Housing Policy and Finance in China: A Literature Review

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1. Introduction

This report reviews the existing literature on China's housing policy and its housing finance system. Three issues will be discussed. First, we will briefly review the history of China's housing reform, which began in 1980. Today China has completely transformed from a centrally planned public housing system to a market-oriented housing industry. Reviewing this process will help us understand China's housing policy choices, since most of them were developed to facilitate this transformation.

After reviewing the historical transformation of China's housing system, we will then discuss the framework of China's current housing policy. In particular, we will discuss the three major programs that the Chinese government has developed to make housing more affordable for its citizens: the Economical and Comfortable Housing program (ECH), the Housing Provident Fund program (HPF), and the Cheap Rental Housing program (CRH), which have become the three pillars of China's affordable housing system.

In addition to developing these affordable housing programs, the Chinese government has also made significant efforts to develop its housing finance system from scratch. Thus our third section will discuss China's housing finance system. We will first review how China's housing finance system has been restructured by the housing reform. We will then describe China's emerging mortgage market, which has become a powerful engine for the country's booming housing development and sustained economic growth (Deng and Fei 2008). Finally, we will also review how the Chinese government has regulated its housing finance sector to address concerns regarding potential real estate bubbles and to stabilize the housing markets.

One key objective of this report is to provide the most recent information on Chinese housing policy and housing finance. Like other aspects of the Chinese economy, the housing sector has been undergoing constant changes. Thus, much of the English-language literature may not reflect the latest developments in this area. To bring the discussion up to date, we also reviewed a significant amount of Chinese literature, including both scholarly articles and government documents.

2. The Transformation of China's Public Housing System

This section reviews the transformation of China's public housing system. A great deal of literature has documented this transformation and assessed its impacts. We will summarize them by discussing several major milestones in China's public housing reform.

The early stages of housing reform in China were largely motivated by the need to address the failure of the old public housing system to provide adequate housing for its citizens and the excessive financial burden of managing a massive public housing stock. Under the old system, housing was treated merely as a component of social welfare and was provided mostly for free by government institutions and state-owned enterprises, also known as work units. Since the nominal rent collected did not even cover the cost of basic maintenance, there was little incentive for housing investment and improvement. As a result, China experienced continuously deteriorating urban living conditions and a widespread housing shortage under the old system. The per capita living space, for example, declined from 4.5 square meters in the early 1950s to 3.6 square meters in the late 1970s (Li 1998).[2] As soon as the Chinese government launched its economic reform in 1979, housing reform was put on the agenda. Yet, just as it approached

[2] One square meters is about ten square feet.

reforms in other sectors, China took a gradualist approach to housing reform in the early stages. From 1980 to 1987, several experiments were carried out in selected areas to test the feasibility of various public housing reform measures such as rent adjustment and privatization of the existing stock (Wang and Murie 2000). In 1988 the Chinese central government issued an important document, *Implementation Plan for a Gradual Housing System Reform in Cities and Towns*, which marked the beginning of a nationwide housing reform. As a result, public housing units throughout the country started to be sold to their sitting tenants at heavily discounted prices. When units could not be sold, efforts were made to raise the rent; the increase, however, was largely symbolic and fell far short of covering even basic maintenance costs. On the other hand, despite efforts to reduce the government's housing burden, work units during this period still treated housing provision as their core obligation. Enjoying the new fiscal freedom resulting from economic reform, many work units significantly expanded housing production for their employees. As a result, housing continued to be allocated as a welfare good, rather than a commodity traded on the private market. Public housing stock grew to an unprecedented level.

The second milestone came in 1994, when the Chinese central government issued *The Decision on Deepening the Urban Housing Reform*, which established a comprehensive framework for the next stage of the housing reform. Within this framework, both supply-side and demand-side programs were created to facilitate the development of a housing market. On the supply side, the government decided to build a multi-layer housing provision system for different income groups. Middle- and lower-income households, for example, would purchase subsidized affordable housing units produced through a program called Economical and Comfortable Housing (ECH), while high-income families would purchase regular market housing (State Council of People's Republic of China, 1998). On the demand side, a dual housing finance system was also established to combine both social saving and private saving (Wang and Murie 2000). Potential homebuyers would get subsidized mortgage loans through a compulsory housing saving program called Housing Provident Fund (HPF) as well as by applying for commercial mortgage loans offered by financial institutions. While trying to bridge the gap between housing supply and housing demand, the government also continued its efforts to privatize the existing public housing stock, but with more carefully designed pricing mechanisms. For example, families who pay market prices for their units get full property rights, including the right to resell their units on the open market, while families who pay subsidized prices would have partial ownership but face restrictions regarding resale (State Council of People's Republic of China, 1994).

Clearly, the overall objective behind all these efforts is to establish a functional housing market so that families could purchase housing directly from the market and work units would be relieved of their housing responsibility. Unfortunately, this did not happen easily. Immediately after the 1994 reform, the country saw the rapid growth of a professional housing development industry and an unprecedented housing construction boom. Yet instead of being sold to individual urban families, most of the housing units were purchased by work units, which then resold them at deeply discounted prices to their employees (Wang and Murie, 1996). Since many of the work units were state owned and were not subject to hard budget constraints, their purchase behaviors have significantly distorted the emerging housing market.

In 1998 the Chinese central government decided to take abrupt action to cut the link between work units and housing provision. Specifically, it issued *A Notification from the State Council on Further Deepening the Reform of the Urban Housing System and Accelerating Housing Construction*. This notice prohibited work units from building or buying new housing units for their employees. Instead, they would have to provide monetary subsidies to their employees to help them buy homes on the market. The 1998 reform was thus characterized as the monetization of the housing allocation system. Considering China's usually pragmatic approach to its reforms, this abrupt cutoff may seem surprising to some people. Yet it has actually been a strategic move in China's overall economic reform. As Lee and Zhu (2006) have observed, the reform immediately followed the Asia Financial Crisis in 1997, which posed serious challenges to the Chinese economy. The economic growth rate in China slipped from 8.8 percent in 1997 to 7.2 percent in the first quarter of 1998 (The Economist, 1998). Due to the decline in the export industry, millions of Chinese workers were laid off from state-owned enterprises. It became obvious that China needed a new growth strategy that would stimulate domestic demand. With its tremendous pent-up demand, the housing industry was chosen as the new growth engine. Yet such a strategy would not work if households continued to rely on their work units for housing allocation; thus, it became necessary to wean them from the old system. On the other hand, the poor performance of many state-owned enterprises during this period also made it clear that housing provision, along with other welfare responsibilities, had become a major liability to these enterprises and had thwarted their competitiveness in a global economy. As a result, the Chinese government decided that it was time to terminate the old system and switch from in-kind housing provision to a cash-based housing subsidy. While redefining the role of work units in its housing system, the 1998 reform also calls for significant expansion of the two major housing programs created in 1994, ECH and HPF. By expanding the two programs, the Chinese government hoped to enable most urban households to purchase housing produced by private developers.

The significance of the 1998 reform cannot be overestimated. It marked the turning point of China's housing reform. Despite some initial resistance and setbacks, China has finally established the market mechanism in both housing production and housing consumption. Today, private market housing transactions are normal for Chinese households. According to Ye et al. (2006), from 2000 to 2004, China's annual investment in real estate averaged about 746 billion Yuan and accounted for almost 7 percent of the nation's GDP.[3] As the housing industry becomes the new engine of growth, urban residents' living conditions have also significantly improved. The floor space per capita, for example, has increased from 18.7 square meters in 1998 to 24.97 square meters in 2004. Thanks to both massive public housing privatization and strong government incentives for home purchase, the homeownership rate in China reached 80 percent in 2004; in fact, homes have become the most important new form of private property for urban Chinese (Feng 2003).

Yet as many scholars have pointed out, this new market-based system also has its own historic footprint and particularly Chinese characteristics. For example, although work units no longer build housing directly for their employees, they continue to play an important role in their employees' housing consumption, either through cash-based housing subsidies, or through their contributions to the Housing Provident Fund. In fact, as discussed below, the continuous participation of work units has been a major cause of the increasing inequality in China's housing system. Moreover, throughout its housing reform, the Chinese government has adopted a decentralized approach in which the central government lays out the framework of housing

[3] As of Nov 9, 2009, the US dollar–Chinese Yuan exchange rate was 1:6.83. To convert Chinese Yuan amounts to US dollars, divide the Yuan amount by 6.83.Thus, 746 Billion Yuan would be about 109 Billion dollars.

reform, and local governments implement specific programs (Huang 2004).[4] Often, central governments commit only very limited resources, and local governments are asked to pay for most of the costs involved in the reform. As a result, there has been considerable local variation in the timetable and degree of reform (Wang 2005). Finally, the strong role that local governments have played in China's housing reform is also due to the fact that all urban land, according to the Chinese Constitution, belongs to the state. Local governments are the representatives of the state and are in charge of expropriating rural land for urban uses and allocating it among different users. By controlling both the land supply and the zoning regulations, local governments can decide what can be built in their jurisdictions, subject to the requirements of the central government.

3. China's Current Housing Policy Framework

This section will discuss China's current housing policy framework, with particular focus on three major affordable housing programs that the Chinese government has developed to improve housing affordability for its citizens. The programs are: the Economical and Comfortable Housing (ECH) Program, the Housing Provident Fund (HPF) Program, and the Cheap Rental Housing (CRH) Program.

Before discussing the individual programs, we should briefly describe the state of the existing literature. The English-language literature on China's housing policy has largely focused on documenting the reform process and evaluating its impacts on urban residents. Few studies have directly assessed individual programs. In China, however, there has been an active debate

[4] It is important to note that local governments in China are akin to metropolitan governments since their jurisdictions often cover large areas. For example, cities in China often include both central cities and suburbs, as well as some nearby rural areas.

regarding the efficacy of each individual program in the media and academia. Unfortunately, much of the debate is driven by advocacy, not by empirical investigation. As a result, there has been a severe shortage of studies that rigorously evaluate these programs. Nevertheless, the extensive public debate did generate some consensus on how these programs have been implemented and what issues they face now. This section will summarize this knowledge.

3.1 Economical and Comfortable Housing (ECH)

As noted earlier, the Chinese government created the ECH program as part of the housing supply system in the 1994 reform.[5] Since then, the program has become a major source of affordable housing for urban families. The program aims to serve lower-middle- and middle-income urban families who may not be able to purchase market-rate housing. According to Di et al. (2008), ECH differs from both previous public housing and private housing initiatives in two ways. First, all the affordable units are developed for sale, not for rent, so that the government does not need to subsidize their operation. Second, most of the ECH units were built by for-profit real estate developers and sold to eligible families through market transactions. ECH relied heavily on the generosity of local governments, which provided most of the development subsidies (Rosen and Ross 2000). Local governments are expected to provide free or low-cost land to ECH developers as well as reduce or even waive various development fees and real estate taxes. In exchange, local governments regulated the sales price of ECH units, keeping the profit margin no larger than three percent. Nationwide, the prices of ECH units were usually 15 to 20 percent lower than market prices (Liu and Xie 2000).

[5] ECH was originally called *Anju Gongchen* (which means "peaceful living") in the 1994 reform. It took its current name and expanded significantly in the 1998 reform.

The ECH program was significantly expanded in the 1998 reform. According to the 1998 reform, ECH housing should be accessible to most urban residents (70 to 80 percent). The higher-income households in urban areas (10-15 percent) would be encouraged to obtain high-quality housing through the market, and poor urban families (about 10-15 percent) would be given subsidized rental housing by their employers or the city government (Wang and Murie 2000). While critics have questioned the rationale for providing subsidized housing to a majority of the population, the Chinese government believed that such an incentive was necessary to push most urban households into the market after the Asian Financial Crisis. Thus, it is clear that the primary goal of ECH was to stimulate housing consumption, not to help needy families. Given this background, it is perhaps not surprising that the program as implemented has often missed its targeted groups. Wealthy households often purchased the ECH units, pushing both development standards and housing prices beyond the reach of middle- and lower-income families (Cai 2009, Zhang 2007). In Beijing, for example, a recent study found that the median housing value among ECH units is about 780,000 Yuan, higher than the median value of the entire housing stock (Man 2009).

In response to the public's strong dissatisfaction with the program, the Chinese government decided to regulate both eligibility and development standards. Specific income limits are now set by local governments, but the income limits are often too high in many areas. In Beijing, for example, an income limit of 60,000 Yuan in 2004 actually made most upper-middle-income households eligible (Duda et al. 2005). In Chongqing, a mega-city located in the less developed inland area, families with incomes of less than 150 percent of the average area income are eligible. Like eligibility issues, the development standards of ECH housing have long been controversial. Throughout most of the program's history, there were no national standards. Local governments were asked to implement their own development standards based on local housing conditions. Unfortunately, local governments were subject to pressure from both developers and wealthy local buyers (just as they were with regard to the income limit). As a result, local development standards for ECH housing— if they existed at all—were often too high, making the housing unaffordable to its targeted group (Liu 2009). Only in 2006, in response to soaring housing prices and an overheated real estate market, did the Chinese central government decide to promote smaller-unit development, hoping to drag down housing prices. Specifically, it required that for every new housing development, at least 70 percent of the finished space must be devoted to housing units that are no larger than 90 square meters. In 2009, the government finally set a separate nationwide standard dictating that ECH units should not exceed 60 square meters. Yet the reduced development standard did not discourage higher-income families from purchasing ECH or other smaller market housing units; indeed, many bought these units for investment purposes.[6] As a result, the price of the ECH units remains beyond the reach of its targeted groups (Duda et al. 2005). For example, a recent study by Yang and Shen (2008) shows that the ECH housing price in Beijing is at least 15 percent higher than what a medium-income family could afford based on standard mortgage assumptions.

Another problem ECH faces is the reluctance of local governments to support the ECH development, since they have to bear most of the subsidy cost. Thus, while there was a temporary surge in ECH production right after the 1998 reform, ECH production has lagged behind total housing investment since 2000. For example, in 1999 ECH investment accounted for 16 percent of the total housing investment, but this share dropped to less than 5 percent in

[6] Theoretically, only first-time homebuyers can purchase ECH units, but this requirement is not strictly enforced. Like the income limit, it is easy for higher-income families to get around.

2007, further exacerbating the affordability crisis in China's housing market. Still, the magnitude of the program cannot be overlooked. Since its beginning, the ECH program has produced over 12 million subsidized units (Tan 2009). More recently, the Chinese government has decided to further expand the ECH production as part of its stimulus spending to address the economic recession. As announced by its Ministry of Housing and Urban-Rural Development (2009), China plans to build 1.3 million ECH units each year from 2009 to 2011. Yet, so far it has not announced the details regarding how this plan would be implemented.

Finally, it is also important to point out that while most of the ECH units are built by private developers, some ECH projects are cooperative housing developments sponsored by work units, a phenomenon that is unique to the Chinese system (Wang et al. 2005). Work units interested in this model set up a subordinate real estate development company. To get the process started, this development company collects deposits from employees through a pre-sale process. With this startup capital, it then operates like any other development company to obtain land, get planning approval, and build the project. Often, the development company just uses the land that work units either acquired through free administrative allocation or purchased at very low cost (Wang et al. 2005). Moreover, because of the strong connection between work units and local governments, these cooperative projects also benefit from many other forms of preferential treatment. As a result, their sales price is significantly lower than that of market ECH housing, which explains why employees are so eager to participate in the pre-sale process. On the other hand, for some work units, especially the well-off state-owned enterprises, this model is very attractive not only because it can help them meet their employees' housing needs and retain talented workers, but also because it offers the opportunity for them to step into the profitable real estate industry. Indeed, many of those spin-off development companies have later grown into large commercial housing developers serving regional housing markets.

3.2 Housing Provident Funds (HPF)

Modeled after Singapore's Central Provident Fund, China's Housing Provident Fund debuted as an experiment in Shanghai in 1991 and officially became a national housing program in the 1994 reform. HPF and ECH work side by side as the country's two main programs promoting homeownership. HPF is a compulsory housing saving program in which both employers and employees contribute a certain percentage of the employees' salaries, initially set at 5 percent, to HPF accounts administered by the China Construction Bank. In return, employees get low-interest mortgage loans from the HPF for their home purchase. HPF has played a major role in facilitating the transformation of China's housing system. It allows work units to contribute a cash subsidy instead of directly building public housing units for their employees. Employees are then expected to purchase market housing using the HPF loans, along with their own financial resources and commercial mortgage loans. In addition to a home purchase, HPF can also be used for other housing-related activities such as home improvement, housing repairs and self-construction (Zhang 2000). While there have been no empirical studies of the program's contribution to homeownership, some descriptive analysis by Duda et al. (2005) shows that beneficiaries of the program tend to purchase larger homes and enjoy more living space per person than other homeowners.

Perhaps the biggest issue facing the HPF program is the increasing horizontal inequality inherent in its design. When the program was first created, it was offered only to public-sector employers. Since 2005, the program has required the participation of both the public and private sectors.

Employers who do not participate have to pay a fine (State Council of People's Republic of China 2002). But this penalty is not strictly enforced since local governments are often reluctant to punish local business owners. In 2006 the HPF program covered 60 percent of all salaried workers in urban areas, but the participation rate varied widely across cities (Ye and Wu 2008). In more developed coastal regions such as Jiangsu and Zhejiang provinces, the participation rate reaches approximately 90 percent. In the less developed inland area, however, the participation rate is below 50 percent. The contribution ratio also varies. In places like Beijing or Shanghai, employers have matched 8 to 10 percent of the employees' salaries, but in other places the ratio may not even reach 5 percent, despite the minimum requirement imposed by the central government (Editorial Committee of the Yearbook of China Real Estate Market 1997; Wang et al. 1999). Finally, since the contribution is salary based, workers with higher salaries receive larger employer contributions. For example, studies show that government institutes offer better HPF than collective enterprises, and higher-level government institutes offer even more than municipal and district-level institutes (Lee and Zhu 2006).

The Chinese government takes great pride in the success of the HPF program in accumulating housing savings. By 2008, the HPF had accumulated over 2 trillion Yuan, with over 73 million urban employees participating. As the fund grows, it becomes more challenging to manage. Like other housing programs, the HPF is locally administered, with central governments setting the principles and rules (Deng and Fei 2008). For example, while the fund is deposited in the China Construction Bank, its daily operations (such as approving withdrawals or originating loans) were conducted by an HPF management center set up by local governments. This management center has to follow decisions made by an HPF management committee that regulates the details of how the HPF fund may be used (such as the interest rate or maximum allowable loan).

Members of the HPF management committee are evenly divided between representatives of related local government agencies, unions, employees and work units. According to Chen (2009), the strong local government involvement is what distinguishes HPF from the commercial mortgage sector. In the commercial mortgage sector, the availability of mortgage capital and its terms are determined by commercial banks and are strictly monitored by China's central bank. Local governments have no control over it. In contrast, local governments are responsible for the management of the HPF fund and have used it as a vehicle to maintain the prosperity of local real estate markets. For example, in 2008, in view of the weak economy that resulted from the global financial crisis, many local governments have relaxed the requirements for HPF loans through measures like reducing the minimum down payment or raising the maximum loan limit to promote housing consumption.

One critical challenge now facing the HPF program involves fund investment. As noted before, there are two legitimate uses of HPF money. The first is for the participants to withdraw their own savings for qualified purposes. The second is to provide low-cost loans for participants' home purchases. Often, participants can expect to get a loan that is as much as 10 to 15 times larger than their HPF savings (Wang 2001). According to government regulations, these two uses have the highest priority, and HPF management must ensure that sufficient capital is available to meet these demands. With this principle in mind, it then can consider how to invest the extra capital. In response to widespread fraud in the early stages of the HPF program, however, rigorous restrictions have been imposed on fund investment. For example, the HPF fund cannot be invested in the stock market, nor can it be used to provide development loans for commercial housing projects. Indeed, the main option today is to invest in Chinese treasury bonds, but this option alone cannot meet the investment needs of a rapidly growing fund. For example, in 2007, an estimated 200 billion Yuan was sitting idle on the bank account, with no place to be invested (Ministry of Housing and Urban-Rural Development of China 2009).

The Chinese government has been looking for ways to expand HPF investment, but it has been proceeding cautiously. For example, the Chinese government now allows the HPF capital gains to be invested in Cheap Rental Housing (CRH) projects, a program targeting low-income urban households. Starting in 2009, the Chinese government has been testing the feasibility of investing the HPF fund in both ECH and CRH developments by conducting experiments in a few selected cities. From the HPF perspective, development loans would earn a higher interest rate than loans offered to individual households. From the ECH and CRH perspective, these HPF loans would compare favorably to the commercial loans their developers would have to get otherwise. Thus, this could theoretically be a mutually beneficial option.

Finally, in discussing the investment challenge, we should also note that the HPF home purchase loans offered to individual households have performed extremely well, with a delinquency rate averaging about 0.07 percent in both 2006 and 2007. Clearly, much of this is due to the subsidized interest rate, which can be as much as one percentage point lower than the commercial mortgage rates. However, it may also reflect the program design that links the mortgage size with the amount of savings households have accumulated on their HPF accounts. As discussed above, households with higher salaries receive larger HPF contributions and thus qualify for larger loans. Lower-income households, on the other hand, can only get smaller loans, or perhaps nothing if they could not afford to purchase any housing. Some scholars have argued that the difficulty for low-income families to get sizable HPF loans is one of the reasons that much of the program’s fund has remained unused (Chen 2009). Thus, ironically, the apparent financial safety of the HPF fund may have resulted in part from this inequality in fund allocation. According to the Chinese government, the recent experiment of investing the HPF fund in ECH or CRH developments may help address the inequality issue by expanding the supply of affordable housing for these lower-income families. But how to balance this goal with the program's financial safety requirements is a challenge the Chinese government needs to handle.

3.3 Cheap Rental Housing (CRH)

The two major programs we have just discussed are both homeownership programs. As our historical review shows, much of China's housing reform has focused either on reducing the government burden or on promoting homeownership, with little attention to the housing needs of low-income renters. This is because China's housing policymaking has been driven as much by the need to promote economic growth as by the need to meet families' housing needs (Lee and Zhu 2006). To be fair, the 1998 monetization reform did call for the establishment of a social rental housing system for people who cannot afford to purchase ECH units or to rent market housing. The targeted groups include seniors, people with disabilities, and extremely low-income households. Rents in these social housing units are heavily subsidized (Ye et al. 2006). Yet with the exception of asking local governments to reserve some old public housing units as social rental housing, the central government has made no special effort to accommodate the housing needs of the growing low-income population resulting from the massive rural-to-urban migration (Han 2008). As a result, while most urban households have experienced a dramatic improvement in their living conditions, this is not the case for the urban poor. According to the Ministry of Housing and Urban-Rural Development of China, the average living space per capita among urban residents has risen from 6.7 square meters in 1978 to 28 square meters in 2008. By contrast, over 10 million urban households still lived with less than 10 square meters per capita.

In fact, the Ministry itself also acknowledged that that the main housing problem in China today is no longer overcrowding but rather urban poverty.

Given increasing concerns about urban poverty and how it might threaten both social stability and economic prosperity, the Chinese government finally decided to take action. In 2004 the Chinese central government issued an order on *Ways to Provide Cheap Rental Housing for the Poorest Urban Residents* with the goal of strengthening the social rental housing system and renaming it the Cheap Rental Housing (CRH) program. While the program focuses mainly on expanding the affordable housing supply, it does not exclude the demand-subsidy approach. In fact, the program asks for the combined use of both new production and rent subsidies.[7] Unfortunately, while it urged local governments to establish the CRH program, the government order of 2004 did not dedicate funding for this purpose. Instead, local governments were asked to look for multiple funding resources, such as annual budgetary allocation from different levels of governments, a portion of HPF capital gains, other local housing funds, etc (Ba et al. 2006). For example, the central government might provide some support from its annual budget, but such funding was not guaranteed and was often very limited. Local governments again had to bear most of the cost. As a result, the program has understandably grown very slowly (Han 2008). In light of this issue, in 2006 the Chinese central government mandated that every municipal government must dedicate 5 percent of its net gain from land conveyance fee to the CRH program. Still, since there is no enforcement mechanism, many local governments are reluctant to do so. From 1998 to 2006, only about 550,000 low-income households have benefited from

[7] The rent subsidy approach is similar to the housing voucher program used in the United States, since families receiving rent subsidies have to find housing in the private market.

either the CRH or the former social housing program, and the two programs together have produced only about 1 percent of the total housing units built during the same time (Tan 2009).

On the positive side, from its beginning, the CRH program has been clear that its targeted population should be low-income households. Strict development standards were also established. For example, the 1998 reform requires that such units should not exceed 60 percent of the area's average housing size (Ye et al. 2006). More recently, the government has specified that these units should not exceed 50 square meters. Again, local governments have flexibility in determining who is eligible and what types of units should be provided. So far it appears that the CRH program has avoided some of the problems that plagued the ECH program. Yet the CRH's identity as the housing program of the poor has started to cause problems, especially with regard to where projects should be sited, an issue with which U.S. readers are undoubtedly familiar. Local governments resist CRH projects not only because they have to bear most of the subsidies, but also because they are concerned about property value impacts in the surrounding areas. This is especially the case considering that local governments in China are essentially land owners and rely heavily on the revenues from land sales. They are thus sensitive to the impacts that CRH projects might have on their land sales in the surrounding areas. As a result, they have been putting CRH projects on some of the least attractive sites. Since the program is still relatively new and its development magnitude is limited, there has not been much reporting on issues such as NIMBYism or the concentration of poverty, as one commonly observes in the United States. But these issues are emerging and they must be addressed if the program is to achieve long-term success (Zhou 2008; Lv 2009).

A great opportunity for the CRH program came in 2009. As part of the efforts to combat the global recession and create employment opportunities, the Chinese government decided to significantly expand its affordable housing production. On May 22, the central government issued an ambitious plan called *Cheap Rental Housing Guarantee Plan from 2009 to 2011*. According to the plan, China will take three years to solve the housing problem for 7.5 million low-income urban households. Three quarters of them, about 5.6 million households, will live in new developments and one quarter of them, about 1.9 million households, will be accommodated by existing housing through the support of rental subsidies. Specific annual goals have been set on how many new units should be built and how many new households should receive rental subsidies. For example, the goal in 2009 is to build 1.8 million CRH units and provide rental subsidies for 0.83 million new households.

To ensure its implementation, the central government also allocated a fair-share goal to each individual province. Officials at lower-level governments will be evaluated on how well they implement the plan, which will cost an estimated 300 billion Yuan (Ministry of Housing and Urban-Rural Development of China 2009). In terms of funding, the central government promises to increase its support for less developed areas. For example, it allocated 7 billion Yuan out of its 2009 budget to subsidize CRH projects in those areas. But local governments still have to pay for most of the cost. In particular, the central government now requires that at least 10% of the net gain from land conveyance fee, together with all the capital gains in HPF investment, should be used for CRH projects. Whether the plan will succeed remains to be seen. Given local governments' lack of enthusiasm for CRH developments, winning their support is perhaps the largest challenge China faces.

4. China's Housing Finance System

This section will discuss China's housing finance system. We will first examine how China's housing finance system has been restructured in the housing reform. We will then describe China's emerging mortgage market to see who the major players are, what types of mortgage products are available, and how mortgage risks are managed. Finally, we will also discuss how the Chinese government has regulated its housing finance sector and what efforts it has made to address concerns about real estate bubbles and to stabilize the housing market. We should also point out that because the Chinese housing finance system has such a short history, writing on this topic has been limited in both the Chinese and English literature.

4.1 The Restructuring of China's Housing Finance System

Like other housing policies, China's housing finance system has been completely restructured by the housing reform. Before the reform, all economic power was concentrated in the central government. Housing was financed solely by the government through budgetary funding, which, as mentioned above, had led to serious housing shortage. By introducing market mechanisms, the housing reform has widened the funding sources for housing development, for example, by mobilizing the resources from individuals and work units as well as introducing financial leverage through intermediaries such as banks (Zhang 2000). However, the restructuring of China's housing finance system was very unbalanced in its early stages. Most of the funds were distributed as development loans for production, with little left for housing consumption. In fact, in the early 1990s, the easy availability of development loans was one of the reasons for an oversupply of commercial housing in several regional real estate markets. In Hainan province, for example, the oversupply caused many development companies to go bankrupt and a large of number of properties to remain vacant for years. On the other hand, this regional crisis taught the Chinese government its first lesson on how overextending credit to the development sector might damage the economy. Since then, it has been more careful to prevent real estate bubbles. Moreover, the crisis also made the government realize that a housing market cannot be sustained without strong support for housing consumption.

In 1994, as part of the housing reform package, the Chinese government started to introduce mortgage loans to home buyers nationwide (Di et al. 2008), but banks were not comfortable providing loans to individual households and often imposed strict restrictions on loan originations. For example, loans were available only to those who had bank savings equal to 30 percent of the home's value. Moreover, the loans had to be paid back in 5 years, and the first payment had to be no less than 30 percent (Zhang 2000). Most urban households could not meet these criteria. As a result, individual home mortgages remained only a small portion of all bank loans. For example, in June 1998, Chinese banks originated housing loans worth a total of 264.3 billion Yuan, but most of them were development loans. Only 35 billion, about 13 percent, went for home purchase mortgages (Han, 1999). Of course, as noted before, another significant development in the 1994 reform was the establishment of the Housing Provident Fund, which created a policy-driven housing finance channel. The market-oriented housing finance channel, the commercial mortgage sector, developed very slowly.

The turning point again came with the 1998 housing reform. Since work units were no longer allowed to build or purchase housing for their employees, most urban households had to buy housing from the market. In order to support this reform, the Chinese central bank, the People's Bank of China (PBoC), published the Residential Mortgage Lending Regulations, which established basic mortgage lending standards, including a maximum loan-to-value ratio of 70 percent and mandatory income verification. The maximum mortgage term was also extended to 20 years. PBoC also regulated the preferential mortgage interest rate and set the mortgage rate 10 basis points below commercial loans with the same terms (Deng and Fei 2008). The relaxed lending standards, coupled with the strong housing demand released by the housing reform, have led to the unprecedented growth of the commercial mortgage sector. Interestingly, the bankers who used to worry about the credit-worthiness of individual homebuyers have realized that residential mortgage lending offers them healthier lending opportunities, since the default rate of loans to individual homeowners has been much lower than that of project loans to state-owned enterprises (Deng and Fei 2008). By 2005, China has become the largest residential mortgage market in Asia, with an outstanding balance exceeding two trillion Yuan (USD 198 billion), almost 89 times the 1997 balance (Deng and Liu 2009; Zhu 2006)

Figure 1, developed by Deng and Fei (2008), summarizes the current housing finance system in China. As Figure 1 shows, urban households in China can expect to get both subsidized HPF loans and commercial mortgage loans. Since an HPF loan is often not sufficient to purchase a house, most households apply for both. According to a report by the People’s Bank of China (2007), the total HPF loan originations reached about 380 billion Yuan in 2006, about one-fifth of the total commercial mortgage loan originations. Thus, despite the importance of the HPF program, commercial mortgage loans still dominate China’s residential mortgage market. The following discussion focuses on the commercial mortgage sector, since the HPF program was discussed above.

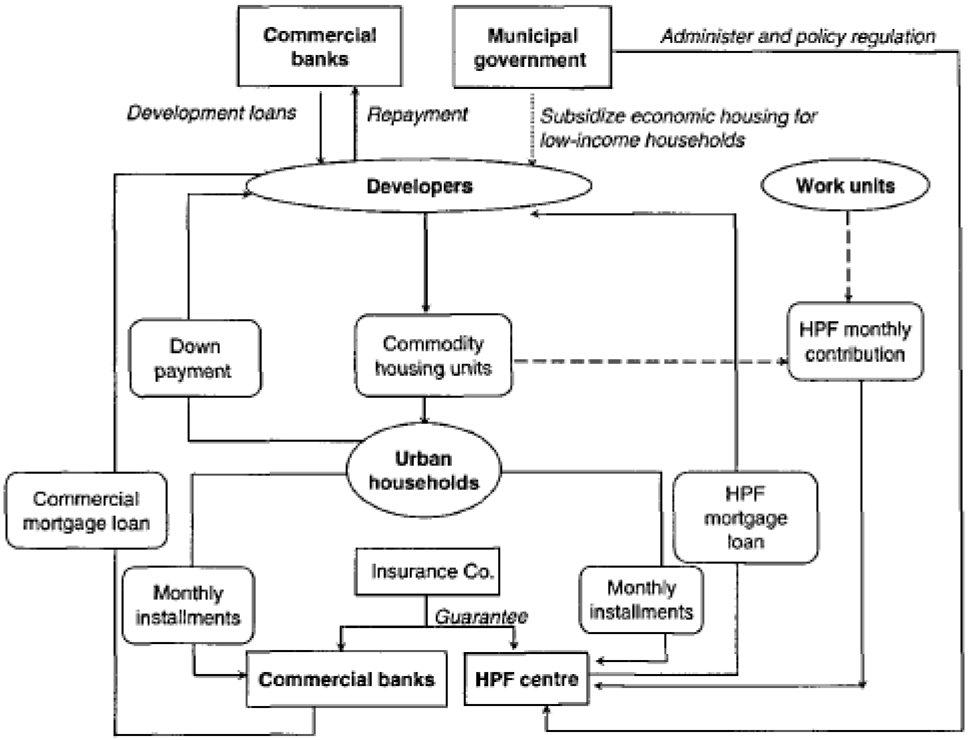

Figure 1: The Framework of the Housing Finance System in China.

Source: Deng and Fei (2008)

4.2 The Emerging Commercial Mortgage Market

Unlike the U.S. or other developed countries, where the mortgage industry is fully integrated into the larger capital market, China has not yet developed its secondary mortgage market.[8] Four state-owned commercial banks dominate the market primary mortgage market: the Industrial and Commercial Bank of China (ICBC), the Bank of China (BOC), the China Construction Bank (CCB), and the Agriculture Bank of China (ABC). All of these are supervised by the PBoC, the central bank of China, and they report directly to the State Council of China. Together they account for over 90 percent of the commercial mortgage market share. ICBC and CCB are the

[8] The Chinese government is very interested in creating a secondary mortgage market and has set up a pilot program for mortgage securitization in China Construction Bank (Deng and Fei 2008).

top two banks, and together they have originated almost 70 percent of all commercial mortgages (Deng and Liu 2009). As noted before, CCB also handles all HPF savings and loans. While a few quasi-private banks are allowed to provide commercial mortgages, their market shares are very small.

All mortgages in China are adjustable-rate mortgages. The maximum loan-to-value ratio is currently set at 80 percent. The maximum mortgage term can go up to 30 years, but the typical term is about 10 to 15 years (Zhu 2006). There is no risk-based pricing mechanism in China's mortgage system (Deng and Liu 2009).The central bank, PBoC, sets the mortgage rate, which applies to all borrowers.[9] Once the central bank announces a rate adjustment, this new rate is applied to all existing mortgage loans starting from the beginning of the following year. As a result, refinance-driven prepayment is very rare in China (Deng et al. 2005). However, Chinese mortgage borrowers are sensitive to increases in mortgage rates, so when the central bank announces a rate increase, many of them choose to prepay their mortgage loans, especially since they have limited alternative investment opportunities. For example, the interest rate on bank deposits has been kept at a very low level, which discourages people from saving (Lardy 2007). According to a survey conducted by the Chinese Central Bank in 2006, the average mortgage payment accounts for 35 percent of a buyer's income, and more than 35 percent of the buyers paid back their loans ahead of the term (Yang and Shen 2008).

Deng and Liu (2009) describe how Chinese banks manage the default risk. Even though Chinese banks do not apply risk-based pricing, they did adopt a five-category system to group borrowers into different risk levels. Before approving a loan, a bank investigates the credit-worthiness of its

[9] Since 2005, commercial banks are allowed to set their own mortgage rates to attract borrowers, but they cannot go below 90 percent of the baseline level set by the central bank.

applicants and determines their initial risk levels by looking at criteria such as family income, occupation, etc. Once the mortgage is issued, the bank watches the borrowers' payment behaviors carefully and makes frequent adjustments to the borrowers' risk level if it sees any warning signals. The headquarters of a mortgage lending bank also actively monitors its branches and subsidiaries. An early warning is given to branches with a 1 percent to 3 percent delinquency rate in their mortgage loan portfolios, the headquarters requires a reorganization of mortgage operations at branches whose delinquency rate falls between 3 percent and 5 percent, and mortgage lending licenses are revoked when branches have a greater-than-5 percent delinquency rate (Deng and Liu 2009). Overall, the number of default cases in China is quite small. For example, the average nonperforming rate of mortgage loans was only 1.5 percent in 2004 (Deng and Fei 2008).

4.3 Recent Government Efforts to Regulate the Housing Finance Sector

The fact that China's housing finance system is dominated by state-owned banks has allowed the Chinese government to intervene significantly in this sector. Indeed, since China does not have a secondary mortgage market to spread the risk, the Chinese government has long been concerned about the stability of its housing market and the safety of its financial institutions. In view of the global financial crisis, it would be useful to review some of the efforts the Chinese government has recently made to address concerns about real estate bubbles and to stabilize the housing market.

As previously discussed, since the 1997 Asian Financial Crisis, the Chinese government has made great efforts to stimulate domestic housing consumption. For example, from 1998 to 2002, it lowered the mortgage interest rate five times to encourage home purchases. Meanwhile, it developed policies favoring housing development, such as broadening the scope of development loans or allowing pre-sales.[10] These policies did work. From 1997 to 2005, the annual housing investment in China increased by about 6 times (Ye and Wu 2008). The construction boom was also accompanied by unprecedented home purchase activities. As a result, from 2001 to 2004, almost every major city in China saw housing prices increase by at least 25 percent. In big cities like Shanghai, prices increased up to 70 percent (Deng and Fei 2008). We should point out, however, that even in this favorable environment, the China central bank still required a mortgage down payment of no less than 20 percent. In fact, as early as August 2002, the China central bank issued a report warning all state-owned commercial banks to be cautious about potential housing bubbles. It also restated its policy forbidding zero-down-payment mortgages.

Worried that the housing market may be overheated, in early 2004 the Chinese government began to issue a series of policies to regulate the housing industry, hoping to curb soaring housing prices and discourage speculation. The government's efforts are best summarized by the policy principle it issued at this time: "strict management of land, severe supervision of credit." In terms of land policy, local governments were asked to tighten the supply of land for real estate development. It terms of credit policy, the government required developers to have equity capital of no less than 35 percent, a significant increase from the old standard of 20 percent. Meanwhile, the central bank also raised both the minimum mortgage down payment and the interest rate and allowed the mortgage terms to differ between first-time homebuyers and those purchasing multiple units, presumably the investors. First-time homebuyers would enjoy the preferential mortgage interest rate, while investors would be subject to larger down payment and higher

[10] As Deng and Liu (2009) described, the pre-sale practice in China is different from that in other countries, in that all the pre-sale revenues are transferred to the project developer all at once. As a result, developers often rely on the pre-sale process to raise development funds.

interest rate. To further discourage speculations, the Chinese government also raised transaction tax on foreign buyers. Finally, seeing that all these efforts failed to bring down housing prices significantly, the government decided to intervene directly in the housing supply by imposing development standards. As noted before, starting from 2006, every new housing development had to devote at least 70 percent of its finished space to housing units that are no larger than 90 square meters. The breadth and depth of government regulations were unprecedented. As a result, the period of 2004 to 2007 became known as the macro-regulation period in China (Ye and Wu 2008).

If we look at housing prices alone, it seems that these regulations did not achieve their intended goal, since housing prices in China continued to grow from 2004 to 2007. It is also possible, however, that the situation might have been even worse without these regulations. China has avoided a major housing market collapse in this global financial crisis; perhaps this has something to do with these regulations, given that they were implemented before the crisis. Unfortunately, there is no answer to these questions, since no studies have yet examined the impacts of these regulations.

Ironically, while the Chinese government was working hard to cool down its housing market, the recent financial crisis forced it to take an abrupt turn in its housing policy. Due to the global economic recession, the Chinese economy has suffered significant contraction in its exporting sectors. With unemployment rising, it became clear to the Chinese government that it needed to create as many jobs as possible through domestic sources of economic growth. Given its labor-intensive nature, the housing industry was once again chosen as the growth engine. As a result, since 2008, the Chinese government has reversed all its restrictive credit policies to encourage both housing consumption and housing development. With a favorable credit environment, housing prices in China have resumed their growth after a temporary decline in 2008. According to data from the National Bureau of Statistics, housing prices in 70 Chinese cities rose 2 percent in August 2009 compared to the previous year. On the other hand, unlike the responses to the last Asian Financial Crisis focused only on homeownership, the Chinese government has now dedicated a significant share of its stimulus spending package to low-income housing. As discussed before, it has issued two ambitious plans for the next three years: one is to expand the CRH program for 7.5 million low-income households; the other is to increase the ECH production by 4 million units. Taken together, the Chinese government’s total affordable housing investment is estimated at 900 billion Yuan.

5. Conclusion

This paper reviews the existing literature on Chinese housing policy and housing finance system. As the review shows, after 30 years’ reform, China has achieved great success in its housing sector. Most urban households have experienced significant improvements in their living conditions, with a homeownership rate exceeding 80%. The housing industry has also become a major contributor to the nation’s economic growth. While it has much to be proud of, the Chinese government also faces significant challenges. The first is the issue of housing affordability. Since the 1998 housing reform, housing prices have soared throughout China. Nationwide, the ratio of housing price to annual family income averaged about 7.8 in 2006, significantly higher than the international standard (Di et al. 2008). High housing costs have become a significant burden for the average urban household, causing strong social dissatisfaction. As we discussed, both the ECH and the HPF programs were set up to improve housing affordability for homebuyers. Yet both programs have benefited the rich more than the poor. On the other hand, while the government has recently made some efforts to bring down housing prices, such efforts were reversed due to the need to stimulate economic growth after the global financial crisis. As a result, housing prices continue to rise and housing affordability is getting worse in many Chinese cities, raising serious questions regarding the sustainability of such prices.

Another challenge facing the Chinese government is housing inequality and the related issue of urban poverty. As many scholars have pointed out, three decades of housing reform have increased housing inequality among Chinese households, and this inequality may well lead to further social and economic segmentation. As China's urbanization process continues, more and more rural households will move into urban areas. How to accommodate their housing needs has become a big challenge. The Cheap Rental Housing program was created to address low-income families' housing needs, but its scope has been very limited. No doubt the Chinese government is fully aware of this challenge, as we can see from its efforts to significantly expand spending on the CRH program in its stimulus package. Yet the Chinese model is very interesting since it requires the central and local governments to share such social welfare spending. Whether this model will succeed remains to be seen.

Finally, China's housing finance system has not yet fully developed. State-owned banks hold most individual mortgages and development loans. While this allows the central government to take quick action when necessary, the stakes are so high that it may also constrain government actions, given that any instability in the housing market would pose a serious threat to the entire economy. Thus, while the housing reform was first introduced to reduce the government's housing burden, today the Chinese government has to bear an even larger responsibility for the safety and soundness of its housing sector—just as any government should.

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