

Housing Finance in Emerging Economies: Applying a Benchmark from Developed Countries¹

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I. INTRODUCTION

This paper examines the existing and prospective housing finance systems for emerging economies, in general, and China, India and Russia, the three largest emerging economies, in particular, from the vantage point of the evolved systems of the developed countries. All three countries have embarked upon sustained programs of economic reform. While China and Russia were centrally planned economies in the not so distant past, India has had a mixed economy with somewhat stringent state controls. India has been a parliamentary democracy for over half a century, and has many political, economic and social institutions that underpin a modern market economy, while China has demonstrated a greater political will for market reform. Despite these differences, many of the institutional, structural and economic problems confronting these three countries, and other emerging economies as well, in their ongoing reform and transition process are quite similar. The decline of the state as an economic actor and the increasing reliance on markets for resolving socio-economic problems has generated both serious apprehension and guarded optimism. One of the key challenges facing these countries is

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how to design policies that promote market mechanisms in a manner that enhances efficiency and growth, while ensuring a sense of fairness and a smooth transition. Perhaps nowhere is this challenge more evident than in the proposed reforms of the housing market and the housing finance system, which are simultaneously a determinant of overall market efficiency, as well as a harbinger of social equity. We assess the steps taken in these countries in reforming these sectors, and analyze the challenges and issues faced in the context of housing markets, in general, and housing finance systems in particular. Our analysis is carried out in the context of the collective experience of mortgage markets in developed countries, summarized in a benchmark model. The benchmark provides a measure of how the mortgage system in a less developed market might be expected to change in order to replicate a developed country's mortgage market.

Our discussion is subdivided into four subsequent sections. In the next section, we describe the linkages between housing markets, capital markets and the economy. We discuss the impact that the housing finance system can have on housing, social well-being, and the economy. This discussion will serve as a backdrop for understanding why the transformation of the housing finance system is essential in the long run for the growth of each country - Russia, India and China. Section III provides a short discussion of the existing state of the housing sectors in Russia, India, and China, and of the current reforms underway. Section IV will focus upon the development of the housing finance system benchmark, and the last section of the paper will present a brief conclusion and summary.

II. HOUSING FINANCE AND THE ECONOMY

The development of the housing sector is widely recognized as an integral part of economic development. In addition to the large share that the housing sector occupies in the economy, its importance also arises from the positive externalities and spillover effects, and its impact on the social and political climate, issues of particular importance in developing countries. In most countries, and increasingly so in emerging economies, housing represents a large proportion of a household's expenditure and takes up a substantial part of lifetime income. Usually, it is the largest asset owned by households. The backward and forward linkages to land markets, durable goods manufacturing and development of labor markets with depth and mobility further underscore the significance of this sector, particularly in the process of economic transition.

It is also widely understood that the provision of housing services depends upon a well-functioning housing finance system. Indeed, without a properly functioning housing finance system that operates in an allocationally and operationally efficient manner, the "real" housing market would be sub-optimal. Moreover, similarly to the housing markets, the housing finance system has beneficial spillover effects on the entire financial system with far-reaching consequences for economic development. Increasing emphasis is therefore being placed in developing and transitioning countries on the reform of real estate finance and mortgage markets.

Economists and policy makers have isolated at least five main economic and social policy issues that arise from a successful reform effort, and which would be of particular significance to developing countries such as Russia, India, and China.²

a) Social Impact: The purported benefits of homeownership have been stressed in theoretical and empirical literature. The social value creation by homeownership, such as social stability, functional neighborhoods, development of civil society, abatement of crime, and general enhancement of welfare, are well recognized. This is particularly true of provision of affordable housing for the poor, in addition to the widely acclaimed objectives of equity and social justice. "Homeowners accumulate wealth as the investment in their homes grows, enjoy better living conditions, are often more involved in their communities, and have children who tend on average to do better in school and are less likely to become involved with crime. Communities benefit from real estate taxes homeowners pay, and from stable neighborhoods homeowners create" (U.S. Department of Housing and Urban Development 2000). Homeownership creates neighborhoods with a collective sense of identity through the development of stake-holding that is linked in terms of its value to the dynamics of the neighborhood at large. The value may be monetary, as well as quality of life issues in the immediate neighborhood of the primary residence. Some raise the question whether homeowners make better citizens (DiPasquale and Glaeser, 1999). Although the ownership rate in many emerging economies is high³ (i.e., owned homes as a proportion of total dwellings), the quality of a large segment of dwellings leaves much to be desired and many of the externalities of housing are neither created nor captured.

² The following discussion is based on Bardhan and Barua (2004).

³ Proxenos (2002).

b) Spillover, multiplier effect: Direct new expenditures in the construction industry or in other real estate related industries stimulate the economy and generate jobs. Since a substantial portion of generated income is plowed back into the economy, there is an additional multiplier effect. This is true of any industry. However, since the real estate industrial sector cluster is largely a non-tradable industry (i.e. most of the output and inputs associated with the industry stay, and are from within the confines of the domestic economy), there is little leakage out of the country. The localized and domestic nature of real estate therefore leads to a much larger multiplier effect than would be expected for more tradable sectors. While construction, home maintenance and repairs, power and transportation directly affect the economy, the extensive nature of downstream and upstream linkages of real estate, from the finance sector to the furniture/consumer goods sector, from infrastructure (roads, bridges, public works) to superstructure (commercial space/retail, industrial, etc.) further impact the national economy. A given amount of expenditure in the real estate industry (vis-à-vis other sectors) tends to support larger numbers of jobs in the economy.

c) Impact on financial markets: A mortgage market is important for the process of capital accumulation in a developing economy, and is critical to enhancing the depth and reach of the financial markets. Since housing is the primary tangible asset of a developing or transitioning economy, it can then also be used as collateral to borrow funds in order to carry out productive capital investment. Mortgage debt accounts for a large proportion of household debt and, through secondary markets and securitization, supports the efficient functioning of financial markets. Housing finance, as well as other real estate finance, are vital elements both in the development of a dynamic housing sector as well as a growing

and deepening financial sector. In addition to creation of more lending channels, more investment channels are opened up as well for both institutional and individual investors, leading to more complete and efficient markets.

d) Role in creation of a nationally integrated market: Though real estate is considered a “local” business activity, the national residential and non-residential/commercial real estate markets are essential for the development of nationally integrated economic markets in general. A national economic market implies a free flow of capital, labor and resources within the borders of a nation-state, and the development of a national market for housing and other real estate resources is critical in facilitating national markets in goods, services and factors. The experience of several countries shows that regional disparities and distorted development are the norm if real estate markets are regionally segregated and segmented. Whether firms respond to investment opportunities in various parts of the country or whether people follow jobs, a rapidly responsive market in commercial construction and support services, in the development of hotels, rental housing and homes for sale, can lead to a more efficient and geographically mobile labor market.

e) Tool of upward mobility: In some countries the purchase of an entry-level home, often subsidized in some form, has served as a stepping stone for upward social and economic mobility. As observed by Bardhan, Datta, Edelstein and Kim (2003), the Singapore housing market, for example, is characterized by the coexistence of a dominant public sector and a small, growing private sector with relatively higher quality housing. While accounting for the impact of the former on the latter, they find that an increase in the rate of change of public housing resale prices has an important and significant

positive impact on the sales of private residential units. The underlying mechanism for this effect is that occupants of the subsidized public sector flats are allowed to sell their flats after a certain period, subject to some restrictions, and capital gains from the sale proceeds provide a substantial portion of the down payment in the purchase of new, more expensive, private apartments. This tandem of private-public activity lends a helping hand to upwardly mobile households, and the larger social and economic value created far outweighs the resources expended in the public sector housing subsidies.

III. RUSSIA, INDIA, AND CHINA: DEFINING SIMILARITIES AND CONTRASTS

Russia, India, and China have their own specific economic problems and particularities, and while the differences might be significant, these three countries exhibit many common economic and institutional similarities. In terms of indicators of underdevelopment, such as housing stock, incomes, and urbanization, China and India share the need for overcoming the legacy of the constraints of the previous system, such as state provision of housing services and property rights. Russia and China have a common background in the sphere of politico-regulatory environment. There are certain commonalities between Russia and India as well. Part of the motivation for studying these three nations as a group is the potential for “economies of scope” in research, and the potential for drawing policy lessons that might be appropriate for each other. The overall combination of inadequate housing, ill-defined property rights, public housing, state-owned land, information asymmetries, incomplete financial markets and other hold-

overs from the previous systems create a complex, challenging and fascinating object of study.

The combined urban populations of Russia, India, and China constitute more than one billion people, comprising approximately 250 million households. At a conservative estimate, the current shortfall in urban housing is about 100 million units, abstracting from future expected growth.⁴ The average weighted projected growth rate for the urban population in these three countries for the next decade is expected to be about 3%.⁵ In 2000, China and India had 38 and 24 “million”-strong cities, respectively, and although the Russian population is projected to decrease, the urban share is slated to rise due to reform in the countryside.⁶ The combined urban population of India and China alone is more than 850 million with approximately 200 million households. The potential home-owning populations in India and China typically have high savings rate⁷, but low income to house price ratios, and a generally heightened socio-cultural preference for homeownership. Lack of credible alternative investment channels and riskier returns on stock markets have sometimes resulted in hoarding of precious metals (for example, gold in case of India), and other unproductive activities. The creation of the mortgage markets

⁴ The Asian Development Bank for example has estimated that India has a deficit of 40 million housing units – affecting almost 200 million people.

⁵ Our estimates based on “Urban Research in the Developing World”, Volume 1, Center for Urban and Community Studies, U. Toronto and GOSKOMSTAT, Russia.

⁶ Cities with population of 1 million or more. Census of India, and the National Bureau of Statistics of China

⁷ The domestic savings rate of India and China are close to 38% and 23% of their respective GDPs. Asian Development Bank Statistical Database.

may release these unproductive savings, free up lagged pent-up demand and give a boost to the economy at large.⁸

At the present stage of economic reforms, both India and China are well on their way towards a system of housing financing that is increasingly dependent upon private capital, particularly through the channel of lifelong savings. Ill-defined property rights, incomplete real estate markets and competing forms of private-public supply, together with lack of long-term finance have been the defining obstacles for homeownership, especially for the lower stratum of the middle class in many of these countries.⁹ A comprehensive reform in the housing finance sector, among other things, would involve further development of individual mortgages for home purchases. Property rights are a smaller impediment in the case of India, where the inefficiencies in the housing market arise primarily from the inefficiencies of the housing finance system; this has resulted in a significant under-serving of the population, particularly when one takes into account the highly developed banking system in the country. India now has a set of financial institutions, which are spearheading the drive for development of a modern housing finance system – Housing Development Finance Corporation (HDFC) and the National Housing Bank (NHB)¹⁰. Never the less, the major impediment has been the inadequate availability of long term financial resources and the tepid mobilization of domestic funds.

⁸ This is already being seen in India. The Government has announced significant policy measures (including tax concessions) for house building in the last few years. These have given fillip to investments by individuals in the housing sector. Given the relatively lower return to financial investments in India, an increasing proportion of the savings of the household sector is being invested in the housing sector. See Bardhan and Barua (2003).

⁹ For example, in Beijing, there are three different kinds of housing supply – market based, affordable, and subsidized, depending solely on the income of households.

¹⁰ The National Housing Bank has the dual role of oversight and secondary market facilitator. See Struyk (1992).

The existing stock of housing in Russia and China has undergone privatization in fits and starts; both countries possess a relatively underdeveloped housing finance system. India has had a traditionally complex public/private sector in the housing and financing arenas. The respective housing finance systems are in their infancy, with considerable institutional and regulatory bottlenecks. Severe housing shortages combined with privatization, and the non-involvement of the state, have left in their wake a severe supply side problem, and, above all else, a shortfall in the provision of housing finance.

A common legacy of all three countries has been the major role played by the state in the financial and housing sector, particularly in Russia and China. In these planned economies, the entire gamut of the housing supply chain, from building materials, construction, repairs and distribution were state controlled. Administrative fiat, price and rent controls, subsidies and plan allocations were the levers utilized to manage the “market”. Housing finance, and finance, more generally, played a restricted, accounting role, and did not serve as an allocation device for signaling relative prices, scarcities and values; the main role of the financial system was to “control”, rather than be an active instrument of resource allocation. At the same time, the banking system basically performed an auditing role. Both in Russia and China, the cradle-to-grave economic welfare system included the housing sector as a vital component. Most housing was built, owned, and maintained by public work ministries, state enterprise affiliates or city housing bureaus. Allocation was done on the basis of the nature and clout of the employing organization. As a result of prices and rents set below equilibrium levels, central and local governments spent inordinate amounts on explicit and implicit subsidies

for maintenance and the provision of housing, and perpetuated a system of chronic excess demand.¹¹ Low quality housing construction and overcrowded communal apartments became the ultimate legacy of the housing market imbalance. Indeed, rents and utilities costs were generally kept so low, about 1-5% of incomes, that they did not cover basic maintenance costs.

At the present stage of economic reforms, China is moving towards a system of financing housing largely from private capital. Privatization of housing stock belonging to the state owned enterprises is a major issue confronting reformers, since it is tied up with the reform of state enterprises as a whole. As these entities address restructuring, they will no longer be primary homebuilders, as well as home providers and landlords.¹²

An avowed aim of reform in both China and Russia has been to increase the home-ownership rate with the implied positive social externalities. Fuzzy property rights, incomplete real estate markets and competing forms of supply, together with lack of long-term finance have been the defining obstacles for homeowners.¹³ Recently, major state owned commercial banks in China and a few large private banks in Russia have started issuing home mortgages to individuals. At present, a home mortgage typically requires a large down payment (50%) and a relatively rapid amortization period (10-15 years) than is the standard of developed country housing finance.

¹¹ Ross, M. and Rosen, K., Housing Policy in China: Reducing Barriers to Private Homeownership, FCREUE, WP: 99-267.

¹² Thus, in an example of a positive externality, housing reform will improve the stability of China's ailing banking system by making state-owned enterprises more profitable.

¹³ For example, in Beijing, there are three kinds of housing supply – market based, affordable, and subsidized, depending solely on the income of households.

Russia

After the effective privatization of state-owned and state-enterprise owned apartments to the existing worker/tenants, there is now a growing market in Russia for transactions involving privately owned urban dwellings. A survey conducted in seven Russian cities indicated that the turnover rate ranged from 2.4% to 9.3%, comparable to the turnover of existing homes in the U.S. (Kaganova, 1996). In the realm of Russian housing finance, two notable developments have taken place: establishment of a rudimentary legal framework and a regulatory basis for mortgage lending, such as the Law on Collateral (1992) and the Law on Mortgage (1995). Russia's mortgage lending is complicated by high and volatile inflation, which leads to severe interest rate risk. Lack of legislation on use of residential units as collateral further magnifies default risks in mortgage operations. The task for commercial banks and real estate companies is to find innovative ways to reconcile the weak legal basis, the lack of experience with growing mortgage demand, as well as with underwriting and intermediation standards, with a view to developing long-term lending resources. The government's role in Russia is likely to include facilitating the creation of a secondary market through the formation of a central agency for mortgage lending.

According to Skyner (2005), the underdevelopment of mortgage lending to individual households in Russia can be explained quite simply by the lack of demand, which in turn is due to high credit risks resulting from the lack of security of title, lack of financial depth that translates into high interest rates on mortgage loans, the limited long-term

credit resources of originating banks resulting from the failure to develop secondary market financing, lack of transparency, and the current structure of public subsidies, among many others. As Skyner says, ..”Compounding the problem, the lack of trust towards financial institutions by the population does not tend towards indebtedness.....The residual risk from the macroeconomic crisis of 1998 and the constant threat of inflation have kept mortgage interest rates highand the concomitant lack of long-term pricing benchmarks has kept mortgage maturities relatively short.” The incomplete nature of financial markets, lack of participation by insurance or pension funds further exacerbates the problem.

INDIA

Most of the existing housing stock in India has traditionally been privately owned albeit with severe quality issues, overcrowding problems and shortages. Property rights are certainly less of an impediment in the Indian context. The inefficiencies in the Indian housing markets arise primarily from the inefficiencies of the housing finance system, which significantly under-serves the population. Until 1978, there was effectively no market-rate housing finance available. Today, the Indian housing finance sector is crowded with players of all sizes. A plethora of institutions provide long term finance for housing - commercial banks, housing finance companies, cooperative banks and organizations, regional rural banks, agricultural and rural development banks, and cooperative housing finance societies. A number of financial institutions have been organized for the expressed purpose of mortgage lending – Housing Development

Finance Corporation (HDFC, 1978), and the National Housing Bank (NHB, 1988).¹⁴ The latter is an apex institution that acts both as a regulatory agency and as a secondary mortgage market facility.¹⁵ New foreclosure laws have been passed, encouraging smaller banks to enter the market; Urban Land Ceiling Acts and the Rent Control Acts are being repealed, or being severely diluted.

The major impediment in developing a housing finance sector is still the non-availability of long-term resources and inadequate mobilization of dormant untapped funds.

Mortgage securitization, one of the sources of long-term, decentralized finance for the housing sector, is still in the pilot stage in India. The National Housing Bank is confronted with regulatory constraints and sequencing issues. The critical task in the Indian context, therefore, is to develop an institutional, regulatory, and financial structure with a secondary market as a major objective. Another issue of concern is that, expectedly, originated mortgages cater to the upper and upper middle-income borrowers. Since the most important consideration for a bank is credit risk, banks are extremely reluctant to lend to individuals from the lower end of the economic stratum. This situation is aggravated because banks face severe informational constraints, contributing to credit rationing for the mortgage market¹⁶. However, consumer credit scoring is being developed, with borrowers and their economic-financial profiles scored as in countries with a more advanced consumer credit culture. The lending institutions continue to err on

¹⁴ The NHB has the regulatory responsibility similar to that of the Office of Thrift supervision in the US, and the industry promotion tasks of the Federal Home Loan Banks. It also has the funds mobilization through secondary mortgage market operations of Fannie Mae and Freddie Mac.

¹⁵ Struyk, Raymond and Ravicz, R. M., Housing finance in LDCs: India's National Housing Bank as a Model? The Urban Institute Press, 1992.

¹⁶ Jaffee and Russell (1976) and Stiglitz and Weiss (1981) have shown that the existence of credit rationing in the presence of asymmetric information.

the side of financial prudence, perhaps because of the very large segment of informal employment in the country, and risk based pricing is still in its infancy.

The proportion of outstanding housing loans as percentage of GDP is estimated to have increased from 3.4 per cent in 2001 to 7.25 per cent by 2005 (See NHB Report, 2006). Among measures taken to boost mortgage demand include raising the interest payment tax deductible limits. The combination of a fast-growing middle-class, or more accurately upper-middle-class, availability of financing, and pent-up demand due to regulatory backlog has generated a rapid increase in the Indian housing stock, going from 148 million units in 1991 to 187 million units in 2001 and is expected to reach 220 million units by 2007.

The Indian mortgage market has grown at 35 to 40 percent per annum for the past five years; and industry sources predict the same growth rate to persist for at least the next decade, with both commercial banks and housing finance institutions playing a joint leading role. Although these data are impressive, the bulk of residential mortgage lending has occurred during the last 7 years, and the outstanding volume of mortgage loans as a percentage of GDP is relatively small at just over 3%. The industry is nascent, when compared to developed western economies (outstanding mortgages represent about 51 % of the US GDP, and 36 % for the EU GDP) or even some of the South – East Asian economies (15 – 35 % of GDP). The only countries among the OECD countries that appear to be comparable to India are Australia, Austria, and Italy. The sheer size of India, with 30% (more than 300 million people, close to the total US population) of its people

living in urban areas suggests that the housing finance market is neither extensive nor deep, and the potential for growth and development of housing finance is huge.

Specialized housing finance companies, commercial (domestic as well as foreign) banks, cooperative banks and other Non – Banking Financial Companies (NBFCs) are at present the main “players” capturing a 90 % share of the mortgage market. The Housing Development Finance Corporation (HDFC), a private sector entity, is the market leader followed by the State Bank of India (SBI), a nationalized bank. The Industrial Credit and Investment Corporation of India (ICICI) Bank, and the Life Insurance Corporation (LIC) Housing Finance Limited also have a significant share of the nascent market.

China

Growth of the primary and secondary mortgage markets is now an avowed goal of PRC public policy strategy. Conversion of public housing to private is viewed as a path for liquefying the largest collective national asset- the nation’s housing stock. The process of mortgage issuance and subsequent securitization would convert the illiquid housing capital into fungible capital needed elsewhere. The emergence of a dynamic housing finance system, able to interface with international capital markets, is a crucial, yet to be accomplished, link among general economic, financial and housing policies.

The subsidized housing system started to be dismantled rapidly after 1998, and the government began to encourage people to buy and own their own homes. Commercial

banks together with the Housing Provident Fund (HPF) program established in 1990¹⁷ are the key elements in the nascent Chinese mortgage market. The HPF scheme is modeled after the Singapore provident fund system, and requires compulsory saving by employees (plus contributions from employers) for entitlement to a housing loan in the future. The Municipal Housing Fund Management Centre, an arm of the Beijing Municipality, has been providing home mortgages in Beijing since 1994. Effectively, it has been the nodal agency in the effort, together with the China Construction Bank and the China Industrial and Commercial Bank.

Three different types of home mortgages have been promoted toward the end of the 1990s in Beijing: housing provident fund mortgage, commercial bank mortgage, and hybrid mortgage (combining the two). In the recent past, most housing purchases were the result of sales to the sitting tenants by work units (as a part of the broader process of privatization of state-owned enterprises), and the price was relatively low; of course, there was little need for a mortgage. With increasing provision of high-quality commercial-private housing, the demand for mortgages has increased, and of the total loans issued, 80% of the funds are now used by highly paid private sector employees, in a situation somewhat similar to that in India.

The transformation of the current primary and secondary housing finance system is not an easy set of tasks, given the sheer size of China. Further, the transformation of the housing finance system requires the development of new and necessary legal and institutional structures that do not necessarily exist in China. The politico-economic

¹⁷ See Ya, 2001, for a good discussion on mortgage markets in China.

governance structure of China is complex, with a diverse set of regional and group interests, many of which will make the transition for the economy, and by extension for the housing finance system, difficult.

While China seeks to establish itself as the “work bench” of world in order to foster its economic growth, there are a number of significant hurdles to the strategies of both general growth and the transformation of the housing finance system. First, as in many other developing countries, the house price to income ratio is high, relative to that in the developed countries. Moreover, the geographic distribution of income is skewed towards the coastal areas. In Shanghai, for example, the per-capita income is about US\$5,000, while in parts of western China per capita income is less than a thousand USD per year. These magnitudes of geographic economic disparities generate interregional social tensions as well as intra-country mobility pressures.

It is difficult to assess how the social flux in China complicates its transition. In particular, PRC’s demographic profile is becoming older quickly. This has been caused in part by the One Child Policy, which has slowed the population growth significantly, and has caused China, with increasing longevity, to be on the road to becoming a much older society. In some sense, China is in a race to improve the standard of living of its residents before its mighty labor force becomes a smaller proportion of its total population. Furthermore, the One Child Rule has changed the eternal social fabric of China, where large families were the standard, and no longer can or will be. The socio-economic impacts of these demographic changes are unclear, and are likely to have

significant effects upon the nature of the needs for housing in the future. The massive churning and internal migrations of the labor force, in the absence of a functioning housing market and a state retreating from housing provision, may create additional problems.

Finally, the Chinese economy, in general, and the financial system, in particular, are simultaneously astride “two horses”, as it were. The financial system reflects a legacy of both administrative controls and market mechanisms, and the banking system is not necessarily responsive to market incentives alone. In essence, this situation has generated a banking system that necessitates the need for major, systematic reforms. In the longer run, the banking system may have to confront the Herculean task of becoming competitive in the world financial arena.

Some changes are already apparent in the Chinese housing system. Although a late entrant, the mortgage market has expanded to around \$230 billion at the end of 2005 (about 10% of GDP, see Zhu, 2006)) to become the largest mortgage market in Asia. Korea was second, and in terms of mortgage loans outstanding as a share of GDP, the leaders are Singapore and Hong Kong, with 61% and 44% of GDP, respectively. Overall, China recognizes that housing finance reforms will have to be an integral part of economic reforms, and that the housing finance system will have to more responsive to the needs of a privatized housing stock.

For Russia, China and India, a combination of economic and social factors, such as high domestic savings rates, high price to income ratios, and a general cultural and social predisposition towards homeownership, suggests that the essential core of the common problem facing them lies in the provision of housing finance services that can allocate untapped resources, mitigate regional distortions and assist in consumption smoothing for households over their life cycles. Lack of alternative investment channels has prompted hoarding of precious metals and similar unproductive activities.¹⁸ The creation of a functioning mortgage market may be able to release these moribund savings, free pent up demand and raise the economies to a higher equilibrium. Since a substantial part of the benefits of a mortgage market come from externalities for the economy, a government-supported "mortgage bank" is essential for creating a mortgage market in developing economies. Private banks cannot realize these externalities, and so do not find it profitable to put resources into establishing a mortgage market. Moreover, state intervention is critical in ensuring finance for affordable housing, a matter of significance in economies undergoing a wrenching social transition.

The home mortgage market is growing rapidly in volume and importance in these three countries. However, the link between the primary housing market and the secondary capital markets has been weak; As a consequence the risk related to housing finance is borne by the housing finance institutions. That is, the market for sharing the risks of mortgage lending has not been fully developed. In turn, this situation has restricted the availability of finance. Mortgage insurance plays a critical role in alleviating this

¹⁸ The domestic savings rate of China, India and Russia are around 38%, 23% and 13% of respective GDPs. Asian Development Bank Statistical Database, Russian Economic Trends, GOSKOMSTAT.

bottleneck. In developed countries, mortgage insurance has become an important instrument to cover some of the risks incurred by housing finance institutions, and also to assist borrowers in qualifying for higher loan amounts than would have been possible otherwise. The consequence will be greater availability of home financing, higher home ownership rates, and improved physical standards of housing (See Urosevic et al. (2005) for an approach for developing a mortgage premium structure framework for these economies.)

A key issue facing many emerging economies grappling with the specifics of mortgage market development is the potential of securitization. It is felt by many that the process of integration of mortgage markets with the capital market through the securitization route, will deepen the market, reduce risk, increase access to broader saving pools, and ultimately have significant welfare consequences by broadening the benefits of housing finance to groups beyond the upper-middle-classes. This would create an integrated financial market with linkages between savers, home loan borrowers, financiers and capital market investors, and lead to tapping important domestic and international funding source for the housing sector. The Indian National Housing Bank has launched the Residential Mortgage Backed Securitisation (RMBS) program under NHB's corporate guarantee for issuance by housing finance companies and commercial banks. China has issued its first Mortgage Backed Securities tranche, as recently as in 2005, with a view to mitigating the maturity mismatch risk in the banking system, improve liquidity in the primary mortgage market and to deepen the local debt market (Zhu, 2006). The

Russian Duma (Parliament) introduced the law ‘On mortgage-backed securities’ in November 2003. The avowed aim is to allocate risk more efficiently throughout the financial system. It remains to be seen how the mortgage backed securities function in the overall financial systems of these emerging economies.

IV. BENCHMARKING

In order to evaluate quantitatively the prospective level of development of the mortgage market in Russia, India, and China, we create a "benchmark" procedure, calibrated using OECD data for developed countries. The model relates mortgage activity in OECD countries to the domestic financial system, real economic variables and demographics. The objective is to examine the present state of the mortgage market in developing/transitioning countries vis-à-vis the market “equilibrium” or “norm” established by our benchmark measure. The underlying kernel of intuition is that for a given set of variables, such as housing stock, GDP per capita, urbanization and so forth, a “normal” developed country (i.e., our assumption of an idealized, average OECD nation) would be expected to have a corresponding level of mortgage volume outstanding.

Our dependent variable for the benchmark statistical model is the total outstanding mortgage volume. From a large set of potential explanatory variables, we then select a sub-set of the most important determinants of the observed level of outstanding mortgage volume for the developed OECD countries. In short, we estimate regressions of outstanding mortgage volume, as a share of GDP, on economic, financial, and demographic determinants for these countries. Economic theory, intuition and conventional wisdom suggest that financial, demographic, institutional and economic

characteristics of a country should determine the size of a country's mortgage market (in addition to historical legacy/path dependence, etc.). It is anticipated that obvious candidates/explanatory variables, such as gross savings rate, urbanization, number of households, new housing construction, the lending – borrowing spread and an income variable, will have a significant effect on the volume of outstanding mortgages. The estimated coefficient values from the regression model for mortgage volume outstanding will be utilized to create a rough benchmark for our transitional/emerging markets, India, China, and Russia. A comparison of the actual and the benchmark model measures then provides a basis for evaluating the state of mortgage market development in the transition economies. Assuming that the benchmark represents the expected level at which a transition/emerging market should be (had it followed the general pattern of the OECD countries), we can then evaluate the nature and relative performance of the housing finance sector.

The lynchpin assumption is that the functional form estimated for the mortgage market in OECD countries applies to the developing countries. That is, the mortgage markets in the developed economies have reached a “stable equilibrium,” and the observed cross – country variations in the outstanding mortgage volume can be related meaningfully to their distinctive economic, demographic and financial characteristics. There is no reason to believe that countries as different as Russia, India and/or China would or should follow the same development format and path as the OECD countries. However, the OECD countries possess housing finance systems that the developing countries might wish to achieve, given both the nature and magnitude of their growth path, and assuming a

market-oriented financial system. If the mortgage markets in the emerging markets ultimately do behave similarly to the OECD markets, relationships among the variables should be roughly similar to those in the OECD countries. Our benchmark estimates for emerging economy countries, under our assumptions, should be interpreted as values towards which the mortgage markets in these countries would be evolving in the long run. An advantage of benchmarks is that they can be re-calibrated over time.

There is sparse empirical work that addresses the determinants of the efficient/equilibrium or normal level for a country's mortgage market activities. Berger et al. (1995) estimated cross section regressions for the number of banks among the states of the United States. The motivation for this study was the removal of the restrictions on interstate banking and its effect on the transformation of the banking system in the US. Kaufman and Mote (1994) examined another aspect of the banking structure, the number of branches in Chicago neighborhoods based on the income, population, and neighborhood. A more recent paper by Jaffee and Levonian (2001) empirically analyzes the determinants of the banking system structure for 26 OECD countries (as measured by bank assets, number of banks, branches and employees). The estimated regressions are applied to 23 transition economies to obtain benchmarks for the efficient structure of the banking system; their paper develops a set of detailed benchmark measures for the transition nations and compares the benchmarks with other available measures.

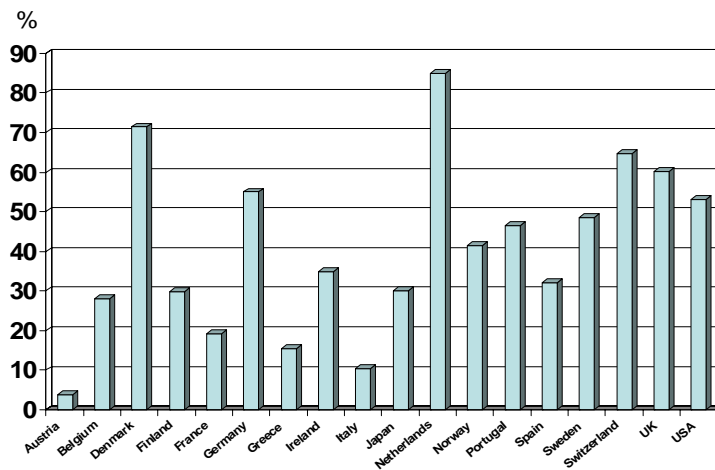
A brief look at the OECD mortgage markets

In spite of a common market and a monetary union, there are significant differences in the fundamental macroeconomic variables (e.g. GDP growth, employment, inflation) that

shape the mortgage markets in many of the European countries, which constitute the major part of our sample (see Appendix A). The volume of mortgage loans outstanding at the end of 2002 was around 40 percent of GDP in the EU. The volume of mortgage loans outstanding has more than doubled (in nominal terms) since 1991 and exceeded 4 trillion Euros by the end of 2002. In our sample, the outstanding mortgage debt as a percentage of GDP ranged from 85% in the Netherlands to about 32% in Spain and to only about 4% in Austria. Figure 1 shows the volume of mortgages outstanding as a proportion of GDP. The large differences in the national mortgage markets reflect the fact that mortgage markets retain strong national characteristics, as well as transmit real underlying economic disparities. The former, at least in part, has arisen as a result of the differences in the historical, demographic, political and regulatory environments in which mortgage lenders operate.

Figure 1: Residential mortgage lending and GDP (2002)

OECD Countries: Outstanding Mortgage Volume as Percent of GDP, 2002



Data and Results

In order to capture the differences across countries that may affect the demand for mortgage loans and therefore the outstanding amount of mortgage loans, we use the following explanatory variables:¹⁹

- Household Size
- Interest Rate Spread: i.e. the Mortgage Rate Minus the bank Deposit Rate
- Urbanization rate: Proportion of Urban residents (share of total population)
- New Housing Completions
- Housing Stock
- Ratio of Financial Assets (Depository Institutions) to GDP
- Savings Rate

The dependent variable is the country's outstanding mortgage volume as a share of GDP. Data for the OECD countries are obtained mostly from the European Mortgage Federation (Hyostat) database, the OECD database, World Development Indicators (WDI), Global Markets Information Data, and the Global Financial Database. Mortgage data for the US and Japan were obtained from the Federal Reserve, and the Economics Statistics Annual database of the Bank of Japan, respectively. The time span for the data set is from 1991 – 2002 (12 years for the 18 countries listed in Appendix A).

¹⁹ Many of these variables like new housing construction, GDP, and spread between lending and borrowing rates, may not be truly exogenous. For example, new housing construction is likely to depend on the evolution of the overall housing finance market and vice versa.

Table 1
OECD (18 Countries) Summary Statistics, 2002

	Median	Max	Min
Mort.Vol/GDP	0.34	0.85	0.4
Urbanization Rate	76%	97%	36%
Popln/HHold Ratio	2.55	3.33	2.15
Fin. Assets/GDP	0.23	1.2	0.03
Spread	4.17%	7.7%	1.4%
Total Housing Stock (units)	6.4mill.	115mill.	1.2mill.
New Housing Completions	90thous.	1,400thous.	11thous.

Table 1 reports summary statistics for key variables. Our data displays great variation. While the UK has the highest ratio of financial assets to GDP, Italy, Portugal and Greece bring up the rear; Belgium is the most urbanized (97%), Portugal the least (36%); Greece has the highest spread, UK the lowest. The correlations matrix (shown in Table 2) provides are no major surprises, with the share of outstanding mortgages being negatively correlated with the lending-borrowing spread and positively correlated with the urbanization rate and the financial assets to GDP ratio.

Table 2
Correlations Matrix

	Mort/ GDP	New Housing	Assets/ GDP	Hhold Size	Spread	Housing Stock	Urban Rate
Mort/GDP	1	-0.0416	0.318545	-0.5666		-0.28517	0.397536
New Housing	-0.0416	1	-0.12775	0.1452	-0.2027	0.881645	0.152599
Assets/GDP	0.318545	-0.12775	1	-0.0118	-0.1502	-0.06427	0.049769
HHold Size	-0.5666	0.1452	-0.0118	1	0.05376	0.04604	-0.4265
Spread	-0.28517	-0.20272	-0.15015	0.0536	1	-0.19041	-0.24897
Housing Stock	-0.04484	0.881645	-0.06427	0.046	-0.1904	1	0.223492
Urban Rate	0.397536	0.152599	0.049769	-0.4265	-0.249	0.223492	1

The statistical findings for our benchmark multivariate statistical model are shown in Table 3. We run pooled cross-country regressions with outstanding mortgage loans as a share of GDP as the dependent variable for each of the 18 OECD countries, from 1991 through 2002, inclusive. Notwithstanding the significant variation in the underlying dataset (see Table 1) for virtually every variable, the overall statistical fit for the benchmark model is remarkably good. In essence, our results suggest that there are systematic determinants of housing finance (outstanding mortgage volume is our proxy for the level of development of the latter) across the OECD countries.

Table 3 Benchmark Model
 Cross-Country Pooled Regression Results 1991-2002, inclusive
 Dependent Variable: Total Outstanding Mortgage Loans as a share of GDP,

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.864572	0.156793	5.514083	0.0000
Urbanization Rate	0.230828	0.095967	2.405273	0.0172
New Housing as Share of Stock	1.026215	1.713138	0.599027	0.5499
Household Size	-0.250682	0.042324	-5.9229	0.0000
Financial Assets/GDP	0.088767	0.033252	2.669565	0.0083
Spread	-0.018699	0.005972	-3.1311	0.0020
R-squared	0.425184	Mean dependent var	0.341134	
Adjusted R-squared	0.409217	S.D. dependent var	0.193054	
S.E. of regression	0.148386			

The results in Table 3 suggest that several of the variables that we experiment with are statistically significant determinants of a country's housing finance system. Higher rates of urbanization are associated with a larger mortgage market, which would seem to suggest that urban banking "availability," lack of informal-network finance in urban areas, as well as rural-urban migration and higher transaction activity levels may have an important impact on mortgage volumes. A country's total financial assets as a share of GDP also have a positive explanatory impact on the mortgage market. In essence, in countries that have shallow financial markets, the mortgage markets tend to be smaller as well, and vice versa. The interest rate spread (the difference between the mortgage rate and the deposit rate) is negatively related to total outstanding mortgages. The negative

coefficient for the spread variable might be explained in a number of ways. First, an increased spread will lead to reduced demand for mortgages because of the implied increased user cost. Second, a large spread may indicate a relatively inefficient mortgage housing finance sector. Third, even in an efficient market, a large interest rate spread for mortgages may be reflective of mortgage loan financial risk. A larger household size should lead to less demand for housing units, and lower demand for mortgages, everything else being equal. Hence, there seems to be a sufficiently intuitive explanation for a negative coefficient for the household size variable. Finally, the coefficient for new housing construction as a share of the total housing stock variable is insignificant, though positive. In part, the coefficient for new construction may be insignificant because of the large volatility of housing construction over time and across countries. This volatility may not affect the trend in outstanding total mortgage debt, but may affect the timing of the issuance of mortgage debt.

In sum, there seems to be a relatively good fit for our benchmark model, in terms of the determinants of share of mortgage volume outstanding for OECD countries, and the results appear to be consistent with apriori theoretical considerations. A rough calibration of the benchmark model for Russia, China, and India seems to suggest that, while all three have a small, actual volume of mortgages outstanding, as a share of GDP, and which is significantly less than what the benchmark model would predict, India seems the closest to the projected figure and Russia the furthest. This is likely due primarily to the fact that the former has a low urban population share and a high household size, while the latter has a high rate of urbanization and small households,

these being the two variables that account for most of the “explanation”. We attribute this “short-fall” in mortgage volume share in all these countries to the early stage of housing finance reform. The analysis might suggest that the mortgage markets for Russia, India, and China, given the underlying socio-economic and financial variables, have a substantial potential for growth, even at current levels of economic activity.

V. CONCLUDING REMARKS

Emerging economies face a myriad issues and questions pertaining to housing finance and housing market reform: To what extent are supply of housing credit and demand for housing constrained by the existing financial systems? What are the bottlenecks and rigidities in the existing institutions, norms and regulations surrounding land, construction policy, urban planning and infrastructure? What is the correct role for primary/secondary institutions and markets in these circumstances? What should be the role of the public sector in housing and housing finance? In this review paper we look at some of these issues through the prism of a systematic transition taking place in these countries as well as taking into account the historical legacy and the context of the previous socio-economic system. Using data from 18 OECD countries, we develop a benchmark metric for explaining the relationship between a country’s mortgage market size and socio-economic explanatory variables. The empirical results are consistent with the expectations of economic theory and fit the data relatively well. This is perhaps a surprising result given the substantial variation within the underlying OECD dataset. In utilizing our estimated benchmark for the OECD countries, a rough hypothetical calibration for the expected size of the mortgage markets for Russia, India, and China

suggests an implied significant “short-fall” between the expected and actual amount of mortgages. We interpret this mortgage short-fall to signify that the new economic reforms and housing market policies now being implemented in each of these countries may be in early stages of development. Our results suggest that, to the extent that the mortgage market reforms can be implemented to bring the emerging nation mortgage markets in sync with the mortgage markets of developed nations, there is a substantial growth potential for the mortgage markets and the housing sectors for these three emerging economic giants. Russia appears to have the greatest mortgage “short-fall” among the three, given the urban share of the population, the small household size of its population etc.; both the projection and actual amount for India are much lower, and China’s shortfall occupies an intermediate position with respect to the other two countries. Socio-economic variables, such as the urbanization rate and household size tend to play an important role in the determination of the shortfall. Of course, considering the potential inconsistency of data across diverse countries, the endogeneity of many variables, particularly in a benchmarking-calibration context, we recognize that our results should be taken as “suggestive,” requiring additional empirical refinement.

Appendix A
List of OECD Countries

**Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan,
Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, UK, USA**

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