Housing, finance, policy and the economy

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Abstract

Building an understanding of the interrelations of housing, finance, policy and the economy is a critical step towards developing a strategy that permits policy makers to leverage resources and enable the housing market to function better in the pursuit of economic, financial, social and environmental objectives. The wealth effect and the financial accelerator are two of the aspects that connect housing and the economy. Powerful real, legislative and financial circuits suggest that an enabling strategy for housing can support societal progress and wellbeing. By drawing on the existing literature in this area, this study examines the rational for housing market regulation, investigates whether housing market corrections threaten macroeconomic stability, and asks whether policies are efficacious at controlling housing market outcomes. This study adds to the debate on how to optimize the housing-related policy toolbox by presenting critical concepts and shedding light on the interplay between housing and the economy.

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1 Introduction

Housing satisfies the need of humans for shelter (Denton, 1990), can be a major wealth component and is a key sector of the economy[1]. Housing also plays a critical role in labor economics and the urbanization process. Rapid urbanization and limited resources can place a strain on housing, especially in lower-income countries. Inadequate housing and poverty are linked. The United Nations Human Settlements Programme (UN-Habitat) estimates that about three billion people, i.e. 40 percent of the global population, will need adequate housing and access to basic infrastructure and services by 2030. A major Millennium Development Goal is to improve the lives of at least 100 million slum dwellers by 2020. Housing sector dynamics can affect the economy (Poterba and Noguchi, 1994), and help explain cross-country differences in the macroeconomic performance (Muellbauer, 1992). Favorable finance conditions tend to promote investment and economic growth (e.g., Keynes, 1936; Levine, 2005), and unfavorable ones can do the opposite[2]. The housing market and the economy are intertwined through real, legal, regulatory and financial circuits (Mishkin, 2007). They are linked through the wealth effect (e.g., Keynes, 1936; Modigliani and Brumberg, 1954; Friedman, 1957; Blanchard, 1985; Deaton, 1992) as well as through the financial accelerator (e.g., Bernanke and Gertler, 1989, 1995; Bernanke et al., 1996). Understanding these circuits is critical in determining how housing market shocks influence economic activity, societal progress and wellbeing (e.g., Mishkin, 1978; Claessens and Kose, 2014). To anticipate the implications of these shocks and to take appropriate action, policy makers need to identify their source and nature. Interesting questions are whether housing market moves are a source of shocks or a reflection of economic development, and whether housing-related policies impact not only the housing sector, but also the wider economy. Knowledge about the impact of housing-related policy on the economy is imperfect. This means that a better understanding of the functioning of the housing market is necessary. Interventions in this

[1] Worldbank (1993) states that each dollar of housing investment produces to two dollars of economic activity in other sectors, and one more job in residential building gives rise to two other jobs. Maclennan et al. (1998) stress that the building industry provides between five and ten percent of the European employment. Gross fixed capital formation in dwellings was, on average, in the range of 4.4 and 9.4 percent of gross domestic product (GDP) in the past 45 years in Australia, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, Sweden, Switzerland, the Netherlands, the United Kingdom and the United States. Alone the housing wealth of households accounts for up to four percent of GDP in these countries. For countries where gross national product per capita is similar, housing investment tends to be larger in jurisdictions where urbanization rates are higher (Worldbank, 1993).

[2] Real estate market corrections run through the account of events preceding crises such as in the United States in the 1930s and late in the first decade of the 2000s, in Iceland late in the first decade of the 2000s and in Scandinavian countries in the early 1990s (Claessens and Kose, 2014).

market can profoundly affect market dynamics, economic activity, societal progress and wellbeing (ECB, 2003). Care needs to be taken when designing or revising housing-related policies (OECD, 2011). Questions worth exploring are whether these policies address causes or symptoms; whether they help to reach economic, financial, social and environmental objectives, and whether they have unintended consequences.

Housing supply, housing demand and the institutional framework in the housing sector typically vary across countries. These disparities can influence the transmission of policy measures to the economy (Muellbauer and Murphy, 1997). Variations in political, economic, financial, regulatory and environmental conditions tend to give rise to different policy tasks. Policy makers intervene in the housing market in the pursuit of economic, financial, social and environmental objectives. Strategic priorities, reform payoffs and the relative importance of policy instruments change with the position of an economy along the development path (e.g., Poterba and Noguchi, 1994; Dabla-Norris et al., 2016). Worldbank (1993) summarizes key areas of housing policy reform depending on the level of development of an economy. Policy makers should consider market forces as well as the desires and prospects of the variety of housing market stakeholders. They ought to strive for a balance between the costs and the benefits of the various policy tools. The housing-related policy toolbox is comprehensive and under ongoing review and revision (e.g. Andrews et al., 2011). Policies can have a bearing on housing supply, housing demand, the institutional framework in the housing sector and sectoral management. They can be aimed at influencing economic indicators, addressing market imperfection and combating market failure (Igan et al., 2014). When designing policies aimed at the housing sector (broader economy), the policies' effects on the broader economic (housing sector) performance should be considered. A housing market that is responsive to the needs of its market stakeholders, may be conducive to greater macroeconomic resilience to shocks (e.g., Caprio and Honohan, 2001; OECD, 2011; Claessens and Kose, 2014). An enabling strategy for housing is likely to include the promotion of property rights, collateral security, housing-related infrastructure and housing finance as well as a viable subsidy system and an appropriate institutional framework. Growing urbanization, amongst other factors, can put pressure on policy makers, who have limited resources and are in charge of adequate housing, housing-related infrastructure and environmental quality, to choose among competing objectives (Worldbank, 1993). In slums and squatter settlements, for example, there are conflicts between the availability of affordable, equitable housing and the feasibility of environmental and health standards.

Housing-related policies may affect the economy by altering spending decisions as well as finance and labor market outcomes. Policies have limits. The room for fiscal maneuver is limited, bearing in mind the path for output, government expenditure and public debt. Central banks are constrained by the zero lower bound on nominal interest rates (e.g., Eggertsson and Krugman, 2012; Igan et al., 2014). Prolonged expansionary monetary policy poses challenges for policy makers, the public and private sectors, and is apt to increase the risk of financial and macroeconomic instability (Bean et al., 2015). Policies that significantly redistribute resources in a given society typically create social friction and can be politically infeasible (Alpanda and Zubairy, 2016). Policies directed at one segment, i.e., rural or urban housing, formal or informal housing, lower- or higher-income housing, regulated or unregulated housing market participants, may not necessarily encroach upon other segments. However, dynamics in one segment may be linked to others. Policies aimed at leveling the playing field for different segments are not a subject of this study. The housing sector's performance tends to be driven by market forces. It is difficult to evaluate the effects of policy differences on the performance of the housing sector, which can be reflected in house prices and the quantity and quality of housing units, and to understand this sector's contribution to the broader economic performance; reliable, accurate, timely and easy to understand data are required. The currently available housing market information does not always meet these requirements. With these caveats in mind, this paper explores the literature on housing-related policies. The objectives of this study are to investigate the entanglement of housing and the economy and to contribute to the debate regarding how to best optimize the housing-related policy toolbox. Policy reform success can depend on political, economic, financial, regulatory and institutional frameworks (ECB, 2003). Reform success, timing and sequencing are not topics of this study, but would be worthwhile to examine. This study mainly focuses on the impact of macroeconomic and prudential policies on housing market outcomes. Highlighted are predominantly the effects of individual tools rather than their interaction. Although it would be worthwhile, this study does not compare institutional frameworks and policy toolbox compositions across countries and over time. This study may be relevant for an audience interested in housing-related policies and the dynamic interactions between housing and the economy.

This study opens with the key findings in the literature on the interplay of housing and the economy. Section 2 explains the rationale for housing market regulation. Then, by summarizing the insights from the literature, potential implications of housing market

corrections for financial stability and the economy are stressed. Section 3 deals with the effects of housing-related policies by drawing on the key findings in the literature. This study concludes with a brief discussion.

2 Entanglement of housing and the economy

2.1 Reasons for regulating the housing market

Figure 1 shows a housing market model. Market forces tend to influence housing market outcomes, which can have repercussions for societal progress and wellbeing. Recognizing common patterns of past crises and understanding how to improve the interplay between housing and the economy are critical for better policy setting. Housing and the economy are linked through the wealth effect and financial accelerator, amongst other factors. Bernanke et al. (1996) define the financial accelerator as an amplification of a shock to the economy brought about by finance condition changes. Housing market moves can affect private sector spending by more than the conventional wealth effect if the financial accelerator works (e.g., Bernanke and Gertler, 1989, 1995; Bernanke et al., 1996). To the extent that these moves have an impact on the creditworthiness and spending capacity of the private sector, this can exacerbate the economic implications of shocks. Negative shocks affecting the private sector's financial position can be associated with spending drops, which can deepen and prolong economic contraction as well as weaken and lengthen recoveries (e.g., Kiyotaki and Moore, 1997; Aoki et al., 2004; Iacoviello, 2005; Almeida et al., 2006; Igan et al., 2014). Housing market corrections may affect borrowers facing higher agency costs in the credit market more than those facing a lower external finance premium. Credit reallocations from lower to higher net worth borrowers after the occurrence of a shock may put lower net worth borrowers under extra financial pressure (Bernanke et al., 1996). The marginal propensity to consume out of wealth tends to decrease with increasing wealth (Carroll and Kimball, 1996). Lower net worth households tend to have a higher marginal propensity to consume out of wealth (King, 1994). Lower-income households tend to allocate a larger portion of income to housing, and the average portion of household income allocated to housing grows with the level of economic development (Worldbank, 1993). Wealth distribution in a society tends to matter for aggregate consumption behavior (e.g., Davey, 2001; ECB, 2003). Buiter (2010) argues that, in a closed economy with representative agents, aggregate consumption can be affected by wealth redistribution among agents with different marginal propensities

to consume out of wealth. The effect of a housing market correction on aggregate consumption may be greater in economies where the fraction of lower net worth households is larger (Mian et al., 2013). The prospect of private sector spending deterioration can be one reason for policy action (Eggertsson and Krugman, 2012). The magnitude and distribution of wealth changes in an economy tend to have implications for the effectiveness and design of macroeconomic policy (Mian et al., 2013).

Figure 1: Housing market model

Housing investment typically requires financing, which allows consumers to better allocate resources over time. Policies can shape the finance system and thereby help support financial stability. Finance matters for economic growth (e.g., Levine, 1999, 2005). Taken together, policy and growth are linked (La Porta et al., 1998). Housing-related policies can affect spending and saving patterns. Financial depth and breadth tend to evolve with the level of development of an economy. Housing loans tend to become marketable once property rights, tenure security, collateral security and foreclosure are in place to safeguard borrowers' and lenders' interests. Housing finance can be a major line of business for lenders. However, housing finance products are inaccessible for many consumers in lower-income economies, and housing underinvestment exists (Worldbank, 1993). High margins between primary and secondary housing finance market products

can be a result of market inefficiencies such as inadequate policies, competition and finance products. The housing finance system can be supplemented by approaches to ease credit, collateral and market risks through legal security, collateral appraisals, borrower assessments and insurance products. Drudi et al. (2009) stress that financial liberalization and housing market outcomes are associated. The functioning of the housing finance system can also influence the policy transmission mechanism. ECB (2003) supposes that financial liberalization strengthens the housing wealth effect on consumption and intensifies house price sensitivity to monetary policy. Winkler (2016b) finds that the housing wealth effect on consumption tends to be larger in countries where access to credit is easier. Mian et al. (2013) show that households' propensity to consume out of housing wealth tends to grow with household indebtedness. Enabling housing equity withdrawals can promote household spending (Davey, 2001). Financial liberalization without adequate financial sector regulation and supervision can fuel instability, e.g., if credit standard relaxation and debt accumulation during booms are associated with nonperforming loan buildup during busts (OECD, 2011). Igan et al. (2014) show that financial distress in indebted households can spill over to lenders. This may necessitate policies targeted at financially overextended households or aimed at assisting households' access to credit by intervening in the financial sector through procedures for the recovery and resolution of lenders (Claessens et al., 2014b). Policy responses to crises have to be designed carefully to enhance financial stability, limit the loss borne by taxpayers, protect depositors and critical financial services, and minimize moral hazard and excessive risk taking by borrowers and lenders (Igan et al., 2014).

Housing market outcomes tend to play a critical role in determining the persistence and amplitude of macroeconomic cycles (e.g., OECD, 2011; Claessens et al., 2012). If a bubble bursts, policy makers should moderate, rather than accelerate, housing market correction (Bean et al., 2015). Housing-related expenditure changes also affect price stability[3]. Central banks seek to ensure price stability, as it tends to promote sustainable economic growth (Kuttner and Shim, 2012). Housing market outcomes in terms of quality, quantity and price tend to have an impact on neighborhood social diversity and social inclusion, which can in turn influence economic performance (e.g., Galster, 2007; Andrews et al., 2011). Relative housing market conditions can have implications

[3]Housing-related expenses account for 22.3 percent of the basket of the euro area harmonized index of consumer prices, and represent 42.2 percent of the consumption basket constituting the United States consumer price index.

for migration and labor economics (e.g., Cameron and Muellbauer, 1998; Cannari et al., 2000; Saks, 2008). Housing underinvestment is associated with a shortage of affordable formal housing, increased commuting as well as depressed residential and labor mobility (Worldbank, 1993). Housing tenure and housing supply flexibility also tend to matter for social inclusion as well as residential and labor mobility (e.g., Saks, 2008; Andrews and Caldera Sanchez, 2011b). Common forms of housing tenure are owning and renting. The relative share of owner-occupied and rental housing in the housing stock is influenced by demographics; by psychological, sociological and economic factors; and by finance conditions and policies. Unsubsidized tenants tend to be the most flexible movers (e.g., Hughes and McCormick, 1981; OECD, 2011). Residential mobility increases labor market efficiency (Andrews and Caldera Sanchez, 2011b). Residential mobility tends to be lower in an environment where housing market frictions are higher (Rupert and Wasmer, 2012) and access to credit is tighter (Andrews and Caldera Sanchez, 2011b). Negative housing equity tends to reduce residential mobility (Ferreira et al., 2012). Housing supply flexibility is associated with superior labor market outcomes (e.g., Glaeser and Gyourko, 2002; Andrews, 2010; Meen, 2011).

To summarize, there are many reasons why housing market regulation is desirable, as housing affects, amongst other factors, private and public budgets, spending and saving decisions, inflation, financial progress and labor economics. Prevention is better than cure, and if adverse housing market outcomes are foreseeable it is often better to address rather than ignore those challenges. To develop a normative view of the housing market, Worldbank (1993) advises to consider the needs and prospects of the market stakeholders, which includes consumers, suppliers, finance providers and public authorities. To improve the functioning of the housing market, policy makers must reconcile the mutually incompatible interests of diverse market stakeholders; they must also assess housing sector reform effects on the sectoral and broader economic performance.

2.2 Housing market corrections and financial crises

Financial crises have common patterns (e.g., Reinhart and Rogoff, 2009; Claessens et al., 2014a). Housing market corrections frequently appear in the accounts of events preceding crises. Housing market boom and bust cycles are sequences of expansion and contraction. Detecting whether housing is overvalued, undervalued or fair-valued is more an art than a science. Expecting policy makers to predict housing market cycle peaks and troughs

and to instantly take the respective countercyclical actions is unrealistic. Claessens and Kose (2014) show that the classification of cycle stages in the literature is inconsistent. They emphasize that asset price booms and busts can happen in an environment with or without distortion, uncertainty and rational market participants. Igan et al. (2014) stress that the relationships between housing prices, rents and income may be indicators of whether housing is fairly valued, but highlight the importance of information concerning housing demand momentum and housing supply conditions. Market forces shape the equilibrium price and quantity (Figure 1). The housing supply and demand curves tend to be affected by fundamental and behavioral factors as well as policies. Andrews et al. (2011) argue that, contingent on the nature of housing supply and demand, there can be price and quantity distortions in the housing market. Imbalances in this market might put financial and economic stability at risk. There are attempts to predict real estate prices, but fundamental forces cannot fully explain price movements (e.g., Muellbauer, 1992; Kasparova and White, 2001; Girouard et al., 2006; Ortalo-Magne and Rady, 2006; Andrews, 2010; Grimes and Aitken, 2010; Andrews et al., 2011; Hiebert and Sydow, 2011; Kuttner and Shim, 2012). Housing is a heterogeneous good. ECB (2003) points out the local character of housing market dynamics. The fundamental forces that help to account for different house price moves include wealth developments as well as demographic, economic, financial, regulatory, political, institutional and technological aspects. Psychological and sociological factors can amplify the response of the housing market to fundamental forces. The functioning of the finance system can have an impact on how the housing market responds to a shock (e.g., Muellbauer, 1992; Maclennan et al., 1998; Kasparova and White, 2001). Housing prices, quantity, quality and affordability are related (Worldbank, 1993). Housing wealth and loan growth can move in tandem, masking the increasing exposure of households to a housing market correction.

Property rights encourage housing transactions by safeguarding transaction partners' interests, and are therefore prerequisites for developing housing finance. Housing finance evolution and oversight are critical elements of an enabling strategy for housing. Claessens and Kose (2014) argue that credit growth tends to be associated with productivity, capital flow and policy changes. Factors underlying household debt accumulation can include optimism about wealth prospects and easier access to credit due to financial innovation and deregulation (e.g., ECB, 2003; Andrews et al., 2011; Igan et al., 2014). Financial innovation may take the form of investment, finance and insurance products, while financial deregulation is likely to include changes in the finance system to foster

competition, the removal of market frictions to improve efficiency, or the easing or abolishment of product restrictions. The cost and availability of finance tends to be linked to borrower balance sheet and cash flow dynamics (OECD, 2011). As an asset, housing can serve as a credit collateral. The outstanding balance on a housing loan can be related to the housing value. Movements in asset prices have an impact on the value of assets serving as a credit collateral as well as on the net worth, creditworthiness, access to credit and spending of households (e.g., Kiyotaki and Moore, 1997; Hofmann, 2001; Mian et al., 2013). Housing equity can be a significant part of household net worth. Credit-financed housing investment can inflate house prices (Reinhart and Rogoff, 2009). It is difficult to identify whether asset price and credit growth are on a sustainable path, or whether the dynamic interaction between asset wealth and credit drives the progression in asset prices and the credit market. Housing credit growth accompanied by house price booms can mask the growing exposure of households to a housing market correction, which may trigger financial instability and even financial crises (Schularick and Taylor, 2012). Financial distress from unsustainable household indebtedness can stem from a reversal of an upward trend in the credit market, from domestic currency depreciation against the foreign currency and the prevalence of foreign-currency loans, or from consumer price index (CPI) inflation and the prevalence of inflation-indexed loans. Household financial distress arising from mounting debt burden can spill over to individual finance providers and the financial sector.

Finance providers cannot perform financial intermediation for the benefit of the economy with dysfunctional finance markets. Credit and market risks, amongst other factors, hamper the functioning of the finance system. Financial development tends to start with short-term finance, as long-term finance is riskier. Financial liberalization may allow for innovative finance solutions, which are unlikely to be a panacea in risk-prone countries. Forces such as exchange rate risk, price risk and finance condition changes may impair finance market participants' financial positions and can threaten financial stability (e.g., Mishkin, 1978; ECB, 2003; Reinhart and Rogoff, 2009). Economic contraction and rising unemployment may follow from worsening creditworthiness and decreasing spending capacity in the private sector (e.g., Eggertsson and Krugman, 2012; Laeven and Laryea, 2014). High household indebtedness and negative housing equity can be a drag on labor economics (e.g. OECD, 2011; Ferreira et al., 2012). Housing market corrections and the associated adverse effects on the financial position of borrowers can give rise to inefficiencies such as insufficient spending on housing improvement and maintenance (Igan

et al., 2014). In the run-up to financial crises, financially overextended borrowers may face borrowing and debt servicing constraints, and nonperforming loans are likely to accumulate on the balance sheet of lenders. Lenders might put extra pressure on lower net worth borrowers by tightening lending standards and credit availability. Foreclosures can further depress house prices as well as reduce borrowers' net worth, access to credit and spending (e.g., Shleifer and Vishny, 1992; Mian et al., 2015). The neglect and decay of vacant properties can have negative neighborhood externalities. Borrowers' financial distress can spill over to lenders. Lenders may reevaluate asset prices, collateral values and credit risk exposures. Insufficiently capitalized lenders may be unable to absorb the losses associated with the revaluation of assets. Inadequately capitalized lenders may experience distrust by investors, capital withdrawals and financing constraints and thus might be unwilling to renegotiate loans or engage in investment activities (e.g. Shleifer and Vishny, 2011). These incidents might be credit crunch indicators.

2.3 Financial crises and economic outcomes

Not every credit boom ends in a financial crisis, but the risk grows with a boom's length and severity (Igan et al., 2014). One in three credit booms tends to be followed by a crisis, and about half of booms lasting more than six years are likely to end in a crisis (Claessens and Kose, 2014). Mechanisms at work preceding a crisis include asset price inflation, credit expansion, marginal asset growth, rising leverage, lower lending standards, financial engineering, remuneration schemes distorting behavior, substantial capital flows, sustained current account deficits, lack of finance market transparency, growing opacity of risk exposures, increasing importance of unregulated players in the finance market, fragile finance models, thin capital buffers, systemic risk buildup as well as inadequate oversight and associated agency problems. Concurrent occurrence of these aspects can indicate growing financial instability. Financial crises can occur in more and less benign macroeconomic circumstances, in more and less financially integrated markets, in richer and poorer economies as well as on national, multinational and global scales. Crisis triggers are hard to identify, but may include changes in the confidence and optimism of finance market participants, less benign wealth expectations among consumers, suspicion of asset overvaluation and overindebtedness as well as uncertainty about economic growth, finance conditions and policy change. Financial crises can originate from economic contraction, which can also follow from financial crises (Claessens et al., 2012). When an economy contracts, national output and private sector expendi-

ture tend to fall, and public sector expenditure may rise. In comparison with economic contractions unassociated with crises, those associated with crises tend to be more pronounced and protracted. Studies show that banking crises tend to last longer and are likely to have more severe implications for the economy and public resources than other crisis types (e.g., Reinhart and Rogoff, 2009; Laeven and Valencia, 2013; Claessens and Kose, 2014; Igan et al., 2014). Regardless of the approach, the estimated financial crisis effects tend to vary. Claessens and Kose (2014) argue that some variation is explained by ambiguity regarding the dating and classification of such crises. They stress that, in emerging markets, the decline in consumption in an environment of crisis-induced economic contraction can be up to ten times larger than declines unassociated with crises. Output loss associated with banking crises, measured as the accumulated deviation from trend GDP, is, on average, about 20 percent of GDP during the first four years including the crisis start year (Laeven and Valencia, 2013). Abiad et al. (2014) report that seven years after a crisis start year, the median output loss measured as the GDP trend deviation is, on average, 10 percentage points.

Economic recoveries associated with financial crises can be weaker and slower than those unassociated with a crisis. Compared to episodes unassociated with crises, cumulative GDP growth tends to be up to 2.5 percentage points lower in the four quarters after a crisis-induced economic trough (Kannan et al., 2014). Crises tend to weigh on public resources as a result of increased public spending on automatic stabilizers, discretionary public deficit growth, expansionary fiscal policies and falling government revenues. Laeven and Valencia (2013) estimate the fiscal costs net of recovery proceeds relative to GDP during the first six years from the crisis start year, and identify average net fiscal costs associated with financial crises of 13.3 percent of GDP. They discover that the average recovery rate is only 18.2 percent of the gross fiscal costs. Public debt tends to grow by 86 percent, on average, in the three years after onset of a banking crisis (Reinhart and Rogoff, 2009), and the median public debt growth tends to be 12.1 percent of GDP in the same period (Laeven and Valencia, 2013). Coenen et al. (2012) suggest that a public stimulus equal to one percent of baseline, pre-stimulus GDP for two years can raise GDP by 1.3 percent in the United States and 1.1 percent in Europe. Excessive leverage can be reason for slow growth in the wake of crises (Bean et al., 2015). Mian et al. (2013) and Igan et al. (2014) reveal that household consumption tends to decline more in an environment where house prices fall and household indebtedness is high. Igan et al. (2014) also find that household deleveraging tends to be more in-

tense during house price correction preceded by amplified debt accumulation. Elevated deleveraging of highly indebted households helps explain stronger economic contraction in an environment where house prices fall (Igan et al., 2014). Claessens et al. (2012) claim that economic contraction accompanied by house price correction is, on average, deeper and takes about 1.5 quarters longer than when unaccompanied by such correction. They demonstrate that economic recoveries coinciding with house price booms are, on average, stronger and are about two quarters faster than those unaccompanied by house price booms. Abiad et al. (2011) argue that economic recoveries unaccompanied by credit booms, i.e. creditless recoveries, are more common after the occurrence of banking crises preceded by credit booms. They suggest that one of five recoveries is creditless. Claessens et al. (2012) find that output growth during recoveries accompanied by asset price and credit booms is, on average, up to four percentage points higher than that during recoveries unaccompanied by such booms.

3 Housing-related policies and societal outcomes

The functioning of the finance market is one of the important elements in an enabling strategy for housing. Such a strategy allows for affordable housing for consumers from different ethnic groups and helps achieve economic, financial, social and environmental objectives. Critical questions in this respect are which policies are available, and when they should be used to bring about a dysfunctional housing market to work. Housing sector reforms that ignore the broader economic conditions are likely to have limited impact on societal progress and wellbeing. The positive and negative implications of housing-related policies for housing market outcomes need to be skillfully balanced. The timing and mutual interactions of policy measures need to be carefully coordinated and are critical for the success of the applied policy set. For example, signaling that expansionary policies are the preferred response to crises can raise risk to financial stability by encouraging moral hazard (e.g., Farhi and Tirole, 2012; Claessens and Kose, 2014; Bean et al., 2015). Policies have limits. For example, in a low interest rate environment, the impact of sustained expansionary monetary policy on aggregate demand is likely to be limited, especially if inflation is below target and central banks are unable to cut the policy rate to a level lower than the natural rate of interest. Prolonged relaxed monetary policy can threaten financial stability by boosting credit-financed riskier investment and inflating asset prices. If the policy rate reaches the zero lower bound and central banks already turn to unconventional instruments, structural measures may be

necessary to safeguard economic progress and the burden on fiscal policy actions tends to grow to provide the required impulse for sustained aggregate demand. Public sector stimulus can counterbalance temporary weakness in private sector demand. Continuous deterioration in private sector spending may be offset by a corresponding rise in deficit spending to maintain a constant aggregate demand level and to support employment. Deficit spending enlarges the public debt burden. The scope for fiscal maneuver tends to narrow as public debt grows. Public debt dynamics can worsen if doubts arise over the creditworthiness of the sovereign. Fiscal consolidation and inflationary monetary policy can help the government to manage the public debt burden. Countercyclical prudential policies can help mitigate risk to financial stability by ensuring the financial system's resilience to shocks, safeguarding the soundness of lenders, discouraging excessive credit accumulation and inhibiting risky investment. However, individual policy measures are not a panacea. I next elaborate on the effects of housing-related policies by drawing on the key findings in the literature.

3.1 Monetary policy and housing market outcomes

The question is whether monetary policy is efficacious at regulating housing market outcomes (Figure 1). Monetary policy consists of actions by central banks, which often seek to ensure price stability in the pursuit of macroeconomic objectives. There are conventional and unconventional monetary policy measures. Central bank decisions can manipulate money supply and costs, aggregate supply and demand, and affect the trade balance and price stability through different channels (e.g., Bernanke and Gertler, 1995; Mishkin, 2007). Figure 2 illustrates the key transmission channels (ECB, 2016). Tighter monetary policy may lower the likelihood and extent of macroeconomic disruption associated with financial volatility, but tends to hamper aggregate demand (Bean et al., 2015). Although housing market outcomes can put financial stability at risk, there is a heated debate about whether central banks should target real estate prices. Central banks pay attention to asset prices to the extent those contain price stability information. However, they typically refrain from targeting asset prices, as this is tantamount to fixing asset prices and can imply misallocation and dislocation. Targeting asset prices would require reliable, accurate, timely and easy to understand indexes, and existing indexes often do not meet these requirements. Housing plays a key role in how the economy responds to monetary policy (Bernanke and Gertler, 1995), but one policy action can differently affect the heterogeneous housing markets in a single monetary regime (Kas-

parova and White, 2001). Variations in the functioning of the housing finance market imply heterogeneity in the monetary policy transmission mechanism. Depending on this mechanism, monetary policy measures may be mainly directed at finance market participants, segments or products. Modigliani (1971) highlights that the wealth effect on consumption is crucial in the response of the economy to monetary policy. Factors such as legal security, credit contract design and consumer indebtedness matter for consumer spending behavior and thus the transmission of monetary policy to the economy (Calza et al., 2013). To the extent that monetary policy signals have an impact on consumers' creditworthiness, credit conditions and spending, the macroeconomic implications of the initial signal can be amplified (e.g., Iacoviello, 2005; Claessens et al., 2012). The importance of the financial accelerator varies across monetary regimes and may depend on the position of an economy along the development path (e.g., Bernanke and Gertler, 1989, 1995; Bernanke et al., 1996).

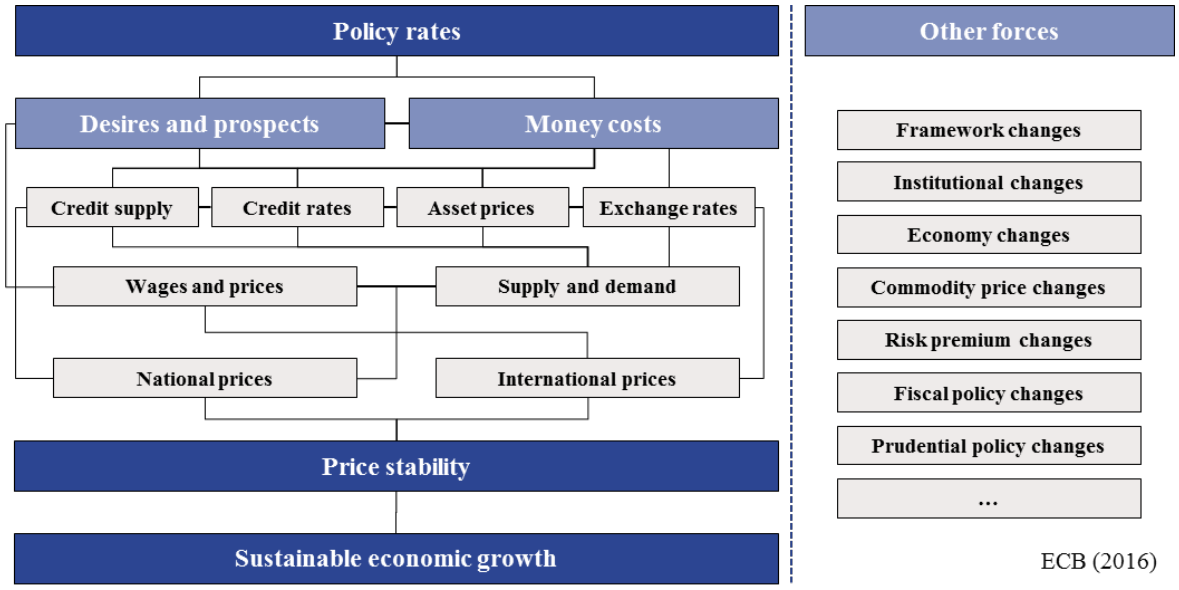

Figure 2: Monetary policy transmission mechanism model

Macroeconomic policies influencing growth and national income can affect housing market performance (Worldbank, 1993). Kuttner and Shim (2012) propose that monetary policy, with the exception of interest-rate policy, is ineffective in controlling housing market outcomes. Maclennan et al. (1998) argue that the response of the economy to policy rate changes is lower in countries where rental housing is important, housing finance is less developed and housing transaction costs are higher. Kiyotaki and Moore (1997) stress that interest-rate policy affects the financial accelerator. Rate increases can put

loan servicing to the test. Compared with economies where fixed-rate loans dominate, policy rate changes tend to be passed on to consumers more quickly in economies where variable-rate loans prevail (e.g., ECB, 2003; Igan et al., 2014). Borrowers facing higher agency costs in the credit market tend to bear the brunt of a shock to the finance system, as access to credit is more difficult for them than for borrowers facing a lower external finance premium (Bernanke and Gertler, 1995). In addition, loans granted by low-capital lenders tend to be more policy rate sensitive than loans granted by high-capital lenders (Kishan and Opiela, 2006). Kuttner and Shim (2012) review the literature on the implications of policy rate changes for house prices. They find that a one percentage point interest rate increase tends to slow house price growth by between 1.2 and 6.4 percent. Ahearne et al. (2005) find that expansionary monetary policy tends to precede housing market booms. They suggest that the policy rate tends to bottom out about three years before house prices peak. Monetary policy alone is likely to be a blunt tool for dealing with house price dislocation and housing credit accumulation. Shi et al. (2014) argue that prudential policy may be better suited than monetary policy to influence housing market outcomes, especially in economies where policy rate changes are constrained by macroeconomic aspects. Kuttner and Shim (2012) indicate that policy rate increases together with prudential policy tightening negatively affect house prices. Igan et al. (2014) stress that expansionary monetary policy can help forestall economic contraction during episodes of consumer deleveraging. Claessens et al. (2014b) emphasize that such policy stimulates aggregate demand and the economy, assists debt servicing and thus supports the asset side of lenders' balance sheet, but tends to fuel asset prices, credit-financed riskier investment strategies and financial instability.

3.2 Housing-related fiscal policy and societal outcomes

Fiscal policy can manipulate housing market outcomes by biasing consumer spending and finance decisions. Fiscal policy is discretionary or non-discretionary. Discretionary fiscal policy is the deliberate change of government revenue and expenditure to influence aggregate demand by redistributing resources. Housing-related revenue instruments include raising taxes on housing transactions as well as on housing investment income and capital gains; examples are taxes on imputed rent from owner-occupied housing as well as real estate capital gains and transfer taxes. The tax base varies across instruments. Housing-related expenditure instruments include subsidies, allowances and the provision of housing services by the government or government-sponsored entities.

The impact of fiscal instruments on different types of households varies (Alpanda and Zubairy, 2016). Worldbank (1993) advises policy makers to promote property rights, remove supply barriers, lower housing production costs and improve access to finance before using subsidies as a last-resort instrument to ensure the functioning of the housing market. Fiscal measures can strain public resources. There are on-budget and off-budget subsidies (Worldbank, 1993). Alpanda and Zubairy (2016) cite that the United States government has foregone about 68 billion dollars of 2012 revenue from the tax deductability of mortgage interest payments. The scale of housing-related expenditures relative to the public budget tends to differ across economies, as does the mix and effects of those measures. Alpanda and Zubairy (2016) rank several housing-related fiscal instruments in terms of their efficacy in raising government revenue per unit of output loss; they find that reducing the tax deductability of mortgage interest payments is the most effective policy, followed by taxing imputed rents from owner-occupied housing, increasing property taxes and reducing depreciation allowances for rental housing. Fiscal policy can influence housing demand and supply as well as the choice between owning and renting (e.g., Rosen, 1979; ECB, 2003; Huefner and Lundsgaard, 2007; Kuttner and Shim, 2012). To ease policy-induced distortions, OECD (2011) and ECB (2003) recommend more harmonized fiscal treatment of owner-occupied and rental housing, new and existing housing as well as housing investment and other types of investment.

Property rights are a precondition to housing-related fiscal policy. The success of such policy can depend on the portion of formal housing in the housing stock (Worldbank, 1993). Other studies suggest considering the sensitivity of housing supply when assessing the impact of housing-related fiscal policy on housing market outcomes (e.g., Swank et al., 2002; Hilber and Turner, 2014). Preferential fiscal policy treatment of one specific housing tenure may influence labor mobility (e.g., Lundborg and Skedinger, 1999; Haurin and Gill, 2002; Alpanda and Zubairy, 2016). Van Ommeren and Van Leuvensteijn (2005) show that the levy of real estate transfer tax lowers the relocation probability of owner occupiers. OECD (2011) suggests that portable housing allowances do not hinder residential mobility to the same extent as the direct provision of housing services by the government or government-sponsored entities. Preferential fiscal policy treatment can contribute to accelerated housing investment and house price growth (Worldbank, 1993). Kuttner and Shim (2012) show that the links between fiscal policy and the housing market cycle are inconclusive. Claessens et al. (2014b) argue that expansionary fiscal policy promotes aggregate demand and asset prices. Andrews et al. (2011) warn

that preferential fiscal treatment of credit-financed housing investment can be reflected in heightened house prices. Keen et al. (2010) propose that taxation-induced bias in favor of credit-financed housing investment can put financial stability at risk. Hilber and Turner (2014) emphasize that the tax deductability of mortgage interest payments is capitalized into house prices rather than home ownership attainment, in particular in an environment where housing supply is inflexible. Noord (2003) highlights that the preferential fiscal treatment of housing investment income and capital gains is associated with elevated house price volatility. Poterba (1992) suggests that fiscal policy, which reduces the depreciation allowances for rental housing, is associated with rental housing investment declines and rent increases. Noord (2003) claims that housing-related fiscal policy differences across the member states of the Economic and Monetary Union of the European Union should be a concern because they contribute to asymmetric transmission of monetary policy to the single monetary regime countries.

Worldbank (1993) emphasizes that housing-related subsidies should be well-targeted, limited in time and house price neutral and furthermore should not dampen housing supply flexibility. With the prospect of government expenditure and public debt in mind, governments may increasingly be concerned about the respective costs and benefits of fiscal policy instruments under consideration, including those stimulating the housing market. The tax deductability of mortgage interest payments and the exclusion from taxable compensation of imputed rent from owner-occupied housing represent benefits to housing owners (Poterba and Sinai, 2008). Hilber and Turner (2014) stress that the tax deductability of mortgage interest payments is a relatively expensive subsidy and ineffective in promoting home ownership and social inclusion. They also note, as does Hanson (2012), that the tax deductability of mortgage interest payments tends to be unassociated with home ownership attainment in aggregate. Hilber and Turner (2014) furthermore find that the tax deductability of mortgage interest payments helps explain home ownership attainment of higher-income households in an environment where housing supply is flexible. Other studies also conclude that the tax deductability of mortgage interest payments disproportionately supports home ownership attainment among higher-income households (e.g., Glaeser and Shapiro, 2003; Andrews and Caldera Sanchez, 2011a; Hilber and Turner, 2014). Housing owners may over-consume housing services if mortgage interest payments are tax deductible and imputed rent from owner-occupied housing is not taxed (e.g., Gervais, 2002; Glaeser and Shapiro, 2003; Hanson, 2012). Gervais (2002) suggests that welfare could be gained from abolishing the tax deductability of mortgage

interest payments. Poterba and Sinai (2008) emphasize that housing owners may only face a moderate tax increase if the tax deductability of mortgage interest payments is abolished. Although housing owners who are affected by the policy reform may not appreciate the change (e.g., Glaeser and Shapiro, 2003; Poterba and Sinai, 2008; Andrews and Caldera Sanchez, 2011a; Hilber and Turner, 2014), the removal of the tax deductability of mortgage interest payments can be effective in generating government revenue per unit of output loss (Alpanda and Zubairy, 2016).

3.3 Prudential policy and economic outcomes

Policies aimed at protecting the financial position of borrowers can mitigate borrower credit risk as well as support sustainable financial development and housing market performance. Policies such as those aimed at reducing borrowers' interest burden at the expense of lenders are likely to impede financial development. Andrews et al. (2011) argue that financial liberalization facilitates credit-financed housing investment, but can be destabilizing without adequate prudential standards and supervision. Prudential standards and supervision as well as viable primary and secondary housing finance markets tend to be important for housing market outcomes. Countercyclical prudential policies can help mitigate risk to financial stability. Macroprudential policy is a framework of standards aimed at ensuring the financial system's resilience to shocks, discouraging excessive credit accumulation and inhibiting risky investment by applying countercyclical instruments. Microprudential policy is aimed at ensuring the soundness of individual institutions. Within the prudential policy framework, credit growth can be influenced by setting capital and liquidity requirements, leverage ratios, underwriting and credit standards as well as lending and exposure limits. Credit availability and costs are typically linked to borrower creditworthiness, as measured by indicators such as the maximum loan-to-value (LTV) ratio and the debt-to-income (DTI) ratio (Bernanke and Gertler, 1995). The maximum LTV ratio refers to a minimum down payment requirement. The maximum DTI ratio limits a borrower's debt servicing payment to a fixed multiple of the income. Technological progress allows for innovative data-driven underwriting algorithms that can be used in addition to the lenders' conventional processes to assess borrower creditworthiness. In accordance with the prudential policy framework, lenders need to comply with capital requirements and consider risk weights on credit risk exposures such as claims secured on housing. By laying down preferential prudential policies, policy makers can incentivize lenders to engage in certain activities more than others

and to prefer one funding instrument over another, i.e. there can be prudential policy driven distortion in primary and secondary housing finance markets.

Prudential standards, financing transactions and economic activity tend to be linked (Lown and Morgan, 2006). Prudential policies help attenuate unsustainable finance market trends (Farhi and Tirole, 2012), but may hamper credit-financed economic growth. These interrelations can have an impact on housing market outcomes, societal progress and wellbeing. Enabling housing equity withdrawals can promote indebted consumer spending by leveraging consumers' financial position (Davey, 2001). Residential mobility tends to be lower in an environment where down payment requirements are higher (Andrews and Caldera Sanchez, 2011b). Reductions in the maximum LTV ratio and the DTI ratio presumably curb social inclusion and finance market growth because resource-constrained consumers are less likely to be able to comply with the tightened minimum credit requirements (OECD, 2011). Lower maximum LTV and DTI ratios, together with higher provisioning requirements on housing loans, tend to slow the growth of housing loans and prices (Kuttner and Shim, 2012). Increasing risk weights and capital requirements may be less efficacious at moderating credit growth if adequately capitalized lenders internalize policy induced capital cost increases. Prudential policies aimed at controlling housing credit supply to domestic investors may be ineffective in curbing house price growth associated with modest housing supply flexibility and excessive housing demand from foreign investors. To mitigate borrower credit risk, Collyns and Senhadji (2002) advise lenders to look at borrowers' overall debt servicing capacity, in particular in environments where housing wealth and loans develop in tandem. Igan et al. (2014) observe that borrowers with inflation-indexed foreign-currency loans struggle with loan servicing more than borrowers with loans without such characteristics when inflation rises, the domestic currency depreciates against the foreign currency and disposable income stagnates. They argue that countercyclical prudential policies and to a lesser extent macroeconomic policies are useful for containing the implications of negative shocks for the ability of borrowers to meet debt payments.

Effective banking supervision can help limit the probability and impact of financial institution failure. There are national banking supervision as well as resolution and recovery systems. Banking supervision uses on-site and off-site examinations to monitor the prudency of financial institution management. Banking supervision can impose enforcement measures and involves the determination of whether a financial institution

is failing or likely to fail. Financial services are increasingly global and integrated, and housing markets tend to be influenced by international, national, regional and local realities. Further improvements and greater international cooperation may be needed to strengthen the regulatory framework for the oversight, resolution and recovery of lenders with cross-border operations. OECD (2011) calls for an effective system of cross-border banking supervision and argues that international coordination has to further improve. Macroeconomic conditions, the financial framework as well as finance trends are in flux and give rise to complex and continuously changing banking oversight tasks. OECD (2011) stresses that appropriate financial sector regulation and supervision can balance the pros and cons of financial liberalization. Barth et al. (2012) call for more nuanced and effective regulation strategies and a carefully balanced mix of finance market discipline, banking supervision and government intervention. OECD (2011) claims that an effective oversight of the housing finance framework can promote macroeconomic stability. Employing the banking supervision index established by Abiad et al. (2010), Andrews (2010) stresses that effective banking supervision tends to lower house price volatility and has the potential to reduce house price volatility more than other factors, such as higher housing supply flexibility, elevated housing-related transaction costs and less generous tax deductability of mortgage interest payments.

3.4 Housing tenure and societal implications

Housing tenure and housing market outcomes are related. Resource-constrained consumers must settle for inferior housing in terms of size, quality and tenure security if superior housing is unaffordable. Promoting legal security and housing-related infrastructure, e.g., in informal settlements, is important for an enabling strategy for housing (Worldbank, 1993); but the transition from informal to formal housing can give rise to social friction unless gentrification is avoided. Housing market outcomes can be manipulated by policies aimed at safeguarding tenure security and shaping the housing tenure profile. Other forces that tend to influence the housing tenure profile include housing affordability, finance conditions and the relative performance of owner-occupied and rental housing (e.g., ECB, 2003; Alpanda and Zubairy, 2016). Demand and supply mismatches in the owner-occupied and rental housing markets may be reflected in the price-to-rent ratio as well as in the price-to-income ratio relative to the rent-to-income ratio. Housing tenure, neighborhood stability and labor market outcomes are linked (e.g., Cannari et al., 2000; ECB, 2003; OECD, 2011). Andrews et al. (2011) stress that

unsubsidized tenants are, on average, 13 percent (nine percent) more likely to relocate than owner occupiers without (with) credit. They suggest that unsubsidized tenants are, on average, six percent more likely to relocate than subsidized tenants. Barcelo (2006) finds that subsidized tenants' mobility tends to be higher than owner occupiers' mobility; interestingly, Hughes and McCormick (1981) find the opposite. Housing transaction costs tend to reduce residential mobility (Haurin and Gill, 2002), and create lock-in effects (Lundborg and Skedinger, 1999). Owner occupiers' moving costs are often higher and thus their mobility tends to be lower than unsubsidized tenants' mobility (e.g., Van Ommeren and Van Leuvensteijn, 2005; Coulson and Fisher, 2009). The propensity to relocate tends to fall with age (Andrews et al., 2011). To stimulate labor market outcomes by fostering residential mobility, Barcelo (2006) advocates the promotion of unsubsidized rental housing, and Cameron and Muellbauer (1998) recommend reducing housing-related transaction costs. Owner occupiers' relatively limited residential mobility can be associated with neighborhood stability (Coulson and Fisher, 2009) and neighborhood social capital investment (DiPasquale and Glaeser, 1999). Flatau et al. (2003) claim that higher home ownership rates are associated with superior labor market outcomes, but others such as Oswald (1996); Munch et al. (2006); Coulson and Fisher (2009) challenge this finding. Household indebtedness (Flatau et al., 2003) and employer behavior (Coulson and Fisher, 2009) can play a crucial role in the relations between housing tenure and employment. Indebted owner occupiers tend to leave unemployment with higher probability (Barcelo, 2006). Andrews and Caldera Sanchez (2011b) stress that improved credit conditions can contribute to labor mobility. Ferreira et al. (2012) highlight that negative housing equity reduces labor mobility.

Lower net worth and younger consumers tend to form a greater percentage of the rental population (Andrews et al., 2011). Worldbank (1993) highlights that rental housing is an important alternative to owner-occupied housing, especially in lower-income countries, and stresses that rent control can distort housing and labor market outcomes. Arnott (1995) reviews the literature on rent control. Justifications for the use of rent control include providing affordable housing services and supporting rent stabilization as well as balancing bargaining power inequality and addressing information asymmetries between landlords and tenants. Arguments against rent control emphasize that its implementation can contribute to rental housing underinvestment, insufficient spending on rental housing improvement and maintenance, inferior labor market outcomes, rental price distortion and inefficient resource allocation and distribution, i.e., consumers do

not necessarily get the desired rental housing quality and size at the controlled price (e.g., Worldbank, 1993; Arnott, 1995; Sims, 2007; Andrews et al., 2011). Menard and Sellem (2010) indicate that subsidized tenants tend to accept lower-paid jobs and may be unemployed longer, as they are reluctant to give up relatively favorable tenancy conditions. Relaxing rent control and tenant-landlord regulations can improve rental housing investment and residential mobility (e.g., ECB, 2003; OECD, 2011). To enhance residential mobility, OECD (2011) suggests relaxing rental housing regulations, harmonizing subsidized and unsubsidized rental housing regulations and harmonizing the fiscal treatment of owner-occupied and rental housing. ECB (2003) argues that relocating tenants tend to bear the brunt of rental price corrections in a rent-controlled market. Arnott and Igarashi (2000) show that looser and tighter rent control regimes contribute to social welfare gains and losses, respectively. Rental housing market reform implementation is delayed if the revised rules are only applied to new tenancy agreements (ECB, 2003). According to Worldbank (1993), research suggests that the public sector is less efficient than the private sector in providing housing services. Hughes and McCormick (1981) and OECD (2011) propose that more market-oriented housing assistance, such as portable housing allowances, are unlikely to hinder residential mobility to the same extent as and are preferable to the provision of subsidized housing services by the government or government-sponsored entities. Kangasharju (2010) studies the impact of housing allowances on the rent paid by subsidized housing residents; he discovers that an extra euro of housing allowance tends to increase the rent paid by up to 70 cents and thus leaves a limited amount for housing-unrelated spending.

3.5 Social inequality and housing market outcomes

Social inequality is characterized by uneven resource distribution. Resource-constrained consumers adjust housing consumption to prices. Inferior housing is an alternative to superior housing, and informal housing is an alternative to unaffordable formal housing. Informal settlements, which tend to be associated with poverty, often suffer from property right insecurity, housing tenure uncertainty, a lack of housing-related infrastructure, inferior quality and crime. Inequality concerns can motivate housing market interventions (Andrews et al., 2011). Promoting property rights, tenure security and adequate housing-related infrastructure, e.g., in informal settlements, can ensure the functioning of the housing market by motivating housing investment. Economic progress and policy reform aimed at increasing the functioning of the housing market can contribute to supe-

rior housing market outcomes in terms of housing prices, sizes and quality (Worldbank, 1993). Housing provides shelter and allows for wealth accumulation, and reform aimed at transforming informal settlements into formal settlements is likely to give rise to social friction if gentrification is not avoided. Social inclusion can promote societal progress (Andrews et al., 2011). Fitzpatrick and Stephens (2007) investigate the links between social welfare and homelessness. They find that homelessness is higher in economies where social welfare and affordable housing are more limited. Social inclusion and neighborhood social diversity may be connected. Galster (2007) reviews the literature on the interplay between neighborhood social diversity and social equity and finds that there is no clear evidence that socially mixed neighborhoods are sufficient to combat social inequality. Interventions by the public and private sectors may provide incentives to socially disadvantaged households to engage in housing by lowering opportunity costs or raising the potential benefits. Policies aimed at facilitating access to credit for socially disadvantaged households can enable them to afford housing (Worldbank, 1993). Housing-related fiscal policies can also influence the social mix of a neighborhood. Andrews et al. (2011) argue that efficient subsidized housing eligibility and allocations policies minimize deadweight losses. Galster (2007) stresses that, contingent on the combination of prevailing neighborhood effects, the targeted neighborhood social diversity can be in the range of equally mixed and completely segregated. This finding demonstrates that housing-related policies aimed at neighborhood social diversity to combat social inequality might be justified only under a confined set of prevailing neighborhood effects.

3.6 Housing supply and housing market outcomes

Property rights allow for property exchanges on a legal and enforceable basis. A lack of legal security as well as procedural and administrative bottlenecks in property exchanges shape housing market outcomes (Figure 1). Informal settlements may flourish if legal security is unsound. Winkler (2016a) reviews the literature on housing supply. The nature of housing supply is found to help explain house price moves (e.g., Glaeser et al., 2008; Gyourko, 2009; Grimes and Aitken, 2010), housing affordability (e.g., Glaeser and Gyourko, 2002; Meen, 2011), cross-location income inequality (e.g., Glaeser et al., 2006; Saks, 2008), labor economics (e.g., Cannari et al., 2000; Andrews and Caldera Sanchez, 2011b) and housing-related policy reform success (e.g., Swank et al., 2002; Hilber and Turner, 2014). Worldbank (1993) argues that housing supply reform has great potential to enable the housing market to work better. However, care should

be taken when revising housing supply policy, as interventions can affect land prices, building costs, housing quality, housing suppliers' efficiency, housing supply flexibility and housing prices (e.g., Worldbank, 1993; Andrews, 2010). A cost and benefit analysis is therefore advised before implementing housing supply-related policies, as changes can influence housing affordability, social inclusion, labor economics, resources consumption and environmental pollution (e.g., Worldbank, 1993; Glaeser and Gyourko, 2002; Andrews, 2010; Meen, 2011; OECD, 2011). Housing sector performance and the associated effects on societal progress and wellbeing may be augmented by better adjustment of housing supply to demand. Housing supply flexibility can be supported by modest housing investment constraints and construction impediments (Jaccard, 2011), appropriate building codes, infrastructure standards and land-use regulations (e.g., Worldbank, 1993; Mayer and Somerville, 2000; Vermeulen and Rouwendal, 2007), efficient licensing processes, better incentives to release land for residential development (Andrews et al., 2011), and superior housing finance conditions (Winkler, 2016a). Policies targeted at addressing supply shortages in affordable housing could tackle building industry entry barriers, monopolistic and insufficient housing market competition, deficient residential land provision and inappropriate housing-related infrastructure supply (e.g., Saiz, 2010; Andrews et al., 2011; OECD, 2011). Worldbank (1993) highlights that private sector housing suppliers tend to operate more efficiently than public sector housing suppliers, and advises governments to limit their role as housing service providers and facilitate the private sector's role in the housing market.

3.7 Rational for consumer debt restructuring

Policies aimed at restoring borrowers' financial position, creditworthiness and debt servicing capacity can affect housing market outcomes. Pressures on societal progress and wellbeing arising from unsustainable consumer indebtedness can necessitate consumer debt restructuring (e.g., Eggertsson and Krugman, 2012; Laeven and Laryea, 2014). The goal of restructuring should be to ensure that the present value of debt after restructuring is lower than before. This process may offer an alternative to borrower default and foreclosure, and can include credit terms and conditions changes as well as the imposition of a moratorium on debt servicing and foreclosure. Lenders typically carry the associated losses, and financial stability might be at risk if the impairment of the financial position of the lenders is substantial. Government involvement in consumer debt restructuring may be influenced by aspects such as the available room for fiscal

maneuver, consumer recourse to social welfare (Igan et al., 2014) and the level of contraction in consumer spending. Policy design shapes the fiscal outlay. The government may grant consumer loan guarantees, which imply limited upfront fiscal outlay but contingent liabilities (Claessens et al., 2014b). The fiscal outlay associated with voluntary settlements between individual lenders and borrowers might be low. Mandatory government sponsored consumer debt restructuring programs can strain public resources, and sound principles should guide their layout. Policy makers should consider the legal and institutional framework, limit public sector losses, protect critical financial services, minimize sustained excessive risk taking by borrowers and lenders, offer borrowers and lenders enough participation incentives and set the basis for economic recovery (e.g., Igan et al., 2014; Laeven and Laryea, 2014). In other words, incompatible interests need to be reconciled. For the policy program to be effective, timing can be critical. Laeven and Laryea (2014) suggest implementing a program once economic indicators stabilize and an effective resolution and recovery regime is operational. To avoid a credit crunch, lenders need sufficient capital to absorb the losses associated with consumer debt restructuring (Shleifer and Vishny, 2011). To handle insufficiently capitalized lenders, policy makers need to employ effective resolution and recovery measures (Landier and Ueda, 2014). The redistribution of resources associated with government sponsored debt restructuring can give rise to social friction, which may be why this option is heavily debated, rarely used and implemented with delay (Igan et al., 2014). However, delays in financial and operational restructuring as well as the handling of nonperforming loans can hamper economic recovery (Claessens et al., 2014b).

4 Conclusion

By summarizing the key findings in the literature, this study adds to our understanding of the interplay between housing and the economy; it also examines housing-related policies and their effects. The presented real, legislative and financial circuits suggest that an enabling strategy for housing can contribute to societal progress and wellbeing. One critical observation is that the wealth effect and the financial accelerator, amongst other factors, link housing and the economy, which can amplify the economic implications of housing market outcomes. To improve the functioning of the housing market, it is imperative that a coordinating authority takes steps to reconcile the market stakeholders' mutually incompatible objectives and arrange for concerted policy and institutional reforms. An enabling strategy for housing should be based on superior knowledge about

the housing sector's performance, its contribution to the broader economic performance and the success of housing-related policies. Evidence-based housing-related policy setting furthermore necessitates the compilation, analysis and interpretation of reliable housing and economic indicators. An enabling strategy for housing also necessitates market efficiency. Property rights are an important enabling instrument, as they are a prerequisite for formal property exchanges, housing finance and housing-related policies. Enabling policies also should encourage housing market stakeholders to adhere to principles. Promoting market-oriented housing supply and finance solutions can be desirable if concerns over housing affordability arise. To hamper mortgage supply, mitigating the preferential policy treatment of mortgages might be sensible. Countercyclical prudential policies can be a reasonable way to confine consumer credit risk. To foster affordable housing and labor mobility, it may be worthwhile to encourage a viable rental housing market. The goal of an enabling strategy for housing should be the achievement of an efficient, socially inclusive, environmentally friendly and sustainable framework for housing and housing-related infrastructure.

Regular and critical reviews of the housing sector's operational framework and the sectoral contribution to the achievement of economic, financial, social and environmental objectives should be standard, as they allow for the identification of misallocation, dislocation and reform needs. Evaluating the effects of differences in the set of housing-related policies on housing market outcomes, societal progress and wellbeing is impossible without reliable, accurate and timely data on both formal and informal housing sector performance as well as economic outcomes. Improving the reliability, accuracy, timeliness and availability of data on housing and the economy is therefore an important element of an enabling strategy for housing. This facilitates not only evidence-based housing-related policy setting, but also empirical research on the success and interactions of different housing-related policies, the optimal sequencing of housing-related policy reform as well as the implications of housing-related policies for consumers from different ethnic groups; the empirical research results can help policy makers in the policy decision-making, formulation and implementation. Advances in technology and data processing as well as financial liberalization are changing the way consumers secure finance. Leveraging these developments can be destabilizing without adequate financial sector regulation and supervision. The growing importance of unregulated finance solutions can undermine the impact of regulatory oversight. In addition, innovative underwriting concepts based on newly developed, data-driven algorithms tend to remain untested through full credit cy-

cles. Future research could address how the supervisory system and the financial industry should react to trends such as increasing cyber-security concerns as well as the growing importance of unregulated finance solutions and data-driven underwriting concepts. Providing regulatory clarity and direction to the different finance market stakeholders can support sustainable finance market growth and access to credit, especially for underserved consumers. Both housing supply reform and market-oriented housing finance solutions have great potential to enable the housing market to work better. Research could investigate the implications of the emergence of innovative finance alternatives for the interplay of housing and the economy.

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