²⁵ For the housing sector, pre-emptive policy action to lean against a boom will need to take into account the underlying causes, as well as the specific and broader economic contexts, with policy responses tailored accordingly.

Part IV

Government Failures

The government's role and, in particular, its deployment of a vast array of policy instruments in housing and financial markets, is often justified as responses to market failures. However, government policy and regulations (and the enterprises and agencies they create) are also subject to the risks of different kinds of failures and distortions. In the troubled 1970s, economists at the University of Chicago led by Milton Friedman, George Stigler, Gary Becker, Robert Lucas and others brought about a general shift in economic thinking and a reevaluation of the appropriate balance of governments and markets. The Chicago School rejected the concept that market failure justified government intervention; in particular, if the imperfections in government behavior were greater than those in the market. Building on elements of public choice theory and the logic of collective action by interest groups, George Stigler also brought attention to the question of the degree to which private interests might capture regulatory agencies and legislators.¹ The strong endorsement of these ideas by UK Prime Minister Margaret Thatcher and US President Ronald Reagan in the 1980s brought about a wave of privatization and deregulation in many infrastructural and utilities sectors that eventually spread to many other countries.²

In the capital markets arena, Eugene Fama, Merton Miller, Fischer Black and Myron Scholes also began a new chapter in the evolution of quantitative finance at the University of Chicago's Business School. They shared firm beliefs in the rationality and efficiency of financial markets which extended the notion that markets knew

best and were self-regulating and that financial markets should set the priorities for corporations as well as for society. Support for their views came from no less than Alan Greenspan, chairman of the US Federal Reserve from 1987 to 2006. In 1999, Greenspan played a key role in encouraging the repeal of most of the Glass-Steagall Act (a Depression-era legislation), an act that had prevented US depository institutions from taking part in investment-banking activities. Greenspan also believed in the capacity of private parties to regulate the risks in financial markets (including derivatives markets), as well as in a hands-off approach towards asset bubbles. In both cases, he refused to consider seriously the notion that markets could fail.³

Since the crash of 2008, the pendulum has swung back towards the Keynesian view – that markets can in fact fail spectacularly, that deregulation had gone too far, and that there is a need for more and better regulation. In a congressional hearing on the financial crisis in 2008, Greenspan admitted, “I made a mistake in presuming that the self-interests of organizations, specifically banks and others, were such that they were best capable of protecting their own shareholders and their equity in the firms.... The problem here is something that looked to be a very solid edifice, and, indeed, a critical pillar to market competition and free markets, did break down.... I still do not understand why it happened...”.⁴ In a 2010 speech, Ben Bernanke, the Federal Reserve chairman acknowledged that regulatory laxity was responsible for the US housing bubble and subsequent financial crisis.⁵

Like market failures, the sources of government failures associated with the housing finance sector are numerous. Part IV of this book, drawing lessons from recent history, addresses some of the main categories of failures. The focus of Chapter 11 is the problems inherent within the design of housing policy, housing finance institutions, regulatory frameworks and deregulation. Chapter 12 considers how government agencies could fail in the sphere of regulation and supervision. Since the global financial crisis of 2008, new terms describing areas of government regulatory failure, which have not been generally used prior of to the crisis, have emerged. Amongst these terms are “regulatory blindness”, “regulatory myopia” and “regulatory naivety”. The risks of

these areas of regulatory failure have increased as financial institutions individually and the financial system as a whole have grown in size, complexity and interconnectedness. For each policy and regulatory failure or risk identified, we consider a case drawn from the experience of the USA and one from the experience of another country.

11

Unintended Consequences of Housing Policy

While governments may have the best of intentions in putting in place housing finance policies to address the problems of market failures, there are numerous examples of housing policies that either have resulted in unintended consequences or could pose potential problems in the future. In this chapter, we consider the following policies:

Fixed interest rates;
Financial sector deregulation;
Direct mortgage interest subsidy;
Design of government-sponsored housing finance institutions; and
Foreign currency mortgages.

For each identified policy, an example of problems encountered is drawn from the US experience and from a non-US country (see Table 11.1). The USA has a long history of interventionist housing policy that has evolved with the goal of promoting homeownership. Amongst the advanced economies, the IMF index of government participation in housing finance for the USA is higher than for any other country with the exception of Singapore.¹ As such, the US experience provides an excellent source of examples for unintended consequences of housing policy.

Fixed interest rates

The conventional home loan, 25- to 30-year term, fully amortizing, with a fixed interest rate, is a post-Depression US housing

Table 11.1 Unintended consequences of housing policy

Housing policy	US example	Non-US example
A. Fixed interest rates	S&L crisis (early 1980s)	Mexican banking crisis (1982)
B. Financial sector deregulation	S&L crisis (1989–1991)	Swedish banking crisis (early 1990s)
C. Direct mortgage interest subsidy	US Section 235 (1968–1973)	Japan Government Housing Loan Corporation (1950–2007)
D. Design of government-sponsored housing finance institutions	Government-sponsored enterprises, Fannie Mae and Freddie Mac (2008 crisis)	China's housing provident funds (ongoing problems with fund performance and cross-subsidization issues)
E. Foreign currency mortgages	N.A.	Hungary (2004–2008)

policy innovation that facilitated the spread of homeownership in the post-World War II era. Prior to this, US mortgages were short-term balloon loans that required frequent refinancing. In the early 1930s, many homeowners were unable to obtain refinancing, leading to a wave of foreclosures that exacerbated the Depression. The long-term fixed-rate mortgage (FRM) was introduced to reduce the incidence of foreclosures and thereby promote greater financial stability.² The FRM protects borrowers from both the need to frequently refinance as well as from interest rate shocks. It works well in low to moderate interest rate and inflation environments but presents two major risks for lenders in higher and more volatile inflationary environments³ – asset and liability durations mismatch, as well as prepayment risk from borrower repayments when interest rates fall.

As nominal payments are fixed over the term of the mortgage, real payments decline in an inflationary environment – allowing the borrower to benefit in real terms at the expense of the lender. In a system where banks rely on deposits to finance mortgage loans, these deposits have “short duration” in the sense that most deposits

can be withdrawn on demand and banks need to match market interest rates in order to continue to attract deposits. In contrast, bank assets, such as the fixed-rate mortgage, have “long duration” because the bank receives repayment gradually. This “duration mismatch” presents fundamental risk to lenders when mortgages are fixed rate, when inflation accelerates and when nominal interest rates are rising. Prepayment risk, on the other hand, is a risk when rates fall and when there are no prepayment penalties. For example, if a borrower has taken a mortgage on a house at 6 per cent and rates fall to 5 per cent, then the borrower simply pays back the 6 per cent mortgage and refinances by taking out a new mortgage at 5 per cent. This is provided that house prices have not declined to a level that prevents refinancing. The disadvantages of the fixed-rate mortgage are illustrated by the US savings and loan crisis and the Mexico banking crisis, both occurring in the early 1980s.

US Savings and Loan crisis (early 1980s)

The US thrifts, or Savings and Loans (S&Ls), provided most of the financing for the suburban home construction in the post-war period that lasted throughout the 1960s. However, beginning in the mid 1960s, federal deficits drove nominal interest rates up, leading to periodic rate wars between thrifts and even commercial banks. In 1966, Congress passed the Interest Rate Control Act, which allowed federal regulators to set ceilings on interest rates paid by both commercial banks and thrifts. This served to protect thrifts and banks from interest rate risk through the 1970s, until the sharp increase in inflation and nominal interest rates (to double-digit figures) in 1979, when oil prices doubled. Money market mutual funds were created, which allowed depositors to withdraw their funds from banks and thrifts to invest in treasury securities. As deposits drained from the regulated sector, the threat of hundreds of S&L failures caused Congress to act to deregulate the industry. Two laws were passed – the Depository Institutions Deregulation and Monetary Control Act of 1980 and the Garn–St. Germain Act of 1982. These laws provided for the phasing out of interest rate regulation, increased the maximum insured deposit amount for banks and thrifts to \$100,000, and allowed thrifts to offer adjustable rate mortgages (ARMs), as well as expansion of the types of loans they could offer.⁴

Mexican banking crisis (1982)

In the late 1960s and 1970s, directed lending and interest rate caps were used as credit allocation tools. Mexican banks were required to set aside 6 per cent of total bank credit for housing financed at fixed or capped nominal interest rates set by the government.⁵ The expansion of Latin America's debt came about through international borrowing. Mexico soaked up the supply of US dollars that had resulted through overseas deposits of US dollars and surpluses from oil-exporting countries in the 1970s. During the general global inflation of the 1970s, interest rates on new loans to Latin American countries, including Mexico, rose. However, interest rates on housing loans in Mexico were made on fixed terms. This was not a problem as long as the credit available was expanding and new cash flows could cover bank losses. However, when the US Federal Reserve tightened monetary policy in 1979, the credit supply contracted sharply. There was a currency crisis in Latin America, and bad loans caught up with Mexico's banking sector. In 1982, Mexico nationalized all private banks, leading to a large loss for taxpayers. The US government provided a \$1 billion bridge loan to Mexico to allow it to renegotiate loans with foreign creditors.

Financial sector deregulation

Rigid interest rate regulations and the FRM in the high inflation period of the 1970s proved unsustainable. The 1980s ushered in a period of interest rate and financial sector deregulation as well as privatization of state-owned institutions in several countries. In the USA, the S&L deregulation resulted in a high cost to the American taxpayer.

US S&L crisis (1989–1991)

The net effect of increased deposit insurance and deregulation of the S&Ls in the early 1980s (see the discussion above) was to induce them to take on riskier lending in new areas, particularly commercial real estate. Lawrence White has described the behavior of the thrifts' executives as "overly optimistic, excessively aggressive, careless, ignorant, and/or outright criminal or fraudulent".⁶ By the mid-1980s, one-third of the industry had become insolvent, with the deposit insurance agent itself becoming insolvent in 1987. As a result of the crisis, Congress passed the Financial Institutions Reform,

Recovery and Enforcement Act of 1989 to provide funds for bailing out and restructuring the industry. During the decade between 1986 and 1995, 1,043 thrifts, with total assets of over \$500 billion, failed, with a net cost to the taxpayers of \$124 billion and to the thrift industry of another \$29 billion.⁷

Swedish banking crisis (late 1980s and early 1990s)

Between 1983 and 1985, the Swedish banking system and credit markets in general were deregulated. Liquidity ratios for banks were abolished in 1983, and interest ceilings were lifted in 1985. Lending ceilings for banks and placement requirements for insurance companies were likewise removed. These measures, combined with expansive macroeconomic policy, resulted in a rapid expansion of debt and an asset price boom, with the stock market reaching its peak in August 1989.⁸ The financial deregulation inflated the boom in commercial real estate, with the price index for prime location commercial properties in Stockholm increasing by 140 per cent between 1985 and 1990. Between 1985 and the peak in 1991, the nominal price index for housing increased by 99 per cent.

These asset bubbles occurred during a period of fixed exchange rate of the Swedish kroner (SEK). The bursting of the stock market and real estate bubbles in 1990 was followed by massive credit losses and solvency problems among finance companies and banks in 1991. In 1992, the government moved to provide a general bank guarantee and created a “bad bank” to take over the non-performing loans of banks. The need to defend the kroner with high interest rates further deepened the banking crisis. The European exchange rate mechanism crisis in the summer of 1992 and the continued speculation against the kroner eventually led to its floating on 19 November 1992, when it depreciated by 9 per cent in one day and by 20 per cent by the turn of the year. The cost of the banking crisis to the taxpayer has been estimated to be 35 billion SEK, or 2.1 per cent of the GDP.

Direct mortgage interest subsidy risk

Under a direct interest subsidy scheme, the state can intervene to provide low-cost housing loans through a state housing bank or reduce directly the interest paid to a private lender from the normal market rate. The state may do this through paying the lender a fixed

amount, some proportion of the interest due, some specific rate or the balance of interest payment due based on agreed upon benchmarks. The state could also provide tax or direct subsidies through rates used for funding loans. The reduction in rates can be for the life of the loan or for some shorter period, or it can phase out over time, depending on either the income of the borrower or elapsed time. It may also be applicable to only certain types of housing (such as new housing) or certain types of households, such as first-time buyers. Direct interest subsidies are easy to implement and attractive politically as they can be very inexpensive initially if the current budget is not charged the full amount of committed future outlays. Depending on its design, this subsidy can be distortive and regressive, as it encourages borrowing more than the minimum required, and the larger the loan, the larger the subsidy.

US Section 235 (1968–1973)

In 1968, the US government decided to assist low-income households to become homeowners through a program termed Section 235, which was named after the section of the legislation that authorized it.⁹ The loans were provided through private lenders and limited to US\$15,000. They required no down payment and had a repayment burden of 20 per cent of income. The interest rate on loans was 1–3 per cent at a time when inflation was 4–5 per cent and market interest rates were 7–8 per cent. The difference between market rates and the rate to the borrower would be paid over time, with participating lenders billing the government monthly for the interest rate differential. The government also guaranteed recovery on the loan to the lender. Almost 400,000 units were subsidized under Section 235 in just four years (approximately 3 per cent of houses sold during this period). By the end of 1972, it was clear the current interest rate differential that was placed on the budget greatly understated the actual burden – future outlays (present value of future subsidy payments) were going to be quite large. Defaults and abandonment rates were also high. In early 1973, the president suspended all new subsidy commitments under Section 235.

Japan (1950–2007)

The homeownership rate in Japan has been around 60 per cent since the 1960s. The housing strategy of post-war Japan was associated

with the clear social direction of promoting homeownership as being closely linked with economic development and the growth of the middle class. The three main housing policies introduced in the 1950s were (i) low-interest loans provided by the Government Housing Loan Corporation (GHLC); (ii) subsidized rental public housing for low-income households; and (iii) the development of multifamily housing estates for middle-income households by the state-owned agency Japan Housing Corporation.

Of the three policies, the GHLC loans to encourage the building of owner-occupied housing received the most governmental support and accounted for the bulk of subsidy or public funding for housing. During the bubble period, GHLC's lending conditions were repeatedly improved. GHLC loans to house purchasers would have a 10-year period with a fixed rate below market and a 25-year period with a preset fixed interest rate. In 2002, the rates were 2.755 per cent and 4 per cent, respectively.¹⁰ Such conditions could not be matched by private lenders, who were crowded out in this spectrum of maturities. After the real estate bubble burst in the 1990s and the prolonged recession that followed, the government decided, in 2001, to abolish the GHLC by 2007 as it had become a huge financial burden. The GHLC was replaced by the Japan Housing Finance Agency, which does not offer housing loans to the general public and instead is focused on enhancing securitization and the development of a secondary market.¹¹

Design of government-sponsored housing finance institutions

Liquidity risk is a broader financial sector stability issue and is not unique to housing finance. However, the long-term nature of mortgages creates greater liquidity risks compared with other forms of lending.¹² Lenders are thus most unwilling to provide housing loans in emerging markets with no bond markets and little long-term finance. Governments have sought to reduce liquidity risk of housing finance through various targeted measures in order to increase the supply of funds for housing finance. These include deposit insurance, mortgage insurance, the creation of secondary mortgage institutions and markets to facilitate securitization (such as in the USA), extensive legal infrastructure supporting the mortgage bond markets

(as in Nordic and European countries) and state-owned housing banks and housing provident funds.

US GSEs – Fannie Mae and Freddie Mac

In Chapter 6, we described the origins of Fannie Mae and Freddie Mac and their central role in the development of the US secondary mortgage market since the 1980s. The securities created by the government-sponsored enterprises (GSEs) allow investors to invest in bundles of home mortgages that are purchased from the original lenders. To reduce the credit risk of these mortgage-backed securities (MBS), both Fannie Mae and Freddie Mac provide credit guarantees to investors in their MBS against the risk of default by borrowers of the underlying mortgages. As vehicles for promoting affordable homeownership for all Americans, both companies, though *privatized* (until their conservatorship in September 2008), enjoyed special status and regulatory treatment. They paid no taxes and enjoyed low capital requirements for holding similar risks compared with private-sector counterparts.¹³ More importantly, as the market perceived Fannie and Freddie to be implicitly guaranteed by the US government, investors ignored the risks on Fannie's and Freddie's balance sheets.

A recent book, *Guaranteed to Fail: Fannie Mae, Freddie Mac and the Debacle of Mortgage Finance*,¹⁴ by Acharya et al. describes the mammoth GSEs, their history and the role they played in the financial crisis of 2008. Several features of these GSEs made them particularly pernicious and economically damaging: they took excess risk and were not aware of the scale of risk (they were “*guaranteed to fail*”); there was *moral hazard* as investors viewed that losses would be implicitly covered by the government; the fact that they are huge organizations made them well and truly *too big to fail*; and the perception that mortgages are a *safe business* means that the risk of these GSEs failing remained subtle despite their size.

Guaranteed to fail. Fannie Mae and Freddie Mac were allowed extraordinary leverage. For insuring mortgages, they had to hold only 45 cents for \$100 of insured mortgage and only \$2.5 for every \$100 of mortgages they purchased. By the time of the crisis, the agencies, having completely ignored their insurance risk, were leveraged roughly 20 times. Acharya et al. estimate the GSE leverage, including

their insurance guarantees, to be 69 times in 2007. This astonishing leverage combined with their absolute size effectively made them the world's largest hedge funds by a considerable margin. In addition to satisfying the goal of homeownership, the agencies also invested in more risky mortgages – those that originators made to households with greater chance of defaulting.

Moral hazard. The idea that the GSEs were backed by the government (proven to be true in 2008, when the Federal Housing Finance Agency took over the operations of both GSEs, effectively nationalizing them) allowed GSEs to accumulate a mountain of debt. Figure 11.1 shows the evolution of outstanding agency debt. The yield on this debt was just slightly higher than government debt, meaning that investors effectively treated agency debt as risk free. In 2005, the chairman of the Federal Reserve, Alan Greenspan, summed up this moral hazard thus: “investors worldwide have concluded that our government will not allow GSEs to default”; thus GSE borrowing

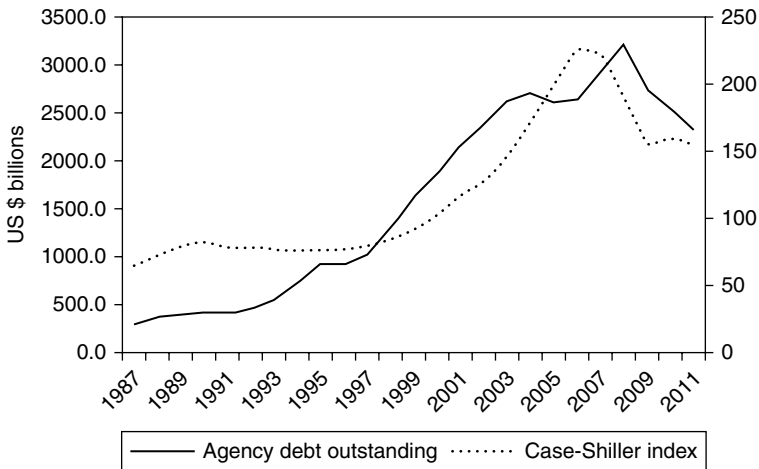


Figure 11.1 Agency debt outstanding (US\$) and house price index

Note: Includes GSE and agency debt of Fannie Mae, Freddie Mac, Federal Home Loan Banks, Farm Credit System, Farmer Mac, and Tennessee Valley Authority.

Source: Chart data from US Securities Industry and Financial Markets Association (<http://www.sifma.org/research/statistics.aspx>).

costs were artificially low. Greenspan went on to conclude that the GSEs were exploiting this subsidy to create private profits by aggressively expanding their balance sheets.¹⁵

Too big to fail. Figure 11.2 shows mortgage-related securities (MRS) outstanding by federal agencies, total outstanding MRS, and the agency share of the mortgage security market. The annual US output for the year 2011 was about US\$15 trillion. The value of agency MRS outstanding in 2011 was US\$7 trillion. Agency-sponsored mortgage securities made up more than 70 per cent of the mortgage security market in 2007, when private securitization was at its peak. The low

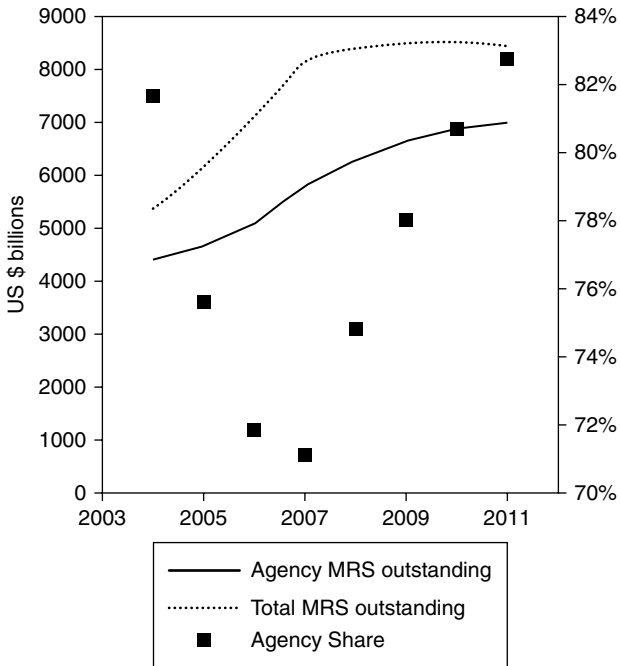


Figure 11.2 GSE share of mortgage-related securities (MRS) outstanding (by issuer)*

Note: *Includes MBS and CMOs issued by Ginnie Mae, Fannie Mae and Freddie Mac.

Source: Chart data from US Securities Industry and Financial Markets Association (<http://www.sifma.org/research/statistics.aspx>).

borrowing costs, weak capital requirements, and inadequate risk standards allowed the GSEs to become very large. In addition, the US\$3 trillion of GSE debt (shown in Figure 11.1) are traded and held by financial institutions operating in global capital markets. If the creditworthiness of agency debt and agency-insured securities came into question, the global financial system and economy would face meltdown.

Safe business. The fact that mortgages were widely perceived as safe business allowed the agencies to go out of control. While the agencies' size and risk received some attention in the 1990s and early 2000s, the government took very little action against the agencies. One reason for this was that the agencies had a public mission objective to increase homeownership and improve housing affordability. Another reason was that the agencies were politically very powerful and could sustain that power through their sheer size and active lobbying. The third reason was the perception that house prices could not really fall and that the mortgage markets were "very safe".

The bursting of the US housing bubble in 2005–2006 set off a chain of events that led to the global financial crisis of 2008, which exposed the flaws of US housing finance policy and the extensive problems within its financial system. In September 2008, the Bush government placed Fannie and Freddie under conservatorship, using an outright US\$150 billion bailout to keep them solvent. The realized losses for the two GSEs between 2007 and 2011Q2 was US\$247 billion, requiring draws of US\$169 billion under the Treasured Preferred Stock Purchase Agreements to remain in operation.¹⁶

China's housing provident funds

The recent history of housing policy in China has seen dramatic changes. The housing system was transformed during the post war period to give local governments and work units the key responsibility for housing provision. Over the last two decades, local governments have been tasked with overseeing a unique privatization process which has transferred ownership and also resulted in major institutional changes through the introduction of large-scale development companies, managing agents, and local housing provident funds (HPFs).

Modeled after Singapore's CPF, the HPF was introduced initially in Shanghai in 1991 as a pilot program to kick-start a housing finance

system that could effect the desired housing policy reform. There are presently over 320 HPF management centers that manage compulsory low interest rate savings and which offer low interest rate mortgages.¹⁷ Initially offered only to public sector employees, it required the participation of both the public and private sectors from 2005. Both the employer and employee are required to contribute at least 5 per cent of the worker's wages into his/her individual provident fund savings account. The actual contribution rates are determined by local governments.¹⁸ The deposits, lending and financial management of the HPF centers are handled by commercial banks appointed by local governments.

HPF participants can withdraw their HPF savings for retirement purposes or for purchase or major repairs of housing. The HPFs played an active role in popularizing basic knowledge of housing finance and promoting homeownership. However, there have been problems with HPF performance that include inefficiency, fraud and the misuse of funds for other priorities.¹⁹

Regressive lending policies have also resulted in only a small proportion of contributors benefiting. In 2005, only 8 per cent of savers were housing borrowers.²⁰ A large group of low-income renters, whose deposits are too low to make them eligible for loans, effectively cross-subsidize the low-interest mortgage loans of a smaller group of middle-income homeowners.²¹ Since higher-income earners receive larger contributions to their savings accounts, they would also be able to qualify for larger loans.

The utilization rate of the HPF scheme varies across regions but is generally low, owing to loan application procedures that are complicated and time consuming when compared with those of commercial banks. Indeed, commercial banks appear to be a more important source of finance for housing purchase and have therefore not been crowded out by the HPF scheme.

Foreign currency mortgages

In countries with a history of high inflation rates, foreign currency mortgages at the retail level, with their relatively lower interest rates, are popular and are permitted by regulators as they are considered more affordable. As the US dollar has been the world's currency for

more than half a century, this particular practice does not exist in the USA. Foreign currency mortgages, however, have been heavily used in countries in Latin America, and central and eastern Europe. These foreign currency loans expose borrowers and lenders to the risk of exchange-rate fluctuations, which can take the form of a sharp devaluation in a macroeconomic crisis. When borrower income is paid in local currency, the resulting high payment shock, which is often not hedged, can lead to widespread default, as well as difficulties for lenders.

Hungary (2000–2008)

The year 2000 marked a turning point in housing policy for Hungary.²² The government launched a new housing subsidy scheme to provide incentives for new housing construction. Substantial funds were allocated for subsidizing interest rates on long-term mortgage loans for new houses. The mortgage subsidy schemes introduced offered interest rates as low as 3–5 per cent when market rates were well above 15 per cent, with the interest subsidies borne by the central budget. These subsidies were subsequently extended to purchasing, enlarging and modernizing existing dwellings. By 2003, the proportion of new housing loans subsidized had risen from 29 per cent to 68 per cent. Outstanding mortgages grew from HUF 200 billion to over HUF 2 trillion between 2000 and 2005, surpassing 10 per cent of GDP in 2005 and 13 per cent by 2007. From late 2003, the Hungarian government began to tighten and withdraw housing subsidies as they were too expensive to maintain, reaching around 1.8 per cent of GDP in 2003.²³

Despite the drop in housing loan subsidies, Hungary's mortgage market showed strong growth in 2004, with growth sustained, from 2004, by the entry of foreign-owned banks and Swiss-franc (CHF) denominated loans. However, there was serious underpricing of currency risk by both banks and households. In 2006, the average interest rate for a floating CHF housing loan was 3.29 per cent while the rate for a similar type mortgage was 9.13 per cent for a HUF loan, and 4.3 per cent for a euro loan. Loans in CHF accounted for between 80 and 90 per cent of new housing loans granted in 2007 and 2008. After September 2008, because of Hungary's huge external debt, substantial budget deficit and heavy mortgage-market reliance on

foreign currency borrowing, investors dumped HUF assets. This led to a currency depreciation of 20 per cent within weeks, and consequently, banks and other financial institutions virtually stopped giving loans in CHF. A massive €20 billion (US\$25 billion) financial rescue package had to be provided by the IMF, the EU and the World Bank in October 2008. Mortgage-backed foreign currency lending was banned in August 2010.

12

Regulatory Failures and Regulatory Capture

As bank failure can have serious consequences for individual customers, depositors and investors, as well as the economy, financial institutions are subject to a wide array of prudential regulations and supervisory review (see Chapter 6). Regulators, however, may fail to succeed in a number of ways. They may fail to regulate entire sectors of the housing finance system (regulatory blindness) or to exercise adequate supervision of the lenders and their intermediaries (regulatory myopia). Regulators may also be naive in failing to appreciate the risk of systemic crisis from the failure of too-big-to-fail institutions or the risk of contagion across markets and countries. This chapter presents cases and examples that will be discussed under various types of regulatory failure (see Table 12.1). As was the approach in Chapter 11, for each type of failure, one example of problems encountered is drawn from the US experience and a second from another country's. Another source of potential regulatory laxity and failure could arise from "regulatory capture", when officials charged with overseeing business entities end up protecting the interests of the companies instead of the interests of taxpayers and the general public.

Regulatory blindness

Regulators may fail to regulate or decide instead to lightly regulate important segments of the financial system. Non-deposit-taking lenders often enjoy lighter regulation as they are thought not to pose a systemic risk to the financial system. However, in Paul Krugman's

Table 12.1 Regulatory failures

Nature of risks	US example	Non-US example
A. Regulatory blindness	Failure to regulate “shadow” banking sector 2007–20008	Thailand: Failure to adequately regulate offshore banking facilities and finance companies, 1997–1998
B. Regulatory myopia with regard to <ul style="list-style-type: none"> – predatory lending – risk of housing bust – moral hazard behavior – misbehavior and fraud 	Subprime crisis 2007	Spain’s housing bubble 2000s
C. Regulatory naivety with regard to risk of systemic crises <ul style="list-style-type: none"> – counterparty risk – too-big-to-fail risk – contagion risk 	Financial crisis 2008	Asian financial crisis 1997–1998

view, the 2008 US financial crisis “involved risks taken by institutions that were never regulated in the first place”.¹ Lightly regulated finance companies in the case of Thailand also helped precipitate the 1997 Asian crisis. Dual-track regulation inevitably resulted in regulatory arbitrage by the markets to get around regulatory restrictions.

US shadow banking sector (2007–2008)

The shadow banking system, though difficult to define precisely, plays an important role in providing an alternative source of funding and liquidity. An estimate for the US system placed its size at US\$21 trillion in early 2008, shrinking to US\$10 trillion at the end of 2011.² In comparison, assets in the traditional banking sector were US\$15 trillion in 2008 and US\$18 trillion in 2011. The shadow banking system is the term that is used to describe credit intermediation involving entities, conduits and activities outside the regular banking system. Participants in the shadow banking system include investment banks, money market mutual funds, hedge funds, mortgage bankers, securitizers and sophisticated institutional investors. While deposit-taking banks are subject to careful regulatory oversight,

non-banks which do not take retail deposits are subject to less stringent prudential regulation. However, as the shadow banking system also creates leverage, transforms maturity/liquidity and involves counterparty risks among financial institutions, a run in the market if confidence is lost (as when house prices declined and mortgage default rates increased) can easily spill over to the banking system.

A non-bank may rely on short-term investments such as money market funds for deposit-like borrowing; in exchange, it issues tradable asset-backed commercial paper or repos for the cash. (A repo, or repurchase agreement, involves the sale of a security and an agreement to repurchase it at an agreed upon time in the future for an agreed upon price.) Prior to the 2007 subprime crisis, US investment banks were actively involved in the private label securitization process as securitizers, investors, traders, and market makers; they were also in the market for derivatives, such as credit default swaps, for risk hedging.

There was a rapid growth of both mortgage-backed and other asset-backed securities issued by “private labels” through structured investment vehicles (SIVs) starting in the 1990s and accelerating from 2002 to 2007. A large proportion of this increase in credit in the economy, for housing mortgage financing in particular, took place in the shadow banking system. It appeared that many hedge funds and investment banks were holding highly concentrated portfolios and extremely leveraged positions in CDOs and MBS. In 2008, this excessive leveraging led to the near bankruptcy of Bear Stearns, the demise of Lehman Brothers in 2008, and the near collapse of the US financial system.

Thailand’s BIBFs and finance companies (1997–1998)

During the 1990s, leading up to the Asian financial crisis in 1997, Thailand attracted large capital inflows, as foreign investors were encouraged by its strong economic growth, low inflation and relatively healthy fiscal performance. Capital inflows also increased after offshore banking facilities, known as the Bangkok International Banking Facilities (BIBFs), were introduced by the Bank of Thailand (BoT) in 1993 to help develop the Thai financial center. The BoT also intended the BIBFs to facilitate and reduce the cost of international borrowing. BIBFs could use foreign funds raised overseas to lend to domestic or overseas customers. The BIBFs enjoyed tax concessions

and stamp duties exemption, as well as *exemption from reserve requirements*, which made foreign funding attractive for corporate borrowers. In December 1996, 45 financial institutions held BIBF licenses.³

However, large foreign capital inflows fueled rapid credit expansion in Thailand, which, in turn, lowered the quality of credit and led to asset price inflation. Excessive risk taking was encouraged, as inflated asset prices led to more capital inflows and lending. At the end of 1996, short-term debt to offshore banks in Thailand stood at US\$46 billion.⁴ The perceived peg of the baht to the US dollar further incentivized borrowing in foreign currency, leading borrowers to underestimate the risks associated with foreign currency exposure. Given that these loans were mostly unhedged, the risks were compounded.

The BIBFs that engaged in direct foreign borrowing were responsible, in the main, for the bulk of the capital inflows, which averaged 10 per cent of GDP annually from 1990 to 1996. Commercial bank and near-bank assets grew from between 50 and 100 per cent of GDP in 1992 to between 150 and 200 per cent of GDP in 1996; average debt-to-equity ratios of listed companies were around 400 per cent at the end of 1996.⁵ Over this period, the growth in Thailand's foreign debt notably outpaced the growth in usable foreign exchange reserves.

Thai banks and financial institutions thus placed themselves in very vulnerable positions in the event of capital outflows and exchange rate devaluation. The BoT played a contributory role, as it failed to account for foreign exchange risks and thus did not introduce prudential rules on foreign borrowing. According to Renaud, during the period between 1993 and 1995, a reported 45 per cent of net foreign direct investment and 15 per cent of net borrowings through the BIBFs went into real estate and construction.⁶ Another 5 per cent of net lending went to the construction materials industry, and 15 per cent went to financial institutions, which (in turn) engaged in real estate lending.

In particular, 91 lightly regulated finance companies, which were able to access a new source of funding, were aggressive in expanding their lending for real estate, thus fueling the property bubble. The resulting real estate boom across all segments of the industry led to a situation of oversupply and high vacancy rates that was already apparent by 1995. In 1995, the BoT instructed commercial banks to

limit lending for the purchase of real estate. *However, the instructions did not apply to finance companies.* Finance companies did not stop making loans for real estate and consumer/hire purchase – their core areas of lending. By December 1996, supervisory data demonstrated that real estate and construction loans accounted for 52.5 per cent of total outstanding loans by finance companies.⁷ Assets of the finance companies accounted for 20 per cent of the assets of the financial system and 39 per cent of Thailand's GDP.⁸

BIBFs, banks and finance companies were able to increase their leverage as the BoT did not sufficiently regulate their borrowing and lending. This overleveraging and maturity mismatch made the Thai financial sector extremely susceptible to speculative attacks on the baht. When the lack of foreign reserves to meet short-term debt obligations became apparent, capital flows reversed as investors panicked. Finance companies which had the largest exposure to the real estate sector were the first institutions to become illiquid and in need of support from the BoT, with effect from March 1997. To stem the liquidity drain, the BoT suspended 16 finance companies on 29 June 1997. After the peg of the baht was abandoned on July 2, the IMF mission found many, if not all, of the remaining finance companies to be insolvent in mid-July, a situation that resulted in another 42 suspensions on 5 August 1997. The subsequent restructuring of the financial sector that occurred as a result of the crisis led to significant changes for the finance companies – with the result that 56 were closed and a further 13 were merged. At the end of 1999, the number of finance companies had been reduced to 22, which together accounted for a 5 per cent share of assets of the financial system.

Regulatory myopia

It is a challenge to regulate well. Regulators may be myopic with regard to impending crises; they may fail to keep up with innovations in the industry or fail to notice misbehavior by entities they regulate, or they may fail to fully appreciate the moral hazard problems posed by regulations. In short, regulators are human and are given to the same myopic failings as those they regulate. These regulatory shortcomings have been apparent in the case of the US subprime crisis and are also evident in the ongoing Spanish banking crisis.

US subprime crisis (2007)

Regulatory myopia in a number of areas contributed to the subprime crisis of 2007–2008. There was inadequate regulation of the mortgage underwriting process, the risk ratings used for purposes of capital requirements and the supervision of institutions involved in securitization, as well as the risk models used by banks and credit rating agencies.

Predatory lending

Starting at the mortgage origination stage, weak underwriting standards led many subprime borrowers to take on loans they could not afford, even before interest rate resets and declining home values put borrowers underwater. In 1994, Congress had enacted a law against high-cost mortgage loans with the definition of high costs set so high that it regulated no more than one per cent of subprime home loans.⁹

Although many states subsequently enacted anti-predatory lending laws with lower cost triggers and restrictions on pre-payment penalties from 1999, there was a substantial variation in the restrictiveness of the laws across different states. While the enactment of anti-predatory laws did limit the spread of loans with potentially problematic characteristics, it also resulted in product substitution to facilitate the flow of mortgage credit. In particular, a careful study by Bostic et al. provides evidence that the introduction of an anti-predatory lending law in a particular state led to the lengthening and deepening of teaser rates for ARMs and interest-only ARMs.¹⁰ There was also a significant rise in the likelihood of fixed-rate interest-only mortgages, with the majority of interest-only loans providing low or no documentation of income and with reported income likely to be substantially above the actual income of the borrower.

State-level anti-predatory lending regulations enacted between 1999 and 2007 did not, as such, have much impact on the overall flow of credit for subprime lending and was not successful in protecting borrowers, lenders or investors. By June 2008, California and Florida (both of which had enacted anti-predatory lending laws in 2002) accounted for one-fourth of subprime loans and one-fifth of prime loans – of which almost one-third were delinquent for more than 60 days and almost two-fifths resulted in foreclosure.¹¹

Inadequate risk regulation

Basel II rules, issued in 2002, governed bank capital requirements in a microprudential, asset-class-specific and firm-specific approach. The basic approach has been to attach higher risk weights to riskier assets. However, by underestimating the extent of the price decline that was possible in a housing bust, regulators failed to get the risk weights correct for housing-related mortgage products. Although house price declines in a bust can be as much as 50 per cent, the risk of such a magnitude of decline was not reflected in the risk weights attached to real estate-backed assets. As compared with equity in hedge funds, which attracted 400 per cent risk weighting, residential mortgages enjoyed 35 per cent risk weight, and AAA CDOs a preferential risk weight of 7 per cent.¹² Prior to 2007, these regulations effectively required banks to set aside less than 1 per cent of loss-absorbing equity for residential mortgages with no money down and 0.4 per cent for CDOs backed by US subprime mortgages.¹³ The low risk weights contributed to the buildup of housing credit and system-wide risks, subsequently inflicting heavy losses on banks during the crisis.

Belief in sufficiency of self-regulation

Investors seeking higher returns initially had positive experiences with subprime MBS and CDOs. This fueled a demand for subprime securitized assets across the United States. However, during the explosive growth of the subprime market for loans from 2001 to 2006, the quality of loans deteriorated as underwriting criteria were loosened. The process then created a moral hazard, in which subprime lending risks under the US originate-to-distribute securitization model were allowed to be passed along a chain, starting with mortgage brokers, extending to lenders and securitizers and ending as calculated risks in investor portfolios.¹⁴ Transactors chose to participate in the chain so long as they did not retain the risks and were confident of passing it on to the next stage. At the end of the chain, there was also a lack of incentive for institutional fund managers to adequately manage their risk portfolios as they faced limited liabilities – a classic principal-agent problem. In good times, bonuses for good performance are high since high-risk products offer high returns. When things do not go as expected, however, there is no requirement to pay back bonuses.¹⁵ Moral hazard was thus prevalent throughout the entire chain of the securitization process.

From 2004, Basel II also allowed banks to trust their own internal risk models to assess and control credit and operational risk for capital requirement purposes. The result was that the tangible common equity of many banks, when measured against risk-weighted assets, was as low as 1 to 3 per cent, implying risk-based leverage of between 33 and 100.¹⁶ Regulators thus failed to pay sufficient attention to moral hazard, conflicts of interest and fraud, naively relying on bank self-regulation as a regulatory mechanism.

Credit rating agencies (CRAs)

In the housing boom phase, when rising prices motivated lenders and investors to put increasing amounts of liquidity at risk, CRAs served to fuel investment behavior by awarding credible and safe ratings to risky securities, including complex CDOs. However, regulators failed to recognize that the CRAs were giving insufficient consideration to the impact of housing price declines in their rating models. Securities were thus consistently overrated as risks were systematically underestimated; in particular, for high-risk tranches. It was also likely that the three major CRAs – Standard and Poor's, Moody's and Fitch – were competing amongst themselves through the lowering of rating standards. This contributed to irrational investment optimism in subprime-related securities, and investors bore higher risks than what the ratings would suggest.

Spain's housing bubble in the 2000s

Spain has a high homeownership rate of over 80 per cent, with generous personal income tax deduction for mortgage loan payments. The launch of the euro in 1999 led to interest rates falling to historically low levels which in turn fueled a housing bubble. Between 2000 and 2008, housing prices rose by 2.5 times, and more than five million homes were built from 2000 to 2009.¹⁷ The housing bubble was inflated by credit growth; instead of relying only on deposits, Spanish banks borrowed on the international markets to lend to developers and home buyers. Typically, long-term 30-year maturity loans for construction projects were offered to developers who were required to pay interest only during the first two years of construction. At the end of the two year construction period, the original loan amount was divided into smaller mortgages (keeping

the conditions of the original loan, including interest rate, the same) and offered to buyers of the housing units being developed. This low-cost development financing structure encouraged borrowing by real estate developers and resulted in high construction activity in the housing sector.

The arrangement was also attractive to Spanish banks since the financing of one development project allowed them to originate many mortgages that would have otherwise been costly to sell to individual home buyers. Banks also regarded these smaller loans as almost riskless since they increased a customer's loyalty and allowed for cross-selling opportunities. *Cajas*, or savings banks, which had traditionally focused on individual customers, joined in this expansion, fueling the credit and construction boom by providing financing for much riskier (but potentially higher-paying) loans for apartments and second homes. The (until recently) 50 or so *cajas* were theoretically non-profit organizations owned by regional and local governments. At the end of 2009, the total exposure of the Spanish financial system to the construction and real estate sector had grown to €453 billion, around 12 per cent of the system's total assets, and 43 per cent of its GDP.¹⁸

In good times, when expectations of housing price increases led to increased housing investment and demand, such a financing agreement worked well. However, problems arose when developers were unable to sell the units under construction. When the financial crisis in the United States triggered the burst of Spain's housing bubble in 2008, demand for new units under construction evaporated. Many developers were unable to repay the development loans, and by the end of 2009, it was estimated that close to 10 per cent or €44 billion of real estate loans were non-performing loans.¹⁹ To avoid immediate losses, lenders chose to exchange the loans for real estate assets to avoid writing off the non-performing loans. The subsequent banking crisis led to a series of ongoing government bailouts of the banking sector. The government arranged a merger of seven troubled *cajas* in 2011 which resulted in the creation of a "good bank", Bankia. However, in May 2012, continued unsolvable problems led to the insolvency and eventual nationalization of Bankia. In June 2012, the European Union agreed to lend the Spanish government €100 billion to recapitalize Spanish banks in order to avert a full-scale financial crisis (see Chapter 9).²⁰

Regulatory laxity by Banco de España during the housing boom period contributed to increasing the bubble size, with subsequent grave consequences for financial sector stability and the economy. The Spanish unemployment rate had risen to 24 per cent by 2012. Ironically, Banco de España's pioneering of bank dynamic provisioning as a countercyclical macroprudential regulatory measure from 2000 may have led to regulatory complacency. In practice, the use of dynamic provisions allowed banks to appear healthy even when they were quite ill and were depleting excess reserves from past profits – that is, until they crashed.²¹

Regulatory naivety²²

Regulatory failure and moral hazard behavior leading to systemic crises were evident in the Asian crisis (1997–1998) and the US financial crisis (2008–2009), of which much has been written, as well as the ongoing Euro zone crisis (2010–2012). Housing finance systems are particularly prone to systemic risk as real estate prices move in cycles, creating risks for lenders as well as for the stability of financial systems. Historically, many major banking distress episodes in both developed and emerging economies have been associated with the boom-bust cycles in property prices (see Chapter 9). Prior to each of the recent systemic crises episodes, the financial regulators concerned appeared to have been naive with regard to the systemic risks arising from counterparty risks and too-big-too-fail institutions, as well as to contagion across markets.

In the wake of the regulatory failures that precipitated the global financial crisis of 2008, major reviews of both domestic and global regulations of financial institutions were carried out. The need to regulate over-the-counter derivatives and counterparty risks, the systemic risk posed by too-big-to-fail institutions, the risk of international contagion, and the need for macroprudential policy have become part of the new financial regulatory landscape. In 2009, governments of the G20 countries established the Financial Stability Board to coordinate the work of national financial authorities and international standard-setting bodies in order to promote the stability of the international financial system.²³ In 2010, the US Congress passed the Dodd-Frank Wall Street Reform and Consumer Protection Act, a far-reaching overhaul of financial regulation.

The act, at 2,319 pages, required the adoption of 243 new formal rules by 11 different regulatory agencies within a year and a half of its passage.²⁴ On the international front, a review of Basel II resulted in Basel III, a new global regulatory standard on bank capital adequacy, stress testing and market liquidity risk. The new standards were agreed to by members of the Basel Committee on Banking Supervision in 2010–2011.

Regulatory capture and corruption

Housing policy and the regulation of financial institutions are also subject to external risks in the form of political intervention, regulatory capture and corruption. Political risks may arise from changes to housing policies (e.g., housing subsidies, housing-related taxes and regulations) resulting from a change in government. In 2010 in congressional testimony, Susan Wachter classified the USA, the UK, Spain and Ireland as countries that suffered particularly severe recessions driven by sharp housing crashes from 2007 on.²⁵ At the other end of the spectrum were Canada, Australia and Germany, where home prices merely leveled, resulting in no recession or a mild recession. Wachter attributed the difference between these two categories to the stability of regulation: the first group allowed lending standards and capital requirements to decline, while the latter group maintained rules in the face of market pressure. However, Wachter did not delve into the specific reasons for the difference in stability of regulation.

The answers to the question as to why there was a slide in regulatory standards in some countries and not in others lie at the interface of politics, finance and regulatory capture. Since the global financial crisis of 2008, a growing number of commentators have highlighted the regulatory capture of policy makers and regulators by leading financial institutions as one of the main causal factors of the crisis. Officials charged with overseeing financial institutions ended up protecting the interests of the companies instead of the interests of taxpayers and the general public. For example, media reports in 2008 detailed how Fannie Mae and Freddie Mac had spent a total of US\$170 million in the decade prior to the financial crisis on political lobbying.²⁶

Andrew Baker argues that such capture extended beyond the USA and the UK into the international arena through the disproportionate

international influence exercised by US and UK officials.²⁷ The terminology has expanded to include terms such as “state capture”, which was first used for transition economies,²⁸ “intellectual or cognitive capture”,²⁹ and “deep capture”.³⁰

Relating regulatory capture to outcomes is, however, challenging as measuring capture is tricky. In one study, researchers used nationwide measures of corruption, which may be correlated to regulatory capture, to explain differences in the efficiency of electricity distribution firms in 13 Latin American countries. Another study analyzed the connection between capture and outcomes by focusing on whether influence in the form of campaign contributions to politicians mattered for wholesale price determination by US state regulatory commissions in telecommunications.³¹

Kaufmann and Vicente³² draw a distinction between illegal and legal corruption, where legal corruption includes state capture and influence. Using data obtained from a 2004 worldwide Executive Opinion Survey, they arrived at measures of corporate corruption (which included both illegal and legal corruption), from which they derived the Corporate Ethics Index for each country. Table 12.2 shows the Kaufmann and Vicente Corporate Ethics Index (available at the World Bank website) as well as the Corruption Perceptions Index (from Transparency International) for the two categories of countries identified by Wachter. The first category comprises countries where financial regulatory standards have declined in the past decade (the USA, the UK, Spain, Ireland and Greece); the other category comprises countries which had stable financial sector regulation (Australia, Canada, Germany, Sweden and Singapore).

Table 12.2 Corporate Ethics Index (and Corruption Perceptions Index)

Decline in regulatory standards	Stable financial sector regulation
US 57.4 (7.1)	Australia 71.1 (8.8)
UK 80.3 (7.8)	Canada 63.1 (8.7)
Spain 51.0 (6.2)	Germany 73.7 (8.0)
Ireland 60.3 (7.5)	Sweden 77.0 (9.3)
Greece 36.5 (3.4)	Singapore 83.0 (9.2)

Note: The Corporate Ethics Index combines both corporate illegal and legal corruption measures. A higher value for both indices implies a higher ethical standard rating.

Sources: Corporate Ethics Index as estimated by the World Bank and Corruption Perceptions Index by Transparency International.³³

Countries with stable financial regulation scored better for corporate ethics and perceptions of public sector corruption as compared with the countries where there was a decline in regulatory standards. The only exception was the UK, which had witnessed a decline in regulatory standards but enjoyed a relatively high Corporate Ethics Index of 80.3.

To further investigate the link between regulatory capture, decline in regulatory standards and financial crises, Figure 12.1 shows a country's Financial Stability Score against its Corporate Ethics Index; the list includes countries with developed financial markets.³⁴ The Financial Stability Score is obtained from *The Financial Development Report 2011*, prepared by the World Economic Forum, and is a measure of the risks of currency crises, systemic banking crises, and sovereign debt crises (see Appendix). The simple hypothesis we consider is that countries in which regulators are more easily capturable (as measured by the Kaufmann and Vicente Corporate Ethics Index) should have financial sectors that are more prone to crises. We find a significant positive correlation (0.54) between the Financial Stability Score and the Corporate Ethics Index.³⁵

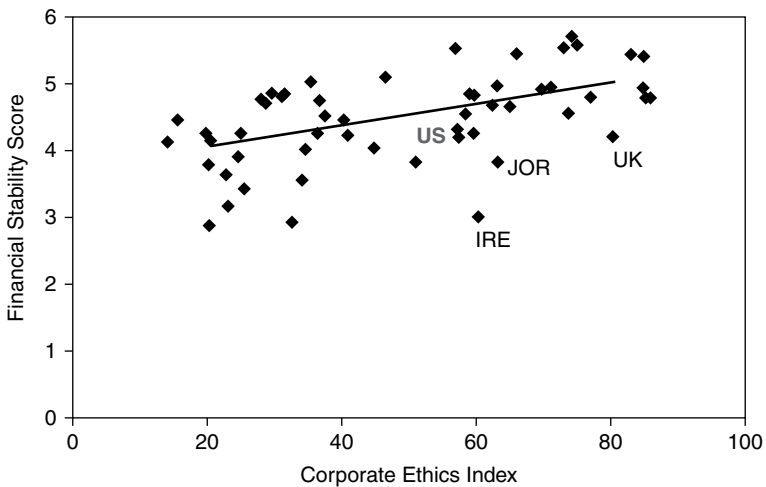


Figure 12.1 Financial Stability Score versus Corporate Ethics Index

Note: Sample size 54; correlation coefficient: 0.59 (without Ireland – IRE); t stats 5.19.

Table 12.3 Financial stability and regulatory capture risk: classification of countries

	High risk of regulatory capture CEI < 58	Low risk of regulatory capture CEI > 58
Stable financial sector FSS > 4.3	<p><i>Stable financial sector, despite risk of regulatory capture</i></p> <p>Malaysia, China, Indonesia, Morocco, Colombia, Brazil, Czech Republic, Mexico, Peru, Thailand, Slovakia, Bangladesh</p>	<p><i>Stable financial sector and independent regulators</i></p> <p>Denmark, Netherlands, Norway, Finland, Singapore, Sweden, Hong Kong, Switzerland, Germany, UAE, Australia, Austria, Chile, Belgium, Canada, Japan, France, South Africa, Israel</p>
Unstable financial sector FSS < 4.3	<p><i>Risk of financial sector regulatory capture</i></p> <p>USA, Tunisia, Spain, Egypt, Italy, South Korea, India, Vietnam, Hungary, Turkey, Panama, Venezuela, Argentina, Pakistan, Russian Federation, Ukraine, Romania, Poland, Philippines</p>	<p><i>Risk of international capture of financial regulators</i></p> <p>UK, Ireland, Jordan, Bahrain</p>

The data in the Appendix shows only three countries with Corporate Ethics Indices (CEI) higher than the USA's, but with Financial Stability Scores (FSS) about the same or lower than the USA's; namely, the UK, Ireland and Jordan (see Figure 12.1). On the basis of the hypothesis just mentioned, the regulators of these three countries make good plausible candidates for having been "internationally captured" by US financial institutions.

Using the same data set and the USA as a benchmark for financial sector instability (the US FSS being 4.2) and risk of regulatory capture (the US CEI is 57.4), Table 12.3 categorizes the countries in the sample into four types:

- (i) countries with stable financial systems with low risk of regulatory capture (FSS > 4.3 and CEI > 58);

- (ii) countries with stable financial systems but where risk of regulatory capture is present ($FSS > 4.3$ and $CEI < 58$) (one interpretation of this category is that financial sector regulators in these countries are less susceptible to corruption than the rest of the state);
- (iii) countries with unstable financial systems and high risk of financial sector regulatory capture ($FSS < 4.3$ and $CEI < 58$); and
- (iv) countries with unstable financial sectors with a higher risk of financial sector regulatory capture relative to other sectors of the economy, possibly by global financial institutions ($FSS < 4.3$ and $CEI > 58$).

Regardless of whether the corruption risk is legal or illegal, real estate and financial systems, as deeply leveraged sectors, are particularly vulnerable to the risk of capture. While the above evidence cannot be regarded as establishing a definitive causal link between corruption levels and financial sector regulatory capture in the respective countries, regulatory and state capture are risks in housing finance systems that need to be recognized and restrained.

Appendix

Countries within top 60 for financial markets	Financial Stability Score 2011	Corporate Ethics Index 2004
Denmark	4.79	85.9
Netherlands	4.79	85.2
Norway	5.41	84.9
Finland	4.94	84.8
Singapore	5.44	83.0
UK	4.21	80.3
Sweden	4.80	77.0
Hong Kong SAR	5.58	75.0
Switzerland	5.71	74.2
Germany	4.56	73.7
UAE	5.54	73.0
Australia	4.95	71.1
Austria	4.92	69.7
Chile	5.45	66.0
Belgium	4.66	65.0
Jordan	3.83	63.2
Canada	4.97	63.1
Japan	4.68	62.4

Continued

Appendix – Continued

Countries within top 60 for financial markets	Financial stability score 2011	Corporate ethics index 2004
Ireland	3.01	60.3
France	4.83	59.7
Bahrain	4.26	59.6
S Africa	4.85	59.0
Israel	4.55	58.4
USA	4.20	57.4
Tunisia	4.32	57.2
Malaysia	5.53	56.9
Spain	3.83	51.0
China	5.10	46.5
Egypt	4.04	44.8
Italy	4.23	40.9
Indonesia	4.46	40.3
Morocco	4.52	37.5
Colombia	4.75	36.7
South Korea	4.26	36.4
Brazil	5.03	35.4
India	4.02	34.6
Vietnam	3.56	34.1
Hungary	2.93	32.6
Czech Republic	4.85	31.5
Mexico	4.81	31.1
Peru	4.86	29.6
Thailand	4.71	28.7
Slovakia	4.77	28.0
Turkey	3.43	25.5
Panama	4.26	25.0
Venezuela	3.91	24.6
Argentina	3.17	23.1
Pakistan	3.64	22.8
Russian Federation	4.15	20.5
Ukraine	2.88	20.3
Romania	3.79	20.2
Poland	4.26	19.8
Bangladesh	4.46	15.6
Philippines	4.13	14.1

Sources: Data on Corporate Ethics Index is obtained from the World Bank website (<http://web.worldbank.org/WBSITE/EXTERNAL/WBI/EXTWBIGOVANTCOR/0,,contentMDK:20788416~pagePK:64168445~piPK:64168309~theSitePK:1740530,00.html>).

Data on Financial Stability Score is obtained from World Economic Forum, *The Financial Development Report 2011* (<http://www.weforum.org/reports/financial-development-report-2011>).

Part V

Complexity and Risks

This book began with the simple proposition that the positive externalities of homeownership and numerous other market imperfections provided the rationale for government intervention in housing finance markets. Governments in many countries have been proactive in implementing housing policies, designing a vast array of policy instruments and housing institutions to channel resources into the housing sector. Figure V.1 depicts a well-functioning housing finance system fulfilling multiple objectives – promoting social and political stability, enhancing housing market performance, as well as contributing to financial sector stability and development.

Yet, in too many instances, housing finance policy has had unintended and undesirable consequences. Powerful market forces and strong feedback loops (both positive and negative) within the housing finance system, as well as unexpected dynamics arising from cross-border capital flows, have proven to be destabilizing in many instances. Moral hazard behavior, too-big-to-fail entities, misaligned incentives, government policy and regulatory failures have also combined to deliver unexpected systemic challenges. The housing finance system occupies an increasingly prominent space that interfaces with social and political risks, housing market distortions and economic and financial system risks (see Figure V.2).¹

There is a need for housing finance systems to be viewed as part of a complex and highly interdependent network encompassing many processes, organizations and sectors, with interlocking risks of market failures and government failures in any part of

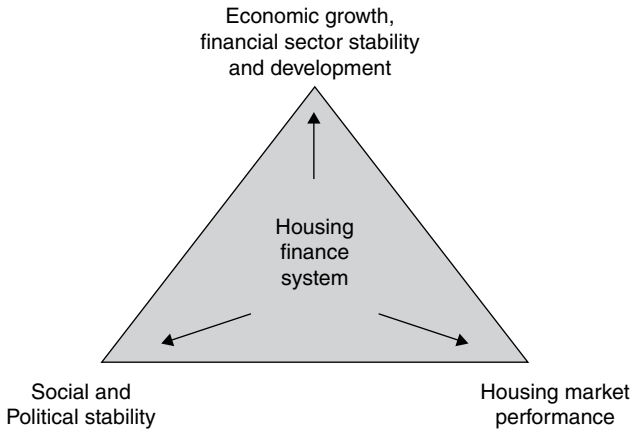


Figure V.1 Potential contributions of housing finance to multiple policy objectives

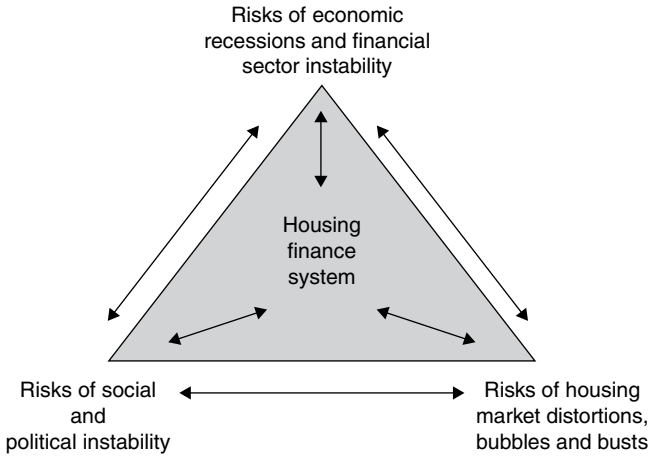


Figure V.2 Systemic risks in a complex housing finance system

the network capable of having systemic effects on the rest of the network. Having reviewed the numerous possible sources of market failures and government failures within the housing sector and how these failures are often inextricably intertwined, in the final chapter of this book, Chapter 13, we consider the lessons learned as well as smart practices for building resilient housing finance systems that can better deliver on multiple social and economic objectives.

13

Smart Practices for Housing Finance Systems

Having reviewed the various forms of housing market failures and policy interventions, as well as major government failures, in this concluding chapter, we consider how the lessons learned can translate into smart practices for housing finance systems.¹ Housing finance systems vary significantly across countries, and a policy that works well in a particular context may not have the same successful outcomes when transplanted to another setting. Thus, instead of the term “best practice”, with its connotation of specific techniques which apply in a blanket fashion across jurisdictions, I have chosen to use Eugene Bardach’s term, “smart practice” instead, as this draws attention to the importance of relevance of the environment and context in which housing policy operates. Looked at in this light, different housing policies will apply in different ways by themselves, as well as in conjunction with other policies, depending on the environment and context concerned. Specific housing outcomes in any given jurisdiction are therefore the result of the dynamic interplay between the general housing policy approach and the social, political, historical, institutional and regulatory contexts.

The global financial crisis originating in the USA in 2008 has led to consensus among many economists that an overhaul of US housing policy is much needed.² This chapter does not attempt to consider the complexities of how US housing finance should be reformed. However, the recent US crisis provides many valuable lessons for policymakers elsewhere on the vulnerabilities of the financial system and the role of policy and regulatory failures. The ongoing debate on reforming US housing finance likewise provides useful lessons

that can be gleaned from good practices in other jurisdictions. The discussion on smart practices in this chapter is grouped according to the following policy issues: the crafting of housing policies, the regulation of the housing mortgage product, the perennial question of public or private enterprise, and regulating for financial stability. Much has been written on regulating for financial stability and the focus here will be on recommendations that are more specific to housing finance.

The crafting of housing policies

Rental housing

Governments in many countries intervene in housing markets with policies that have a homeownership bias. This bias skews financing and resources towards the homeownership sector and away from the rental sector. Moreover, rental sector policies such as rent control and rent regulation may contribute to making rental housing an inferior asset for private investors to hold. In countries that have achieved high ownership rates, the rental sector often declines into a segmented sector comprising a social housing sector and a commercial short-term leases sector. Governments need to be careful about the long-term economic and social health of the rental sector as well as its vulnerability to such policy bias.

The German experience in building an economically and socially sustainable rental sector offers excellent policy lessons for the crafting of rental housing policies. In the German system, the rental housing stock is highly differentiated, with large professional commercial real estate companies playing an important role.³ The overall principle is for tenants receiving housing assistance and social housing units to be distributed throughout the entire city and intermixed in districts. In each city, local governments are able to work with a few large real estate companies (instead of numerous private sector landlords) to better address the range of social, local public goods and neighborhood issues in the housing sector.

Housing subsidies

When governments make a policy decisions to subsidize homeownership, a one-time upfront explicit housing grant subsidy that is

carefully targeted to intended beneficiaries is, generally speaking, superior to subsidies tied to housing loans from the perspectives of transparency, accountability, efficiency and equity. Subsidies for mortgage credit, as used by Shanghai for a short period between 1998 and 2003, can be useful to incentivize housing purchase and investment. However as a long-term policy, they can lead to excessive borrowing and contribute to financial instability. Moreover, mortgage tax deduction as a long-term policy (as in the case of the USA) can be opaque, regressive and costly for taxpayers.

Housing subsidies in a context where there is a serious housing shortage would be more effective if allocated to the supply side to increase the available stock of housing. In so far as housing supply is concerned, local governments need to ensure that land use and other planning regulations do not pose insurmountable obstacles to housing development which would drive up housing prices. Supply-side subsidies can be allocated to housing authorities or incorporated in a public-private partnership arrangement or in the form of tax credits to incentivize the private sector to develop, rehabilitate and/or manage affordable housing.

Mortgage insurance

Government provision of mortgage default insurance or guarantees can be an efficient way to encourage lending to lower-income households at lower interest rates. At the wholesale level, government guarantees can help to catalyze the development of funding mechanisms for housing finance for targeted segments of the population. This may take the form of guarantees on timely cash flows for mortgage-back securities or against default by mortgage lenders who borrow from a liquidity window. However, at both the retail and wholesale levels, there is a need for *selective* and *targeted* provision of government guarantees and proper pricing of risks, as well as avoidance of moral hazard. For example, government guarantees could be given only to a targeted segment of the population or to certain securities backed by mortgages given to targeted beneficiaries based on need or special purpose. The involvement of private sector insurers and reinsurers should be encouraged as they bring professional expertise in operations as well as in the proper pricing of risk.

Housing savings schemes

Contractual savings schemes (CSS) and housing provident funds (HPFs) can be useful in emerging economies in jump-starting housing finance through the mobilization of domestic savings. Through lowering mortgage default risk, they also help contribute to the stability of housing finance systems. However, HPFs can have regressive effects when low-income-tenant households, which are required to contribute to the fund, effectively cross-subsidize middle- and high-income homeowners. In this regard, the voluntary nature of CSS for housing makes it a more flexible and equitable alternative policy to HPFs.

Exit strategies

The appropriate mix of housing policies to adopt varies depending on the context, and, once implemented, there is a need for ongoing evaluation of policies and public sector institutions for relevance and effectiveness and for periodic reviews of the resources required. A schedule for program evaluation, sunset provisions, and exit strategies needs to be incorporated as one of the components of housing policy planning and implementation.

The regulation of housing mortgage products

Mortgage underwriting

The moral hazard that abounds within housing finance prevents borrowers from exercising market discipline and lenders from ensuring safe underwriting practices. Moreover, households differ in their levels of financial literacy and financial sophistication. Hence, governments cannot rely upon self-regulation and need to regulate the mortgage underwriting process. Rules-based regulations and prudential supervision (as opposed to principles-based and light-touch regulation) are necessary, and the penalties for evasion or noncompliance must outweigh the profits.⁴

Recourse mortgages

The global financial crisis of 2008 has called attention to the prevalence of non-recourse mortgages in the USA as compared with mortgage markets elsewhere in the world. Non-recourse mortgages are

secured only on the property, and in the event of default, the bank has no right to pursue the borrower for the difference between the foreclosure price and the mortgage amount. As the borrower is able to “mail back the keys” without suffering further consequences when housing prices fall (a strategic walk-away mortgage default), this raises default rates, adds to negative sentiment and exacerbates the decline in prices. Harris compares the pros and cons of the recourse versus non-recourse and advocates a dual regime; in particular, that US jurisdictions that prohibit recourse loans should lift this prohibition.⁵ For jurisdictions with recourse residential mortgages, it would be preferable that this remains the practice as empirical evidence does indicate that recourse is associated with a lower default incidence.⁶

FRMs versus ARMs

A long-term fixed-rate mortgage (FRM) provides certainty for borrowers but exposes lenders to a great deal of interest rate risk. The FRM requires the existence of secondary markets in mortgage securities in order for lenders to transfer the market risk to other investors. Interest rate hedging further requires deep interest rate swap markets as a starting point. As sophisticated derivatives markets are rare in emerging countries, adjustable rate mortgages (ARMs) or hybrids, such as rolling short-term fixed rates, would be preferable to FRMs. However, the interest rate risks for ARMs are borne by borrowers, and this could result in higher default risk when interest rates rise. Tight regulation is therefore required over lending practices, such as prohibiting lenders from issuing ARMs to borrowers who do not qualify for the highest projected rate over the life of the loan.

Mortgage securities

Mortgage securities are important sources of housing finance in many developed countries including the USA, the UK, Denmark, Australia and Sweden. A few emerging economies, such as Malaysia and Chile, have also successfully established markets for mortgage securities. However, since the 2008 crisis, there is consensus that incentives in the US originate-to-distribute securitization model (where the pool of mortgage assets is separated from the issuer and resides in a special-purpose vehicle) are seriously misaligned. Mortgage originators need to have “skin in the game” and retain at least some credit

risk exposure for the mortgages they originate in order to avoid moral hazard issues.

As a means of financing mortgages via the capital market, European mortgage covered bonds are a systemically less risky alternative to US mortgage-backed securities. Mortgage loans remain on the books of a bank that issue the mortgage covered bond, and bondholders have dual recourse to the collateralized pool of assets, as well as to the assets of the issuing bank in the event of a default. An increasing number of US economists have proposed the Danish mortgage covered bond model as offering useful lessons for the reform of the US housing finance system.⁷

Mortgage product offerings

Mortgage products with features such as a 50-year term, interest-only payments, teaser rates, negative amortization and foreign currency loans can enhance housing affordability. However, the trade-off is that they can also encourage speculative purchases and excessive borrowing and amplify house price volatility. Foreign currency mortgage loans either require payments in the foreign currency or index amounts in domestic currency to the exchange rate. These loans are attractive in high-inflation countries but carry significant default risk for borrowers whose incomes are in the domestic currency. These complex and risky mortgage products should be avoided in markets where consumers are financially unsophisticated and do not fully appreciate the risks involved. John Campbell has advocated that regulation be used to promote standard mortgages in order to reduce the incidence of borrowers making financial mistakes when confronted with a wide array of mortgage products.⁸

Public or private enterprises?

Uncertainty and the risks of both market failures and government failures lead us to the perennial questions of the appropriate role of the government and the relative superiority of private corporations over state-owned enterprises. The answers depend very much on context – the nature of market failures and the risk of political, state, or regulatory capture, as well as the risk that political leaders might adopt populist policies or seek to maximize the well-being of particular segments of society. Large private (or privatized) real

estate companies and financial institutions enjoy efficiencies that are important for improving performance of the housing sector. However, the trade-off may be that governments may not have adequate regulatory capacity to monitor the potential abuse of monopoly power, agency problems and moral hazard behavior.

In the presence of both positive externalities (which justify subsidies) and regulatory capture risks, it is possible for the public-owned enterprise to be the first best outcome.⁹ Although subject to much criticism by free market and privatization advocates, state-owned enterprises and government housing institutions in many countries have operated successfully (see Chapter 7). On the other hand, there exist numerous recent examples of spectacular failures of private limited-liability corporations which were rampant with fraud and principal-agent problems. In the discussion of appropriate institutional design, we need to recognize that the more important issue may not be the drawing of clear boundaries between market and government,¹⁰ but rather the correct alignment of incentives within an organization and its proper governance.

This brings us to the role that public-private-partnership (PPP) arrangements can play in financing cities in general and housing development in particular. Although problems and challenges exist, PPPs have been instrumental in the dynamic growth of many cities in East Asia (see Chapter 8). Well designed and executed PPPs attract much needed private sector expertise and capital for urban development projects. PPPs have worked well in real estate development where the government is a major landowner or where government involvement is needed in order to remove gridlock. Within housing finance systems, the involvement of commercial banks and private mortgage insurance companies in government-initiated housing schemes can also effectively allow the public sector to leverage on the private sector's professional expertise, technology and operational efficiency. PPPs are not best practice solutions but rather smart practice arrangements – they take into account both context-specific market failures and government failures that cannot be removed in short order.

The possibility of political or regulatory capture by large corporations, either in regulated industries or in a PPP setting, is a risk that needs to be recognized. However, the difficult question remains as to who regulates the regulators. Lord Norton offers the following

answer: “We have let the regulatory state emerge and grow but we have not created a body or bodies to ensure that it is accountable and, indeed, that its size and shape are appropriate.”¹¹ This answer, while not particularly helpful in addressing the problem, points to the need for governments and societies to recognize this particular risk and to enhance transparency, consumer protection and governance capacity to guard against it.

Regulating for financial stability

Leaning against housing bubbles

To the extent that real estate markets affect financial and macroeconomic stability, they should come within the ambit of macroeconomic policy. However, monetary policy would be too blunt an instrument to deploy to prick bubbles in the context of a large country or a monetary union where housing bubbles could be localized geographically. In small open economies, monetary policy would be ineffective. However, when asset prices are already bubbling, excessively low levels of interest rates might serve to trigger the development of bubbles.

Segmented and careful regulation of housing markets (which could be at the national, regional or local level, depending on context) to discourage speculation and to deter potentially destabilizing foreign short-term investors are direct tools that can be considered. Fiscal instruments such as transactions taxes and capital gains taxes on real estate gains can be adjusted in a countercyclical manner in order to dampen the housing cycle and to discourage speculative activity during the boom phase.

Macroprudential regulation of the housing sector may be necessary to mitigate the risk of a housing bubble leading to systemic financial crisis. Varying the caps on loan-to-value ratios or debt-to-income ratios are potentially useful countercyclical tools to dampen the housing booms and bust cycle. In some countries, measures specifically target cities and even districts within a city and specific market segments within the housing market. As housing supply elasticity numbers can vary widely across a country and housing bubbles are often localized geographically, these targeted micro policies on lending are rational and understandable once a macroprudential decision has been taken to intervene.

In addition to aggregate leverage levels and external imbalances, central banks need to monitor the amount of credit as well as the sources of credit being channeled into the real estate sector. Large sustained current account deficits that are being used to fund real estate investments should be monitored carefully and controlled if necessary if they are contributing to the development of real estate bubbles. Regulators also need to monitor large cross-border capital flows (popularly known as “hot money”) that may be causing credit expansion and real estate price increases. Aliber notes that such capital flows are a recurring feature of financial crises. From a housing perspective, regulators need to monitor the flow of hot money into real estate, which could be potentially destabilizing. Regulators could consider anti-speculation measures and capital-flow targeted policies, such as a higher transaction tax for non-resident buyers.

Regulatory arbitrage

Regulators need to monitor for possible regulatory arbitrage among different categories of financial institutions (banks, non-banks, finance companies, etc.) and among different financial markets. When regulatory treatment differs, regulatory arbitrage can be used to circumvent restrictions and become a cause of systemic failure. The following quotation from Paul Krugman encapsulates the general principle well: “Anything that does what a bank does, anything that has to be rescued in crises the way banks are, should be regulated like a bank.”¹²

“Too-important-to-fail” institutions

In 2011, the Financial Stability Board of the G20 nations together with the Basel Committee of Banking Supervision put forward a list of globally systemically important financial institutions (G-SIFI).¹³ The 29 banks on the initial G-SIFI list have been targeted for extra scrutiny, additional capital surcharges and loss-absorption capacity and are expected to produce detailed “resolution” plans showing how they could be broken up in a crisis. It is presumed that the list will be updated regularly and extended to include non-bank financial entities and domestic SIFIs in the future and that these practices would also factor in the prudential regulation of domestic SIFIs by national governments. In the USA, under the Dodd-Frank Act, non-banks designated as SIFIs have also been brought under the regulation of

the Federal Reserve Board and are subjected to additional capital standards as well as other requirements.¹⁴

Although large financial institutions enjoy tremendous economies of scale and scope, from a systemic risk perspective, governments need to consider if “too-important-to-fail” institutions are simply “too-important-to-exist”. There is a need to consider the trade-offs between efficiency, on the one hand, and systemic stability, on the other. This has led to proposals for a return to “narrow banking”, for the whittling down of the number of too-important-to-fail institutions and for preventing systems from becoming overly complex. Advocates for narrower banking include Mervyn King, the governor of the Bank of England.¹⁵ Much will, of course, depend upon the precise context concerned.

Conclusion

To conclude, a well functioning housing finance system is one that meets the multiple objectives of promoting social stability and equity, enhancing housing market performance, and contributing to financial sector development and macroeconomic growth. Many factors influence the ability of a system to attain these multiple objectives, and getting housing policies, housing finance, institutions, supply regimes, and regulations right are therefore important. In this regard, there is much to be learned from the successes and failures of different countries; in particular, those with a long history of government intervention in housing markets. As recent history has shown, the risk of market and government failures within the housing sector that can lead to economic crises is ever present. Given the varied and unpredictable sources of risks, this final chapter has outlined some smart practices that (if applied judiciously, having regard to the particular context concerned) can hopefully contribute towards building more resilient housing finance systems.

Notes

1 Background and Overview

1. Edward Glaeser makes an impassioned case for the city in *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier and Happier* (London: Macmillan, 2011).
2. The figures cited in this section are drawn from the UN Department of Economic and Social Affairs, Population Division, *World Urbanization Prospects: The 2011 Revision*, CD-ROM Edition, 2012, <http://esa.un.org/unup/CD-ROM/Urban-Rural-Population.htm>.
3. Maintaining fiscal discipline and mobilizing adequate finance for infrastructure are potentially conflicting policy goals. For case studies of how these objectives are managed, see George E. Peterson and Patricia Clarke Annez (eds.), *Financing Cities: Fiscal Responsibility and Urban Infrastructure in Brazil, China, India, Poland and South Africa* (Washington, DC: World Bank; New Delhi: Sage, 2007).
4. The United Nations Human Settlements Programme, or UN-HABITAT, is the UN agency for human settlements. It is mandated by the UN General Assembly to promote socially and environmentally sustainable towns and cities, with the goal of providing adequate shelter for all (www.unhabitat.org/).

Part I Why Housing Finance Systems Matter

1. “We can put light where there’s darkness, and hope where there’s despondency in this country. And part of it is working together as a nation to encourage folks to own their own home.” President George W. Bush, speech at the White House Conference on Increasing Minority Homeownership, George Washington University, Tuesday, 15 October 2002, <http://georgewbush-whitehouse.archives.gov/news/releases/2002/10/20021015-7.html>

2 Affordable Housing

1. United Nations Committee on Economic, Social and Cultural Rights, 13 December 1991, Article 11.
2. The Canada Mortgage and Housing Corporation defines suitable housing as housing that has enough bedrooms for the size and makeup of the resident household, according to National Occupancy Standard (NOS) requirements. Enough bedrooms, based on NOS requirements,

- means one bedroom for each cohabiting adult couple; each unattached household member 18 years of age and over; each same-sex pair of children under age 18; each opposite-sex pair of children under age 5; and each additional boy or girl in the family (http://cmhc.beyond2020.com/HiCODefinitions_EN.html#_Suitable_dwellings).
3. Performance Urban Planning, *8th Annual Demographia International Housing Affordability Survey* (<http://www.demographia.com/dhi.pdf>).
 4. The Australian Housing and Urban Research Institute (AHURI) advocates the use of the residual income method to monitor housing affordability. See Terry Burke, Michael Stone and Liss Ralston, "The Residual Income Method: A New Lens on Housing Affordability and Market Behavior" (AHURI Final Report No. 176, 2011).
 5. Mark Robinson, Grant M. Scobie and Brian Hallinan, "Affordability of Housing: Concepts, Measurement and Evidence" (New Zealand Treasury Working Paper 06/03, March 2006), provides a comprehensive review of the concepts and measurement of housing affordability.
 6. See Lynn, M. Fisher and Austin, J. Jaffe, "Determinants of International Home Ownership Rates", *Housing Finance International*, September 2003, pp. 34–42; and Sock-Yong Phang, "Affordable Homeownership Policy: Implications for Housing Markets", *International Journal of Housing Markets and Analysis*, Vol. 3, No. 1, 2010, pp. 38–52.
 7. Sources for Figure 2.1 include the following: International Monetary Fund, *Global Financial Stability Report on Durable Financial Stability: Getting There from Here* (2011), p. 128; Dan Andrews and Aida Caldera Sanchez, "Drivers of Homeownership Rates in Selected OECD Countries" (OECD Economics Department Working Papers No. 849, 2011); Lu Gao, "Achievements and Challenges: 30 Years of Housing Reforms in the People's Republic of China" (Asian Development Bank Economics Working Paper No. 198, 2010); Richard Ronald and Mee-Youn Jin, "Homeownership in South Korea: Examining Sector Underdevelopment", *Urban Studies*, 2010, pp. 2367–2388; and government websites for homeownership rates for Brazil, Hong Kong, New Zealand, Singapore and Thailand.
 8. Performance Urban Planning, 2012, note 3.
 9. For time series data of price-to-income ratios for US cities from 1985, see <http://www.zillow.com/blog/research/2011/08/17/what-goes-up-must-come-down-comparing-price-to-income-ratios-across-markets>.
 10. Michael Lea and Anthony B. Sanders, "Government Policy and the Fixed Rate Mortgage", *Annual Review of Financial Economics*, Vol. 3, 2011, pp. 223–234, argue that the US taxpayer is exposed to too much risk in supporting Fannie Mae and Freddie Mac in order to justify continued government support for the FRM for which the costs outweigh the benefits.
 11. *Ibid.*, Table 2.
 12. For a detailed survey of international practices, see Michael Lea, *International Comparison of Mortgage Product Offering*, (Mortgage Bankers Association and Research Institute for Housing America, 2010).

13. See Kim Hawtrey, *Affordable Housing Finance* (Palgrave Macmillan, 2009), chapter 8, “Retail Finance Solutions”; for Islamic mortgages, see Andreas Jobst, “The Economics of Islamic Finance and Securitization”, *Journal of Structured Finance*, Vol. 13, No. 1, 2007, pp. 1–22.
14. For details of this radical proposal, see Robert J. Shiller, Rafal M. Wojakowski, M. Shahid Ebrahim and Mark B. Shackleton, “Continuous Workout Mortgages” (NBER Working Paper No. 17007, May 2011).
15. Ron Harris, “Recourse and Non-recourse Mortgages: Foreclosure, Bankruptcy, Policy” (Tel Aviv University Law School Working Paper, 2010).
16. Ibid.
17. Lea and Sanders, note 10, Table 3.
18. See John M. Quigley and Steven Raphael, “Is Housing Unaffordable? Why Isn’t It More Affordable?”, *Journal of Economic Perspectives*, Vol. 18, No. 1, 2004, pp. 191–214.
19. See Christophe Andre, “A Bird’s Eye View of OECD Housing Markets” (OECD Economics Department Working Papers, No. 746, OECD Publishing, 2010, Section 2.3), pp. 14–18, for comparison of actual and fundamental price-to-rent ratios for OECD countries between 1995 and 2009. Also John Krainer and Chishen Wei, “House Prices and Fundamental Value” (*FRBSF Economic Letter*, Federal Reserve Bank of San Francisco, No. 2004–2027, 2004).
20. Antonia Diaz and Maria Jose Luengo-Prado, “On the User Cost and Homeownership”, *Review of Economic Dynamics*, Vol. 11, 2008, pp. 584–613.

3 Market Failures

1. Edward Glaeser, *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier and Happier* (London: Macmillan, 2011), p. 148.
2. For literature review, see Sock-Yong Phang, “Affordable Homeownership Policy: Implications for Housing Markets”, *International Journal of Housing Markets and Analysis*, Vol. 3, No. 1, 2010, pp. 38–52.
3. From President George W. Bush’s address at the White House Conference, “Increasing Minority Homeownership”, George Washington University, 15 October 2002 (<http://georgewbush-whitehouse.archives.gov/news/releases/2002/10/20021015-7.html>).
4. Lee Kuan Yew, *From Third World to First: The Singapore Story 1965–2000* (Singapore Press Holdings, 2000), p. 117.
5. For a review of the US literature linking homeownership to social outcomes, see Dwight Jaffee and John Quigley, “The Future of the Government Sponsored Enterprises: The Role of Government in the US Mortgage Market” (NBER working paper 17685, 2011). Most of the research supports some positive effects but does not conclude that the effect is very large.

6. Richard Groves, Alan Murie and Christopher Watson (eds.), *Housing and the New Welfare State* (Aldershot, UK: Ashgate, 2007).
7. See, for example, William Wheaton, "Vacancy, Search and Prices in a Housing Market Matching Model", *Journal of Political Economy*, Vol. 98, No. 6, 1990, pp. 1270–1292.
8. Koichi Mera and Bertrand Renaud (eds.), *Asia's Financial Crisis and the Role of Real Estate* (New York: M. E. Sharpe, 2000), p. 285.
9. Steven C. Bourassa and Martin Hoesli, "Why Do the Swiss Rent?" *Journal of Real Estate Finance and Economics*, Vol. 40, No. 3, 2010, pp. 286–309.
10. For a comparative study of rental market, see Jim Kemeny, *From Public Housing to the Social Market* (London: Routledge, 1994).
11. See article in *The Guardian*, "Private Landlord Register Confirmed", Wednesday 13 May 2009 (<http://www.guardian.co.uk/money/2009/may/13/landlord-register-scheme-buy-to-let>).
12. Dan Hara, "Market Failures and the Optimal Use of Brownfield Redevelopment Policy Instruments" (Hara Associates Reference 1435, paper presented at the Canadian Economics Association 37th annual meeting, 2003).
13. Eddo Coiacetto, "Real Estate Development Industry: Is It Competitive and Why?" (Griffith University, Brisbane, Urban Research Program Research Paper 10, 2006).
14. James D. Shilling and Tien Foo Sing, "Why Is the Real Estate Market an Oligopoly?" (paper presented at the Annual ASSA-AREUEA Conference, Boston, 2006).
15. See Coiacetto, op. cit., at note 13, for a detailed list of issues of concern.
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 32. Daniel Kaufmann and Pedro C. Vicente, “Legal Corruption”, *Economics and Politics*, Vol. 23, Issue 2, 2011, pp. 195–219.
 33. Corporate Ethics Index from the World Bank website: <http://web.worldbank.org/WBSITE/EXTERNAL/WBI/EXTWBIGOVANTCOR/0,,contentMDK:20788416~pagePK:64168445~piPK:64168309~theSitePK:1740530,00.html>; and Corruption Perceptions Index 2011 from Transparency International website: <http://cpi.transparency.org/cpi2011/>.
 34. The list includes the countries ranked as the top 60 financial markets in the *Financial Development Report 2011*, for which more than 50 per cent of financial stability results, as well as Corporate Ethics Index, were available (53 countries).
 35. The correlation coefficient is 0.59 without the clear outlier Ireland. Both numbers are statistically significant at the 1 per cent confidence level.

Part V Complexity and Risks

1. This diagram is adapted from the ETH Risk Center’s depiction of “Future Resilient Systems” (<http://www.riskcenter.ethz.ch/research/projects/sec>). I thank Ryan O. Murphy, from ETH Swiss Federal Institute of Technology, Zurich, for drawing my attention to the ETH project.

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