HOUSING IN INDONESIA:

EXPANDING ACCESS, IMPROVING EFFICIENCY

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PREFACE

In recent years, Indonesia has recovered from the economic and political crises of the 1990s. The country has made great improvements in sustaining economic growth and ensuring the stability of the political system through, amongst other means, strong decentralization initiatives. In the area of housing, Indonesia has a dynamic informal sector that enables it to achieve amongst the highest household formation rates in Asia.

Nevertheless, the housing sector underperforms dramatically when compared to neighboring countries, even those with much smaller economies. Compared to these countries, Indonesia has a lower share of households with access to basic infrastructure, such as piped water and sewage. It also has expensive and time-consuming construction permitting and land registration systems. Finally, it has a much lower share of mortgage finance relative to GDP compared to neighboring countries, and the mortgage finance that does exist is often inaccessible to the poor. These factors act as constraints on the housing sector.

The objective of the report is to take stock of trends and challenges in the housing sector. It reviews opportunities and constraints for the sector, as well as the current policies in place to deal with land and housing markets. This report focuses solely on the Indonesia context with limited reference to international experience. The methodology applied involved a series of meetings with key government agencies, such as the Ministry of Housing (Kemenpera), Ministry of Land (BPN), and Ministry of Planning (Bappenas) as well as literature review, quantitative analysis based on government datasets. To complement the analysis, two city-level case studies of Manado and Semarang were conducted using interviews with developers, informal house builders, BPN offices, and local governments to understand the constraints to housing production.

This report, entitled *Housing in Indonesia: Expanding Access, Improving Efficiency*, is the result of that analysis. The overarching goal of the study is to provide a timely and rigorous analysis of the housing sector, including supply and demand constraints and opportunities, in order to inform policy discussion

at the central, provincial and local government levels. It is meant to serve as an input to ongoing dialogue with the Government of Indonesia on policy options for affordable housing. The World Bank is committed to working on these issues with the Government of Indonesia to ensure that all Indonesians have a decent home.

The analytical material in the report builds on the long commitment of the World Bank to improving housing and cities in Indonesia. The most recent work related to housing in Indonesia conducted by the World Bank involves two projects: the HOMI report in 2001 and an urban review carried out in Indonesia by the World Bank in 2003. Additionally, the continuing work of Marja Hoek Smit on the housing finance sector is an important input (Hoek Smit 2008). Finally, the basis for contemporary research on housing, the informal sector and urban development in Indonesia was established with a book published by the Urban Institute, with this book comprehensively describing the housing market in the country (Struyk et al., 1990). Though much has changed, a surprising number of findings and recommendations from that book remain relevant today.

I. EXECUTIVE SUMMARY

A well-functioning housing sector should continue to be a priority for the Government of Indonesia. The housing sector is a key element of sustainable urban development and is a driver of economic growth for cities. Quality housing is a fundamental component of the economic, social, physical, and psychological welfare of citizens. Housing is also the largest single purpose for which land is used in cities, and is usually the most valuable asset individuals own. Ensuring that housing maintains and increases in value is essential for families' economic stability and prosperity. In addition, the home environment of families affects their physical and mental health significantly.

Indonesia is rapidly urbanizing. It is estimated that over the next 40 years, an average of 2.2 million people will move to urban areas each year. The proportion of Indonesia's urban population has nearly tripled from 17% of the country's total population in 1971 to 48% in 2005, and is expected to increase to 68% by 2025. This is a result of natural population growth, urban-rural migration and other factors. With the rapid urbanization taking place in Indonesia, housing production and the manner in which it is managed will have significant implications for socio-economic development, and greatly influence the structure of cities and metropolitan areas.

The Regional Urbanization Review for Indonesia (World Bank, 2012) indicates the government could enhance economic growth nationally through better regional and metropolitan policies and management. This report builds on that message, and emphasizes the role of housing in the urbanization story, as one element cities could utilize to leverage the economic benefits of rapid urbanization. Common elements include the need to reform the land and property rights system to streamline urban infrastructure provision and redevelopment of land, which in turn helps support functional housing markets; increasing investments in efficient spatial structures, residential development

and urban services; and the need to focus on small to medium size cities where most of the urban population growth will occur in the coming years.

Problems with housing supply and affordability in Indonesia are becoming more apparent as the country urbanizes. Indonesia has experienced a decrease in the rate of new household formation in recent years (beginning roughly in 2000), which is due in part to a reduction in housing supply. The rate at which young adults are establishing their own households has been falling. The timing of the change suggests that the economic crisis in the late 1990s has contributed to the decline in new household formation, with individuals possibly opting to postpone new household formation until incomes recover.

There were roughly two million more households in urban Indonesia in 2007 than there were in 2001. The number of recently built housing units can also be identified using data from the housing module of the 2007 SUSENAS. First, recent movers (within the last 5 years) can be identified, as can the number who bought or built a new house versus moving into or renting an existing house. The data show that slightly less than two million houses were built in the period from 2002 to 2007, which matches the estimated number of new households. However, if the headship rates of 2001 were applied to 2007, the number of new households would be about 75 percent higher. This variation is probably the result of the financial and political crisis that impacted Indonesia at the end of the 20th century.

There have been a number of claims that Indonesia is experiencing a housing deficit, with the exact claimed extent of this deficit ranging from 800,000 to 8 million units. The wide variation in the estimates of the extent of the deficit demonstrates the variability across methods used to estimate the demand for housing.

This report estimates the housing deficit to be 1.6 million units. This estimate has been calculated on the basis of data from 2007 and utilizing a simple household formation model comparing headship rates from 2001 to 2007. However, changes in household structure and size corroborate the argument

that the supply of housing in Indonesia is falling significantly short of demand. Projections show that in order to meet future demand, somewhere between 600,000 and 900,000 housing units should be built per year. In the period from 2014 to 2021, this production rate must increase to between 700,000 and one million units per year.

This report finds that people from all income groups, the poor in particular, are less likely to form a new household in cities in which a higher proportion of housing is unaffordable. Analysis also suggests this decline in new household formation is at least partly due to common trends associated with economic growth and urbanization. Nevertheless, constraints to housing supply and the resulting decline in the affordability of housing in large and medium cities in Indonesia are also a significant part of the problem.

Additionally, less than half of the small share of households that bought a house built by a developer or purchased an existing house did so using a mortgage or other type of financing. About 75 percent paid cash (Badan Pusak Statistik, 2007). Thus, income is only one aspect of affordability, with savings being a stronger determinant of housing affordability.

While there are indications that the quality of housing construction and materials has improved over the past twenty years, there has been little improvement in access to sewerage, running water, and property rights, which are essential complements to housing units. Further, there is large variation in conditions among different income groups and among different cities. These factors magnify the complicated and multi-sectoral nature of the housing sector, especially as it relates to infrastructure provision, land administration, housing finance, and city planning. A coordinated approach is required to bring together urban planning, land administration, infrastructure provision and housing markets.

Self-built housing[1] constitutes over 70 percent of the housing stock in Indonesia, and continues to provide shelter for the vast majority of the country's new and existing households. Self-built housing follows an incremental process that allows lower-income households to access housing. These methods of housing production have proven to be an effective solution for the low income segments of the population, and should be supported by government policies and strategic infrastructure investments. Without such support, the impact of these approaches will not be optimized as cities get bigger. There is a risk that areas of informally developed housing may develop without basic infrastructure and with limited coordination or planning at the neighborhood level, and that households may face constraints in building new housing at the pace that they desire.

While the provision of formal housing by private developers and the public sector is a part of the solution, these approaches mostly target higher market segments. Therefore the government should play a strong facilitating role in ensuring that the self-built housing areas are supported through provision of basic services, protective rights of way to enable incremental infrastructure development, no build areas, and legal tenure provisions.

The analysis presented in this report highlights three major factors that affect the supply of housing in Indonesia:

a. Land administration practices and construction permitting process;

b. Finance for housing, especially for middle- and low-income households; and,

c. Coordination and investment in infrastructure by local governments to support housing development.

Cumbersome housing construction regulations are resulting in increased informality. The combination of convoluted and inefficient land administration

[1] Throughout the study the term "self-built housing" refers to low income housing built through small contractors or by local labor, either on formal or informal land.

practices and cumbersome permitting processes for housing construction stifles the sector. This burden and cost on housing production makes formally developed housing unaffordable for the majority of the population, which pushes a large segment of the population into informal housing solutions.

Housing finance does not currently serve several segments of the population. Although there have been some positive developments in the housing finance sector, with the overall value of loans growing steadily, several segments of the population remain either underserved or not served at all, especially low income groups without formal employment histories. This is one probable reason that the economic crisis in 1997 had such a significant and long lasting impact on the rate of household formation. Households that cannot access a loan must acquire housing through savings and incremental building, and the crisis eliminated the savings of many families.

There is a need for proactive participation of local governments. Recent decentralization efforts have given local governments the responsibility for housing within their jurisdiction. However, in most cases, these governments lack a cohesive strategy for addressing the housing issue. The role of local governments in housing development is multiple: First, they must initiate and manage projects to upgrade and redevelop existing areas of the city. Second, they must play a proactive role in the coordination of urban development, including the facilitation of housing markets. Third, they can enable incremental infrastructure development through right of ways and no-build areas to improve spatial planning and access.

Given the scale of self-built housing in cities in Indonesia, local governments should focus on how they can contribute to this type of construction. However, the current focus of local governments' role in housing seems to be on large-scale development areas. Incremental housing is important as it generally requires smaller investments and targets the appropriate market segments, resulting in residential environments that meet the evolving housing needs of urban communities better than many formal large scale housing developments.

Based on analysis in this report, there are several steps the Government of Indonesia can take to support the provision of affordable housing nationwide. Key areas that require attention, in order of priority, include:

- **Foster conditions to stimulate and enable the market to provide various types of housing to meet different demand segments**. Different segments of the population access and combine the basic inputs into housing (land, finance, materials and labor) using a range of different methods. Analyzing how each different segment of the market accesses housing, and the bottlenecks in this system, is a crucial step in formulating government programs. This can indicate priority areas for such programs and also greatly enhance their efficiency and eventual outcomes. This report recommends that such housing market segmentation studies be done at the local level, and that a role for the national government will be to provide funding for capacity building and technical assistance in this regard. Focusing a local housing strategy based on an understanding of the market segments can not only achieve great results for the housing sector in the city, but also save local governments money by increasing the efficiency of their public expenditure on infrastructure investments.

- **Incentivize and increase local government involvement with housing access.** Local governments must be given incentives to play a major positive role in facilitating the development of low income housing and in improving the quality of urban areas. At a larger scale, local and provincial governments must coordinate the planning and development of supporting infrastructure in the new areas and to integrate new areas into the fabric of the city.

- **Reform the land registration, permitting and land readjustment process.** The current land consolidation system in Indonesia should be reformed as a tool to help create new housing units in existing urban areas. Greater community participation should be encouraged for these programs to ensure sustainability and transparency. With regard to the

formal housing development process, a pressing need is to streamline the location permit system.

- **Develop housing finance solutions that focus on low income families directly and/or through community organizations.** There are a number of ways that the government could expand access to housing finance – especially for lower income groups – and diversify the instruments available, including the following: (a) Develop a credit enhancement scheme specifically targeting low-income and informal sector borrowers; (b) Develop a savings-for-housing system; (c) Re-evaluate the strategy for the Secondary Market Facility (PT-SMF) to play a role in the development of a bond issuance program, which would provide investors with a new class of secured asset; (d) Build capacities of regional banks and micro-finance/cooperative institutions; and (e) Enhance the impact of the Housing Finance Liquidity Facility (FLPP) on the economic and social efficiency of low-income housing finance.

- **Educate and communicate with households, local governments and policymakers about housing policies**. Appropriate efforts to better disseminate information related to housing must be taken, both among housing developers and among individual members of the community. Education related to incremental house building and subsidies should be freely available to potential new household members as part of a public service campaign.

This report is organized into six chapters. The first chapter provides an overview of the housing sector in Indonesia and looks at household formation and demographic changes. The second chapter reviews demand as well as housing conditions, affordability and demand for services across different market segments. The third chapter provides context on housing and land policy. It examines the institutional framework for housing and land administration. The fourth chapter takes stock of housing finance schemes, and the fifth chapter reviews housing production, housing markets and constraints. Finally, the sixth chapter gives conclusions based on analysis in the report and

provides recommendations for strengthening the housing sector in order of priority. Following the main text, a series of eight appendices provide greater detail on the selection of cities, data and methodologies applied to estimate the housing deficit, background information on land and housing sector policy, two city-level case studies of the housing sector and land administration in Manado and Semarang, and the financial and economic conditions in Indonesia.

I. EVALUATION OF THE HOUSING SECTOR

KEY MESSAGES

This chapter describes the current demographic situation in Indonesia and its relationship with housing unit demand and projects patterns of household formation in the period up to 2021. In addition, it considers the variation in housing unit demand between different income groups and in different cities. The analysis of simple correlations of age-specific headship rates and city characteristics such as size, average incomes and certain housing market characteristics facilitate the formulation of initial policy recommendations and provide direction for further research. These projections show that in order to meet future needs, somewhere between 600,000 and 900,000 housing units should be built per year. In the period from 2014 to 2021, this production rate must increase to between 700,000 and one million units per year.

The analysis of Indonesia's housing deficit in this chapter provides several important pieces of information to support a re-formulation of housing policy in the country. First, it shows that *understanding the way in which housing deficits are calculated is essential to a discussion of housing needs*. A housing deficit is generally estimated based on past trends in household formation, although these trends can be affected by many factors. Examining recent demographic changes in Indonesia shows that housing unit needs will grow in the coming years. Understanding the connection between housing deficits and demographic change enables the government to view the increase in demand for housing units as an opportunity rather than a challenge, and to act accordingly. The analysis also provides evidence that the housing deficit disproportionately impacts members of lower income groups.

1.1 HOUSEHOLD FORMATION AND HOUSING UNIT DEMAND

Indonesia's urban population increased rapidly from 17% of the country's total population in 1971 to 48% in 2005. The proportion of the urban population is expected to increase to 68% by 2025. Besides natural population growth, urban-rural migration and the reclassification of urban areas are also factors. It is

estimated that over the next 40 years, an average of 2.2 million people will move to urban areas each year.

There have been a number of claims that Indonesia is experiencing a housing deficit, with the exact claimed extent of this deficit ranging from 800,000 to 8 million units. The wide variation in the estimates of the extent of the deficit demonstrates the inconsistency in the methods used to estimate the demand for housing. Unfortunately, when such claims are made, the method used to calculate the housing deficit is generally not described nor is the term 'housing deficit' adequately defined.

In this chapter, the housing deficit is estimated to be 1.6 million units, with this estimate being calculated on the basis of data from 2007 and utilizing a simple household formation model. Any housing deficit calculation will depend on a number of assumptions about household formation. However, changes in household structure and size corroborate the argument that the supply of housing in Indonesia is falling significantly short of demand.

This paper uses the concept of the *headship rate*[2] to calculate the demand for new housing. The term *headship rate* in this study refers to the proportion of individuals identified as the household head or as the spouse of a household head.[3] The roughly constant headship rate observed for the years 1995 - 2001 is assumed here to be the natural equilibrium headship rate, from which the headship rate dropped to the 2007 level. As this chapter explains, the housing deficit figure is arrived at by assuming that the population in 2007 seeks to achieve the former 1995-2001 headship rate, and calculates that 1.6 million additional housing units would be required to do so. This figure is only intended to prompt a broader discussion. The assumptions regarding household

[2] Headship rate refers to the proportion of people that are household heads at any given time, and not the pace at which people are becoming new household heads.

[3] In the United States, the census no longer uses the term 'household head', which implies a traditional patriarchal household structure. Instead they have switched to the term 'householder' which is applied to whoever answers the census question and is not loaded with the meaning of household head. Nevertheless, the traditional household head concept seems to still be applicable in Indonesia, but we also consider the spouse of the household head as a household head.

formation and the meaning of the housing deficit in Indonesia must be examined more closely before discussing its implications and possible government responses.

One factor contributing to the housing deficit in Indonesia is the demographic change through which the country is passing. Indonesia is currently in the middle of a demographic transition, characterized by declines in both mortality and fertility that have also marked periods of industrialization and urbanization in other developing countries. During such demographic transitions, mortality rates usually decline first, followed by a fall in fertility rates: meaning, people live longer and have fewer children. These changes have profound economic and cultural implications. In particular, such transitions are characterized by an increase in the proportion of the working age population relative to the proportion of the elderly and children, which can be a great boon for development (Birdsall et al., 2001).

In Indonesia, the rate of child mortality began to decline in the mid-1960s, while fertility rates began to decline in the early 1970s (Lewis 2010). Both have continued to decline until the present. This demographic transition has been concurrent with an extended period of economic growth. As in many countries, declines in rates of growth and fertility are endogenously and positively related (Lewis, 2010).

The demographic transition has important implications for the supply and demand for housing. The increase in the proportion of working-aged people relative to older and younger people leads to an increase in the proportion of people in the household-formation age. Moreover, the lag between the drop in fertility rates and the drop in mortality means that on average, people occupy their houses for longer periods due to their longer average life expectancies, meaning that a greater number of houses must be built for newly established household units. The concurrent increase in average incomes magnifies this effect, as higher-incomes are usually associated with smaller household sizes. Therefore, the increased average incomes associated with urbanization and industrialization increases the pressure on the house to population ratio.

In effect, during a demographic transition of the type through which Indonesia is passing, the number of houses per person must increase in order to maintain the average household size. This surge in demand for housing is disproportionately higher in urban areas, as rural to urban migration is generally concurrent with the economic changes associated with the demographic transition. In Indonesia, the share of the population living in cities grew from 26 percent in 1985 to roughly 45 percent in 2007, at which point almost half of the approximately 100 million people living in cities in Indonesia were under 25 years of age.

While the proportion of the population of household-forming age results in increased demand for housing, the number of new households that are actually formed through the occupation of an independent housing unit depends on the ability of the housing sector to meet this demand. In Indonesia, data and research from the late 20th century suggest that the housing sector was producing a sufficient number of new houses to meet the shifting needs of the population in that period, as shown by the fact that in the period from 1988 to 2001, the number of people per household declined from 4.55 to 3.84 (Struyk et al. 1990; BPS, 2001). More recently, however, it seems that demand is significantly outstripping supply. While the average number of people per household in urban areas declined until 2001, in the period from 2001 to 2007, this number actually increased slightly, from 3.84 to 3.98 (Struyk et al. 1990; BPS, 2001). Headship rates have dropped even more significantly, especially among younger and lower-income people.

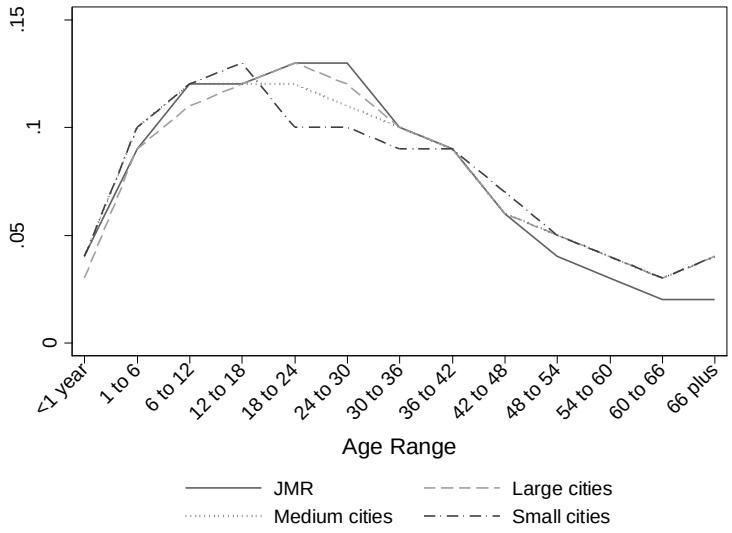
Although correlations are useful as rough descriptions of trends and relationships, many aspects of the housing market are not measured in available data. Other factors must be considered before the explanations of observed relationships can be tested. Particularly, the possible impacts of the economic crisis and political changes at the end of the 20th century should not be overlooked.

1.2 Demographic Transition and Housing Unit Demand

A common measure of the demographic transition is the *dependency ratio*, which refers to the ratio of the population of working age relative to the elderly and children. In Indonesia, this ratio has been growing steadily since a trough in the 1970s, when there were 1.2 working age people for every dependent. By 2007, the ratio had increased to two working age people for every dependent and was showing no sign of leveling off (Lewis 2010). This suggests that Indonesia is still in the middle of the transition, with fertility and mortality rates continuing to decline.

However, the extent of the demographic transition varies significantly across Indonesia, as different cities grow at different rates and in response to varying stimuli. Particularly, the demographic transition has been characterized by a greater degree of decline in fertility and mortality in larger, wealthier cities and by the immigration of ambitious young adults to seek employment in such cities. Consequently, the dependency ratio is generally higher in those places.

FIGURE 1.1 SHARE OF URBAN POPULATION BY AGE IN DIFFERENT CATEGORIES OF CITIES, 2007



SOURCE: BADAN PUSAT STATISTIK, 2007.

Figure 1.1 shows the age distribution of Indonesia's urban population for cities in different size classes[4]. This figure clearly demonstrates two trends. First, in terms of age, the largest demographic group is the 6 to 24-year-old group. This has important implications for future housing unit demand, as it is the people in this group who will seek to form new households during the next 20 years. Secondly, the figure clearly demonstrates the relationship between working-aged people and city size: larger cities have a significantly higher than average proportion of their population aged between 20s and 30s. This is probably due to be migration of young people from rural to urban areas and

[4] As in the rest of the report, cities were identified using a definition similar to that used by the United States census bureau to define Metropolitan Statistical Areas – administrative regions that include an urban 'core' with a population of more than 50,000. The population of the urban 'core' was determined using a combination of data from BPS (2007) and the size of the urban footprint (Schneider et al. 2003), and the minimum population threshold was set at 75,000 to be consistent with previous research on housing in the country (Struyk et al. 1990). Cities were are also grouped into categories by population size, where large cities are those with more than one million residents, medium-sized cities have between 500,000 and one million residents and small cities have more than 75,000 but less than 500,000 residents. In 2007, there were 15 large cities, 20 medium-sized cities, and 56 small cities.

from smaller to larger towns. Due to data limitations, the estimates here give only limited consideration to inter-urban migration, although such considerations are clearly important for future work on urban housing in Indonesia.

1.2.1 Headship rates

Before estimating the level of future demand for housing units, we will examine the age at which people typically form households in Indonesia. The problem, of course, is that there is a two-way relationship between rates of household formation and the level of supply from the housing sector. If it is difficult or expensive to acquire housing, individuals are more likely to remain living with family or friends. This adaptation to living in larger households will also reduce pressure on the housing sector to build new houses. It is also important to factor in cultural aspects that may influence headship rates to a certain extent, as some multi-generational families prefer to remain in the same home (and potentially expand its size incrementally) over many years.

In this study, headship rates are calculated on the basis of the proportion of individuals identified as household heads or as the spouse of a household head in SUSENAS data. In the SUSENAS data, all surveyed individuals are classified in terms of their position in the household. In addition to household head and spouses, the data classes household members in the following categories: child, child-in-law, grandchild, parent, maid or other. An analysis of headship rates for different age groups shows, not surprisingly, a larger proportion of those in older age groups are household heads. Thus, by the age of 30, roughly half of the population is a household head, while by the age of 40, more than 90 percent of the population are either a household head or a spouse of a household head.

Examining headship rates in different periods shows a dramatic drop in the rate of age-specific household formation in the period from 2001 to 2007, with a significant decline in headship rates at all ages up to the mid-40s. The difference in headship rates in 2001 and in 2007 is consistent and significant for all age and city categories, with the variations at the two points in time

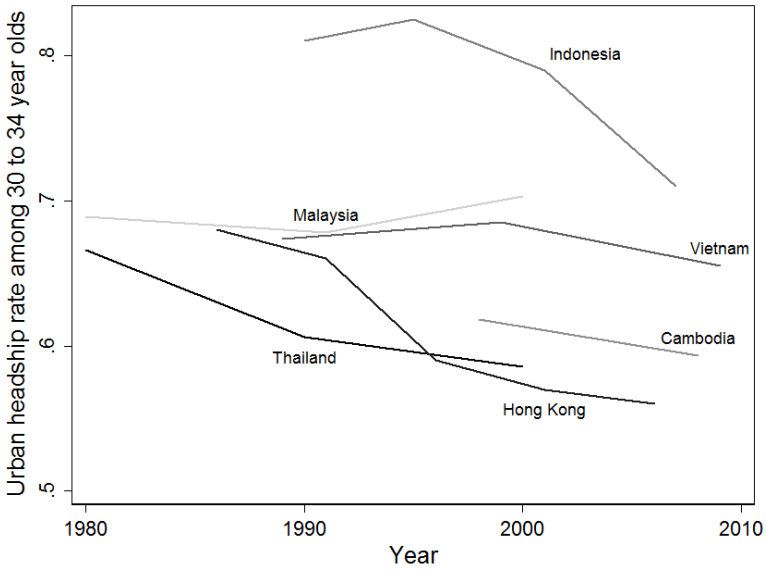
reaching up to 10 percent in some cases. A comparison of headship rates in 1995 and in 2001 shows no such significant variation, indicating that the change has occurred in the period since the crisis. The drop in rates of headship is concurrent with a decrease in the rate at which household size has been shrinking.

The lack of supply of suitable housing is one of many possible causes of this change. Another is the nature of the economic period. The dramatic financial and political crisis of the late 1990s affected the population of Indonesia in many long-lasting ways. The World Bank's World Development Indicators (2009) data show that GDP per capita did not recover to pre-crisis levels until almost 2005. Although rates of unemployment and informal employment remained relatively stable and high in the period throughout the early to mid-2000s, wages plummeted during the crisis.

One documented adjustment at the household level was an increase in household size, with family members moving in together to economize on consumption (Thomas and Frankenberg 2007). Thus, it is not surprising that the strong trend towards decreasing household sizes was not apparent during the crisis period. The fact that incomes declined much more dramatically than did expenditures during the crisis and that the value of assets collapsed provides one possible explanation for a lagged impact on household formation in a housing system that lacks sufficient financing and relies on savings for acquiring land and expanding houses.

However, while the financial crisis affected almost all countries in the region to a great extent, the apparent impact on patterns of household formation was far more dramatic in Indonesia than in neighboring countries. Figure 1.2 compares headship rates among the 30 to 34-year-old age group in urban areas of South-East Asian countries over the last three decades. Clearly, the changes in Indonesia are far greater than in any other country at all points throughout this period.

FIGURE 1.2 URBAN HEADSHIP RATES AMONG 30-34 YEAR OLDS IN SOUTH-EAST ASIA, 1980-2009



SOURCE: OWN BASED ON DATA FROM HONG KONG CENSUS AND STATISTICS DEPARTMENT (1986-2006); BADAN PUSAK STATISTIK INDONESIA (1990-2007); AND NATIONAL INSTITUTE OF STATISTICS CAMBODIA, DEPARTMENT OF STATISTICS MALAYSIA, NATIONAL STATISTICAL OFFICE THAILAND, AND VIETNAM GENERAL STATISTICS OFFICE (MINNESOTA POPULATION CENTER, 2011).

The high rate of household formation in Indonesia could be due in part to a persistence of cultural norms related to age of marriage and post-marriage residence. In spite of significant levels of urban growth and significant improvements in economic and educational terms during the second half of the twentieth century, marriage at an early age among women in Indonesia is a persistent pattern (Buttenheim and Nobles 2009). In 2000, the percentage of women in the 35 to 39-year-old group who were never married was 3.5 in Indonesia, compared to 9.5 in the Philippines and 11.6 in Thailand. In the same year, the mean age for marriage in Malaysia was 24.9, compared to 22.7 in Indonesia (Jones 2010). At the same time, it is also possible that the dynamism

of the informal housing sector in the country allows young couples to establish a new household more easily than in neighboring countries.

1.3. The Magnitude of the Housing Supply Problem

In this section, household projections are used to estimate the future demand for housing units. Data related to headship rates commonly forms the basis for household formation projections and will be used in this study. A crucial caveat here is that, as with any projection exercise, the results depend on the assumptions one makes regarding the determinants of headship rates and household formation and the periods from which data are taken. In this case, we use headship rates from both 2001 and 2007. The 2001 headship rates are higher than those in 2007. The figures from 2001 are similar to those for 1995, before the crisis, and it is likely that these figures are more representative of Indonesia's long-term patterns, as they do not reflect the specific short to medium term impact of the crisis.

Table 1.1 Actual and Potential Household Formation, 2001 to 2007

City Category	New households, 2001-2007	Potential new households, 2001-2007	Housing unit backlog	Backlog as a Percent of All Households
JMR	305,236	723,402	418,166	7.9
Large	719,933	1,401,400	681,467	7.2
Medium	259,849	523,984	264,135	7.0
Small	280,779	416,861	136,082	3.9
Towns	453,448	624,839	171,391	6.9
All urban	2,019,245	3,690,486	**1,671,241**	6.8

Source: Author's calculation, SUSENAS 2001 and 2007.

Before projecting into the future, however, headship rates in 2001 are applied to the population distribution in 2007 for each city, in order to assess the number of potential households that did not form during those years and to obtain an approximate idea of the extent of the housing deficit. Again, the term *housing deficit* refers to the gap between potential households and actual households, assuming that every person of household forming age wishes to do so. Table 1.1 reports these calculations, with results grouped by city size category.

There were roughly two million more households in urban Indonesia in 2007 than there were in 2001. The number of recently built housing units can also be identified using data from the housing module of the 2007 SUSENAS. First, recent movers (within the last 5 years) can be identified, as can the number who bought or built a new house versus moving into or renting an existing house. The data shows that slightly less than two million houses were built in the period from 2002 to 2007, which matches the estimated number of new households. However, if the headship rates of 2001 were applied to 2007, the number of new households would be about 75 percent higher. This dramatic variation is probably the result of the financial and political crisis that impacted Indonesia at the end of the 20th century.

1.3.1 Household Projections

In this section, the results of approximate household projections into 2021 are presented. A standard methodology is used, which consists of first projecting population growth by ages, assuming fertility, mortality, and migration rates do not change. Then, historical headship rates are applied to this future population distribution. By estimating the potential number of households, the number of housing units that are needed to house them can be inferred. The projections are conducted at the city level, in order to account for migration. For each city, the projected demand for housing units in the period from 2007 to 2014 and from 2014 to 2021 is estimated using six year age groups. Age specific fertility, mortality, and migration rates are estimated on the basis of data from 2001 and 2007.

TABLE 1.2 HOUSEHOLD PROJECTIONS BY CITY SIZE, 2007-2014 AND 2014-2021

City	Households,	2001 Headship Rates	2007 Headship Rates

Category	2007	Households, 2014	Households, 2021	Households, 2014	Households, 2021
JMR	5.3	6.7	7.8	6.3	7.3
Large	9.9	11.8	13.2	11.1	12.5
Medium	3.7	4.5	5.1	4.3	4.8
Small	3.1	3.6	4.0	3.4	3.9
Towns	2.5	3.3	4.0	3.1	3.8
All urban	24.5	29.9	34.1	28.1	32.3

SOURCE: AUTHOR'S CALCULATION, SUSENAS.

NOTES: ALL NUMBERS ARE MILLIONS OF HOUSEHOLDS.

Table 1.2 presents the results of projections grouped by city size categories. Two sets of projections were calculated, one using headship rates derived from the 2001 data and another using the data for 2007. Given the decline in age specific headship rates in the period from 2001 to 2007, as shown by the data at the two specific time points, projected headship rates are much higher when based on the 2001 data. However, the projection based on the 2001 data is probably more representative of a 'natural' rate for Indonesia, due to the special circumstances affecting Indonesia at the latter point.

These projections show that in order to meet future needs, somewhere between 600,000 and 900,000 housing units should be built per year. In the period from 2014 to 2021, this production rate must increase to between 700,000 and one million units per year.

1.3.2 Market Segmentation

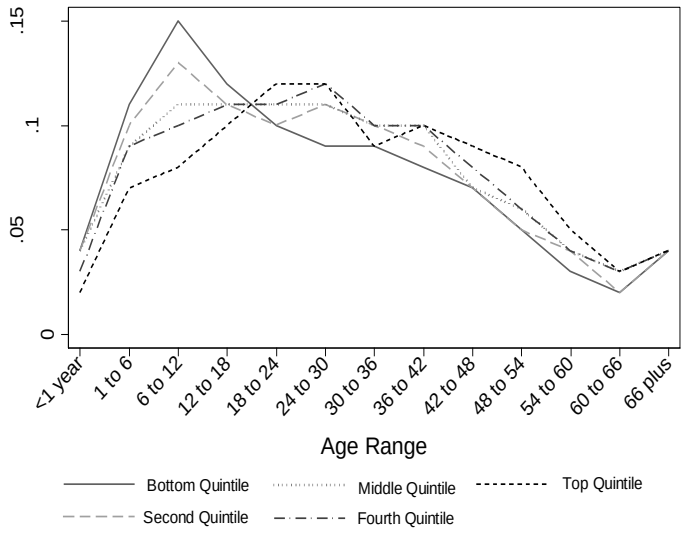
Rates of household formation and on the consequent level of demand for housing depend greatly on average levels of income. Higher-income households can and generally do form households earlier than low-income households. Moreover, low-income households tend to be younger. Thus, when considering future demand, it is necessary not just to consider the age distribution of the population overall, but also the average income levels of people in age groups most likely to establish households.

In order to assess household formation patterns for different income groups, we group households into quintiles on the basis of household expenditure per

capita, which is calculated simply by dividing the monthly household expenditure by the number of household members. The per capita measure is used because household expenditures are affected by household size much more than is income: the higher the number of people constituting a household, the more money needs to be spent on food, clothing, and transport. A larger household also implies a need for a bigger house. The population is then divided into income quintiles for each metropolitan area and examined separately, due to the variation in average income levels in different cities.

Figure 1.3 shows the age distribution for different income quintiles. There is a clear variation in average ages in the different income groups. The higher-income groups have a much lower share of younger (up to 18 years old) members and a higher share of older (mid-40s to mid-60s) members. This reflects the lower fertility and mortality rates among higher-income households. Of course, a cross-sectional analysis of ages and incomes does not tell the whole story, as many of the younger population in lower-income households will eventually earn higher-incomes. Nevertheless, these age distributions imply that in the future, the demand for housing amongst people in lower income groups will grow relative to the demand from those in higher-income groups.

FIGURE 1.3 AGE DISTRIBUTION BY CITY-SPECIFIC EXPENDITURE QUINTILES



SOURCE: AUTHORS' CALCULATION WITH BPS 2007.

The other important connection between levels of income and demand for housing is that those from higher-income households tend to form their own households earlier in life than members of low-income households, although this depends somewhat on specific market characteristics. A comparison of household formation rates across income groups and cities is presented in Table 1.3. Additionally, with the share of total household expenditures allocated to housing reported.

Several trends are apparent when looking at the data in Table 1.3. First, there are significant differences between Jakarta and other cities in Indonesia. In Jakarta, rental expenditure constitutes a much higher proportion of total expenditure than elsewhere. In part, this seems to be due simply to its large size, as there is an apparent positive correlation between city size and rental expenditure as a proportion of total expenditure. The more salient difference between Jakarta and all other cities is the relationship between the household formation rate and income. Unlike any other Indonesian city, in Jakarta the headship rate has a non-linear relationship with income, increasing between the first and second quintiles and then declining as incomes increase further.

In most cities in Indonesia, headship rates amongst those in the 30 to 42 year old group do not vary significantly with income, although the headship rates of those in younger groups do. In both cases, it is the highest and lowest quintiles that differ most significantly from the middle three. The headship rate of those in the 18 to 32 year old group in the highest income quintile, for example, is almost double that of the lowest quintile.

TABLE 1.3 HEADSHIP RATES FOR HOUSEHOLDS ACCORDING TO EXPENDITURE QUINTILES, 2007

	Expenditure Quintiles [a]				
Variable	**1**	**2**	**3**	**4**	**5**
JMR					
Rent to Total Expenditure	26	27	26	26	29
Headship rate, 18 to 30	30	33	37	33	28
Headship rate, 30 to 42	82	84	83	81	73
Large Cities					
Rent to Total Expenditure	20	21	21	22	23

Headship rate, 18 to 30	24	29	31	31	39
Headship rate, 30 to 42	76	82	82	81	82
Medium Sized Cities					
Rent to Total Expenditure	19	19	20	20	21
Headship rate, 18 to 30	27	33	34	32	40
Headship rate, 30 to 42	77	80	83	84	85
Small Cities					
Rent to Total Expenditure	18	19	19	19	20
Headship rate, 18 to 30	26	31	31	32	37
Headship rate, 30 to 42	81	82	81	82	85
Towns					
Rent to Total Expenditure	16	17	18	19	21
Headship rate, 18 to 30	26	30	31	34	46
Headship rate, 30 to 42	78	80	80	84	86

SOURCE: SUSENAS 2007.

[a] Household income per capita, calculated separately for each city.

1.4. LOCATING THE PROBLEM: INTER-CITY VARIATION IN HOUSING UNIT DEMAND

The demand for housing units is not equally distributed across cities in Indonesia. An examination of inter-urban variation in headship rates provides a simple and effective indicator of the relative level of efficiency of the housing market, assuming that an age specific household formation rate should be similar across cities. In the 93 Indonesian cities with more than 75,000 residents, overall headship rates vary from 36 to 53 percent of the population, while headship rates of 30 to 42 year olds varying from 67 to 93 percent. However, due to the variation in population characteristics of different cities, education and income controlled headship rates should be considered as well. In this way, the level of responsiveness of the housing market to similar levels of demand can be measured.

This section presents analysis relating characteristics of metropolitan areas and their housing markets to headship rates, which are taken as a proxy for the level of efficiency of the housing market. As mentioned previously, overall headship rates are not the most important indicator of market efficiency. These headship rates can be greatly affected by the age distribution of a city's population.

However, for the sake of this discussion, we can take headship rate as a loose indicator of market efficiency by making the assumption that people between the ages of 30 and 42 wish to form their own households, and that their ability to do so depends on their ability to find suitable housing.

The full table showing correlation coefficients between headship rates in this age group and various city characteristics, including income and primary education only, is presented in the appendix B. As before, the income quintiles are calculated on a city-by-city basis, thus measuring relative income groupings across cities. Isolating those individuals with the same levels of education or relative income is a way to control for differences between cities, although the fact that income levels are relative means the use of the attainment of primary school education as a control is preferable.

People from all income groups, and the poor in particular, are less likely to form a new household in cities in which a higher proportion of housing is unaffordable. The largest and most consistently significant variable associated with headship rates is the proportion of households who live in 'unaffordable' housing, which is defined in terms of an expenditure of more than 30 percent of the household's total monthly expenditures on housing. This is a better measure to determine a given city's housing costs than median housing costs, because it incorporates the dimension of income. It is noteworthy that this variable is most closely associated with individuals in the lowest income quintile, who appear to suffer more from expensive housing markets.

Higher rates of land formalization do not necessarily lead to more efficient land markets. This is seen in the correlation that shows that the share of houses that have BPN title is negatively associated with overall headship rates in the 30 to 42 year old group. Even headship rates in the upper income quintile, when seen separately from other income groups, are significantly negatively correlated with the share of houses in the city having BPN titles.

Headship rates in the upper income quintile are also significantly affected by many other city characteristics, including the share of housing that is owner-

occupied: higher headship rates are associated with a higher proportion of owner-occupied houses in the city.

Surprisingly, lower-income and less-educated individuals in faster growing cities actually have higher headship rates. This result runs contrary to the idea of growing cities not being able to keep up with the demand for housing from their new residents. Cities with a higher rate of population growth seem to be supplying housing at a higher rate to meet the demand. This also suggests that lower-income and less-educated people may be choosing to move to cities where the housing market is more conducive to forming new households.

The correlation between headship and housing markets is given in appendix B, which shows scatter plots of overall headship rates, median housing expenditures and the share of housing that is owner-occupied, again with dots resized by city population. These correlations are negative and positive respectively, with the latter correlation being much stronger. This reflects the importance of informal housing markets, as the share of housing that is owner-occupied is likely correlated with the share that is informally developed. Cities with a higher level of owner-occupied housing also tend to be characterized by lower average incomes.

II. Housing Demand, Affordability, and Conditions

Key Messages

This chapter reviews the quality, affordability and demand for housing units. First, housing conditions in Indonesian cities are reviewed and compared to those of 1990. Results show that on average, the physical condition of housing has improved significantly over the last two decades. However, in certain areas, such as access to sewerage, running water, and property rights, there has been very little improvement. Further, there is large variation in conditions between different income groups and between different cities.

After reviewing general housing conditions, the question of affordability is addressed. Although by some measures of affordability, Indonesia does not seem to have a significant problem, the concept is difficult to measure accurately. The positive aspects of Indonesia's housing market to date can be attributed to the self-build, incremental process through which a majority of new houses are built, which allows lower-income households to access housing in spite of the limited availability of affordable formal housing and the inability of households to access financing. However, although there is limited data on the non-monetary costs of housing and access to land, expenditures on housing and a comparison of estimates of changes in the price of new houses relative to incomes show that housing has become less affordable during the 2000s. In particular, the situation for low-income households has also worsened, as there was a positive correlation between initial income and income growth during the same time period.

Finally, two types of demand for housing are estimated: The *income elasticity of demand* and *the price elasticity of demand for different housing characteristics*. The latter allows us to examine the relative importance of different characteristics of housing. Not surprisingly, this shows that while size is the most highly valued attribute, legal status can be almost as important to determine the price of the house as the use of particular materials or access to infrastructure. The report then compares estimates of income elasticity of demand between 1978 and 2007. The evidence shows that there is a high degree of income elasticity of demand. In other words, the poor have fewer resources to spend on housing. This suggests a need to target assistance for functional housing markets to lower income groups.

2.1 Introduction

Housing is a complicated economic good. The potential demand for housing units was estimated in the previous chapter, yet the characteristics or quality of those required new units was not considered. Generally, a contrast is drawn between housing unit demand and demand for housing services. The latter refer to the flow of benefits a house gives to its residents, including everything from the materials, access to infrastructure, neighborhood amenities and proximity to

employment. Consideration of this variation in housing quality is essential in order to discuss affordability in a meaningful way.

2.2. Housing Conditions

The quality of materials used in the construction of most housing units in Indonesia has improved over the last 20 years. However, access to infrastructure and the level of legal ownership has improved much less. Moreover, compared to similar countries, the quality of housing is much lower. This is especially true outside the large cities and for housing occupied by members of lower income groups.

Table 2.1 reports the share of the country's population that lives in urban areas, Gross National Income (GNI) per capita, and the share of households with an improved water source and improved sanitation facilities in 2008 for Indonesia and five other Southeast Asian countries. Indonesia lags behind in the provision of water and sanitation for urban households, even compared to those from lower income groups in other countries.

Table 2.1 Urban Population, Income and Housing Services in Six Countries, 2008

Country	Percent of population urban, 2008	GNI per capita (US$), 2008	Improved water source#, 2008	Improved sanitation facilities#, 2008
Cambodia	22	630	81	67
Vietnam	28	910	99	94
Thailand	33	3,670	99	95
Indonesia	52	2,010	89	67
Philippines	65	1,700	93	80
Malaysia	70	7,250	100	96

Source: World Development Indicators, 2008.

Notes: #Percent of urban population with access.

Table 2.2 shows that the percentage of households in different cities of varying size categories that live in houses built of permanent materials is consistently greater than 80 percent. This table also shows the percentage of households that have access to different basic urban services. Access to sewage, defined by possession and use of a septic tank, is the most elusive, with the proportion of households having access to such a service ranging from 60 to 80 percent at best. Data limitations prevent an analysis in terms of city size after 1990. However, it should be noted that on average, the share of housing with services and/or constructed with permanent materials was 60 percent in 1990, the last year for which figures are available.

One noteworthy trend is that the level of access to sewage and toilets does not correlate highly with city size. Medium sized cities, those with populations ranging from 500,000 to one million residents, have lower levels of access than small cities do. The most striking change in housing conditions over the past two decades has occurred in the Jakarta Metropolitan Region (JMR). In 1988, housing in the JMR was of similar condition and had a lower level of access to infrastructure than even small cities, let alone medium or large ones. By 2007, its relative position had shifted dramatically: urban households in the JMR are now much more likely to have high quality housing than households in most other cities.

TABLE 2.2 PERCENT OF HOUSEHOLDS BY HOUSING CONDITION AND CITY CATEGORY, 2007

City category	Permanent materials [a]	Sewage [b]	Electric lighting	Private toilet	All services
JMR	94	80	99	92	77
Large	89	74	99	89	72
Medium	86	60	98	79	58
Small	84	68	98	86	66
Towns	82	59	96	84	57

SOURCE: BADAN PUSAK STATISTIK 2007.

NOTES: A PERMANENT MATERIALS ARE CONCRETE, BRICK OR WOOD WALLS, A CONCRETE, TILE METAL OR ASBESTOS ROOF, AND A NON-DIRT FLOOR. B SEWAGE REFERS TO A SEPTIC TANK OR

CONNECTION TO SEWAGE NETWORK, ALTHOUGH THERE ARE ONLY 11 OF THE LATTER IN INDONESIA.

The average size of housing units in cities across Indonesia has also increased from about 57 square meters in 1990 to about 67 square meters in 2007, although the average amount of living space per person remains almost the same as it was 20 years ago, at about 18 square meters per person. These numbers are fairly consistent across cities of different sizes, except, of course, in the JMR, where space is at a premium and the average size of housing units is consequently smaller. In the JMR, houses are smaller (63 square meters on average) than the rest of the urban areas, people occupy less space per person (16 square meters on average), and a much greater share of the population lives in a 'crowded' situation, with less than five square meters per person (13 percent as compared to a national urban average of 5 percent).

The legal condition of housing, as measured by the proportion of households living in houses with BPN land certificates, has improved little since 1990. According to the 1988 survey of urban households by Struyk et al. (1990), 37 percent of household owners had some form of BPN land certificate in that year, of which 83 percent were Hak Milik, or freehold. By 2007, both of these numbers had increased, with 44 percent of all urban household owners having some form of BPN title. Of all the BPN titles in 2007, 95 percent were freehold.

TABLE 2.3 LAND OWNERSHIP FOR OWNER HOUSEHOLDS BY CITY CATEGORY, 2007

City Category	BPN		Receipt		Customary		Other		None	
	HH*	%	HH	%	HH	%	HH	%	HH	%
JMR	1.34	44.3	0.53	17.4	0.87	28.8	0.13	4.1	0.16	5.4
Large	3.18	47.0	0.90	13.3	1.28	19.0	0.57	8.4	0.83	12.3
Medium	1.03	38.4	0.26	9.8	0.64	24.1	0.29	10.9	0.45	16.9
Small	1.03	45.2	0.21	9.3	0.49	21.8	0.22	9.5	0.32	14.1
Towns	0.78	44.0	0.19	10.9	0.21	12.0	0.18	10.1	0.41	23.0

SOURCE: BADAN PUSAK STATISTIK 2007.

NOTES: * IN MILLIONS OF HOUSEHOLDS

Table 2.3 presents a breakdown of housing units in terms of type of land ownership claim and in terms of the number of households in absolute and proportionate terms. In cities of all size categories, BPN titles are the most common form of land title. The second most common is *Hak Girik*, or customary ownership rights. There does not seem to be any relationship between the size of a city and the share of houses that have full legal title, though the share of owned houses with no form of legal claim does increase as cities get smaller. There is considerable variation in the proportion of houses with full legal land rights between cities: in some cities, only one fifth of owned houses have titles from BPN, while in others this proportion is as high as four fifths.

As expected, housing with BPN title is on average of a much higher quality: 80 percent of houses with such titles have access to infrastructure, compared to 58 percent of those without title. Similarly, inhabitants of houses with BPN titles have higher average incomes than those without.

TABLE 2.4 HOUSING TENURE BY CITY CATEGORY, 2007

City category	Own		Rent		Borrow from family	
	HH*	Percent	HH*	Percent	HH*	Percent
JMR	3.1	59.9	1.4	26.2	0.4	7.5

Large	6.8	68.7	1.6	15.8	0.8	8.3
Medium	2.7	71.4	0.5	13.2	0.3	8.5
Small	2.3	70.9	0.4	13.3	0.2	7.4
Towns	1.8	69.8	0.4	14.8	0.1	5.8

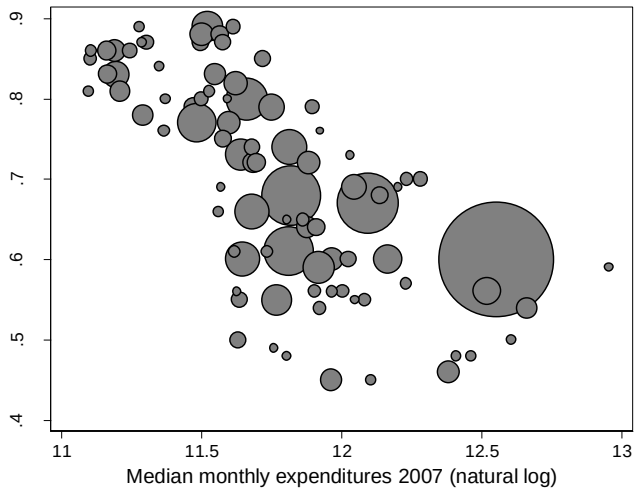
SOURCE: BADAN PUSAK STATISTIK 2007.

NOTES: * IN MILLIONS OF HOUSEHOLDS.

As in many countries where the majority of houses are built through a self-help process, most housing in Indonesia is classified as owner-occupied, even when households do not have full legal title. Table 2.4 presents the number and share of households that are owners, renters or living in a house of a family member. The share of rental housing is relatively low, at 15 percent or less, in most cities, though it is higher in the JMR. In this context, rental housing is generally of higher quality than owner-occupied housing, as owner-occupied housing includes housing being built incrementally through the self-build process. On average, 72 percent of rented houses have access to infrastructure, compared to 67 percent of owned houses.

In a housing context such as that of Indonesia's, the respective levels of rental housing or owner-occupation are also an extremely strong indicator of market conditions. Figure 2.1 shows the very strong correlation between the share of housing that is owner-occupied and monthly median household expenditures.

FIGURE 2.1 SHARE OF HOUSES OWNED AND MONTHLY HOUSEHOLD EXPENDITURE 2007



SOURCE: BADAN PUSAK STATISTIK 2007.

NOTE: POINTS ARE SIZED BY POPULATION IN 2007.

As with many housing outcomes in Indonesia, there is a much stronger association between housing market characteristics and incomes than there is with city size. This stems from the limited presence of agglomeration economies in Indonesian cities: city size is only weakly statistically correlated with higher levels of productivity.

2.3. AFFORDABILITY

Housing in Indonesia has been referred to as 'relatively affordable', based on an estimate of the price of a new house and the median household income (Hoek-Smit, 2008). However, since 2000, this seems to be changing. A simple measure of affordability – the share of household expenditure allocated to housing – showed an almost one quarter increase in the period from 2001 to 2007, from about 18 percent in 2001 to 22 percent in 2007. The distribution of this variable also changed with many more households moving into an 'unaffordable' housing situation (more than 30 percent of expenditures on housing). Figure 2.2 shows the percentage distribution of households according to the proportion of total expenditure allocated to housing in 2001 and 2007 respectively.

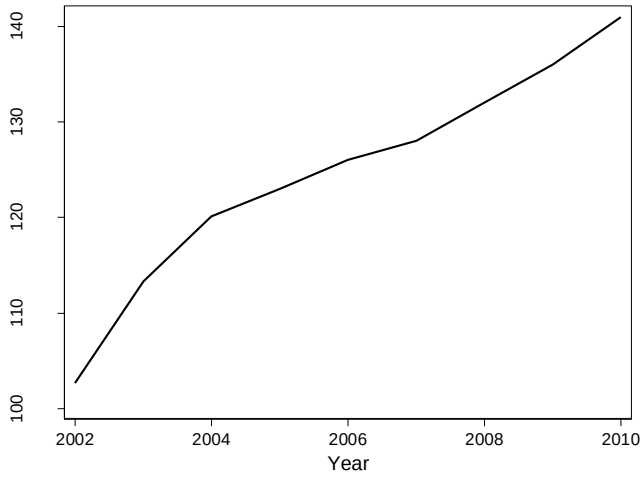
It is also important to note that the increase in the proportion of expenditure allocated to housing during this time period disproportionately higher for low-income households. The increase in such expenditure was as high as 35 percent among the lower income deciles and as low as 10 percent in the highest deciles (Monkkonen, 2010).

FIGURE 2.2 DISTRIBUTION OF HOUSING COSTS AS A SHARE OF EXPENDITURES, 2001 AND 2007

SOURCE: BADAN PUSAK STATISTIK 2001 AND 2007.

The increase in the proportion of expenditure allocated to housing can be disaggregated to changes in housing prices and incomes. There are limited consistent data on housing prices in Indonesia. However, since 2002, Bank Indonesia has published a residential property price index. This index is created from data on new houses built by developers in 14 cities: thus, it must be interpreted with caution, as these houses represent less than half of new supply and thus a very small share of all housing. Nevertheless, it provides the best available indicator of trends in the cost of new housing. Figure 2.3 shows the change in this index, which increased by 37 percent from 2002 to the fourth quarter of 2010, and by 41percent for the category of "small housing" (Bank Indonesia, 2010).

FIGURE 2.3 BANK INDONESIA PROPERTY PRICE INDEX, 2002-2010

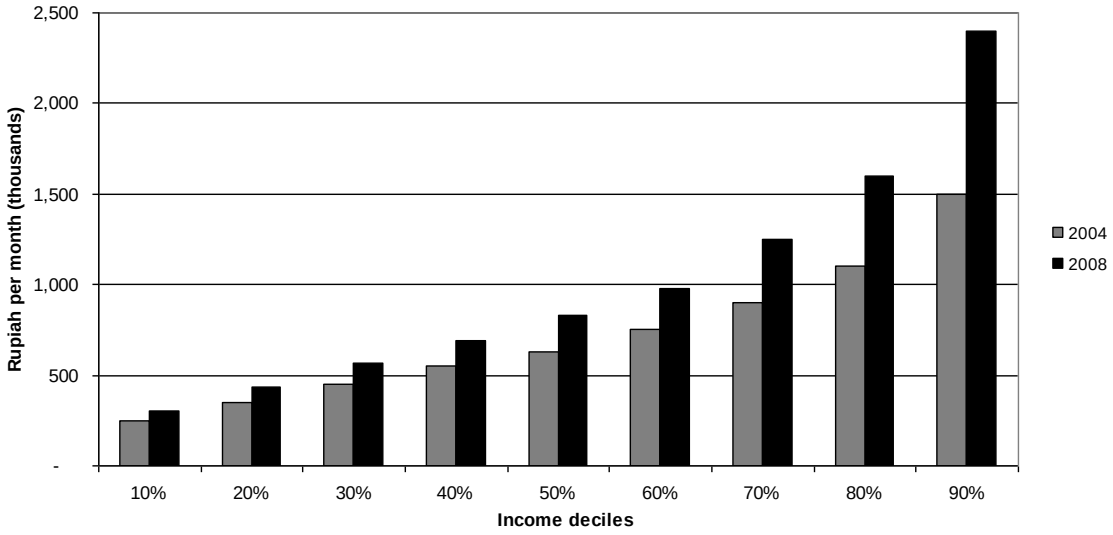


SOURCE: AUTHOR'S CALCULATION WITH BANK INDONESIA 2005 AND 2010

When adjusted for inflation using the consumer price index, incomes in Indonesia rose by a greater share during this time period. However, the increase in average incomes was much higher at higher levels of income. Households in the lower income deciles saw incomes increase only slightly faster than the housing price index. Figure 2.4 describes income deciles from this dataset in 2004 and 2008 (Sakernas 2004; 2008). This figure shows that the median income grew by almost 30 percent, or almost twice the 15 percent increase in the Bank Indonesia property price index over the same period.

However, housing affordability in the Indonesian context is complex and requires further going beyond analysis of rent/income or cost/income comparisons. Only a minority of households are eligible for mortgage loans, due to a lack of formal employment or a consistent income stream. The International Labor Organization recently released a report on the informal sector in Indonesia which shows that approximately 70 percent of employment was informal in 2009, with this share remaining constant since the early 2000s (Nazara, 2010). It should be noted that it is difficult to identify levels of informal employment precisely and that such employment is much more prominent in rural areas (Cuevas et al. 2009).

FIGURE 2.4 CHANGES IN INCOME DECILES, 2004 TO 2008



SOURCE: AUTHORS' CALCULATION WITH SAKERNAS 2004 AND 2008.

As previously stated, the vast majority of households acquire housing through a self-build or other semi-market process. As discussed in this report, of the roughly two million houses that were produced between 2002 and 2007 in urban Indonesia, 72 percent were self-built without a loan (Badan Pusak Statistik 2007). These houses were built incrementally, in a process where land is acquired first and the house is built over time, sometimes over decades. It is a significant challenge to measure affordability in this context, as for the majority of households the important question is access to land rather than the cost of a completed housing unit. Land is sometimes acquired through purchase, so there is a strong connection to housing markets, but it is also acquired through inheritance and squatting.

Additionally, less than half of the small share of households that bought a house built by a developer or a second hand house did so using a mortgage or other type of financing. A full 75 percent paid cash (Badan Pusak Statistik, 2007). Thus, income is only one aspect of affordability, with savings being a stronger determinant of housing affordability.

One final question that must be considered when discussing affordability in Indonesia is the quality of housing. Although the proportion of household expenditure allocated to housing might not be high on average, many

households inhabit a substandard housing unit. To the extent that housing is a merit good with benefits on people's health and happiness, a low rent-to-income ratio in a context of low absolute numbers might not be desirable. In other words, while having to spend a large proportion of income on housing is a heavy burden on households, spending a very low proportion of income on housing is not always good either, if that low amount buys a housing unit of a low quality that negatively affects the health and happiness of the household.

2.4. Disaggregating the Demand for Housing Services

In this section, a simple hedonic regression is estimated for each city in Indonesia in order to unpack the demand for different housing services: its size, building materials, degree of access to basic services like electricity and sewage, and the type of land ownership claim.

Two important characteristics for which data are not available are distance to the city center, and some measure of neighborhood characteristics. The results of the analysis provide information related to the degree of price elasticity of demand for the different characteristics of housing (see appendix C for details about the hedonic regression model used and the coefficients for each housing characteristic).

The size of the house is the most important determinant of its price: its relative coefficient is consistently higher, as it is not a dummy variable like the other variables. For a ten percent increase in the size of a house, the price increases by slightly more than four percent. This coefficient is also quite consistent across most cities, dropping only in the urban towns.

Residents of larger cities are more willing to pay for higher quality houses. The price elasticity of demand for most aspects of housing quality – private toilets, permanent walls and non-dirt floors – is greater in larger cities.

BPN titles were associated with higher housing prices. In terms of land ownership claims, houses with any form of non-BPN title are significantly less valuable than houses with BPN title. Of the different non-BPN claims, a purchase receipt is generally the most valuable.

Houses with the *Girik*, or customary/traditional claim, actually have a lower price premium than those with no claim at all. This is probably due to the legal difficulty in registering *Girik* properties.

Surprisingly, the value of a non-dirt floor is roughly similar to that of having access to sewage. However, it should be noted that the prevalence of several of these characteristics is high, such as permanent walls and roof and electricity, as they are relatively easy to obtain. Thus, the price difference between houses with and without these characteristics is not expected to be large.

2.4.1 Income Elasticity of Demand

The income elasticity of demand for housing refers to the rate at which the proportion of expenditure on housing increases as incomes increase. Details of the regression model and the sources of data used for this analysis are provided in the appendix D.

The results of the analysis suggest that, while there were many dramatic changes in Indonesia between 1978 and 2001, including financial and political crises, the relationship between income and housing expenditure changed surprisingly little. The income elasticity of demand for renters changed by much more than for owners. However, the renter population is less stable and less accurately defined.

In the period from 2001 to 2007, however, there was a significant drop in the income elasticity of demand for housing, i.e. higher-income households were not spending as much more on housing than lower-income households as they had been before. This could result from several possible scenarios. Given that these are cross-sectional models, the change tells us that either i) lower-income households spent relatively more on housing in 2007 than in 2001; ii) upper-income groups spent relatively less; or iii) both.

Elasticities are still high by international standards (though rent-to-income ratios are not) and consistent with the observation that higher-income households dedicate a larger share of their expenditure to housing than lower-income households do. A high cross-sectional income elasticity of demand for housing also implies that housing occupied by low-income households is

affordable relative to housing occupied by high-income earners. However, this is likely due in large part to significant differences in quality.

III: HOUSING POLICY AND LAND ADMINISTRATION

KEY MESSAGES

This chapter explores housing policy and land administration in Indonesia. This chapter provides details on the cross-sectoral, and relatively complex, institutional framework in place to support the housing sector. An overview on the history of housing policy in Indonesia is given in Appendix E.

An important component of housing policy reform in Indonesia will be the reform of land policy and administration. Land is perhaps the most important input to housing, and land administration was found to be the most burdensome constraint on housing development. This chapter notes that the assembly and subdivision process could be streamlined in a number of ways. With regards to the informal, incremental development process by which most households build a house, issues regarding the land registration system seem to be exacerbated by two factors: lack of information and redundant procedures and institutions and/or other actors. The land registration system could become more efficient by simplifying the procedures, and through subsidization and mass regularization programs such as PRONA.

3.1 THE INSTITUTIONAL STRUCTURE OF HOUSING POLICY AND LAND ADMINISTRATION

Improving the performance of the housing sector is a complex undertaking that requires many different but complementary initiatives. Strengthening the administrative, legislative and regulative frameworks to guide and support the development and implementation of housing area is vital (Agus et al, 2002; Buckley and Kalarickal, 2006).

Recent housing studies have increasingly focused on the role of and interaction between institutional factors affecting the output and quality of housing (see, for example, Keivani and Werna, 2001; Glaeser et al 2005; Quigley and Rosenthal, 2005, Adams, 2008). There is emerging evidence that inadequate

and inappropriate regulatory policies may reinforce other factors that contribute to the incidence of urban housing informality and exacerbate high prices (Henderson, 2007; Biderman et al, 2008).

Housing is predominantly supplied outside of formal channels in Indonesia. However, understanding the institutional framework of the housing sector is important, as it defines a set of rules that forbid, permit, or require manners of housing production, consumption, and exchange.

In a housing context such as Indonesia's, land is especially important. The majority of households access housing through informal, self-build processes, following the acquisition of a piece of land on which to build. Thus, in addition to an analysis of the institutional framework that regulates housing policy, the analysis below identifies key players in Indonesian land administration and examines the policies and processes that shape the Indonesian urban housing sector and land development. A more detailed analysis of the evolution of the institutional framework is provided in Appendix E.

3.2 The Institutional Landscape

A multiplicity of institutions involved in housing report to the President of Indonesia; the President's involvement reflecting the government's level of commitment to the development of housing. In 1999, responsibility for matters related to housing was transferred to the new Ministry of Settlement and Regional Development. Matters related to housing remained the responsibility of this ministry until the appointment of President Susilo Bambang Yudhoyono in 2004, when he re-established the State Ministry of People's Housing (Kemenpera).

The main task of Kemenpera is to assist the President in the coordination of and formulation of policy related to housing issues. In addition, Kemenpera is responsible for management of some state property and the monitoring, and evaluation of the housing sector. Kemenpera is also tasked with the implementation of housing provision and neighborhood development policy. The vision statement of Kemenpera is: "Every family living in a habitable house".

Through Kemenpera, the Government of Indonesia also has a number of specific policies intended to benefit low-income groups (*Masyarakat Berpenghasilan Rendah,* or MBP), which are differentiated according to household income level. The nature and form of the assistance provided by Kemenpera either for credit-related or non-credit-related schemes for different income groups is summarized in Table 3.1.

However, matters related to the development of housing and settlements are not the exclusive responsibility of Kemenpera, with various other ministries having similar or related tasks, according to the nature of their portfolio. Thus, there is some overlap the division of functions, tasks and responsibilities between these ministries. For example, the Directorate General of Human Settlement (DJCK) in the Ministry of Public Works is tasked with the formulation and implementation of policy and technical standards related to building and construction, including for housing and settlement.

In addition to central government bodies, local governments have responsibilities related to housing and settlement affairs. Their role has expanded over time, especially following decentralization. Under the local autonomy law, the responsibility for matters related to housing was devolved to local governments. In 2007, new government regulations specifically made housing the responsibility of local governments, with the central government tasked only with the provision of support to local governments.

TABLE 3.1 KEMENPERA ASSISTANCE FOR LOW-INCOME GROUPS

Household income (Rp/month)	Provision type	Housing Assistance		Notes
		Credit-related	**Non-credit related**	
(I) < 350,000	Owned house • Self-help Economic empowerment	Micro-credit for business, housing micro-credit, credit insurance	• Basic infrastructure • Building material • Neighborhood	Poverty alleviation program

(II) **350,000 to 500,000**	Owned house • Formal • Self-help Rental Flat (Rusunawa)	Down-payment subsidy, Interest rate subsidy, Housing micro credit, Credit insurance, Interest rate subsidy for construction	quality upgrading • O & M subsidy • Fiscal incentive • Land certificate and construction permit	People's economic development program
(III) **500,000 to 900,000**	Owned house • Formal • Self-help Rental flat (Rusunawa) Owned flat (Rusunami)	Down-payment subsidy, Interest rate subsidy, Credit insurance, Interest rate subsidy for construction	• Fiscal incentive • Limited basic infrastructure • Land subsidy • Construction cost • O & M subsidy • Land certificate and construction permit	For Rusunami income level up to Rp3 million/ month
(IV) **900,000 to 1,500,000**	Owned house • Formal • Self-help Owned flat (Rusunami)	Down-payment subsidy, Interest rate subsidy, Credit insurance	• Fiscal incentive • Limited basic infrastructure • Land certificate and construction permit	

SOURCE: AUTHOR WITH HTTP://WWW.KEMENPERA.GO.ID/?OP=RENSTRA_KEBIJAKAN&ACT=START&JUDUL=KEBIJAKAN%20PERUMAHAN%20RAKYAT%20BAGI%20MASYARAKAT%20PENGHASILAN%20RENDAH

3.1.2 Institutional Arrangements for the Housing Sector

Housing reinvigorated and potentially empowered: Law No. 1/2011 on Housing and Settlement Area potentially creates a legal framework to advance the development of low-income housing. The following stipulations of Law No. 1/2011are noteworthy:

- The State's responsibility in housing and settlement area affairs is emphasized, with the management of these affairs to be performed by the government either at national or provincial and local levels (Article 5);

- Two new areas are regulated: low-income housing and slum area settlements. Low-income housing is addressed in a section in the chapter on housing affairs, while slum area settlements are addressed in a chapter on prevention and quality improvement of slum housing and settlement;

- Provincial and local governments will have a greater level of responsibility and authority over issues related to housing and settlement areas than central government. The authorities of the provincial and local governments include the authority to coordinate land banking for the development of housing and settlement for low-income groups. The local government (district or city) has the authority to provide infrastructure to build housing for low-income groups (Articles 17 and 18);

- Land for housing and settlement area development is to be the responsibility of central and regional governments, with its delineation in the spatial plan being the responsibility of regional government (Article 105);

- The minimum floor size of a single or row house is set at 36 sq m (Article 22(3)).

The manner in which the new law is implemented will determine its effectiveness. Housing analysts have long pointed to restrictive laws and the lack of an adequate legal framework as a constraint on the Indonesian housing market (Siregar, 2006). There is a lack of regulation in some areas, such as strata titles, contracts, and the transfer of property, while in other areas, existing laws often lead to protracted litigation, creating an artificial scarcity of land and raising prices.

Even though the new housing law opens a new chapter in Indonesia's housing delivery system, multiple institutions with overlapping and unclear areas of responsibility remain. According to Siregar (2006), there are 12 government agencies at the national level that are involved, directly or indirectly, in housing policy. In addition to government institutions, there are other key private sector players that may not be directly involved in policymaking, but are nonetheless

instrumental in the supply of housing. These institutions and their main roles are summarized in Table 3.2.

TABLE 3.2 ROLES OF INSTITUTIONS IN NATIONAL HOUSING POLICY ARENA

Institutions	Main Role
State Ministry of People's Housing (Kemenpera)	To formulate policy and coordinate housing issues, including planning, programs and delivery
Ministry of Public Works (PU)	To promote, develop and ensure building security and safety
Ministry of Home Affairs (Kemendagri)	To support housing affairs as an integrated part of local, regional and national development
National Development Planning Agency (Bappenas)	To promote housing programs to be prioritized in national development plan
Ministry of Finance (Kemenkeu)	To build up fund, coordinate financial institutions, stimulate and develop housing market
Central Bank of Indonesia(BI)	To promote housing bank as a prospective business, coordinate banks to channel loans, provide liquidity loan, determine interest rate
National Land Agency (BPN)	To formulate policy on housing land information and registration, promote security of housing land tenure
State Ministry of Cooperative, Small and Medium Enterprises (Kemenkop-UKM)	To promote and support saving cooperatives to finance housing development
Ministry of Industry (Kemenperin)	To promote and develop industry of building material to support low cost housing
State Ministry of Environment (KemenLH)	To support land administration and management with regard to environment
Ministry of Manpower and Transmigration (Kemenakertrans)	To integrate transmigration settlement to the local and provincial spatial plan
Ministry of Social Affairs (Kemensos)	To support low-income groups and the poor to accumulate and build up resources to finance housing needs
PT. Perumnas	To serve public needs in housing and build up capital to support that purpose

Bank Tabungan Negara (BTN)	To finance development of housing for low-income groups through home ownership credit (KPR)
Real Estate Companies Association of Indonesia (REI)	To enhance the dignity, quality of life of people of Indonesia through strengthening and development of housing and settlements
ASPEK or Association of Cooperative Housing	To develop alternative strategy in housing provision

SOURCE: SIREGAR (2006)

This institutional framework related to national housing policy poses a challenge. The resulting fragmentation of functions can often lead to duplication and confusion within and between institutions, leading to inefficiency and wastage. Over the years, organizations have been restructured and policies have evolved to reflect the Government of Indonesia's continuing commitment facilitating access to housing. A task force on housing would also be a useful tool to improve coordination among different ministries and departments.

The primary role of the central government has gradually shifted from direct involvement in housing to include community-based housing initiatives, with the government acting as a facilitator, enabling housing markets to work, helping local governments and community organizations to provide housing assistance to the neediest families, and taking a leadership role with respect to policy.

3.3 LAND ADMINISTRATION AND POLICY IN INDONESIA

Land administration and policy can be considered separately from housing. However, these matters are such a fundamental component of housing that they should not be ignored. This is especially true in a country such as Indonesia, where the majority of houses are built in a self-help manner, in which the first step of housing construction is the acquisition of land.

3.3.1 Land Rights and their Regulatory Framework

In the period immediately following Indonesia's independence, land titling focused on traditional ownership system, commonly known as *tanah ulayat* and

which is characterized by *hak ulayat,* or customary rights. These rights were those applied locally, allowing customary owners and/or others to utilize natural resources, including land, for their survival. This system has evolved to regulate the relationship between local members of the community and their surrounding natural environment from generation to generation.

a) In 1960, all of those rights were transformed into freehold rights (*hak milik*). This was intended to facilitate a shift in Indonesia's land administration system from a traditional to a modern system. This law, reinforced by another in 1996, recognized modern types of land ownership in Indonesia, including: Hak milik (HM), or freehold right: Available only to Indonesian citizens, such rights apply for life and can be sold or inherited;

b) *Hak guna usaha (HGU), or cultivation right:* The right to utilize the land, this right is held by Indonesian citizens and Indonesian corporations. This title gives such rights for a maximum of 25 years;

c) *Hak guna bangunan (HGB), or building right:* The right to establish a building on land which does not belong to the builder. This right can be given to Indonesian citizens, and corporations located in Indonesia and established under Indonesian law. This title gives such rights to a maximum of 30 years;

d) *Hak pakai, or right to use:* The right to use or exploit land resources directly controlled by the country or people. This right can be given to Indonesian citizens, foreigners who live in Indonesia, and domestic and foreign corporations located and established under Indonesian law. This title can be granted for a specific time period and for specific uses;

e) *Hak sewa, or right to rent:* The right to use the land owned by other people after paying the rental fee;

f) *Hak membuka tanah or land clearing right and Hak memungut hasil hutan or forestry extraction right:* These can only be granted to

Indonesian citizens. Such rights have limited direct relevance to housing issues.

In addition, Law No. 25/2007 regulates land rights related to investment. Such rights apply for different periods and can be held by individuals or organizations. Under this law, HGU can be granted for a maximum of 95 years, with an initial period of 60 years, which can be extended for an additional 35 years. HGB can be granted for a maximum of 80 years (with an initial period of 50 years, which can be extended for an additional 30 years). Meanwhile, the right to use title can be granted for a maximum of 70 years (with an initial period of 45 years which can be extended for an additional 25 years).

Land for housing and residential development mostly involves HM and HGB. On the other hand, HGB can be granted to developers for the land on which they build houses to be sold to individuals. After purchase by qualified individuals, the HGB title can be transformed into a HM title.

Land acquisition in Indonesia is unusual when compared to other countries because the location or development permit must be obtained *before* land is acquired by a developer. This is problematic for two reasons: it stalls development as land purchase agreements are negotiated; and landowners within the area approved for development can be forced to sell land for a lower price as they cannot develop their land under a location permit for other uses.

3.3.2 The Institutional Structure of Land Administration

At the beginning of the decentralization era in Indonesia, it was strongly debated whether land administration should be decentralized. A 1999 law stated that land administration was an area of government responsibility that should be transferred to provincial and local governments. However, since 2001, the central government has reclaimed its authority over land administration.

There are several reasons for the re-centralization of land administration[5]. First, the two-year experiment in decentralization showed that the institutional

[5] President Decree No. 10/ 2010 states that land administration is still the responsibility of the central government. However, Law No. 32 (2004) on Regional Administration

capacity of local governments to implement land administration is relatively low (Rieger, Djalal et al. 2001). Several interviews also indicated that the decentralization of land administration might result in varieties of land certificate that would not be transferrable across regions. In addition, it is argued that land is an important foundation for the existence of a country and that therefore, institutional arrangements for its administration should be unified.

Generally, the formulation and implementation of land administration policies are conducted by the National Land Agency (BPN). In the past, BPN was part of the Ministry of Home Affairs. Later, it was established as an independent state ministry. From 1993, Head of BPN was designated as State Minister of Agrarian Affairs. From 2002 onwards, BPN has been a non-ministerial central institutions (LPND). As such, it is directly responsible to the President through a minister. In general, the tasks of BPN are to formulate and to coordinate land policies, plans and programs and to guide, monitor and control land administration.

According to Presidential Regulation No. 10/2006 and Head of BPN Regulation No. 4/2006, BPN is one of only a few centralized institutions in Indonesia that does not directly coordinate with local governments. All regulations related to land administration are uniform and apply to all parts of the country. The regulations and policies are made only at the central level, with the lower levels being required to comply with central level policy.

In the implementation of duties related to land administration, local BPN offices tend to follow instructions issued by central office. The national or central level is responsible for formulating national policy and guiding land administration and management at provincial and local levels. The regional offices or *Kantor Wilayah* (Kanwil) are responsible for guiding, monitoring and evaluating land administration and for coordination at the provincial level. BPN's

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continues to follow its predecessor, which is Law No. 22 (1999), stating that land administration is one of government tasks that are transferred to local and provincial governments.

local/municipal/district offices, or *Kantor Pertanahan* (Kantah), are the point of contact for the provision of services to the community.

3.3.3 Land Policies and Programs

BPN applies various programs to encourage land acquisition and to facilitate land rights administration. First, in order to facilitate land registration, BPN conducts an adjudication process, the initial process for land registration. Every parcel of land needs to be verified through such an adjudication process, so it can be mapped facilitate certification.

BPN conducts a number of national programs, including SMS, Larasita, Prona, and land consolidation programs. Table 3.3 presents a summary of these four national programs for the acceleration of land registration.

TABLE 3.3 NATIONWIDE PROGRAMS FOR ACCELERATION OF LAND REGISTRATION

Program	*Aims*	*Target Group*	*Procedure*
Sertifikasi Massal Swadaya (SMS)	To reduce cost for survey and measurement	Low-income groups	Local community leaders (e.g., lurah) coordinate collective registration process with BPN office.
Layanan Rakyat untuk Sertifikasi Tanah (Larasita)	To improve the access of low-income people to land registration services	Low-income groups in remote areas	BPN officers visit villages, usually in cars. Service functions like regular counter at BPN offices.
Proyek Operasionalisasi Nasional Pertanahan (Prona)	To subsidize land registration in designated regions	Low-income people, social and spiritual corporations	The central government selects target regions. Local BPN and kelurahan plan and organize large scale land registration.
Land consolidation	To facilitate rearrangement and reuse of land and provision of basic infrastructure; to improve quality of	Unplanned or degraded areas	Initiated either by citizens or government. Inhabitants temporarily relocated. Usually redeveloped to rusun or landed houses with

	local environment		improved infrastructure.

First, SMS (*Sertifikasi Massal Swadaya*) is a form of collective registration that can be initiated by the community. SMS applications can be coordinated by local community leaders, such as *lurah* or heads of neighborhood associations (RT/RW). It is regarded as an efficient procedure to achieve the registration of land for low-income housing because this collective and participatory arrangement reduces operational costs for surveying and measurement.

Another important program is Larasita (*Layanan rakyat untuk sertifikasi tanah*), or the mobile service counter for land registration. Officials visit villages directly in order to facilitate access by low-income members of the community to land registration services. Thus, Larasita is aimed at accelerating individual land certification. Operationally, this program deploys motorized vehicles to facilitate access by members of communities in designated remote areas.

Prona (*Proyek Operasi Nasional Pertanahan*), or the National Project for Land Registration, is a large scale land registration project. It aims to encourage low-income people in designated cities to register their land. In addition, social and spiritual organizations that use land for houses of worship; nursing homes and orphanages; and veterans, public officers, TNI and POLRI offices and pensioners, and their spouses, have the right to register land through this project.

Officially, the services provided through Prona are free of charge, with funding made available through the national budget system. However, this funding only covers the registration fee. The applicants still need to pay associated tax (BPHTB). In practice, there are a number of inconsistencies in the implementation of Prona. While the regulations clearly states that registration does not require the payment of a fee, kelurahan officials still collect fees, often

setting these fees in an arbitrary and unclear fashion. With the autonomy of the *desa,* it is difficult to control this practice.

Land consolidation is also aimed at facilitating the land acquisition process. Land consolidation can be defined as the rearrangement, reauthorization, reuse and provision of land for development purposes, improving the facilitation of environmental quality and the sustainable maintenance of natural resources through active community participation. Land consolidation is a land development modality endorsed by BPN. Self-help consolidation can be initiated by a community or group to restructure irregular parcels of land. The land consolidation is directly carried out by BPN and takes up to 210 days to process.

3.3.4 The Regulatory Framework for Land Administration

Land markets and land policy in Indonesia are primarily regulated by Law No. 5 /1960 on Basic Agrarian Affairs, which classifies land rights and their attributes. It also provides a framework for land surveying, mapping and registration. Due to the growing complexity of land affairs in Indonesia, Presidential Decree No. 34/2003 recommended a revision on the Basic Agrarian Law in order to build a more adaptive national land policy system. In addition to the laws, the legal framework for land policy and markets is also through a number of government regulations, presidential decrees, and instructions issued by various ministers, including the Minister of Home Affairs Regulation, the Minister of Agrarian/Head of BPN Regulations, and the Minister of Agrarian/Head of BPN Decrees.

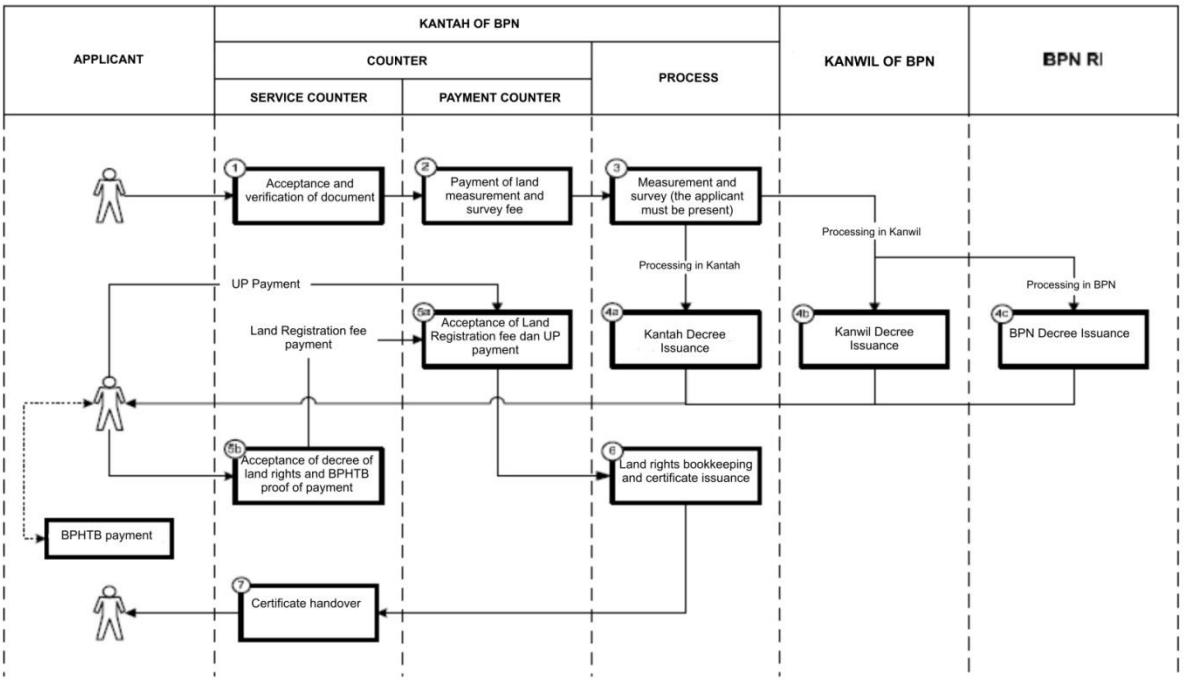
Land registration refers to a series of activities, including collecting, processing, bookkeeping, and presenting and maintaining of physical and juridical data in the form of a map and list, on parcels of land and unit of flats (*rusun*) (BPN 1997; Government of Indonesia 1997; BPN 1998; Government of Indonesia 1998; BPN 2010). The procedure for land registration generally consists of measurement and survey, processing at BPN, fee payment, and certificate issuance. This procedure applies for various different types of land rights, including HM, HGU, HGB and HD titles.

People tend to prefer freehold rights because such a title provides highest security of tenure. This is mostly applied for by individuals whose houses are

built autonomously (self-help housing). Meanwhile, for formal housing, land registration is usually prepared by the developers. The people who buy such land and houses usually obtain HGB titles, although they can then upgrade their HGB title to a freehold title.

The titling procedure required to establish freehold rights is illustrated in Figure 3.1. The process may take from 38 to 97 days, depending on the area in which the land parcel is registered.

FIGURE 3.1 OFFICIAL PROCESS FOR LAND TITLING/ REGISTRATION



SOURCE: *BPN, 2010*.

To conduct a more in-depth review of how these policies are applied in practice at the city level, Appendices F and G provide two case studies that review the process of formal and informal housing production and land administration and titling processes in Semarang and Manado.

IV. HOUSING FINANCE

KEY MESSAGES

This chapter discusses housing finance and finds that, while the formal banking system is relatively healthy, it has not been very successful in meeting the needs of the poor. Loans are repaid in eight years, on average, even for longer-term mortgages. Default rates are low, and lenders are risk-averse. Unlike in other countries, pension funds are not highly exposed to risks of the property market. These suggest that the formal system may not need urgent intervention, and efforts to extend housing finance should strategically target the poor.

The microfinance system is also reviewed, as a growing network of microfinance institutions is in place that makes finance available to the low-income market segment. This finance is not backed against home asset collateral, and for this reason might have higher interest rates to factor in the default risk. However, these loans are used for housing improvements or extensions, which may allow adult family members to remain in their original households for longer while they save capital to be able to form their own households. This system may be a more realistic point of origin for low-income housing finance. Strengthening these organizations, reducing some of their financial risk, while strengthening information systems about informal incomes, could go further in helping the poor access financing for housing.

It is important to note that the lack of data and analytical work or evaluation related to the housing finance sector creates challenges for policy formulation. While low-cost housing should be the most readily documented sub-sector in the housing industry, no agency or institution is responsible to compare bank lending portfolios or data on the effectiveness of subsidy targeting. This should be a future area of focus for the government.

4. 1 OVERVIEW

The Government of Indonesia has been heavily involved in the housing finance sector throughout the country's history. From the late 1970s until the financial

crisis of 1997, the mortgage interest rate subsidy program (KPR) formed the cornerstone of the government's housing policy. Through this program, the government provided assistance for the purchase of between 50,000 and 100,000 housing units per year. Financial sector reform in the late 1980s relaxed rules governing banks and lending. This reform led to a proliferation of new banks entering the market. It also led to a boom in real estate-related loans. However, it did not lead to a boom in long-term lending for housing.

Since the financial crisis, there have been several major changes in the housing finance sector, including two shifts in the subsidy system in 2005. The first of these involved a shift in the way in which housing subsidies were delivered. A down-payment subsidy was introduced and, rather than subsidizing liquidity credit for banks as the KPR program had done, the government began subsidizing selected loans. The second change was intended to broaden the subsidy delivery mechanism to privately owned banks, although this goal has only been partially achieved. A third change is more recent. A Housing Finance Liquidity Facility was established in 2010. This facility operates as a revolving fund to support subsidized mortgage lending.

Although the role of state banks in the provision of housing finance has changed considerably since the crisis, these banks still play a major role, especially for low-income households. In fact, the proportion of mortgages held by state banks in terms of value is roughly the same as privately owned banks. However, on average, the state banks grant much smaller average loans, so the actual number of loans facilitated by these banks is significantly greater than that facilitated by private banks. In particular, the government-owned Bank BTN has traditionally been a channel for the provision of housing subsidies, and remains so today.

In spite of some positive developments in the housing finance sector, the vast majority of Indonesian households do not qualify for housing finance. Rather, the majority of these households acquire housing through self-build, informal housing. The mortgage market still lags behind the overall economic development, although the value and volume of residential mortgage loans have

been increasing quite fast, at a rate of between 20 to 40 percent per year from 2005 to 2010.

Mortgages accounted for close to 9 percent of the total value of Indonesian banks' portfolios in 2010. However, relative to the size of the economy, the sector remains small. The total combined value of current housing loans was estimated to stand at only IDR 150 trillion in September 2010, representing a mere 2.3 percent of GDP. This is still lower than the pre-crisis level, when the figure stood at 3.1 percent. It is also much lower than the figure in comparable countries: for example, the proportion in the Philippines is more than twice as large. Moreover, government subsidized housing finance programs suffer significant problems with targeting. Although intended to facilitate the provision of low-cost housing, they do not seem to benefit households earning below the median income level.

4.2 Structure of the Mortgage Industry

As a result of reforms in the banking sector and of changes in the government's subsidy system and role in housing finance, the level of participation by commercial banks in the provision of housing finance has increased significantly. Though commercial banks now hold a similar share as the main state bank in terms of the value of loans, the government continues to play a more influential role in Indonesia's housing finance sector through its subsidy programs. The state bank continues to dominate the market in terms of the number of loans. This differentiation is particularly significant in an analysis of the housing finance sector as it pertains to low-income housing, as the differences in loan sizes offered by varying financial institutions can be significant.

Reforms have been enacted in three areas of the housing finance sector, although further actions may be required to reinforce and strengthen these reforms. These three areas are:

- Mortgage rights,
- A partial credit information system, and
- A credit management system.

MORTGAGE RATES

In theory, a 1996 law provides the required legal security to lenders, with mortgagees giving issuers the right of direct power of sale in case of default. At the same time, debtors' rights are safeguarded by the obligation on financial institutions to sell repossessed properties by public auction to ensure fair prices. In practice, however, lenders often continue to utilize judicial mechanisms to circumvent debtors' resistance. The cost of registering mortgages means that financial institutions tend to accept simple powers of attorney that only allow them to formalize a security right when it needs to be enforced. Banks generally strive hard to avoid foreclosure and seek alternative solutions such as alternative mortgage payment collection and social pressure on the homeowner. This contributes to relatively low delinquency and default rates.

DEBTOR INFORMATION SYSTEM

A partial debtor information system is now in place in Indonesia. In 2006, the Bank of Indonesia established a credit information bureau, known as the *Biro Informasi Kredit* (BIK), which is intended to serve as the cornerstone of Debtor Information System (SID) network. All commercial banks and some large finance companies are expected to participate in this scheme. All loans must be recorded in the system, without any declarative threshold. BIK collects and provides both positive and negative information, including repayment history. Online access to the system is available. However, many shortcomings limit the system's efficiency: (i) it does not necessarily include data from multi finance companies and micro finance institutions, which may participate but are not required to do so; (ii) its operational capacity is insufficient. The extension of the system to facilitate the inclusion of data from non-bank financial institutions is currently being considered.

The appraisal industry organization's participation supports the credibility of this system. Either as a result of formal regulation[6] or self-regulation, licensed appraisers must generally comply with professional standards, selective

[6] BI regulation of independent valuations for secured loans above a certain threshold, BAPEAPM requirement of code of conduct, MOF requirements

certification processes, and systems of ethics. The main challenge to the accuracy of valuations relates to access to market information. In addition, appraisers note that, at times, banks use internal appraisers to assess the value of properties in cases the bank has a relationship with the developer, causing a potential skewing of price valuations.

Credit management systems

Credit risk management is fairly sound overall, although the types of loans originated adds a layer of risk. Banks demonstrate caution in their risk management policies and loans are mostly granted to holders of freehold titles. Ability to repay is a key criterion, and is not only assessed through debt-to-income ratios, but through budgetary estimates. However, one result of this prudence is banks' tendency to focus on providing loans to salaried workers. This is an obstacle to the expansion of access to housing credit for a large proportion of Indonesians employed in the informal sector. Also, debt payment to income ratios can be very high in government programs, a cause of concern and an obstacle to the expansion of the provision of finance to low-income earners.

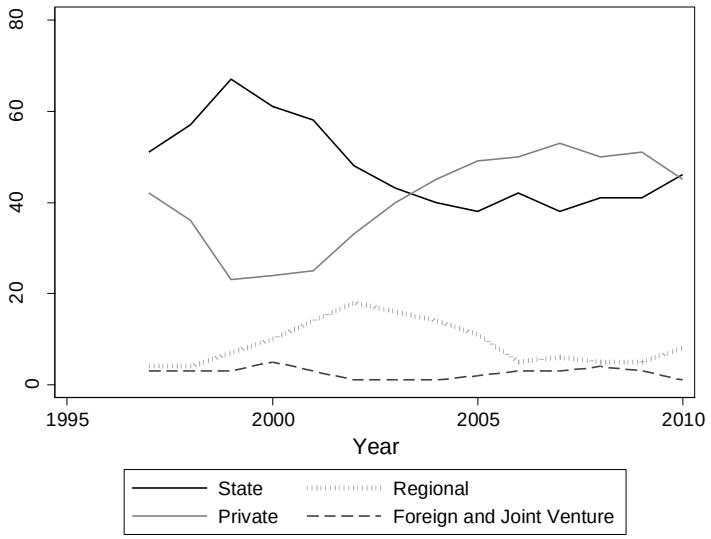
The main weakness in credit management lies in the use of powers of attorney to create mortgages rather than by actually registering the mortgages. This creates legal uncertainty. Furthermore, there does not seem to be much attempt to develop expertise in the assessment of risks associated with informal sector borrowers, starting with a capacity to indirectly measure undocumented incomes. As a result, a significant proportion of households do not have access to housing finance.

Indonesia's Central Bank, Bank Indonesia (BI), has developed a risk-based approach based on supervision. This system provides a better capacity to adjust to evolving contexts than do set regulations. A recent example involves the issuance of a guideline to limit loan to value ratios to 70 percent, as compared to 90 percent previously, an adjustment that reflects concerns regarding real estate values and increased interest rates. Also, BI initiated the construction of the main housing price index in Indonesia, a necessary tool for monitoring the real estate market. As a result, mortgage NPL ratios have been stable in the

range of 3 percent to 4 percent since 2002. Even in the case of BTN, which serves lower income segments to a significantly greater degree than the industry average, delinquencies stood at only 4 percent at the end of 2010.

Figure 4.1illustrates the changing proportion of total mortgage credit according to the type of bank. Not surprisingly, private banks share of the mortgage market fell rapidly and significantly after the financial crisis in 1997, due to a high default rate and a lack of willingness to issue new loans. Thus, the overall value of outstanding loans also fell significantly during these years, to only IDR 12 trillion in 2002.

FIGURE 4.1 SHARE OF TOTAL MORTGAGE CREDIT BY BANK TYPE, 1997-2010



SOURCE: BANK INDONESIA.

According to the Pusat Studi Properti Indonesia (2005), of the roughly 200,000 units of single family housing that were built in 2005, more than 120,000, or 60 percent, were financed by BTN. Moreover, the value of individual units in this sector was on average much smaller than that of the commercial development of multi-family housing, which are mostly high-end shop houses and apartment buildings and which include far fewer actual housing units. It is also important to note that the overall value of the outstanding loans for housing has grown substantially in recent years. In 2005, this value stood at roughly IDR 50 trillion:

by January 2011, according to Bank Indonesia, this had grown to almost IDR 150 trillion.

4.2.1 Mortgage Instruments

There are three basic types of mortgage products in Indonesia. Loans that are issued under the subsidy program are provided as fixed-rate loans. This is also true of Sharia products, which represent a small but growing share of the market. By contrast, non-subsidized loans are generally adjustable-rate mortgages (ARM). Interest rate adjustment on the ARMs is not capped and is at the discretion of the lender, although most banks use movements in Bank Indonesia Certificates (SBI) as guidance. Adjustments of rates have been significant in the past and can impact the level of non-performing loans to a high degree.

Mortgage loans are extended for maturities of up to 20 years, but often actually run for far shorter periods as it is a common practice for borrowers to prepay. Because of funding constraints, interest rates are generally adjustable according to the lenders' cost of funds, which can translate into a credit risk in stressed financial market conditions. Loans with an initial period at a fixed rate also exist, but at a higher rate. According to a recent survey (NORC, 2008), a large majority of households would prefer fixed rate loans.

In spite of the continuing and significant decline in Bank Indonesia's benchmark interest rate, from 12.8 percent in 2005 to 6.5 percent in 2009, interest rates on non-subsidized mortgages have not dropped dramatically since 2005. After decreasing from around 20 percent during the early 2000s to around 15 percent in 2005, they are now around 12 or 13 percent.

Loan term mortgages in the non-subsidized market can vary from 8 to 20 years, though the average loan tenor is only eight years. Down payments vary depending on the borrower but are generally between 20 and 30 percent. Details on structure and rates of subsidized loans are presented in Section 4.4 below.

Previous analysis of the mortgage products available in Indonesia points to a significant problem of bifurcation in the market (Hoek-Smit, 2008): mainstream banks are generally reluctant to offer loans to a value of less than IDR 100 million, which limits their lending to roughly the richest 10 percent of urban households. The subsidized system has upper limits in the size of loans mostly capped at IDR 55 million. Thus, there is a large segment of unmet demand for housing finance between those values, which in turn leads to increased demand for subsidized loans.

4.2.2 Housing Finance Institutions

BANK TABUNGAN NEGARA (BTN)

The mortgage system in Indonesia has a long history. The Dutch colonial government set up a bank called *Postspaarbank* in 1897, which in 1950 was re-established as Bank Tabungan Pos by the independent Indonesian Government. In 1963, this bank later changed its name to Bank Tabungan Negara (BTN). BTN has operated as the sole provider of housing finance for low- and middle-income groups since then, in spite of attempts to expand the provision of housing subsidies through other banks in recent years. In 1989, the bank was partially privatized and began operating as a commercial bank. It issued the country's first corporate bond and in 1994 obtained the required permits to operate as a Foreign Exchange Bank. In 2002, the Government realigned BTN to focus on the provision of commercial housing finance.

Although BTN's role in the housing finance sector has declined since the 1997 crisis, it remains the largest housing lender in Indonesia, with 26 percent of the mortgage market. BTN is the eighth largest bank in the country in terms of total loan portfolio size and the tenth largest in terms of total asset size. A majority stake in the bank is still held by the Government of Indonesia, which owned almost three quarters of the shares in 2010. Its share price has been steadily increasing since the IPO in December 2009. The shares held by the public are roughly evenly split between domestic and foreign investors.

BTN suffered near collapse in the 1980s, due to significant problems with recovery: at the end of the decade, roughly 25 percent of loans were more than

18 months overdue. For a number of reasons, loans were made primarily to civil servants. There was little incentive for borrowers to repay loans and it was politically difficult to enforce collection. After the banking reform in 1988, private banks began entering the market. BTN shifted its focus to smaller and subsidized lending, as private banks began to provide an increased share of loans to high-income borrowers.

In spite of major reforms, BTN continues to dominate the market for subsidized housing loans, issuing 97 percent of such loans in 2010. With a 27 percent market share, by 2010 it had nearly regained the relative position it held in 2003. This results from dominance in the distribution of subsidized housing loans, 97 percent of which are made by BTN, with only two other banks having some presence in this sector. Today, roughly 65 percent of BTN's market share involves loans to borrowers in Java, with 45 percent in the Jakarta Metropolitan Region. The remainder is spread out in the country, mostly in Java and in rapidly growing areas in Sumatra and Kalimantan. Most lending is for landed houses in newly developing suburban locations.

Microfinance Institutions

MFIs provide a large number of small consumer loans, some of which are used for the upgrading of housing but not necessarily designed or recorded as housing finance. There are two main types of microfinance systems intended for housing. The first is a set of not particularly successful government-led housing microfinance programs, while the second is a microcredit product issued by BRI, the largest MFI in the country, which is explicitly intended for housing.

There are two Kupedes BRI products that are used for housing, though neither one is technically a mortgage since property is not held as collateral. One is underwritten simply on the recipients' income or cash flow, as with any micro-credit product. The other holds the property deed as security, even though the house cannot be foreclosed on in case of default. In this case, the holding of the property deed is mainly symbolic. These loans are geared towards financing home improvement or the expansion of a property for renting. A survey of BRI clients from 2001 showed that while only six percent of Kupedes loans issued to borrowers in Java and Bali were used for housing, almost 30 percent of such

loans to borrowers outside of these areas were used for that purpose (BRI and Harvard Kennedy School, 2001). It seems that in Java and Bali, there is a greater degree of competition among MFIs.

The development of micro-finance products for housing has great potential to improve conditions for low-income households in Indonesia, as MFI's delivery network and institutions are well-developed. Expanding liquidity in the sector should be a priority. However, it should be recognized that without an improvement in land and property rights management, the sector will be limited.

Other actors

Secondary Mortgage Corporation

Motivated by a need to expand funding sources for housing and also the need to stabilize sources of funding for BTN loans when funding from Bank Indonesia runs out, a Secondary Market Facility, operated as a government enterprise under the Ministry of Finance and known as PT Sarana Multigriya Finansial (PT-SMF), was created by the government in 2005. The SMF is intended to serve as a source of funds for all banks and financial institutions that provide loans for housing by raising funds from the public through short- and long-term obligations. It was initially established with a capital of IDR 1 trillion, but is permitted to grow this capital to IDR 4 trillion through outside investment.

The venture experienced a slow start due to regulatory constraints, particularly regulations mandating an initial limitation of the maturity of refinance loans and a waiting period of three fiscal years before tapping the bond market. However, the SMF is progressively developing its activities and outreach, with the total value of outstanding long term refinancing loans amounting to IDR 1.6 trillion by the middle of 2011. In addition, the SMF has been involved in securitization deals for BTN. Its interventions mostly targets below median housing loans, with an upper limit of IDR 150 million per loan. As a market developer, the SMF is working to develop a housing buyer education program. It has also developed training materials for lenders that emphasize critical underwriting and documentation processes.

In order to achieve its goals, the SMF is permitted to purchase financial assets linked to mortgage cash flows, to issue mortgage-backed securities (MBS), and to implement other actions including the provision of credit enhancement mechanisms, training, education, and technical assistance to the housing finance sector. A securitization framework has been developed, enabling BTN to launch Indonesia's first Mortgage Backed Security in February 2009. Unfortunately, this first attempt was not successful, although three further attempts fared better and raised more than IDR500 billion. PT-SMF has played a significant role in promoting the instrument, by acting as arranger, credit enhancer and standby investor.

The Liquidity Facility

In October 2010, the Ministry of People's Housing developed and introduced a new housing finance funding program. This program is known as the Housing Finance Liquidity Facility (FLPP) and is being implemented by a new government entity, the Public Service Body for Housing Finance (*BLU Pembiayaan Perumahan*). The system is a shift from the previous one, in which housing subsidies were issued to households through interest rate buy downs or down payment assistance.

The FLPP is effectively a fund created to finance subsidized mortgages, with the goal of increasing liquidity in lending for "low-cost" housing. Funds are made available to banks at 4.5 percent for 15 years, and banks combine these funds with their own to issue 15 year fixed-rate loans at interest rates ranging from 8.15 percent to 9.8 percent, depending on the size of the loan and whether it is for a house or apartment. This gap in the interest rates enables banks to earn a market interest rate on the money they contribute. The initial amount dedicated to the fund was IDR 2 trillion. Between October and January, IDR 900 billion was disbursed through this fund.

The chief difference between FLPP and other subsidized housing programs is its source of funds. FLPP is generated mainly (80 percent) from the government budget (APBN/ *Anggaran Pendapatan dan Belanja Negara*), with 80 percent of funding coming from the source and the remainder from bank's own capital. Attempts will be made to secure funds from other institutional investors such as

the social security fund Jamsostek and other social safety net entities. By contrast, KLBI was funded by the Indonesian central bank. Although any bank can apply to disburse FLPP funds, BTN's history and experience in the provision of relatively small mortgages and its relationship with the ministry has led to them managing approximately 95 percent of the FLPP.

Though it is possible to use FLPP loans for the purchase of an apartment, almost all of the loans have gone towards mortgages for houses. The maximum size for mortgages issued under the FLPP is IDR 80 million, whereas for apartments it is IDR 130 million. However, since a typical low-cost unit is pegged at IDR 55 million in other subsidized schemes, this is the most common size of mortgages. Everybody is eligible for only one subsidized loan in their lifetime. Thus, according to BTN, most participants are young couples, public servants, and police and military officers. Income caps for eligibility are set at IDR 2.5 million per month for house loans and IDR 4.5 million for apartments.

The scheme faces several challenges in its implementation and effectiveness. It is not financially efficient to fund loans on fiscal resources: this scarce source of finance should be used to leverage market resources, rather than being invested in houses. Experience shows that revolving schemes are quickly depleted due to price increases. Thus, although one of the goals of the program is to build a sustainable source of funds for housing, whether this will transpire is still not certain. In addition, the low interest rate at which funds are provided to banks will lead to a significant decrease in the real value of these funds.

The only significant user of the fund currently is BTN. The system reinforces this monopolistic situation while securing a high level of intermediation margin[7] – which, however, is partially justified by the increased exposure to interest rate risk for the 60 percent share of lending funded by the bank. The system is theoretically open to any lender, but it does not address any of the issues that deter private sector institutions from developing products for lower income groups. Incentivizing new participants appear all the more important

[7] From 4.25 percent to 5.90 percent.

considering that BTN faces more challenging funding constraints than other banks.

Finally, as with other the subsidy schemes in Indonesia, the FLPP is not likely to push housing finance down to lower income levels. The transaction tax, which is considerable for low-income households, is a major hindrance to success, as is the requirement that applicants have a tax ID in order to access a loan. Previously this was only required for loans over IDR 55 million, but now everyone will be required to have a tax ID card. At present, most low-income earners do not have such a card and in some cases, resist getting one.

4.3 Financial Programs for Low-Income Housing

The main form of subsidized lending for housing in Indonesia in the period from 1980 to 1997 was the mortgage interest subsidy scheme, KPR. BTN was the administrator of this scheme. Under this scheme, Bank Indonesia issued subsidized liquidity credit to BTN for a share of the value of the loan, while BTN issued fixed-mortgages at below-market rates. The share of the subsidy depended on the cost of the unit. Households qualified on the basis of their incomes, according to which housing unit costs and interest rates were set, with the value of loans being tied to certain housing developments. An evaluation of the costs of the scheme, which issued between 50,000 and 100,000 annually from 1980 to 1997, estimated that direct costs and implicit costs were roughly IDR 1 trillion per year (Hoek-Smit and Diamond, 2005).

The outcomes of the program is described above have not met expectations, mainly for reasons linked to the supply side, such as land price constraints that mitigate against the development of low cost housing. The "1-3-6" rule, or ratio of expensive to middle-range to inexpensive housing units aimed at encouraging the development of socially diversified projects, was also unsuccessful in generating a significant supply of affordable housing for lower income groups. Additionally, the financial side has also not been a success, as private banks have shown a persistent lack of interest in providing small loans. For most banks, the minimum threshold for loans appears to be approximately

IDR 150 million, which requires borrowers to earn a monthly income of at least IDR 4 million. Other factors mitigating the success of the scheme include asset liabilities constraints, as explained above, and insufficient capacities, especially in the area of risk management on the part of multi-finance companies and regional banks, which would be the most appropriate channels to serve informal sector households. In addition, the disbursement of subsidies has been affected by budgetary constraints.

4.3.1 New Subsidy Programs

In 2005, after several attempts to modify the structure of the KPR mortgage interest subsidy, the scheme was discontinued and replaced with two Subsidized Housing Loan (SHL) programs. Despite the fact that all mortgage lenders are now eligible to issue subsidized loans, BTN continues to issue 97 percent of such loans. Similar to the KPR system, the subsidies are for first time homebuyers with incomes within a certain range, with incomes determining house prices and mortgage interest rates.

The two types of subsidies are: a) a down payment subsidy in which the government pays a share of the the down payment, and the borrowers pay commercial interest rates; and b) an interest rate subsidy in which the government pays a portion of commercial interest rates charged by the lender.

Table 4.1 shows the characteristics of subsidies available according to recipients income level, for landed housing and apartments. Interest rates for these loans are capped at a certain level, with this level depending on the income level of borrowers and the corresponding loan size. Lower income borrowers are eligible for higher subsidies but are restricted to smaller loans.

TABLE 4.1 INCOME LIMITS AND CHARACTERISTICS OF TWO NEW SUBSIDY PROGRAMS

Building Type	Income (Million IDR)	Subsidy		Maximum House Price (Million IDR)
		Interest Payment	Down Payment	
House				
I	1.7 – 2.5	8.5	8.5	55.0
II	1.0 – 1.7	11.5		41.5
III	≤ 1.0	14.5		28.0
Apartment				
I	3.5 – 4.5	12.3	5.0	144.0
II	2.5 – 3.5	15.9	6.0	110.0
III	≤ 2.5	20.1	7.0	75.5

SOURCE: KEMENPARA.

In the current context, the limits of the micro-finance system in terms of its capacity to provide loans for housing are a strong constraint against the development of loans for self-construction loans and to the informal sector. The Indonesian micro-finance market is large, but housing does not often seem to be the explicit purpose for which credit is provided. Even the major market player, BRI does not offer a micro finance product specifically for such purposes. This gap is detrimental to the government strategy, as housing micro-finance is a cornerstone of self-help programs. Micro finance could provide useful complements to assisted basic signal family houses or help facilitate upwards mobility towards formal housing in need of renovation.

VI. HOUSING PRODUCTION AND REGULATION IN URBAN INDONESIA

KEY MESSAGES

In order to provide recommendations for ongoing policy efforts to reform the housing sector, this chapter takes a closer look at the processes associated with housing production in both the formal and informal sectors. Special attention is paid to the impact of various types of land and building regulations to determine specific problems and to suggest solutions. Several aspects of the formal and informal housing development process are identified as major constraints to the production of affordable housing for low-income families.

For years to come, formal housing will constitute a minority of the total housing production in Indonesia. The majority of the population will access housing through informal, incremental processes. Reform with the goal of facilitating access to housing should attempt simultaneously to facilitate and improve the quality of housing in both the formal and informal housing sectors in Indonesia. With regards to the formal development process, some clear policy reform directions emerge from the case studies of Semarang and Manado, which are provided in Appendix F.

5.1 OVERVIEW

One of the broad conclusions reached in a major review of the urban housing sector in Indonesia in the late 1980s was that although the vast majority of housing (80 percent at that time) was built outside of formal channels through a self-help process, this informal housing production system worked "fairly well" to provide housing (Struyk et al. 1990). More recently, available data suggests that informal, self-built housing continues to produce the majority of housing in

Indonesia, with the proportion adding up to approximately 70 percent in the period from 2002 to 2007. However, this production system seems to be working less well than in the 1980s, as shown by the growing housing deficit.

Formal housing developers produced around 150,000 houses per year on average during the early 2000s (Hoek Smit 2006), compared to slightly less than 100,000 units per year during the late 1980s. Thus, the absolute number of developer produced housing units has been growing as has their share of total supply. However, it is still not the dominant form of housing production. Thus, policy reform should focus on facilitating access to housing through the informal, self-build sector to an equal or greater extent than it focuses on production by developers. It is worth noting that the rate of housing production in the informal sector has been relatively low since the crisis, although to some extent this is likely a lagged impact of the economic disaster in the end of the 21st century.

In recent years, problems with housing affordability and inadequate housing supply have created a need for a review of the housing production system and for intensified efforts to address barriers to the production of housing. Although survey data show that, by international standards, affordability is still not a large problem in Indonesia when measured by rent-to-income or rent to expenditure (Hoek-Smit, 2001; Badan Pusak Statistik, 2007), this measure is subject to a great deal of error in a context where self-built housing dominates and access to financing is limited.

Analysis of data on household formation supports the view of a significant housing supply problem. There was an increase in household size in most cities in Indonesia in the period from 2001 to 2007 (Badan Pusak Statistik, 2001, 2007), in spite of the economic growth during this period. This increase in household size stems mostly from a drop in headship rates, or the proportion of the population that is the household head or spouse, for people in the 18 to 40-year-old group. This figure is especially troubling given the demographic shifts in Indonesia, particularly its growing proportion of young people.

5.2. Housing Production

The number of housing units produced by developers has grown in proportion to the increase in Indonesia's urban population, which roughly doubled in the period from 1990 to 2010. In 1988, approximately 100,000 housing units were produced by formal developers. In 2005, the number of housing units produced by such developers had increased to almost 200,000. In 2009 and 2010, roughly half of the sales of formal houses were for "small houses", which are defined as houses occupying no more than 21 square meters on a 60 square meter lot (Bank Indonesia 2010). It is also important to note that developer-built housing is located predominantly in the larger urban areas, where incomes are on average higher.

The dominant form of housing production in Indonesia remains self-build incremental housing which, according to the 2007 housing module of SUSENAS, was responsible for more than 70 percent of houses produced in the period from 2002 to 2007 (Badan Pusak Statistik, 2007).

Table 5.1 presents information related to the share of owner households who moved between 2002 and 2007 according to the way in which they acquired their house. It should be noted that because house acquisition may involve houses and other than new houses, these percentages do not represent housing production. In the majority of Indonesian cities, a small share of recent movers purchased new housing from a developer or other type of builders. On average, more than half of houses were self-built, with a large share having been acquired through 'other' means, such as through inheritance or as a gift.

TABLE 5.1 HOUSING ACQUISITION METHOD FOR OWNER HOUSEHOLDS MOVING 2002-2007

Acquisition Method	City Category				
	JMR	Large	Medium	Small	Towns
Bought from a developer (percent)	15.0	7.8	9.8	3.5	3.4
Bought new other source (percent)	11.7	9.7	7.4	6.9	5.7
Bought second hand (percent)	19.5	15.5	12.6	16.1	11.2
Self-built (percent)	40.2	52.2	55.4	60.1	63.2
Other[a] (percent)	13.7	14.7	14.9	13.4	16.4

Total	100.0	100.0	100.0	100.0	100.0
Households (thousands)	459.6	911.8	391.9	342.9	349.6

SOURCE: BADAN PUSAK STATISTIK 2007.

NOTES: A INCLUDES INHERITANCE, BEQUEST, ADMINISTRATIVE ALLOCATION AND OFFICIAL HOUSING.

As with other housing conditions and characteristics, the Jakarta Metropolitan Region presents a different picture from any other city in Indonesia. It has a much larger market for houses purchased from developers; a far greater proportion of houses bought 'second hand' or used; and less self-built housing than other cities. The volume of traded second-hand housing is an important indicator of the degree of robustness of a housing market, with a higher volume tending to indicate greater market efficiency. The ability to purchase an older housing unit rather than having to buy a new one greatly expands buyers' options and allows existing owners to trade up rather than having to expand their existing unit. However, in developing countries trade in such houses is often hindered by market failures, including lack of information, lack of secure property rights and credible contracts (Buckley, 1994).

TABLE 5.2 HOUSING ACQUISITION METHOD FOR OWNER HOUSEHOLDS MOVING BEFORE 2002

Acquisition Method	City Category				
	JMR	Large	Medium	Small	Towns
Bought from a developer (percent)	14.9	5.2	7.8	3.4	2.2
Bought new other source (percent)	6.8	3.2	4.5	2.5	3.1
Bought second hand (percent)	12.7	7.4	9.7	7.9	7.3
Self-built (percent)	43.2	64.5	53.1	68.1	68.3
Other [a] (percent)	22.4	19.7	24.9	18.2	19.2
Total	100.0	100.0	100.0	100.0	100.0
Households (millions)	2.6	5.9	2.3	1.9	1.4

SOURCE: BADAN PUSAK STATISTIK 2007.

NOTES: A INCLUDES INHERITANCE, BEQUEST, ADMINISTRATIVE ALLOCATION AND OFFICIAL HOUSING.

In order to understand the changes in significance of different types of housing production, Table 5.2 presents the relative importance of different avenues through which owner households acquired a house, but for those households that have not moved recently. Comparing the share of households in different categories to those in Table 5.1 shows that the overall trend in housing production has been towards less self-build or acquisition through other means such as inheritance or bequest. A greater share of households now acquires housing by purchasing it either new or on the secondary market. One interesting figure is that the production of housing by developers does not seem to have increased by as great a degree of magnitude as other sources of new housing purchase. This is particularly true in the Jakarta Metropolitan Region and small cities, where it has barely increased at all.

5.3. REGULATIONS AND HOUSING MARKETS

Indonesia has one of the most costly construction permitting and property registration processes in Asia (World Bank, nd). Table 5.3 presents a comparison of Indonesia to other Asian countries for two measures of regulatory stringency in the area of housing production: a) obtaining a construction permit; and b) registering property. Although in terms of the number of procedures required or the time it takes to complete the process, Indonesia is not more restrictive than comparable countries such as the Philippines or Malaysia, these processes are much more expensive. In fact, Indonesia is the most expensive country in Asia by far in which to register property and nearly the most expensive place to obtain a construction permit. The reasons for this are documented in this chapter, as is a description of regions where additional extra-legal fees for land registration and building permits are often charged.

TABLE 5.3 STEPS, TIME AND COST OF TWO REGULATORY INDICATORS IN 10 ASIAN COUNTRIES

	Getting a Construction Permit	Registering Property

Country	Steps	Time (days)	Cost[a]	Steps	Time (days)	Cost[a]
Cambodia	23	709	54	7	56	4.4
China	37	336	579	4	29	3.1
Indonesia	**14**	**160**	**195**	**6**	**22**	**10.7**
Japan	15	187	19	6	14	5.0
Korea, Rep.	13	34	136	7	11	5.1
Lao PDR	24	172	144	9	135	4.1
Malaysia	25	261	7	5	144	2.6
Philippines	24	203	82	8	33	4.3
Thailand	11	156	12	2	2	1.1
Vietnam	13	194	248	4	57	1.1

SOURCE: WORLD BANK, ND.

NOTES: A COST IS REPORTED AS A SHARE OF INCOME PER CAPITA.

Strict land-use and building regulations affect housing markets in two ways: a) they increase the price of finished housing (that is produced formally); and b) they make the supply of housing more inelastic. Regulations lead to higher prices directly, through fees, and indirectly, by making the housing production process take longer (and thus adding to cost) or by imposing minimum standards (and thus also adding to cost). As demonstrated in Table 5.3 and corroborated through case studies in the cities of Semarang and Manado, the permitting and registration system for housing development in Indonesia is both expensive and time consuming. When asked about the biggest constraints to housing production, developers in both cities consistently pointed to the land registration and permitting process as one of the two most important constraints. Minimum standards, on the other hand, do not seem to be excessively high, as houses of 21 square meters are common for the lower price brackets.

The other result of stringent regulations in a country such as Indonesia, where enforcement is not strong, is that it leads households to acquire housing through an informal development process (Duranton, 2008; Brueckner and Selod, 2009). Informal housing is a legal status frequently conflated with a production process, as most informal housing is built incrementally through a

self-help process. However, the legal status and production process have different causes and generate distinct problems.

By definition, informality implies that regulations are not being enforced or followed. The colonial origins of Indonesia's complicated land property rights system have been well documented (Leaf, 1993 and 1994). There are several possible types of land and houses ownership claims due to an incomplete implementation of the colonial policy including customary title, titles proven with purchase receipts, transfer papers, and letters from the sub-district or district headman. Nevertheless, an official land title must be registered with the National Land Agency (BPN) to be completely valid and eligible for use as collateral in a mortgage. However, as is documented in the case studies in Appendices F and G, this registration process is costly and time-consuming. Moreover, because documenting property transactions involves the payment of several fees, formally registered property frequently loses this status when it is sold.

Informal housing refers to both a legal status and a production process. Housing quality is improved over time and more rooms are added and, generally, more secure land titles are eventually acquired. Incremental building of self-help housing provides households with shelter at a low initial monetary cost with the flexibility to expand in size over the longer term depending on the availability of funds and the evolving needs of the household. However, it can be constrained by access to land, financing, infrastructure and services among low-income households and the fact that homebuilding companies cannot build housing that would be affordable for much of the population.

In order to examine the importance of BPN title relative to other forms of property rights, hedonic price regressions were run separately in each of the 90 Indonesian cities with a population of more than 100,000 using data from the SUSENAS (Badan Pusak Statistik, 2007). The natural log of housing price was regressed on a number of house characteristics, including size, infrastructure access, materials of construction and dummy variables of different land ownership claims. Appendix C provides details on the price regressions. In

almost half of the cities examined, the price premium associated with having a BPN title was not higher than either that associated with *Hak Girik* rights or the purchase receipt, demonstrating the success of the informal property rights system in these places.

VI. CONCLUSIONS AND POLICY IMPLICATIONS

The housing sector is extremely important for the economic, social and environmental health of a nation. In direct economic terms, the contribution to GDP of the real estate and housing finance industry can be substantial, if properly managed. In addition, the manner in which houses are built characterizes the manner in which cities are built, according to how neighborhoods are planned determining local urban environments. Cities that are well organized can leverage agglomeration economies to achieve benefits for community members, while those that are not suffer from diseconomies as they grow bigger. Most importantly, quality housing directly improves people's health and happiness.

However, housing is a uniquely complicated economic good. A well-functioning housing sector is difficult to establish and maintain. The high cost of housing relative to incomes means that financing is important to smooth expenditures over time. Property rights must be upheld consistently and taxes collected in order to provide urban services such as water, sewage and electricity. The immobility of land means that redevelopment pressures eventually grow in central areas and systems to manage these pressures must be put into place. Appropriate regulations on construction must ensure the safety of citizens without leading to excessive costs.

The housing sector in Indonesia is dynamic, almost in spite of government intervention. Improvements in land-use regulation, land management, urban infrastructure, and housing finance could support a fully productive housing sector.

Indonesia is now at a crucial point in regards to housing policy. The stimulation of the housing sector, in response to the current housing deficit, has the potential, to be a great boon for economic growth and to improve the lives of future families. Demographic changes mean that there will be a continuing growth in the share of working age people, who can provides the labor pool needed to meet the increasing housing needs of their own generation. It is up to

the government to ensure the correct framework is in place for this to happen. Creating conditions that stimulate and enable the market to provide various types of housing to meet different demand segments is a cornerstone of good housing policy.

This report has identified a number of areas that require government action in order to improve conditions in this vital social and economic sector, summarized below. Recommendations are organized in order of priority. These may be initiated in parallel and require leadership from corresponding agencies responsible for the various reforms.

6.1 Develop and Implement a Strategic Policy Framework

Creating conditions that stimulate and enable the market to provide various types of housing to meet different demand segments is the cornerstone of good housing policy. Different segments of the population access and combine the basic inputs into housing (Land, Finance, Materials and Labor) using a range of different methods. Analyzing how each different segment of the market accesses housing, and the bottlenecks in this system, is a crucial step in formulating Government programs. This can indicate priority areas for Government programs and also greatly enhance the efficiency and outcomes of Government subsidies and programs. Such housing market segmentation studies could be done at the local level, and that a role for the national government would be to provide funding for capacity building and solid technical assistance in this regard. Focusing a local housing strategy based on an understanding of the market segments can not only achieve great results for the housing sector in the city – it can save local governments a lot of money by increasing the efficiency of their public expenditure.

To achieve these results, the government needs to implement a strategic housing policy framework that enables the housing market through policy changes at the national and local levels. The central government should begin working with local governments to modify regulations and to formulate budgets related to housing and urban conditions that are intended to achieve specific outcomes. Flexibility is required to enable different agencies responsible to

address specific challenges in each jurisdiction, but local governments should be accountable for improving housing conditions within their boundaries. A baseline analysis and monitoring of change should be implemented to enable such accountability.

6.2. Increase Local Government Involvement with Housing

Given the importance of informal, incremental house building, local governments should consider new ways of supporting this type of housing production in Indonesia. One model that has been proposed and implemented with limited success is a system of serviced lots supported by the provision of microcredit facilities to facilitate well-planned incremental house building. Additionally, a model to facilitate the construction of very low cost housing units that can be incrementally expanded would provide benefits for lower-middle income groups. Both these models should be supported by and through local governments. Additionally, local governments must be involved in the planning and development of supporting infrastructure in new areas. Systems to achieve the upgrading of urban areas through land readjustment in existing urban areas must be developed.

Local governments must have incentives to play a major role in facilitating the development of low-income housing and in improving the quality of urban areas. Case studies have found that insufficient residential infrastructure is a major constraint to housing development. Local governments can play an instrumental role in improving such infrastructure. Additionally, creating land for housing, both by establishing new development areas and through land readjustment, should be a priority. Consideration should be given to the best way to motivate governments to address these issues.

Tax policies related to property should be revised. The tax on housing purchases should be reformulated, as the current high transaction tax creates a significant incentive for off-the-books transactions, pushing property that had been formally registered back into the informal sector. Instead, an expansion of land or property taxes and their full collection would generate funds for local governments to improve residential environments and provide them with

incentives to help maintain high property values through improvements to infrastructure and through other means.

6.3. Reform the Land Registration, Permitting and Land Readjustment Processes

The land registration system is cumbersome and the assembly and subdivision process could be streamlined. In particular, processes related to the subdivision of land that already has HM status, with the current requirement to convert the status of the title to HGB status and then back into HM before selling individual lots, is redundant. The regulation that parcels can only be split into five smaller parcels is arbitrary and unnecessary, serving only to create delays and opportunities for rent-seeking. More importantly, BPN can be strengthened to become a more efficient and effective agency. Devolution of land management to local governments should be considered, given that the current centralization of the land management organization does not actually lead to any of the benefits of centralization. Rather, it merely creates another layer of bureaucracy.

The current land readjustment or land consolidation system in Indonesia should be revised and reformed as a tool to help create new housing units in existing urban areas. A detailed review of the issue by the World Bank (1999) and academic work on the topic has identified the major problems (Archer 1994; Agrawal 1999; World Bank 1999). These problems relate to the fact that BPN, which is in charge of land consolidation, limits the process significantly and does not facilitate community participation. In addition to facilitating community participation, other positive actions to be taken include easing restrictions on financing and improved coordination with other sectors for infrastructure provision.

With regards to the formal housing development process, there is a pressing need to streamline the location permit system. As it stands, this system makes land unavailable for development unnecessarily and abets speculative practices. The order of development is inverted compared to other countries, with permits for development acquired before the purchase of land. This should be reformed. Reforms are also required to achieve better coordination between multiple local

agencies to reduce both the time required to facilitate bureaucratic procedures and opportunities for corruption. One-stop permitting centers could reduce such bureaucratic hurdles.

6.4 Expand Access to Housing Finance

There are a number of ways that the government could expand access to housing finance and diversify the instruments available, including the following:

Expand access to housing finance for informally employed people. The standard cost/income affordability analysis assumes an ability to finance the purchase of a house. Thus, access to finance would make housing in Indonesia much more affordable. This is especially true for those working in the informal sector. Amongst those working in the informal sector, incomes may be high enough to enable the purchase of a new house. However, without access to finance, housing remains out of informal workers' reach.

Develop a credit enhancement scheme specifically targeting low-income and informal sector borrowers: An obstacle to the deepening of the market is the fear of credit risks created by the participation of the currently underserved population in the housing market. A risk sharing scheme, supported by the government but established on actuarially sound bases and promoting prudent lending standards, should be developed. A number of mechanisms, such as prioritizing affordability metrics and prior savings requirements over loan-to-value considerations, could act as an important lever in this respect.

Develop a savings-for-housing system: The development of a capital market is vitally necessary to facilitate the expansion of housing finance in Indonesia. However, this development will take time, especially if the resources of some large institutional investors are directly allocated to housing through the new FLPP. Thus, the government may consider the stimulation of private savings prior to investing. Such housing savings schemes can be a useful means to supplement the long term resources available for housing, as well as creating security for the financial system.

Re-evaluate PT-SMF's strategy: The SMF could play a role in the development of a bond issuance program, which would provide investors with a new class of secured asset. Subject to adequate operational capacity, the level of added value provided by SMF would be improved by focusing on the stimulation of the overall finance supply. This could be achieved by assisting lenders other than BTN and by playing a central role in developing mortgage securitization globally.

Build capacities of regional banks and micro-finance/cooperative institutions: Many non-mainstream institutions would benefit from capacity building programs, particularly in areas related to the dissemination of expertise, internal organization, product development, the formulation of business plans, and so on. Technical assistance to reengineer business processes with a view to lowering the cost of small loans would be of utmost importance. For example, this could be achieved through systems to facilitate demand aggregation, borrower pre-qualification, and new technology solutions to handle payments.

Enhance the impact of FLPP on the economic and social efficiency of low-income housing finance: The introduction of a liquidity facility, in principle accessible to any lender, could be an opportunity to improve the efficiency of lending mechanisms to better assist underserved categories. FLPP's role could be enhanced in two ways. First, through a shift to a tender process for the allocation of subsidized credit lines, in which each year, recipients could be selected based on the lending conditions they would commit themselves to offering. This could have a beneficial effect on the currently very wide intermediation margins. It could also contribute to a reduction in the borrowing costs incurred by low-income households. Second, Kemenpera could to regularly monitor the level of compliance of lenders with the criteria set by the policy makers.

6.5 Inform, Educate and Communicate with Stakeholders on Housing Policies

Policymakers in the housing sector in Indonesia suffer from an acute lack of data and analysis on which to base decisions and formulate policy. Other actors

in housing finance and construction are also hindered by a lack of information. Thus, much more effort must be spent on the systematic collection of data related to housing and its analysis.

6.5.1. Information

First, data collection efforts, such as a creating credit rating system and property price index, should be introduced. In addition, smaller efforts should also be conducted, involving issues such as a systematic evaluation of the allocation of resources by the different levels of government in the housing sector. Data related to the targeting of subsidized loans should be analyzed to which geographical areas in which social groups are benefitting most from such loans. Regional differences must be addressed through policy, as housing costs and needs can differ significantly. However, without data, there is no basis to determine this or to make meaningful decisions.

As most households do not access housing through standard purchases, understanding affordability in the context of informal housing is important. Standard measures of affordability in Indonesia, such as average expenditures on housing as a share of total household expenditures, are not high. However, these measures do not capture the non-monetary costs of the self-build, incremental housing development process. Thus, the government should review the informal housing system to determine why its ability to produce housing has diminished and how it might be stimulated and supported.

6.5.2. Education

Appropriate efforts to better disseminate information related to housing must be taken, both among housing developers and among individual members of the community. One of many problems resulting from the lack of information is corruption in the land registration system. Households are often misinformed about what costs should be. Thus, they frequently overpay or rely on intermediaries (such as notaries) to conduct actions or facilitate processes that they should be able to manage themselves, without such intermediaries. An

educational program to raise awareness of consumers' rights and obligations should be designed and implemented.

Education related to incremental house building and subsidies should be freely available as part of a public service campaign. For many years to come, formal housing will likely constitute only a portion of total housing production. The larger proportion of the population will continue to access housing through the informal, incremental process. Thus, an educational program related to the design and administration of incremental housing projects could greatly improve safety and the quality of urban planning. Trained architects could be made available for consultation. Also, information on opportunities for subsidies should be made more widely available.

6.5.3. Communication

A national coordinating agency for housing should be designated to engage in regular communication with the wide range of stakeholders within and outside of the government and to act as a liaison between them. The principles of clarity, coordination, and capacity in policy can only be realized through appropriate communication. Through such communication and based on such relationships, policymakers could learn from those in the field. These communication channels can also facilitate the communication and socialization of new policies or changes. The establishment of such communication channels has been extremely successful elsewhere, including in Mexico, where meetings between government representatives and developers allowed government finance agencies to develop mechanisms that resulted in a significant expansion of housing production. Such measures can also ensure that housing production is meeting the needs of the various elements of the population and that it has its intended effect of reducing the housing deficit.

6.6 Implications for Future Research

The focus of this report is on the current, overall state of housing in Indonesia. As this report had a limited scope, there are several issues that could be

explored through follow on work, based on the level of interest from the government. Examples include:

City level land and housing segmentation studies. To date, detailed assessments and case studies about housing and land markets and affordability at the city level have not been carried out. The Bank is currently working with a set of cities to carry out detailed land and housing market segmentation reviews. This work aims to enhance the local governments' understanding of the current picture of housing supply and demand and address gaps in infrastructure services, access to finance, and affordable housing provision.

Analysis of fiscal sustainability of housing subsidy programs. Given the various housing subsidy programs being utilized by the government and the private sector, a scenario analysis of macro conditions that affect the mortgage market could be conducted. This could be utilized to determine the implications of the interest rate subsidies funded by the public sector budget. This could provide analysis of whether/how the subsidies are affecting the affordability of mortgage financing and reaching the intended beneficiaries.

City level case studies. There are pockets of innovation in the housing sector across cities in Indonesia, ranging from access to finance to infrastructure provision and low income housing support, among others. These cases could be explored in greater detail and documented for cross-city knowledge sharing purposes and potential replication.

International experiences on housing. Depending on priority areas for the government, additional comparative research and lessons learned applicable to the Indonesia context could be reviewed. South-South knowledge exchanges with other middle-income countries in Asia and Latin America could also be pursued.

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APPENDIX A

Note on selection of cities

Housing markets must be understood at the urban level. Thus, the first step in the research was to clearly define the manner in which data would be divided. Simply using the administrative definitions that delineate cities is not appropriate given that the functional urban area of many cities extends into surrounding districts. Urban areas were identified as such using a definition similar to that used by the United States census bureau to define Metropolitan Statistical Areas (MSAs). Thus, urban areas are defined in terms of administrative regions that include an urban 'core' with a population of more than 50,000. In the case of Indonesia, the population of the urban 'core' was determined using a combination of data from the SUSENAS and the urban footprint, with the population threshold being set at 75,000 in order to achieve consistency with previous research related to housing (Struyk et al. 1990).

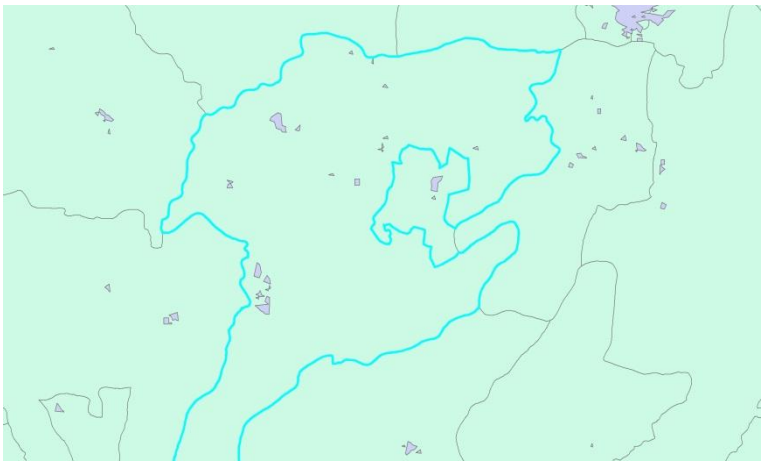
First, the land area within Kota/Kabupaten classified as urban according to the urban footprint was calculated, as was the share of that land area occupied by the largest polygon. Then, the urban population from the SUSENAS 2007 was proportionately allocated to each of these urban polygons. If the largest of these is estimated to have more than 75,000 people, the entire urban population of the Kota/Kabupaten is included in the analysis.

In addition to this quantitative estimation of the size of the urban core, each Kota/Kabupaten was also examined visually to assess whether it should be combined with neighboring districts. This process resulted in the inclusion many urban areas that span more than one Kota/Kabupaten, beyond the eight metropolitan areas defined by the 2008 law. Since these larger urban areas should be treated as a single housing market, data from these areas are grouped together. There are approximately 40 cities, including the metropolitan

areas defined by law, containing more than one Kota/Kabupaten.[8] The entire urban area identification process resulted in the identification of 92 cities or urban areas with a core population of greater than 75,000.

[8] Some geographically large Kabupaten contain two clusters of urban areas that should be treated as separate housing markets, but cannot be separated.

FIGURE A.1. ADMINISTRATIVE BOUNDARY OF KABUPATEN MUARA ENIM AND POLYGONS FROM URBAN FOOTPRINT 2001



Some Kabupaten with an urban population far greater than 75,000 were not included. Kabupaten Muara Enim, pictured in Figure A.1, had a total urban population of 238,000 in 2007. However, as is evident, this population was spread across many separate urban towns. Based on a proportional allocation of the people to the urban polygons, the largest urban polygon is estimated to have 71,000 residents, below the cutoff point. Thus this Kabupaten is not included in this analysis.

Table A.1 presents the total population and number of households in Indonesian cities in groups of cities by population. Data for the greater Jakarta Metropolitan Area (JMR), or Jabotabek plus, cover 12 Kota/kabupaten and are reported separately. Cities are labeled as large if they contain more than one million residents, medium-sized if they contain from 500,000 to one million residents, and small if they contain from 75,000 two 500,000 residents. The category of 'towns' refers to the urban population of Kota/Kabupaten estimated to have an urban core of less than 75,000 residents.

TABLE A.1 POPULATION AND HOUSEHOLDS BY CITY CATEGORY, 2001-2007

City category	No. of cities	Population (millions)			Households (millions)		
		2001	2007	Annual growth rate	2001	2007	Annual growth rate

JMR	1	18.6	21.3	2.3	4.9	5.3	1.0
Large	15	33.2	36.6	1.6	8.7	9.4	1.3
Medium	20	13.9	15.4	1.7	3.6	3.8	1.0
Small	56	12.7	14.2	1.9	3.2	3.5	1.7
Towns	NA	8.6	10.6	3.6	2.1	2.5	3.4
All urban	NA	87.0	98.1	2.0	22.5	24.5	1.4

SOURCE: BADAN PUSAK STATISTIK 2001 AND 2007

NOTES: NA INDICATES NOT AVAILABLE, THE NUMBER OF TOWNS IS IMPOSSIBLE TO ESTIMATE GIVEN THE DATA AVAILABLE.

APPENDIX B

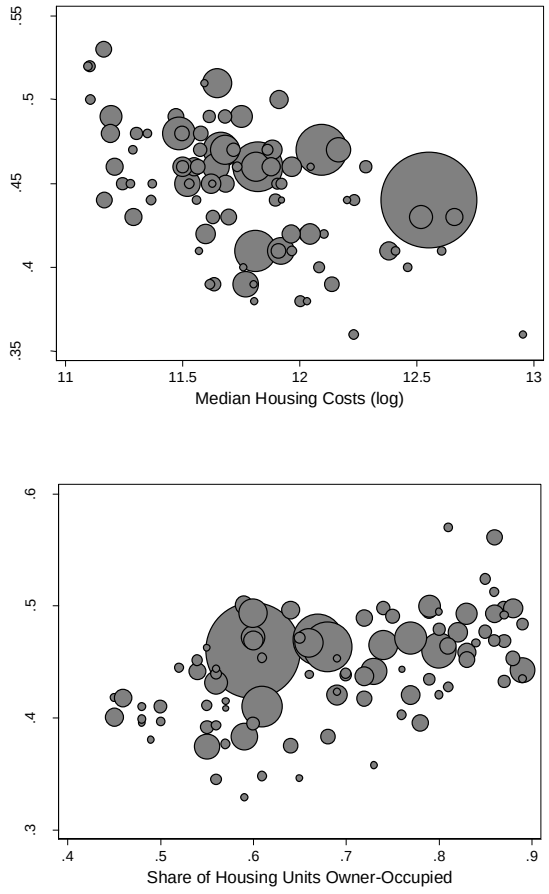
Correlation Coefficients

TABLE B.1 CORRELATION COEFFICIENTS: HEADSHIP RATES AND CITY CHARACTERISTICS

City Characteristic	Share of 30 to 42 Year Olds Household Heads			
	All	Primary school only	Income Quintile	
			Bottom	Top
Ln(Median income)	-0.12	-0.19	-0.03	-0.28
	[0.28]	[0.08]*	[0.80]	[0.01]***
ln(Median rent)	-0.11	-0.20	-0.06	-0.27
	[0.29]	[0.05]**	[0.59]	[0.01]**
Percent unaffordable [a]	-0.29	-0.25	-0.33	-0.25
	[0.00]***	[0.02]**	[0.00]***	[0.01]**
Owner (%)	-0.05	0.10	-0.09	0.24
	[0.63]	[0.35]	[0.40]	[0.02]**
BPN titled (%)	-0.26	-0.16	-0.17	-0.21
	[0.01]**	[0.12]	[0.11]	[0.05]**
Population growth [b]	0.26	0.22	0.28	0.00
	[0.01]**	[0.04]**	[0.01]***	[0.99]
ln(Population)	-0.17	-0.03	-0.26	-0.16
	[0.11]	[0.80]	[0.01]***	[0.13]

Notes: Spearman coefficients. Probability in brackets. ***, ** and * indicate significance at the 0.01, 0.05 and 0.10 levels. a Households are considered to be in an unaffordable housing situation if more than 30 percent of expenditures are dedicated. b Compound annual growth rate.

FIGURE B.1 HEADSHIP RATES, HOUSING COSTS, AND SHARE OF HOUSING OWNER-OCCUPIED



SOURCE: BPS, 2007

APPENDIX C

Hedonic Regression Analysis

The log of rent or imputed rent is regressed on the available characteristics of the housing unit. The standard log-log hedonic model is as follows:

$$\ln(R) = b_0 + b_1 \ln(S) + b_2 T + b_3 X + e \qquad (1)$$

Where:

R is the rent or imputed rent;

S is the square meter size of the house;

T refers to a set of dummy variables indicating the type of land ownership claim; and

X is a set of housing characteristics describing the materials and infrastructure services.

Summary statistics of the various housing characteristics have been reported in Tables 2.2 and 2.3. Table C1 summarizes the results of the 90 OLS regressions. Average coefficients on the different housing unit characteristics are reported, along with the R^2. Sample sizes vary according to the city size, ranging from several million in the JMR to tens of thousands in the smaller cities. Less than 20 of more than 1,000 coefficients estimated are not statistically significant at the 0.01 level.

The coefficients on materials and infrastructure are dummies and thus can be interpreted and the percent increase in price associated with having the given characteristic.

TABLE C.1 SUMMARY RESULTS OF HEDONIC REGRESSIONS BY CITY CATEGORY, 2007

Housing unit characteristic	JMR	Large	Medium	Small	Towns
House size (log of sq. m.)	0.39	0.42	0.41	0.40	0.31
House size/ lot size	0.09	0.17	-0.07	-0.03	-0.07
Land claim (base is BPN title)					
Receipt	-0.17	-0.15	-0.06	-0.09	-0.01
Girik	-0.33	-0.34	-0.16	-0.17	-0.20
Other	-0.14	-0.25	-0.15	-0.17	-0.13
None	-0.22	-0.28	-0.20	-0.17	-0.09
Materials					
Non-dirt floor	0.22	0.28	0.20	0.23	0.35
Permanent roof [a]	0.10	0.13	0.09	0.18	0.13
Permanent wall [a]	0.62	0.25	0.20	0.24	0.32
Services					
Sewage (septic tank)	0.20	0.21	0.13	0.21	0.22
Private toilet	0.21	0.20	0.12	0.14	0.29
Electricity[a]	0.23	0.12	0.14	0.42	0.34
Constant	10.35	9.72	10.06	9.99	9.55
R^2	0.43	0.45	0.44	0.57	0.31

NOTES: A A VAST MAJORITY OF HOUSES HAVE PERMANENT ROOFS, WALLS AND ACCESS TO ELECTRICITY.

APPENDIX D

The income elasticity of demand

The income elasticity of demand for housing is estimated for renters and owners using the standard approach, a simple log-log equation regressing rent on income and household size (Malpezzi and Mayo 1987; Buckley and Mathema 2007). In doing this, it is possible to compare results with two separate research efforts from two and three decades earlier. The book on housing in Indonesian cities by Struyk et al. (1990) uses survey data from 1988, while a paper by Shefer (1990) uses SUSENAS survey data from 1978. One difference between these earlier survey data and those used in the present report is the sample size. The two surveys from decades ago had sample sizes of around 6,000, while the SUSENAS data used in the present report had a vastly larger sample size, encompassing more than 60,000 households.

Most academic research argues that consumption, or expenditure, is a good proxy for permanent income. However, in the case of Indonesia, the two measures yield very different results. Elasticity measured with current income yields estimates that are substantially lower than those estimated with the permanent income proxy. Shefer (1990), who uses consumption data, estimates the elasticity of demand to be 1.17 for owners and 0.84 for renters. Struyk et al. (1990) estimate demand with both measures of income and find the elasticity to be 1.02 for owners and 0.94 for renters when using permanent income (expenditure data) and 0.89 for owners and 0.85 for renters when using current income. A similar difference was also found in Manila, where estimates were between 14 and 25 percent lower (Malpezzi and Mayo 1987).

There is a simple explanation for the difference between the two measures. The savings rate is positively correlated with income, and non-trivial. Thus, there is a downward bias in the elasticity estimated with consumption data. If the proportion of income that a household spends decreases as incomes rise, then while households with higher expenditure levels might dedicate a greater share

of expenditure to housing, they are also saving a significant share of their income.

This discrepancy between measures of permanent and current income also explains a discrepancy in the rent-to-income ratios in Indonesia calculated by different researchers. In the work using the SUSENAS data (both in 1978 and 2007), households with higher expenditure levels are found to dedicate a roughly similar share of their budgets to housing as those with lower expenditure levels do. As Shefer points out, this is unlike any other developing country city for which evidence exists (1990) and contrasts with the results of the Struyk et al. survey from 1988, which find the opposite relationship.

For each city in Indonesia, two equations are estimated using a proxy for permanent income. The simply model includes only income and household size as follows:

$$\ln(R) = b_0 + b_1 \ln(Y) + b_2 HH + b_3 HH^2 + e \qquad (2)$$

Where:

R is either rent or imputed rent;

Y is total household expenditure;

HH is the household size in persons; and

HH^2 is the square of household size.

A summary of the 92 coefficients is reported for 2001 and 2007 in Table D.1. In only a handful of cases are the coefficients on household size or household size squared not statistically significant at the 0.01 level. All coefficients on the log of expenditures are statistically significant at the 0.01 level and positive. The overall average income elasticity of demand for owners in 2007 is 0.94, while for renters it is 0.79. In 2001 these values were 1.17 and 0.84 respectively.

TABLE D.1 INCOME ELASTICITY OF DEMAND FOR HOUSING BY CITY CATEGORY, USING EXPENDITURES AS A PROXY FOR PERMANENT INCOME, 1978, 2001 & 2007

City	Renters	Owners

Category	1978 [a]	2001	2007	1978 [a]	2001	2007
JMR	0.99	0.91	0.86	1.23	1.17	1.00
Large	NA	0.99	0.78	NA	1.19	1.01
Medium	0.85	0.92	0.78	1.15	1.09	0.91
Small	0.78	0.80	0.79	1.04	1.03	0.92
Towns	0.82	1.09	1.00	1.02	1.11	1.04

NOTES: A FROM SHEFER, 1990. SIZE CLASSIFICATION OF CITIES WAS DIFFERENT IN 1978 BUT AN ATTEMPT HAS BEEN MADE TO MATCH THE APPROPRIATE CITY SIZES. MEDIUM CITIES ARE THOSE IN 1978 WITH MORE THAN 300,000 RESIDENTS, SMALL HAD BETWEEN 100,000 AND 300,000, AND TOWNS BETWEEN 50,000 AND 100,000. NA INDICATES NOT APPLICABLE.

APPENDIX E

This appendix provides further background information on the history of institutions and laws relating to housing in Indonesia.

The Institutional Landscape

A multiplicity of institutions involved in housing report to the President of Indonesia; the President's involvement reflecting the government's level of commitment to the development of housing. From the 1950s to the late 1990s, a number of housing institutions were established to reflect the government's prioritization of the provision of housing as a development objective. The government entities intended to fulfill this role were the Bureau of People's Housing and the People's Housing Support Office. These bodies were established under the Department of Public Works and Power to manage housing policy in Indonesia.

The responsibility for matters related to housing alternated between the Ministry of Public Works and the Ministry of Social Affairs for some time. Two other housing institutions were later established. The first was the National Housing Corporation (Perum Perumnas, which later became PT. Perumnas), responsible for meeting the population's need for housing through the development of facilities in Jakarta (Siregar, 2006: 118). The second was the National Savings Bank (BTN), which was charged by the Minister of Finance with the responsibility of managing Home Ownership Loans (KPR). It was not until 1978 that President Soeharto made housing provision a cabinet issue with the establishment of the Junior Ministry of People's Housing.

In 1983, by Presidential Decree No. 25/1983, the status of the Junior Ministry of People's Housing was elevated to become the State Ministry of People's Housing. This arrangement lasted until political reform in 1999. In 1999, when President Abdurrahman Wahid took office, responsibility for matters related to

housing was transferred to the new Ministry of Settlement and Regional Development, which had previously been the Ministry of Public Works. Matters related to housing remained the responsibility of this ministry until the appointment of President Susilo Bambang Yudhoyono in 2004, when he re-established the State Ministry of People's Housing (Kemenpera).

The Evolving Legislative Framework

The State of Indonesia guarantees its citizens the right to employment and decent living (1945 Constitution, Article 27). More specifically, every citizen is entitled to housing in a decent and healthy neighborhood (Amendment of 1945 Constitution, Article 28H). Following the promulgation of the 1945 Constitution, the Government of Indonesia issued a number of policy initiatives related to housing, including Government Regulation in place of Law (Perpu) No. 6/1962 on the Principles of Housing, the first law specifically designed to address issues related to housing. This law states that every citizen and private entity has the right to build housing independently and to determine its use, whether for own occupation or rent.

With increased demand for housing, the 1962 Perpu was replaced by Law No. 1/1964. The new law not only specified the responsibilities and authorities of the government, but also the rights and obligations of citizens. Thus, this law stated that every citizen is entitled to have and enjoy a decent house, in accordance with prevailing social, technical, health and behavioral norms. The main policy initiatives that have been taken by the Government of Indonesia within the past 10 years include the following:

Continued emphasis on citizen's rights to housing: Legislation has been enacted that states "every citizen has the obligation and responsibility to participate in housing and settlement development" (Law No. 4/1992 Article 5) and "every citizen has equal and extensive rights and opportunity to participate in the housing and settlement development" (Article 29).

Supply of housing and settlement development: Legislation has been enacted that states that housing development must be implemented on the basis of a comprehensive and integrated spatial plan (Law No. 4/1992). This applies for

either urban or rural areas, with a requirement that plans be approved by local government after considering all related aspects, including existing plans, programs and development priorities of housing and settlement area. Through this, it is expected that housing and settlement development will become sustainable. The regulatory framework on spatial planning established by Law No. 24/1992 on Spatial Management) instituted a hierarchal structure in the spatial planning system on the basis of administrative region (i.e. national, provincial and district/city levels). This structure is meant to ensure efficiency and the optimal use of space. It also instituted a process where spatial plans at the local (i.e. district or city) level guides housing and settlement development in Indonesia.

Additionally, to a significant degree, Law No. 4/1992 made individual and private entities responsible for the development of housing and settlement areas. For many years, the spatial plan was the only instrument through which the government played a role in housing and settlement area development. Therefore, the law establishes a framework where development is dominated by the private sector rather than the public sector.

Transfer of responsibilities and functions related to housing to regional/provincial and local governments: In the late 1990s, as a result of the Asian financial crisis, Indonesia passed through its own economic and political crisis. To some extent, this crisis was created or exacerbated by excessive property development by the private sector and private bank practices that financed property development excessively. Indonesia's economic and political crises led to a political reform, resulting in administrative decentralization of government functions and authorities from central to regional governments in 1999 (Law No. 22/1999 and Law No. 25/1999). In the period from 1999 to 2004, Indonesia passed through a transition, during which several amendments to the 1945 Constitution were made and two laws on regional government were revoked. New laws were issued in 2004 (Law No. 32/2004 on Regional Government and Law No. 33/2004 on Fiscal Balance between Central and Regional Government). According to these laws, the responsibility for all matters except those related to foreign, defense and security, monetary and fiscal,

judicial, and religious affairs, were transferred from central to provincial and local governments. Amongst the transferred responsibilities were matters related to housing and settlement development.

Housing outside the spatial planning framework: Law No. 26/2007 on Spatial Management was enacted to replace Law No. 24/1992, which had become outdated due to structural changes following decentralization. Even though the 2007 law stipulates that a settlement area is to be planned as an integrated system and must have functional relationship with other areas in space, housing is not specifically addressed by his law, not even low-income housing.

With decentralization, issues related to land management are under the purview of the province and local governments, rather than central government. The implication is that while central government may make amendments and issue guidelines, implementation remains at the level of local governments. With 33 provinces and some 400 cities and districts, support for reforms has varied considerably between different local governments.

In addition to Law No. 1/2011, several other pieces of legislation are relevant to housing and settlement development. The first of these are the implementing regulations associated with Law No. 1/2011, these being 20 Government Regulations (*PP*), four Ministerial Regulations (*Permen*) and three Regional Regulations (*Perda*). They include Government Regulations regulating the criteria for facilities and assistance to build and own house for low-income groups; *Permen* regulating the criteria for low-income groups to obtain facilities; PP aimed at the prevention of the proliferation of slum housing; and *Perda* delineating slum housing locations. In order for its implementation, a PP will be required to facilitate land consolidation. These additional regulations play a critical role in the implementation and success of the 2011 Law.

In addition, since 2004, the State Minister of People's Housing has published 92 policies related to the housing sector, including 23 in the process of preparation. There are also regulations related to housing affairs in different functional zones, such as housing in special zones (Permenpera No. 14 of 2006); coastal zones (Permenpera No. 15/2006); and border zones (Permenpera

No. 17/2006). There are also regulations concerning the establishment of guidelines, standards and procedures related to housing issues. For example, the guideline for assigning an agency to manage 'ready to build' areas and neighborhoods (KASIBA and LISIBA) is established through Permenpera No. 33/2006, while the guideline for integrating basic infrastructure and utilities in housing area is through Permenpera No. 34/2006.

There are also regulations related to various types of financing intended to facilitate access to housing, such as subsidized micro-credit (Permenpera No. 6/2008); subsidized credit (Permenpera No. 7/2008); subsidized *syariah* credit (Permenpera No. 8/2008); and subsidized flat housing credits (Permenpera No. 13/2008 and Permenpera No. 15/2008). The current set of regulations issued by the ministry responsible for housing affairs, Kemenpera, will need to be reviewed to ensure that these regulations do not in any way conflict with the new Law No. 1/2011.

APPENDIX F

This appendix provides detailed information on how policies are implemented locally via case studies of formal and informal housing production at the city level in Manado and Semarang.

Housing Production Case Studies: Manado and Semarang

Semarang is the capital of Central Java, located on the northern seacoast (Pantura). It has an area of 225.17 ksquare meters and a population of approximately 1.5 million people. The northern part of the city is built on a coastal plain, so flooding is common. Historically, Semarang was part of Demak Sultanate, which continues to influence the city's development. Semarang is the center of a metropolitan region known as Kedungsepur, which includes the municipalities of Kendal, Demak, Ungaran, Salatiga, Semarang and Purwodadi.

In Semarang, there are currently about 70,000 parcels of land, with about 50,000 of these (more than 70 percent) having been registered in BPN. Most parcels of land for commercial activities are registered as HGB, while freehold right titles are attached to most individual houses. The rest of the parcels, especially in areas where low-income people live, are still not registered due to economic reasons and institutional constraints.

Land is relatively expensive in the inner city or old area of Semarang municipality, about IDR 1-5 million per square meters. The municipality formerly consisted of 9 *kecamatan* but in 1976 was expanded into 16 *kecamatan* to include neighboring suburbs. Following this municipal extension, development has extended into suburban areas, such as Banyumanik and Tembalang. In the suburban extension area, the price of land is cheaper, averaging approximately IDR 400,000-500,000 per square meters for developed land and IDR 15,000-100,000 per square meters for undeveloped land.

Manado is the capital of North Sulawesi Province. It has an area of 15,726 hectares and a population of approximately 405,715 people. The municipality went through a jurisdictional extension in 1989 and now consists of nine sub districts (*kecamatan*). Key land issues in Manado include conflicts related to land ownership, uncontrolled increases in land price, and a cultural attachment to large plots of land.

According to the local BPN office in Manado, there are currently 63,895 parcels of registered land. Most of these parcels have HM status, with 52,855 parcels covering 6,634 ha falling into this category. Thus, most landowners have freehold rights, though traditional ownership is still recognized, with plans to transform traditional ownership to HM status. The traditional right is known as "*pasini*". The local government also has small area of controlled land with a status of "*Tanah Negara*" (state owned land), which currently covers approximately 26,774 square meters (44 parcels). The majority of this land cannot largely be utilized for housing development, because most of such land is located on preservation areas such as riversides and/or in disaster-prone areas.

The old center of Manado is in the *Sario* and *Wenang* sub districts. The city's main coastal area is currently being affected by a massive land reclamation project. Envisioned to become the city's new business area, the coastal zone is the fastest growing part of the city, and thus experiencing the highest increase in land price. The land price in the center of the city and the coastal zone may range from IDR 1.5 to 3.5 million per square meters, while in the peripheral areas prices range from IDR 500,000 per square meters for developed land to IDR 30,000-50,000 per square meters for undeveloped land.

LOW-INCOME HOUSING

In both cities, it is difficult for low-income households to obtain safe and secure land for housing in the inner city or in other well developed areas. Therefore, they either live in centrally located *kampongs* or peri-urban areas. In the case of Manado, there is also some housing in riverside areas with right to use titles (HP).

Low-income housing located in *kampong*, though closer to the city, usually lacks access to basic infrastructure and is characterized by poor environmental conditions. The local government in Semarang has built several low-cost apartment buildings (*rusun*) close to these old kampong in an attempt to upgrade their living standards and tenure security of their inhabitants.

The other option for low-income earners is to live in peri-urban areas, which can be located up to 20 km from the city. Recently, to capture this demand, several private developers have focused on building small houses targeted at low-income earners. Examples of such projects are Dinas Mas, Dinar Elok and Dinar Asri in Kecamatan Tembalang, which cover approximately 3-4 ha each. Larger than the average, Bukit Kencana covers an area of 10 ha and is located in Kecamatan Meteseh. Developers have also built some housing estates for low-middle income households. Examples of such estates include Mapanget Griya Indah in Kecamatan Mapanget, Griya Sea Lestari in Kecamatan Malalayang, Manado Griya Indah Estate in Boulevard Manado, Griya Paniki in Kecamatan Mapanget. These have poor accessibility as they are located far from the city center.

One of crucial issues in land administration in Manado is conflicts of ownership. The local office has recorded that there were 55 recorded conflicts (of which 43 are considered to have been resolved) in 2009 and 41 cases (of which 29 are considered to have been resolved) in 2010. The conflicts were strongly related to inheritance issues and unclear information about land ownership, resulting in different parties making claims on the same parcels of land.

Formal Housing Production by Developers

In order to better understand the formal housing production process and the major constraints and costs to developers, interviews with four developers in Manado and four developers in Semarang were conducted. Similarly, interviews were conducted with a focus group consisting of the directors of Real Estate Indonesia (REI) in Jakarta. Responses were consistent with regards to the biggest constraints to housing production, with developers placing infrastructure and

materials as the biggest constraint, with difficult land registration and permitting processes being viewed as the second biggest constraint.

One of the most salient findings was that permitting is consistently ranked as being more costly than land. Developers reported that prices for raw land ranged from IDR 30,000 to IDR 50,000 per square meter, which implies that a house on a 66 square meter lot, a common size for small houses, would be less than 5 percent of the final sales price of IDR 55 million. This is much less than previous estimates, which have found that land costs constitute a quarter of the total cost of a formal sector house (Hoek-Smit 2008).

Moreover, this cost does not include the cost of delays due to an uncertain permitting timeline. The nature of the land permitting and subdivision process means that it can take several years for a full housing project to be completed. In many cases, land development permit rules are not followed and although developers were reluctant to give details about unofficial costs for every procedure, they reported independently from one another that these were high and necessary to facilitate the process.

Land development permitting and land assembly

Perhaps the most frequently studied example of the cumbersome housing development process in Indonesia is the land development permitting system. According to the Government Regulation No. 12/2010, developers must obtain a location permit (*Izin Lokasi)* and building permit *(Izin Mendririkan Bangunan)* from the local government *before* acquiring land. After obtaining this permit, they then acquire land from the landowners. Technically, according to BPN Regulation No. 4/2010, the location permit is to be revoked if the developer fails to utilize the land within three years. Thus, many developers interviewed in Semarang or Manado said they purchase a large amount of land without applying for the location permits first.

The location permitting process has been criticized for many years (Ferguson and Hoffman, 1993; Firman, 2004). It effectively removes developable land from the market while developers are acquiring parcels within their permitted development area and gives them a seeming monopoly over the area for which

they have been allocated a permit. There is a nominal time limit on the validity of location permits of one or three years. However, it seems that this is not enforced in practice. Additionally, it has been shown theoretically that taking *any* parcel land out of an urban land market increases prices everywhere in that market by forcing development further away from the city center (Quigley and Swoboda, 2007). Thus, even though the system has recently been reformed, it seems that further reforms are necessary.

LAND REGISTRATION AND SUBDIVISION

The land registration and subdivision process was consistently described as extremely cumbersome, costly and time-consuming by developers. It was claimed that BPN offices often demand unofficial fees, with the use notaries as intermediaries to fast track the process being common. A detailed description of the process has been presented previously in Chapter 3 ("The Institutional Framework of Housing Policy and Land Administration").

Even within the formal procedures for land registration and subdivision, there are clear inefficiencies. In order to sell individual lots, as described previously, the land must be subdivided and each lot assigned a freehold title or *Hak Milik* (HM). In order to create these subdivided lots with HM, even if the assembled parcels already had HM, developers must first legally bind all the project land into one master parcel with a building rights title (HGB). Only after the master HGB is issued can developers apply for the splitting of the master HGB into individual parcels. On paper, the procedure of combining freehold rights to the master HGB is supposed to be completed in 15 days. Nevertheless, in practice, even with the payment of additional (unofficial) fees, developers may spend up to 45 days to have their HGB issued.

Developers must then follow the same steps as would an individual going through the same processes. This involves the registration of their land, including re-measurement and survey, mapping, data checking and processing, bookkeeping and finally splitting of the master HGB. However, if the scale is larger, these steps can take longer. Moreover, the splitting process is further complicated by Head of BPN Regulation No. 1/2010, which rules that a parcel of land can only be split into maximum five smaller parcels, even if developers

plan to build hundreds of houses at one project site. Thus, they are required split a single parcel into five smaller parcels and then split each of these into another five and so forth until the desired number of parcels use obtained. This multiple splitting process is time consuming and costly, as each splitting takes days. Costs also vary according to how fast the developer need to receive their legal documents. Some developers pay hundreds of thousands of Rupiah per unit, while others pay millions.

Financing

Another of the most important constraints to housing development recorded in interviews with developers was access to financing, both construction financing for housing projects and mortgage financing for consumers to purchase finished units. Based on data from the most recent Bank Indonesia annual report on residential property (2010), only one quarter of housing project financing was derived from bank loans. Approximately 15 percent came from pre-sales (known as an indent system), with the remainder from internal funds. Roughly half of the internal funds were earnings from previous projects, while the other half came from paid-in capital. A complete discussion of the issues related to housing finance is presented in Chapter 4 ("Housing Finance").

Infrastructure

The fourth major constraint facing developers is the difficulty of accessing infrastructure for housing projects. In both cities surveyed, problems were documented with obtaining service from the National Electric Power Company (PLN) and the Regional Water Supply Companies (PDAM), especially when the housing project was located on the outskirts of urban areas. Applying for a new utility network required significant time and hidden fees, with these fees resulting in an increase to the housing production cost. Several developers mentioned that the housing price per unit does not include the installation fee for electricity, which is generally about IDR 1 million per unit.

A dearth in the supply of serviced land and tedious permitting procedures make it unprofitable for developers to use available land resources to build low-income houses. To cope with high demand for housing and to support the involvement of private sector, it is important for the government to eliminate or

reduce unnecessary steps. This will expedite the housing delivery process and lower development costs. The government could provide various incentives, such as a faster land acquisition and titling process, basic infrastructure cost subsidy, relaxation of housing standards and concession for financial contribution to utility authorities. Such measures would encourage private housing developers to play an active role in the provision of low-cost housing.

Although obtaining infrastructure is complicated, the Minister of Public Works Decree No. 20/KPTS/1986 stipulates that housing developers are obliged to provide infrastructure and facilities if they have a project covering an area of one hectare or more or involving the construction of housing for 250 people (50 houses). Thus, in the case of Semarang, developers search for loopholes to be legally be excluded from this obligation. For example, they can build many projects in different locations but on a smaller scale in the form of "clusters", consisting of only several houses per project location. With such a very small scale project, they are freed from the obligation to provide basic infrastructure and public facilities.

TAXES

A final regulatory issue that is relevant to the production of housing for low-income households is the purchase tax. Purchasers of houses must also pay the Revenue Acquisition of Land and Buildings (BPHTB) tax, a tax of 5 percent of the property's sale value if this value is lower than IDR 20 million and 10 percent if the value is higher than IDR 20 million. This adds an additional cost to the acquisition of housing for low-income families.

SUBSIDIZED HOUSING

Roughly one third of the housing units built by developers in the period from 2002 to 2005 were supported by subsidies from the government (Hoek-Smit 2008). However, based on interviews conducted in 2010 with developers and local governments in Jakarta, Manado and Semarang, the current down-payment and interest rate subsidies provided by the government seem to suffer from the same problem as the previous *Kredit Pemilikan Rumah* (KPR) system did (Struyk et al 1990): it largely excludes low-income groups, exactly the groups it was intended to assist. Housing units intended for low-income earners are

frequently purchased by households who should not be eligible because their incomes exceed the set limit.

These problems will only be exacerbated by any increase in the maximum price of subsidized low-income housing, which nonetheless should be undertaken in order to encourage more building. The developers interviewed pointed out that building affordable housing for low-income earners is less profitable than other building construction projects, and that the bureaucracy related to the government programs is too complicated. Moreover, since the government has set the prices of the subsidized house types, developers simply minimize production cost in several ways, including building units on land very far from the inner city.

PERUMNAS

Although it was once the major player in housing development in Indonesia, Perumnas, formerly a state-owned enterprise, no longer produces a significant amount of housing. In 2009, Perumnas built roughly 6,500 houses, 80 percent of which were *rumah sederhana sehat*, or very basic housing, and *rumah sederhana* simple housing (Perumnas 2009). They also produce some *rumah menengah* or medium-sized housing, *rumah toko* or shop houses, and *rusunami,* or sale condominiums, in large buildings. Their annual report also lists their sales operations, which included approximately 3,000 additional housing units for which they act as a sales intermediary. The report points out that the figures are below their targeted production rate of 13,000 units per year, with this failure being attributed to increasing costs of production, the dependence of consumers on mortgage subsidies, and delays in the residential permitting process.

Informal Housing Development

Interviews with households in informally developed neighborhoods in Manado and Semarang revealed that they acquire land through squatting, purchase, inheritance, or sometimes a loan from a family member. Frequently, inherited land is split between siblings. In terms of construction, for some households it took 10 or 20 years to build their house, while others built the house quickly or

even purchased a completed house. Many households stated that there is always the possibility of adding rooms or floors.

This heterogeneity makes it difficult to characterize housing production in the sector. Measuring new units depends on whether splitting a house into two or adding several rooms to accommodate family members counts as new units being added. Measuring price changes is complicated because many of the transactions are non-monetary, including transactions such as inheriting land from ones parents or squatting. In addition, interviewees were not sufficiently well informed about the market to make meaningful statements about its changes.

Interviewed occupants of informal, self-built houses agreed with developers regarding the costly and cumbersome permitting and land registration process. A lack of transparency or information regarding the process is exacerbated by the imposition of extra-legal fees, including payments of "thank you" money to local government officers involved in the processing of applications at BPN offices. Although survey fees are regulated by Government Regulation 13/2010, it was consistently reported that actual fees charged are higher than the officially stipulated cost. Unofficial fees are also needed to expedite the certification through notaries. Total registration fees were reported to reach IDR 4 million in some cases, while the nominal fee is only IDR 120,000. Thus, several of the households interviewed mentioned the importance of free or discounted mass land registration programs such as PRONA, with some interview subjects having benefitted from such programs.

Access to land is the most important element, particularly serviced land. It is noteworthy that the price of un-serviced and un-subdivided land is not high in the areas in which the case studies were conducted, with developers in both Manado and Semarang consistently estimating prices to range between IDR 30,000 and IDR 50,000 per square meter.

APPENDIX G

This appendix provides detailed information in the form of case studies of land development and how it affects housing production at the city level in Manado and Semarang.

Land Development Practice: Case Studies of Two BPN Offices

In order to understand the day-to-day practices of BPN, two case studies of local offices were carried out, in Semarang and Manado respectively. This section summarizes the practices of these two offices to highlight the issues

and problems that BPN faces. First, the two major steps of land development in which BPN plays an important role are outlined, these being land acquisition and land registration.

The land acquisition process may actually take longer than land registration. According to Government Regulation 15/2010, in order to develop formally registered housing, a so-called location permit, a permit to develop land, must be obtained from the local government. The process of obtaining that permit may take almost one year and may cost a large sum. For example, a developer in Kecamatan Genuk in Semarang paid IDR 16 million for a permit to build 16 ha of low-income residential housing.

Government Regulation No. 11/2010 and Head of BPN Regulation No. 4/2010 state that the location permit will be revoked if the developers fail to utilize their land within the period of three years. In Manado, developers interviewed stated that although the location permit fee is not high, the associated bureaucratic processes are very time intensive, taking up to one year to complete. This complicated procedure means that developers often violate the law to circumvent the complicated processes by gradually acquiring parcels of the land without first acquiring the required permits.

Before registering land in Semarang, developers must also apply for a KRK, another permit required from the local government office to build houses. An approved KRK indicates that their proposed development is in line with the local spatial plan. For state-controlled land, an additional permit, a PBB, is required in order to register the land. In both cases, developers also need to apply for a building permit, or IMB, after the acquisition of which they can start to build the houses.

Once a developer has acquired certain parcels of land, registration of land occurs in two steps: the local BPN office combines the freehold rights acquired by the developers into one master HGB (*HGB induk*), and then this master HGB is split into new freehold titles that the developers can sell. On paper, the process of combining freehold rights into a master HGB title takes 15 days. Nevertheless, in practice, even with some additional unofficial fees, interviewed

developers state that it takes on average about 45 days to have their HGB issued. Based on Head of BPN Regulation No. 1/2010, HGB for land covering more than 15 ha should be processed at the central BPN office in Jakarta. On the other hand, land covering an area of 2,000–15,000 square meters is to be processed at BPN regional offices, while land covering an area of less than 2,000 square meters is to be processed at local offices.

Once the master HGB is issued, the developers must apply to split the master HGB into individual parcels. Housing developers generally follow the same steps as individuals who register their land for housing. These steps involve re-measurement and surveying, mapping, data checking and processing, and bookkeeping. However, because the process involves a larger area of land divided into a greater number of parcels, the measurement and survey processes take considerably longer.

According to Head of BPN Regulation No. 1/2010, a parcel of land can only be split into a maximum of five smaller parcels. This is despite the fact that normally developers intend to build tens to thousands houses on individual parcels at the same location. However, the regulation enables the developer to split the master HGB into more than five smaller parcels through a multistage process. First, a developer must split the master HGB into five smaller parcels. Then, each of these small parcels is divided into up to 5 smaller ones and so forth, until the smallest desired units are created. Clearly, this multistage process is not efficient, with each stage of the process taking up to 45 days.

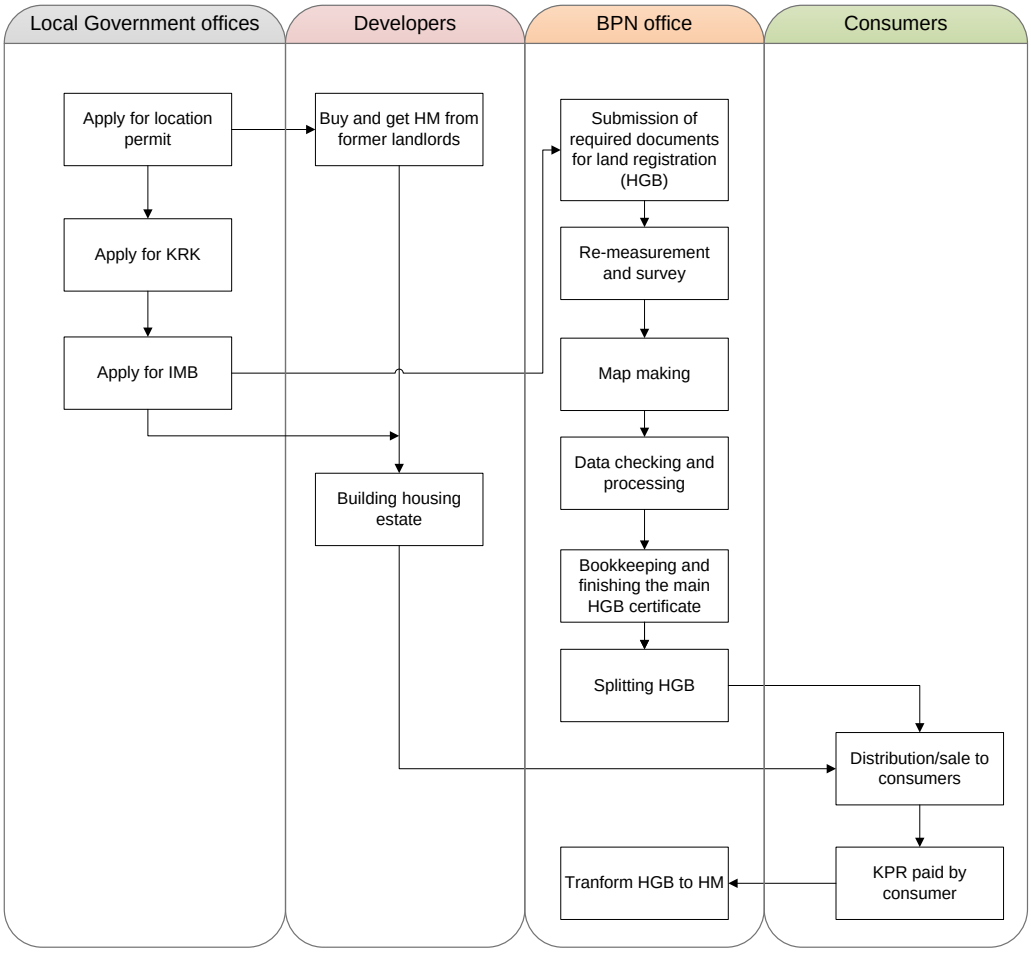
In practice, however, by paying unofficial fees at the local office of BPN, the whole process can be accelerated so that it takes three months or less. Some developers in Manado calculated that they spent IDR 650,000–750,000 for each split parcel to facilitate speedy processing. Another developer claimed that unofficial fees were as high as IDR 3 million per unit. These unofficial fees are much higher than the scheduled fee, which is IDR 210,000 per unit, excluding the notary's fee.

Once split into smaller units, developers can sell the lots of land to consumers or develop them through the construction of houses or other buildings. The

consumers pay for the land and house as a lump sum or in installments. After the payments are made, the consumers must still pay to upgrade the title from HGB to a freehold right title. According to the regulations, the fee for this procedure is IDR 750,000 per unit. The process of acquiring and registering land by developers is described in Figure G.1.

Individual applicants who want to split their freehold title into smaller parcels must also go through the same procedure described above. To split a freehold right into two smaller plots, it may take 3 months, with unofficial fees of around IDR 2 million. This is inconsistent with the Head of BPN Regulation No. 1/2010, which states the process should be completed in 15 days.

FIGURE G.1 LAND ACQUISITION AND REGISTRATION PROCESS FOR DEVELOPERS



SOURCE: BASED ON INTERVIEWS WITH DEVELOPERS.

LAND REGISTRATION BY INDIVIDUALS

The procedures for land registration by individuals are similar in the local BPN offices both in Semarang and Manado. Applicants need to submit completed forms with proof of ownership, declaration letters stating that the land is not in dispute, application fees stipulated in Government Regulation 13/2010 and Head of BPN Regulation 1/2010, ID cards (KTP), and proofs of payment of land and building taxes (PBB). The applicants should submit the applications at the specified counter. In the case of land that is traditionally owned, applicants must write an acknowledgement letter stating that he/she has been occupying the land for at least twenty years. This claim must be supported by the Kelurahan, so the Kelurahan plays an important role in the clarification of land ownership claims.

Both local BPN offices claimed that they fully comply with the regulations in the implementation of the procedures in question. Nevertheless, interviews with developers and with informal housing residents suggested that in practice the time and financial cost of registration was often higher than that stipulated by the regulations. In response to this, the office defended itself by stating that higher fees had to be applied to compensate for inflation and geographical conditions.

Table G.1 presents a summary of the land registration procedure. In the early stages of the preparation of documents, the kelurahan plays an extremely significant role. It issues the documents required for land registration at the BPN office, including a covering letter for the IMB, which is needed to confirm and paid BPHTB, and the " Letter C", a document proving land ownership. Although in theory this letter is no longer required, it is a legacy of the Dutch colonial system that was still used until Law No. 5 was enacted in 1960 and can still be used for proving (traditional) ownership and as a basis for upgrading to the modern types of land titles.

In order to obtain the Letter C, the applicant must show a supporting form and land transaction certificate (AJB). The verification process to issue a Letter C takes one day in the Kelurahan. In practice, the Kelurahan also demands an unofficial fee for this service. They often described this fee as "sumbangan sukarela" (voluntary donation), which they claim is for use to renovate and maintain public buildings. The amount of this donation varies from IDR 100,000 to IDR 500,000, depending on the size of parcel.

TABLE G.1 TIME AND COST OF LAND REGISTRATION PROCEDURES

Procedure	Time	Cost
Administration in kelurahan office	1 day	IDR 5,000-10,000
Document submission	1 day	-
Land measurement and survey	1 day (plus queuing)	IDR 350,000 or more (depending on area size)
Mapping	uncertain	uncertain
Confirmation of data (physical and	uncertain	uncertain

juridical)/processing		
Announcement of certificate	1 month	IDR 50,000 for certificate issuance BPHTB (taxes)
Overall	3 months – 1 year	Total IDR 1–7 million

If the data have been verified, applicants are not required to pass through the process in kelurahan. Rather, they can directly visit the local office of BPN or delegate the task to a notary, a common practice that speeds up the process but entails a higher fee. Using a notary is common because while applicants can arrange the registration without the services of a notary, they still need to meet with a notary or PPAT (land certification officer) to obtain an AJB. This process may also involve additional fees, at least the consultation fee. In addition, it is recognized that there is a close relation between BPN and notaries. As such, the process of self-help registration tends to be made more difficult, with the applicants being directed to delegate the land registration process to notaries.

After submitting the required documents, applicants wait for the results of the land measurement and survey process. The survey generally takes one day for a parcel of land, but can take longer depending if the parcel is large or there are any other complicating factors. Before the survey is conducted, the applicants must pay the measurement and survey fee, the amount of which depends on the area size, as stipulated by Government Regulation 13/2010. After this, the local BPN office will incorporate the survey results into their map and database.

The survey is followed by an examination of both physical and juridical data. The latter may be the most complicated process and may take the longest time, up to several months depending on the size of the land title and the quality of data. The possibility of officials asking for unofficial fee payments may be the highest at this point because the applicants are often prepared to do anything in order to obtain the certificate as soon as possible.

The final step is the announcement of the land rights title. As a follow up, the applicants will pay Revenue Acquisition of Land and Buildings (BPHTB) and UP taxes. The amount of BPHTB tax is 5 percent of the sale value if the tax object

sales value (NJOP) is lower than IDR 20 million and 10 percent if the putative sale value is higher than IDR 20 million. The certificate should be issued soon after this, although unofficial fees may still be requested at this point. The Head of BPN Regulation 1/2010 states that the overall procedure should be completed within 38 to 97 days. However, in practice the procedure may take six months to one year unless unofficial fees are paid to expedite the process.

In terms of costs, several suburban interviewees in Semarang noted that the total cost and time for registering their parcels of land with an area of 300 square meters via notary was IDR 5–8 million, with the process taking up to 1 to 1.5 years to complete. A respondent in Kecamatan Meteseh in Semarang said that though the total registration fee might amount to IDR 8 million for normal registration, the fee is only about IDR 120,000 if the process involves a systematic registration project. A low-income housing developer stated that the official fee is only about one-fourth of the actual total of fees paid.

The overall fee for land registration in Manado can vary from IDR 1 to IDR 7 million. A respondent in Sario Utara Village stated that he paid IDR 5.6 million for the registration of a land parcel of area of 9x6 square meters. Another respondent in Titiwungan Selatan Village in Manado said the land registration cost about IDR 2–3 million, while another in Tuminting Selatan Village stated that he spent IDR 1 million in fees in a Prona project, while the fee for regular registration might be as high as IDR 7 million.

Land Policies in Practice

In Semarang and Manado, BPN offices have implemented the national programs described above to encourage land acquisition and to accelerate land rights administration. People who join the systematic registration programs, such as the adjudication, SMS or Larasita programs, gain by having to pay a relatively low fee, amounting to about IDR 120,000 for land of an area of 70 square meters. The *Larasita* program is aimed at cutting the cost of land surveying and measurement, thus effectively decreasing the fee charged to the applicants. In Manado, this program has been practiced since 2010.

The largest scale Prona registration program was carried out in the 1990s, with funding assistance from the World Bank. In 2009, the local office in Semarang processed approximately 500 Prona applications. According to a private developer, large-scale and project-based land registration programs such as Prona may be problematic and result in a poor quality of registration, with imprecise measurement of plots and inaccurate information regarding ownership history. In Kecamatan Tembalang, for example, the program has triggered conflicts over land rights, with the same parcels of land being claimed by more than one party. The developer obtained the certificate through a regular land acquisition process, after which local community residents claimed that they had obtained a certificate for the same plot of land earlier, through an adjudication process.

Despite these weaknesses, Prona is the preferred program for applicants from low-income groups, due to the high subsides they are able to receive from the government. Through this program, each municipal office can register 500 parcels of land annually. Although there is technically no registration fee included in the program, in practice unofficial fees are imposed on applicants.

SMS (*Sertifikasi Massal Swadaya*), the collective registration program initiated by the community, has been successfully implemented in Semarang. In 2009, the local BPN office processed from 500 to 1,000 SMS applications, with the number increasing to 3,000 in 2010. This program was implemented in 2007 in four kelurahan of Manado, but has not been conducted since due to limitations in the number of the local office personnel.

In 2010, self-help land consolidation processes were conducted in at least three locations in Semarang, with these processes involving approximately 100 parcels of land, compared to 600 parcels in the previous year. The local BPN office stated that the decrease in the number of consolidated parcels from 2009, when there were 150 such parcels, is because an increasingly high proportion of land in Semarang has already been formally registered and is well developed. In Manado, land consolidation programs have not been successfully implemented for several reasons. The main difficulty is that the program

requires a high degree of participation, as existing residents must give up part of their land to facilitate the development of infrastructure. Past experience also indicates that the program was not sustainable because the local government often failed to fulfill their assigned duties by following up the program with the provision of basic infrastructure and facilities. This discourages the local people from participation in the program.

The BPN offices in Semarang also utilize adjudication processes to accelerate land registration. Adjudication is used for land being registered the first time and is packaged in projects. The first large scale adjudication was implemented with financial and other assistance provided by the World Bank in 1994.

Limited Institutional Capacity: BPN offices in Semarang and Manado

The local BPN office in Semarang processes more than 10,000 land registration applications each month. Not more than one percent of these applications are rejected. Rejections can result from unclear physical or juridical data, including the conflicting status of land.

At the time of the site visits, the local BPN office in Semarang employed 134 members of staff, while the local BPN office in Manado employed 54. Both offices claimed that they were understaffed, with the office in Semarang suggesting that they needed about 200 staff members in order to provide a good level of service to the community. In general, starting limitations appear to have made it difficult to carry out programs such as *Larasita* and SMS.

Ideally, each member of staff would work on only one or two tasks in parallel. However, in practice, each employee must work on three such tasks. To some extent, this work overload has been dealt with through internship programs. The office in Semarang employed about 15 student trainees each month, while the Manado office retains 12 honorary workers. However, the annual recruitment of new public servants into these officers does not even cover the replacement of retiring members of staff. Both offices claimed that the lack of staff was the main reason for the lengthy land registration processes.

Another limitation is the lack of necessary equipment. The office in Semarang is better equipped than the office in Manado, with more than 80 computers, 20

GPS devices and several sketch plotters. Staff suggested that existing assets meet about 70 percent of their needs, though the quality of the existing equipment is low. In terms of its equipment, the office in Manado is in even worse situation, possessing only nine GPS receivers, ten computers and three measurement tools, one of which does not work properly.

The operational budget of the offices use allocated through the APBN. In 2009, the allocation amounted to approximately IDR 5 billion for Semarang and IDR 2 billion in Manado. The largest proportion of expenditure is on staff salaries. The local offices also generate revenue from fees for land administration services, but they have to transfer them to the Ministry of Finance directly on a daily basis.

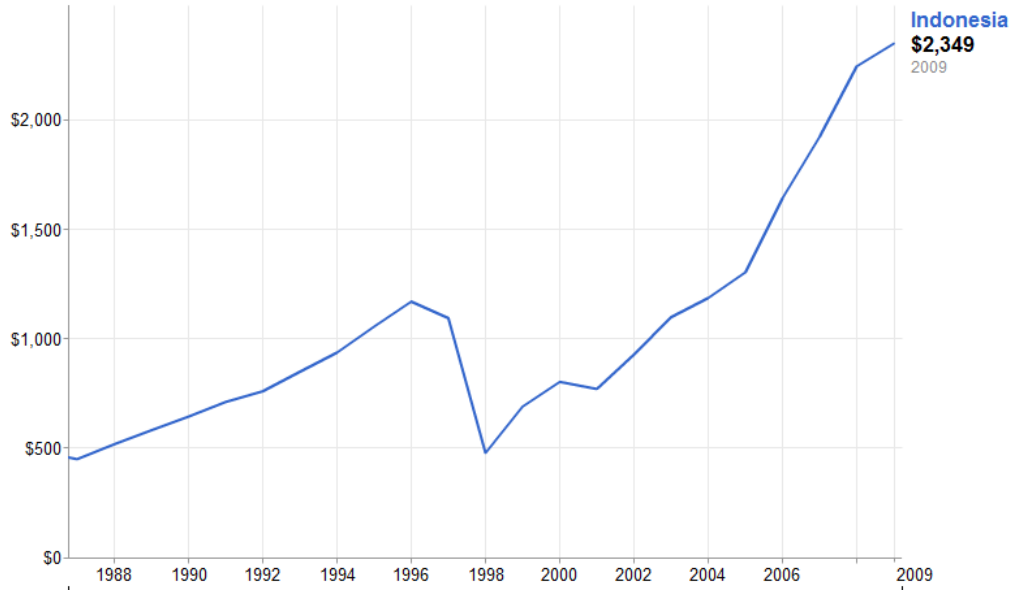
APPENDIX H

This appendix provides background information regarding the economic and financial sector conditions of Indonesia that affect the housing market.

Economic and Financial Sector Conditions

The Indonesian economy recovered slowly after the country's dramatic economic and political crises that followed the Asian Financial Crisis of 1997, recovering to pre-crisis levels of GDP only in 2005. However, since 2005, the economy has shown strong growth, with an average annual increase in GDP of five percent. With its domestically driven economy, the country was resilient to the Global Financial Crisis of 2008. Figure H.1 shows the Gross Domestic Product (GDP) per capita in the period from the end of the 1980s to 2009.

FIGURE H.1 GROSS DOMESTIC PRODUCT PER CAPITA, 1987 – 2009 (IN 2010 USD)



SOURCE: WORLD DEVELOPMENT INDICATORS.

Although Indonesia was negatively impacted by the global financial crisis, the shock was not as severe as in many other countries. However, the rate of increase in GDP declined to 4.5 percent in 2009. This decline occurred mostly due to the decrease in global demand for Indonesia's commodity-based

exports. However, the fact that Indonesia's economy is largely domestically driven mitigated the impact (International Labour Organization, 2011). Similarly, given its reliance on domestic deposits and government funds, the mortgage market was not impacted heavily by the crisis in 2008, with the failure of the first attempt at the securitization of mortgages in 2009 likely being due to a lack of confidence given the experience of the United States with its mortgage market.

The effects of the Asian Financial Crisis are still having an impact on the Indonesian labor market. Although unemployment has declined since 2005 to about 8 percent in 2009, this mostly reflects growth in non-wage employment (International Labour Organization, 2011). As a result, levels of informal employment are now higher than before 1997, providing employment to roughly 60 percent of men and 65 percent of women (Badan Pusat Statistik, 2009). In addition, youth unemployment and informal employment remains high. These two factors exacerbate existing problems related to access to housing finance, as informally employed workers find it much more difficult to obtain a mortgage than those in the formal sector. Also, many of the young unemployed are in the age group most likely to form a household, or to wish to do so, so unemployment amongst this group has significant implications for access to housing.

The Indonesian financial and banking sectors were deregulated after 1988 in order to mobilize funds, to develop capital markets, and to increase the efficiency of lending. In particular, to that point, the financial sector had been dominated by banks. The reforms were thus also intended to facilitate the expansion of non-bank financial institutions. This hoped-for expansion has not been fully achieved, with banks still dominating the financial sector. In fact, they now dominate the market to a significantly greater degree than they did a decade ago. In 2004, it was estimated that roughly 60 percent of financial sector assets were held by commercial banks, with an additional 24 percent being held in the stock market (Hoek Smit 2008). In 2009, it was reported that the banks' share of total financial sector assets had grown to 80 percent (World Bank, 2009).

Banks

The deregulation in the late 1980s led to a rapid growth in the number of banks, many of which had close ties to the real estate sector. However, lack of adequate government supervision of these banks contributed to imprudent lending practices that exacerbated the financial and real estate crisis at the end of the 20th century (Firman, 2000). In the current context, the banking sector in Indonesia is stable, with a diverse network of state, regional, private and foreign banks. The state banks dominate a disproportionately large share of the market. In 2005, the total value of outstanding credit held by state and private banks was approximately equal, amounting to a total value of roughly IDR 250 billion. By contrast, foreign banks held outstanding credit amounting to a total value of approximately IDR 100 billion, while that held by regional banks amounted to a value of approximately IDR 50 billion. Together, the ten largest banks account for approximately two thirds of the total outstanding credit held by the banking sector, with the four largest accounting for 36 percent (World Bank, 2009).

Banks continue to dominate the housing finance system. The funds for non-subsidized mortgages issued by private banks are derived mostly from deposits, which leads to insufficient liquidity and a potential problem arising from funding of long-terms loans from short-term deposits. The practice of adjusting interest rates according to the current level of cost to the lender reduces the interest rate risks borne by financial institutions and transfers the risk to borrowers. However, this does not seem to pose a systemic risk to the financial sector. Loan-to-deposit ratios for commercial banks have been stable in the range of from 70 percent to 75 percent range in the past few years. Their net stable funding ratio, as established by BI according to the Basle III concept, stands at the acceptable level of 2 (2010), with the volume of liquid assets remaining high. However, this is being achieved at the expense of the development of long term finance, particularly for housing. The use of the capital market has been limited until recently, although instruments are now available to mobilize long term resources.

Other financial institutions

Non-bank financial institutions occupy a relatively insignificant position in the country's financial system in terms of the volumes of loans they facilitate. However, many of these institutions, such as microfinance institutions, play important roles in the lives of Indonesian people, especially among low-income groups. In 2005, there were an estimated 237 finance companies operating in Indonesia, many of which were engaged in consumer lending, including the provision of leasing facilities and credit cards. This sector, which focuses heavily on the provision of finance for cars and motorcycles, has a good performance rate. However, at present, such finance companies are not permitted to participate in the mortgage market. On the basis of the analysis above, this prohibition should be reconsidered in order to facilitate the channeling of secondary market funds through established finance companies.

Since 2005, the value of financial assets held by insurance companies and pension funds has grown, with the total value of these assets amounting to IDR 90 trillion and with IDR 60 trillion in investments. Roughly 170 insurance companies provide a number of financial services, including life and non-life insurance and various other forms of social insurance. A significant proportion of these funds has traditionally been invested in government bonds, although an increasing proportion is invested in corporate bonds. There are a significant number of public and private pension funds, although the market is dominated by Jamsostek, which holds more than 40 percent of the total assets of the sector. Both insurance companies and pension funds could play a potentially large role in liquidity for the housing sector in the future, yet their current exposure to real estate and housing loans is limited to 10 percent of total investments.

The micofinance sector in Indonesia is large and diverse, with a wide variety of institutional structures for entities that provide microcredit and saving services. These entities may take the form of cooperatives, credit unions, rural credit institutions and even pawnshops. The various different types of institutions tend to serve different markets, with clients of the different entities tending to use the finance obtained for different purposes. The gross loan portfolio of the

microfinance sector in 2009 was estimated to be over IDR 50 trillion[9]. The government is involved in microfinance to a significant degree. It is the majority owner of the dominant microfinance institution (MFI), Bank Rayat Indonesia (BRI), whose portfolio accounts foran estimated 90 percent of the combined value of the portfolios held by the sector. Although it is probable that microfinance loans are frequently used for housing improvement, there are few products specifically tailored for investment in incremental house building and improvement.

Indonesia has a fairly large stock exchange, which was created by merging two pre-existing stock exchanges in 2007, the Jakarta Stock Exchange and the Surabaya Stock Exchange. Prior to their amalgamation, the Jakarta Stock Exchange had focused primarily on equity trading, while the Surabaya Stock Exchange primarily traded government and private bonds. The total value of stocks listed on the newly formed stock exchange was over IDR 1,000 trillion in 2010.

A recent development in the Indonesian financial sector is Sharia banking, a banking system based on Islamic law, which limits speculation. Since 2008, the sector has been regulated by the central bank through its Indonesian Banking Architecture (API) system. With Indonesia being a predominantly muslim country, it is not surprising that the Sharia system has grown fast. In 2008, the value of its portfolio accounted for three percent of the sector's total. Several banking and other institutions have introduced Sharia banking services for housing finance. BTN, for example, established a Sharia banking system in 2004. By 2010, BTN's Sharia banking system held a housing related loan portfolio amounting to a total value of IDR 2.15 trillion, which accounted for 53 percent of all Sharia banking system loans.

[9] According to the Microfinance Information Exchange (http://www.mixmarket.org/).