

Toward an Urban Housing Strategy

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I. Introduction

More than half the world now lives in cities. Among the most important and obvious policy issue arising from this phenomenon is where and how people should live within these cities. This issue has implications for macroeconomic development, public finance and public health; 19th century reformers in London and New York (cities whose incomes and living conditions at the time were similar to those found in many emerging cities today) argued that dwelling arrangements and settlement patterns influenced the moral well being of society.

Housing strategy therefore takes its place along with sanitation, education and infrastructure strategies as something that matters for long-term growth and economic well-being. This is not to say that the first priority of emerging economies should be to provide every household with a roomy flat or house rooted to a basement.. Evidence from the growth literature also strongly suggests that the returns to education and to plant and equipment are considerably higher than the returns to housing. On the other hand, recent work by Matias D. Cattaneo, Sebastian Galiani, Paul J. Gertler, Sebastian Martinez and Rocio Titiunik shows that concrete floors have a profoundly positive impact on child outcomes.²

That said, policymakers all over the world recognized how important housing is to the well being of their people, which is why it has been used by many politicians to appease citizens. In Singapore, the Peoples Action Party consolidated power in part by raising housing standards very quickly. In South Africa, the Constitution guarantees all citizens access to good housing. In the United States, encomiums to homeownership reach back to the time of Toqueville.

As developing countries think about housing strategy, it is important to consider how to provide housing inexpensively, in locations that allow the poor to have access to economic opportunity, in a manner consistent with growth. While housing may not be particularly important to long-term macroeconomic performance, it is an important predictor of the business cycle³, and it is fair to say that barriers to efficient provision of housing may well undermine economic growth.

¹ Lusk Chair in Real Estate. I thank Kate Owens for comments.

² See *Matias D. Cattaneo, Sebastian Galiani, Paul J. Gertler, Sebastian Martinez and Rocio Titiunik, Housing Health and Happiness, American Economic Journal: Policy, Feb 2009 1(1): 75-105.*

³ See Richard K. Green (1997), Follow the leader: How residential investment and non-residential investment predict changes in GDP, *Real Estate Economics*, 25(5); Edward E Leamer (2007) Housing is the business cycle. NBER Working Paper 13428.

This essay will examine the development of housing strategies for low and moderate income countries by framing a set of questions, attempting to answer those questions, considering the policy implications of the questions, and developing strategies for dealing with those policy implications.

The questions we consider come naturally from various bifurcations of housing fundamentals. Costs come from either land or improvements. Tenure ranges from owning to renting, with some gradients in between. Finance comes from equity and debt. Beyond these bifurcations, we consider settlement patterns of the poor. In some instances, the poor settle in centrally located slums, such as Dharavi and Makoko; in other instances, such as Mexico City, they settle in peri-urban areas.

So we now move to the questions that will serve as the foundation for strategy:

- A. What do we know about the land underneath housing?
- B. What do we know about building housing? As a practical matter, how is housing construction different in low-income countries relative to moderate-income countries?
- C. What do we know about owning housing? How much emphasis should be placed on formalizing property rights?
- D. Do we place enough emphasis on rental housing (the question almost answers itself)?
- E. What do we know about financing housing, particularly in emerging countries?
- G. In sequencing economic development, what role does housing play?
- II. What do we know about land underneath housing?

Land is the key to low cost housing: land values have lots of variation across space, whereas construction costs have far less. Consider the differences in land prices in a variety of countries. In the United States, land is nearly free in many places, and the cost of putting infrastructure in to support the land is in the neighborhood of \$2 per square foot. On the other hand, ,and in parts of Manhattan sells for more than \$5,000 per square feet.⁴

This phenomenon is not confined to developed countries, however. Land in Dhaka's most exclusive neighborhoods, such as Gulshan, sells for around \$50 per square foot, while in the countryside, land is, as best we can tell, not expensive (although the lack of formal

⁴ <http://www.radicalcartography.net/?manhattan-value>

transactions makes this difficult to discern). At \$50 per square foot, land prices in Dhaka are comparable to land prices in affluent suburban neighborhoods in the United States, Australia and Canada, although incomes in Dhaka on an exchange rate basis are about 1 percent of incomes in developed country suburbs.

Bangladesh is not alone in its high land costs. Land in urban areas of India, particularly in Mumbai, is *very* expensive relative to income. While land prices are particularly high in Mumbai, they are sufficiently high in places as disparate as Lima and Johannesburg as to make the delivery of inexpensive permanent housing difficult.

Simply put, if serviced land per unit built isn't inexpensive, neither is housing. This is a point we will return to toward the end of this essay. Consider the impact of land costing as much as \$1000 per square meter in Mumbai. Suppose a modest dwelling has 20 square meters; suppose a Floor Area Ratio (FAR) of 10 (which is much higher than the typical development in Mumbai). Then just the land cost of a modest unit will be \$2000. For the typical household earning \$1000 per year in Mumbai, just the amortized cost of land would use the whole of a reasonable housing budget.

What Makes Land Expensive?

Alonso (1961) showed that even in well functioning land markets, some land can be very expensive. In a very famous paper, Alonso formalized the Von Thunen model of urban development, and defined "bid-rent."

The insight is straightforward. Suppose two agricultural uses compete for land near a trade center. One of the two uses produces greater revenue and has higher transportation costs per mile than the other. At the center of the city, the land use that provides the higher revenue will outbid all other uses. But because the high revenue use has higher transport costs, as location moves away from the center of the city, it will eventually be outbid by the lower revenue use.

This has implications for both the settlement of land uses and people. In the context of cities, production uses often generate greater revenue per unit of land than residential uses. Consequently, we often observe that central business districts are just that: areas in the center of metropolitan areas that contain lots of businesses and relatively few dwelling units. From the standpoint of housing policy, this implies that there are locations for which housing is not the most efficient use.

But bid-rent theory also predicts settlement patterns. Suppose a household can trade off location costs with transportation costs. Consider a low-income household, whose budget set makes transportation spending difficult, if not impossible. Such a household will wish to live within walking distance of work and services, and may be willing to bid more per unit of land area than a richer household. This seems counterintuitive, as many poor people living in the center of cities, whether in Indian slums or American inner cities, appear to reside in cheap housing. But it is only cheap because it is very dense and very poor quality.

When we observe rent (whether formal or informal), we are not observing a price per se, but rather a price multiplied by a quantity, where the quantity is housing quality and total land consumption. The poor appear to spend little relative to the rich for housing, but they actually spend more per unit of housing quality than the rich.

While this is on its face inequitable (we generally don't like it when the rich pay less for something than the poor), it is the natural outcome of a well functioning land market. Under such circumstances, price signals are working well at allocating resources, and therefore are best left undisturbed. The housing problem thus becomes a poverty problem--households don't have enough income to pay for transportation and therefore cannot live in more space and comfort away from the center of the city--rather than a market failure problem. As we shall discuss later, the implication is that poverty is best addressed directly through income supplements.

But sometimes land prices--particularly serviced land price--are high because of distortions arising from regulations, corruption or insufficient capacity in infrastructure development and finance. These phenomena are not uncommon in emerging markets.

Let us begin with regulation. While many types of land use regulation are problematic, three in particular undermine housing provision: those that regulate density, those that regulate ownership, and, ironically, those that regulate price.

The most common method for regulating density is the floor area ratio, which simply forbids more than a certain amount of developed floor space per unit of land. Floor area ratios (or FSIs) in Indian cities are often less than two, despite that fact that Indian cities are among the densest in the world. In contrast, some buildings in Hong Kong have "slenderness ratios" of 20 (meaning that their height is 20 times their floor area per floor) and sit on lots with small setbacks.

Other methods for regulating density include set back requirements, side-width requirements, and green space dedication. Developments that require wide streets also reduce density.

In some cases, legitimate policy concerns motivate the enactment of ceilings on density. For instance, in Mumbai officials argued that the city's infrastructure could not support high-rise development. At the moment, this appears true, as transportation systems, sanitation systems and water systems are overwhelmed by the city's extraordinary population density.

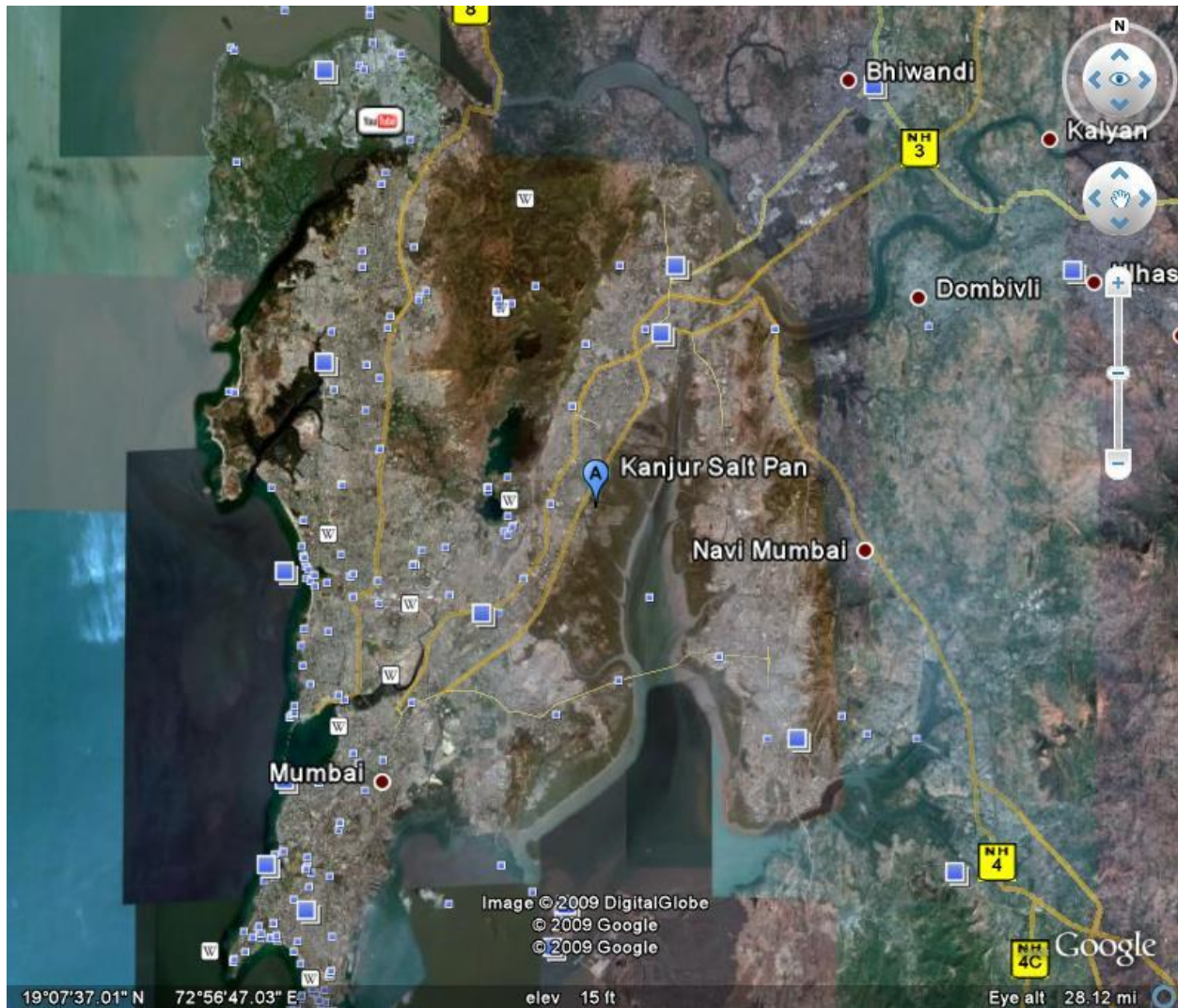
But there is the point: even if dwelling density in Mumbai is low, in part because of regulations we will discuss below, the population density is already high, so it would be hard to see how building density per se will put a lot of excess demand on services. Indeed, if pavement dwellers have places to live, transportation systems in Mumbai, including walking, might improve.

Just as important, allowing denser construction in Mumbai would create value, which could be taxed in order to finance civic improvements. It is actually difficult to consider housing strategy without thinking about infrastructure strategy. Well-located housing can create value that can be exploited for financing infrastructure that effectively improves housing. We will discuss some specific strategies for developing a nexus between dense housing development and infrastructure development at the end of this section.

The second regulatory issue is ownership. India's well-known 1976 urban land ceiling act (which has been repealed in parts of the country, including Maharashtra) prevented any individual from owning more than 500 square meters of vacant urban land. The act also allows the government to acquire vacant land at a fixed price and then build on it. The purpose of the act was to "prevent speculation." Specifically, there was a view that speculators would keep land vacant until its price rose to the point of maximum profit, which would therefore postpone development.

To say that this didn't work out would be an understatement. A look at a Google Earth Map of Mumbai demonstrates the ineffectiveness of this policy. The image is almost entirely filled with the municipality of Mumbai: the only areas outside of the municipality are east of the creek and north of the Ulhas river (the two most obvious bodies of water).

One sees vast tracts of vacant land in the midst of one of the densest cities in the World. While some of this is parkland (including Gandhi National Park in the north), much of it, like the Salt Pan Lands and the Old Port, lie unused or at least underused. Part of the reason for this is that the government owns much of it, and has had neither the capacity nor the political will to develop it. This is beginning to change, as Maharashtra



has repealed the Urban Land Ceiling Act. Yet, these large tracts also offer an important opportunity unseen in many other cities to privately develop at a density high enough to make an impact on the city's land market. Dense development requires parcel assembly, as does, at times, efficient development. Parcel assembly also allows developers to exploit economies of scale, a point to which we shall return when we discuss construction costs. Thus, Mumbai's publicly held land offers an opportunity to avoid many of the issues traditionally associated with private high-density development.

A more prosaic, and more common, type of regulation is price ceilings (in the form of rent ceilings and value ceilings). Price ceilings are particularly pernicious when it comes to land development. According to [Globalpropertyguide.com](http://www.globalpropertyguide.com), about 42 countries have some form of rental control.⁵ Among low and moderate-income countries, these include India, Pakistan, the Philippines.

⁵ See <http://www.globalpropertyguide.com/investment-analysis/The-pros-and-cons-of-rent-control>

Ball (1991), as well as Malpezzi and Ball (1991), discuss the pernicious effects of rent control⁶:

The INURD project analyzed the actual impacts of rent control regimes in four housing markets--Cairo, Kumasi, Bangalore, and Rio de Janeiro. These markets were chosen to represent a variety of economic and cultural environments as well as a full spectrum of rent control regimes as measured by the framework outlined above. Kumasi and Cairo have relatively strict regimes; Rio's is much less strict; and Bangalore's regime contains both a strictly controlled segment (which is occupied by public servants), a less strictly controlled segment, and an uncontrolled component. In each market, the reduction in rent, the "welfare loss" associated with reduced housing quality, and the distribution of benefits were estimated.

In all the markets, rent control reduced the rent paid by the typical tenant, with reductions ranging from 4% of the market rent for Bangalore households under "ordinary" controls to 64% for households in the same community under strict controls (see table). However the "welfare losses" created by the reduction in housing quality dramatically reduced these benefits. In Kumasi, losses reduced the benefit to tenants from 26% of the market rent to 12%. For households in Bangalore under "ordinary" controls, the welfare losses were sufficient to give the representative tenant a negative net benefit. These tenants were worse off under controls than in a free rental market.

Advocates of rent control protest that it is an effective mechanism for redistributing income. Ball, again:

Much of the appeal of rent control stems from its ability to transfer income from supposedly wealthy landlords to poor tenants. This study casts doubts on rent control's efficacy as an income transfer mechanism. In Cairo and Bangalore, no relationship was found between the distribution either of rent reductions or of benefits and household income. In these markets, the benefits of rent control are not well-targeted towards lower income groups. In Rio, the distribution was moderately progressive. In Kumasi, there was no pattern to the distribution of rent reductions and benefits were moderately progressive only because losses increased with income. Thus, only Rio's relatively moderate reduction in rents was appropriately targeted.

Moreover, the founding premise behind using rent control for income redistribution was faulty in some markets. In three markets--Cairo, Kumasi, and Bangalore--the income distribution of tenants and landlords were compared. While the median income of landlords was higher in all three cases, there was significant overlap. In Cairo, for example, about a quarter of the tenants had higher incomes than the landlord median. And there is no guarantee that the transfer will only occur from high income landlords to low income tenants. As a redistributive mechanism, rent control appears as an inefficient regulation.

⁶ <http://siteresources.worldbank.org/INTURBANDEVELOPMENT/Resources/336387-1169578899171/rd-hs4.htm>

When one visits emerging countries, one is struck by the lack of expertise at parcel assembly and subdivision development. In Bangladesh and in South Africa, many projects are “one-off” developments, and therefore are unable to exploit economies of scale in infrastructure and other fixed costs. Many countries need help with developing technical expertise in (if appropriate) high-rise development or tract subdivision development. As we will discuss more specifically below, lack of expertise causes construction costs to be higher than necessary, which leads to inefficiencies that developing countries cannot afford and which disproportionately harm low-income households.

Finally, corruption adds “soft-costs” to land development. For instance, in Dhaka, private parties involved in the development process complain about the size of the side payments required to build infrastructure.⁷ Transparency International notes in another context: “...in India, a country at the centre of the food crisis, corruption is estimated to add at least 25 percent to irrigation contracts and contributes to a system of political handouts and compromised oversight.”⁸ As we look to some success stories in housing provision, we will see in most cases they take place in countries where governments are reasonably transparent and respect contracts. In particular, we will look at five cases: in four of the five, the country is within the top quarter in “cleanliness” according to Transparency International.

Cases of Land Development

We will ultimately look at five countries that followed successful paths to land development, and therefore to housing development. Three countries were poor when they began their land development process: Singapore, Hong Kong and China. The other two were middle-income: Korea and the United States.

The per capita income of Singapore, Hong Kong and China at the start of their rapid land development is comparable to low -income countries today. Singapore became independent in 1965, and its PPP GDP per capita in constant 2000 dollars at the time was around \$4500.⁹ The earliest data we have for Hong Kong is from 1960, when its PPP GDP per capita was around \$3300. China began its reforms in 1989, when its PPP GDP per capita was around \$1500. This compares with India’s current per capita GDP of around \$2800, and Nigeria’s of around \$2000, so it is fair to say that those three countries were poor when they started their land development strategies.

The per capita income of Korea and the United States on the other hand were more comparable to middle income countries. Korea's GDP developed quite rapidly between the end of the Korean War and the early 1990s, but its people still lived in poor housing conditions.¹⁰ It was therefore a middle-income country when it began to move forward seriously on housing development in the 1990s. The 1989 per capita GDP in Korea was

⁷ Based on research conducted on World Bank mission in 2005 by Richard K. Green

⁸ http://www.transparency.org/news_room/in_focus/2008/gcr2008

⁹ GDP data come from Penn World Tables. http://pwt.econ.upenn.edu/php_site/pwt62/pwt62_retrieve.php.

¹⁰ See Green, R.K., S. Malpezzi and K.D. Vandell, Land Use Regulation and the Price of Housing in Korea, *Journal of Housing Economics*

\$8666. Finally, in 1945, the United States was something like a middle-income country, with per capita GDP of around \$11,000. This is not dissimilar from South Africa's current GDP of around \$10,000 per capita.

The only similarity between these countries whose housing conditions have improved dramatically may be that they are all Pacific Rim countries. We will briefly take a look at each one.

Hong Kong

Hong Kong's early housing policy is peculiar because it was the diametric opposite of its economic policy. In general, the Hong Kong government took a laissez-faire approach to the economy with unusually open trade flows and capital flows.

But beginning with the Shek Kip Mei fire of 1953, the government intervened considerably in the housing market, clearing slums and building high-rise public housing. The Hong Kong government did a number of things that are generally anathema to economists: it constructed buildings and it heavily subsidized both rents and home purchases for low-income people.

The construction program was nothing if not ambitious: About half of all dwelling units in Hong Kong are public. Public housing in Hong Kong has been subject to considerable criticism. Like all subsidized housing schemes, the benefits are not necessarily targeted well, and production was prone to locational (as well as physical) inefficiencies. A leading authority, Yu-chim Richard Wong, argues that efficiency ratios (the ratio of benefit to cost) in public housing in Hong Kong lie between 50 and 70 percent. He also notes that the distributional benefits of public housing in Hong Kong are slightly skewed: the bottom 10 percent of the income distribution in Kong has (and almost always has) consumed less than 10 percent of the public housing there.

Yet Wong also acknowledges that this is to some extent beside the point. As he writes:

The squatter fire in Shek Kip Mei in December 1953 [which left more than 50,000 homeless] acted as a catalyst for direct government intervention in the provision of housing. The view that the public housing programme was introduced primarily to reclaim land for development is widely accepted. The Commissioner for resettlement stated clearly that, 'squatters are not resettled simply because they need...or deserve hygienic, and fireproof houses; they are also resettled because the community can no longer afford to carry the fire risk, health risk, and threat to public order and prestige which the squatter areas represent and because the community needs the land on which they illegally occupy. And the land is needed quickly.'"¹¹

¹¹ Wong, *On Privatizing Public Housing*, City University of Hong Kong Press, page 37.

Wong goes on to point out that while the resettlement program did a remarkable job of replacing cleared slums with reasonably good housing (the government provided housing for 600,000 people in ten years), it also led to an *increase* in the number of squatters, in part because people were displaced from their homes, and in part because people had incentives to become squatters if they knew they had a chance to be resettled eventually into subsidized housing.

Yet for all of that, housing conditions in Hong Kong improved dramatically in a short period of time. Although it may not be the Pareto optimum, the share of people living in adequate housing and average dwelling space per capita both rose sharply. So the questions are: what did Hong Kong do correctly, and are there lessons that apply to other places?

In one respect, Hong Kong, like other Chinese cities, was lucky. As Alain Bertaud demonstrated, Chinese cities have long had very efficient settlement patterns, with high densities in their centers and lower densities on their peripheries. While the cause for this density pattern is not entirely clear, it made it easy for the government to know where people wanted to live, because they already lived there. This means that it might be difficult to apply lessons from Hong Kong to, say, South African cities, whose settlement patterns were disturbed by apartheid.

One lesson that may be transferable is financing infrastructure through land sales or long-term leases. For many years Hong Kong offered long-term leases. As such, it has always had an incentive to sell leases to the most productive land user, because this would produce the greatest revenue for infrastructure development. This gave the government enormously important clues about how to do planning: it would put in infrastructure in the places where land would be most intensively used, because it had already revealed itself to be the most valuable. Thus a virtuous cycle developed between land use (including private residential development, which made up a little more than half the housing development) and infrastructure.¹²

Hong Kong is about as dense as Mumbai, yet it would be an understatement to say that it is considerably more livable. This is because the city's capital stock is adequate for supporting its residents and businesses.

Another key to Hong Kong's success is its transparency and lack of corruption. When government officials said they were going to build housing, they did not appear to use construction as a means to pursue cronyism. Ironically, even though most housing development happened in Hong Kong while it was a colony, the government seemed to be accountable, at least as measured by Transparency International.

¹² For a nice discussion of the use of land leases to finance infrastructure, see George Petersen, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=940509#.

One other point about Hong Kong is that because of it is small, decisions get made locally by government officials who are physically close to the decisions. While China has done quite well in its coastal areas, Chinese municipal officials have at times complained that they have insufficient autonomy to react to local issues¹³--that Beijing has insufficient knowledge of local conditions to make good planning decisions.

Finally, Hong Kong may have been able to improve housing conditions for its people because it prospered generally. While it remains a mystery as to why some economies develop and others don't, it is reasonable to suspect that Hong Kong's openness to trade, access to capital markets and well educated population may have had something to do with its success.

Korea

Korea's housing development pattern stands out among the case studies because housing development lagged economic development. In the early 1990s, while on the verge of becoming an OECD country, the ratio of households to housing units in Seoul was nearly 2 to 1.

The lack of supply in the face of increasing affluence put Korean policymakers in a bind. Housing became very expensive in Korea, with price to income ratios as high as 10 in Seoul. Since the Korean War, the government had released limited amounts of land for new housing, and so the country had an inelastic land supply curve that shifted a little bit from year to year. One of the reasons for the limited land supply was almost certainly the government's desire to steer capital towards plant and equipment investment in export-oriented manufacturing.

Once the government decided that housing conditions needed to improve, it understood that it would need to allow supply to become more elastic. But this would hurt the wealth position of those who already owned homes, and therefore seemed politically problematic. Nevertheless, the government decided to move forward. The results were striking:

Table 1. Housing Situation and Service Levels (1980-2000)

Characteristics	1980	1990	2000
Housing stock Vs households ratio (%)			
-Whole nation	71.2	72.4	94.1
-Seoul	56.1	57.9	71.7
Average Size(m ²)	68.3	80.5	81.5
Per Capita floor Area (m ²)	10.2	13.9	20.1

¹³ Research conducted by Richard K Green in 2007

Persons per room	2.2	1.5	0.9
Households per unit	1.5	1.6	1.3
Modern Kitchen (%)	18.2	52.4	93.9
Flush Toilet (%)	18.4	51.3	86.9
Electricity (%)	98.0	100.0	100.0
Hot water (%)	22.1	34.1	87.4
Piped water (%)	56.1	74.0	86.1 ¹⁾
Urbanization Ratio (%)	60.0	78.9	87.4

Source: Seong-Kyu Ha, The Urban Poor and Housing Regeneration in Seoul, working paper

Note the dramatic change in every dimension. While Seoul still needs more units (and remains extremely expensive), the rest of the country has sufficient units. Korea saw dramatic improvement in floor area, presence of a modern kitchen, flush toilets and hot water between 1990 and 2000.¹⁴

How did this happen? Rather than pursue explicit government programs, the government repealed policies that created distortions, even though such removals risked alienating some constituencies. But the housing market was also allowed to function once the country as a whole was fairly affluent. As we will discuss later, it is difficult for the market to serve very low-income people in poor countries, simply because of considerations as straightforward as construction material prices.

Singapore¹⁵

To say Singapore is a unique economic and housing success story is an understatement. It seems to be the rare case where a centrally managed economy has thrived. Despite the country's one party rule, Transparency International ranks it as the fourth least corrupt country in the world. Perhaps Singapore cannot teach us many lessons about housing development elsewhere, but it can teach some--many of which the Chinese have learned.

Public ownership of land is pervasive in Singapore. According to Hwang (2008), around 85 percent of households live in housing units built on government owned land. Most households own their units, and the units are traded actively in the secondary market.

The quality of housing in Singapore is generally good. Much like Hong Kong, Singapore developed a substantial amount of its housing through government agencies. The transformation of the housing stock was remarkable: in 1965, more than 160,000 people lived in squatter settlements in Chinatown, an area with less than one square

¹⁴ Anyone who walked around Seoul in both years would confirm the truth of these numbers. . .

¹⁵Min Hwang provided helpful information for this section.

mile of land. Within 20 years, Singapore became one of the most livable¹⁶ cities in the world.

The Singaporean housing program had three components: government owned land, the Housing Development Board, and the Central Provident Fund. The Housing Development Board built housing, and then, similar to Hong Kong, sold and rented the housing at a substantial discount to market prices. While government involvement produced some locational inefficiencies (Singapore currently has 40,000 vacant new flats), it also took advantage of economies of scale and standardization of flats to reduce construction costs. The absence of corruption doubtless helped reduce costs as well.

At the same time, the government forced workers to contribute to the Central Provident Fund, a government backed retirement fund. This gave Singapore a source of long-term capital from the beginning of its development, and thus gave it funding for infrastructure development to support high-density residential development.

China (Urban)

Residential space in urban China has increased dramatically between 1989 and 2008, from an average of about 9 square meters per capita to 28 square meters per capita.¹⁷ China's emphasis on upgrading housing has not appeared to hinder its broader economic development.

Others, such as Petersen (2008) and Bertaud (2007) have written at length about China and its housing, and so we will limit ourselves to three points. First, China has followed a policy that ties infrastructure and land development: it uses land sales to finance infrastructure. As such, it has generally avoided wasting capital on unnecessary infrastructure. Second, there has been some devolution in housing policy in China, as municipalities have gained more authority. Finally, and most controversially, China has followed a policy of forced relocation so that urban areas could redevelop.¹⁸

To summarize the discussion and case studies in this section, some strategic recommendations for land development are as follows:

- Use proceeds from land sales (or, in Singapore's case, property taxes and pension funds) to finance infrastructure. This assures that infrastructure projects have a

¹⁶ As well as beautiful. A visit to Singapore, will reveal that "worst" neighborhoods, are in much better condition than many neighborhoods in the US, London,

¹⁷ See http://www.chinadaily.com.cn/bizchina/2008-03/17/content_6542889.htm.

¹⁸ See George Petersen (2008) *Unlocking Land Values to Finance Urban Infrastructure*. The World Bank and Alain Bertaud (2007) at, *China: Housing Affordability II: "A stock and flow approach including farmers' urban housing"* at <http://alain-bertaud.com/> accessed on June 5, 2009.

funding source and are positive NPV projects, because they have a nexus with the real estate being developed.

- In places where land is heavily regulated, liberalize land use but also exploit the release of value to develop infrastructure. In Tyson's Corner Virginia, developers agreed to finance a metro station in exchange for greater density rights.
- Consider the political economy of land use regulations and think about second best policies that leave all agents (or at least a substantial majority) of agents at least as well off as before.
- Recognize that liberalization requires more than semantics. In South Africa, land use codes have been revised to remove the word "apartheid," but the substance of the codes is still similar to that which existed in the apartheid era. This means settlement pattern remain distorted.
- Don't fear relatively large Floor-Area-Ratios. The places that need them are dense already, and allowing for high-rise development can actually relieve congestion.
- Recognize that low-income households need access to jobs, schools, transport and other amenities.
- Perhaps a lesson from Hong Kong and Singapore is that housing policy is more of a municipal function than a national function: both places are essentially municipalities as well as, in Hong Kong's case, a colony and then special administrative unit and in Singapore's case, a country. Although China's central government seems pretty successful, federalism seems a good practice for those policy areas where local knowledge is helpful. Consideration of federalism would be ambitious, as relatively few countries have federal structures. For instance, in India, far more power resides in states (and states in India are larger than most countries) rather than in municipalities.
- While not a strategy, it is worth emphasizing that transparency is important. While governments in Singapore and Hong Kong engaged in activities that have generally not proven successful elsewhere (i.e. government housing construction), their lack of corruption allowed them to do so in a relatively efficient manner.

III. What do we know about building housing? As a practical matter, how is housing construction different in low-income countries relative to moderate-income countries?

Regardless of income level, some of the strategies for reducing land development costs apply to all countries. Construction is a different issue, and we must approach it differently for medium income and low-income countries.

But for medium income countries, the application of modern mass development techniques is important for the provision of affordable housing. In a stunning paper, Kenneth Humphries¹⁹ shows that relative to the United States, housing construction is more expensive in China, South Africa, and Mexico while it is as expensive in Eastern Europe and India. While commodity prices are an important determinant of construction costs, and are determined in a world market, they are only one piece of the construction cost puzzle. Clearly, the only way countries with one-third the income of the United States will be able to provide affordable housing to their middle income households will be to reduce the cost of housing development.

Housing construction costs are a function of four things: imported materials prices, local materials prices, labor productivity, and wages. Humphries work shows that lower income countries suffer relatively high construction costs for two reasons: duties and value-added-taxes on imported goods, and poor labor productivity.

The first issue could be addressed directly: if housing is a priority, governments will cease heavily taxing the imported goods needed to build it.²⁰ The labor productivity issue is more problematic, but is not impossible. While laborers who build houses need skills such as carpentry and masonry, these are skills that can be taught through apprenticeships--they do not require many years of formal education.

But it is here that the production process really matters, and where the United States actually found a better mousetrap that can be exported to areas of the world where population density is not particularly high: the tract subdivision.

Perhaps the most famous tract subdivisions in the United States are the three Levittowns, two of which are outside of New York, and one of which is outside of Philadelphia. While many urban planners consider the Levittowns to be banal, they provided very inexpensive, high quality (relative to tenements, anyway) housing in two major metropolitan areas.

To be more specific, houses in Levittown sold for in 1949 for \$8000 (in 2009 dollars that is around \$72,000) and they had a floor area of about 80 square meters. The Levitts innovated by keeping very careful track of inventories (every piece of wood was numbered) and by limiting the number of floor plans they used. Peek and Wilcox provide evidence that while the Levitts introduced mass production techniques to housing construction, they did not perfect them. Quality adjusted real house prices in the United States fell substantially between 1955 and 1972, and stayed at their bottom until 1975, despite increasing demand from the baby boom. This is consistent with a story of technological diffusion in housing construction.

¹⁹ <http://www.icoste.org/intldata.htm>

²⁰ On the other hand, if the VAT on materials provides revenues for other productive uses, such as education and health, it is not so clear that it is important to reduce it.

The limitation of these techniques, of course, is that they do not lend themselves to high-rise construction. But it is possible to do reasonably dense housing without using high-rises. Consider the 80 square meter house, and let us say that it needs land for streets, parks and setbacks equal to four times its foot print. This means that for a household of five, each person consumes an average 64 square meters of land. This would produce a density of 156 people per hectare, which is not dense by South Asian and East Asian standards, but *is* dense by standards from nearly anywhere else, including Africa, Eastern Europe and Latin America. Small houses can also ultimately become larger (and therefore house more people) through additions to rooms or even granny-flats.

Figure 2
Levittown, New Jersey



But dealing with taxes, duties and labor productivity are middle-income country issues. The fact is that it is very difficult to build affordable permanent housing in low-income countries.

Nigeria offers a prime example of this conundrum. First, let us define a minimally acceptable rental unit as a unit with access to clean water, a toilet and electricity. Although it could arguably be smaller, it will provide a minimum space of 5 square meters per person for a family of 5.

Considering whether Nigerians could afford this space if it was formal, permanent, and priced in the market demonstrates the problem with providing new construction. According to the World Development Report, Nigeria has 90 million people with incomes of less than \$2/day, or less than \$730 per year. If we use the widely accepted--if also arbitrary--rule that households should spend no more than 30 percent of income on housing, this means that for 90 million Nigerians, we would need to figure out how to provide housing for less than \$219 per year.

For a landlord to make any profit at all, operating expenses per square meter per year would have to be less than \$10. Perhaps this is possible; it is worth investigating the cost of operating housing in Nigeria (indeed, it is worth collecting this indicator in every country where it might be possible).

A handy method (heuristic?) for determining feasibility is a gross rent multiplier. Gross Rent Multiplier is ratio of the sales price to the rent. Multipliers of 5 are common, although at times they are higher dependent on market conditions. In the Nigerian context it implies that construction costs must be less than \$1100 (including land) in order to induce investors to provide rental housing units of 25 square meters. If operating expenses are substantial, the maximum construction cost for feasibility will be even less; if the Gross Rent Multiplier is larger, the maximum construction cost will be higher.

Even in the most efficient of all worlds (and Nigeria is manifestly not that), commodity prices alone would make it impossible to produce housing for \$40 per square meter. So new, permanent, construction at market prices is not a solution for very poor countries' housing problems.

As it happens, new construction is not how more developed countries house the poor either. They rather rely more than anything else on filtering--old housing. As high-income people move into new houses, they leave their old, slightly depreciated, houses behind. Because the units experienced some depreciation, their cost is lower. But very poor countries tend not to have much old housing (let alone new housing) in urban areas. When new housing is built for upper income and middle class people, there are far too many people on the next lowest rung on the economic ladder competing for the used housing.

Filtering could work better, however, were it not for the attitudes of some of the owners of expensive housing. Amazingly, in 2003 Dhaka had housing vacancies, despite the fact that Bangladesh is among the most poorly housed countries in the world. High - income people would keep large units vacant, rather than subdividing them and renting them out to lower income people. Apparently, owners were worried about ruining the "prestige" of their units, and so preferred not collecting rent (while speculating on prices rising) to subdividing and renting.

Subdividing 200 square meter units in Dhaka into, say, five units would not help the poorest residents of that city, but it would permit some of the housing stock to be affordable to those not in the top rung of the income distribution. Changing attitudes is an enormous challenge, but it is frustrating to see good housing go to waste when it is insufficiently supplied in general.

But the other problem with housing in places like Lagos and Lima arises from their GINI coefficients. High-income earners in these countries earn much more than the average person, and they have small numbers. As a consequence, it is difficult for filtering to work: there is a discontinuity between the top of the market and the remainder.

In light of these issues, it is important to look to alternatives. According to UN Habitat, urban household develop their own housing using "progressive housing" technique as much as 70 percent of the time.

Ferguson is a an advocate for formalizing progressive housing, and notes²¹:

"most of the low/moderate-income majority of emerging nations cannot afford a mortgage loan to purchase the least expensive commercially-built home, formal rental markets are poorly developed, and – instead – households must build their housing themselves. This “self built”, “incremental”, or “progressive” housing accounts for the bulk of housing investment in most emerging countries...Progressive housing represents the only affordable approach to shelter for most low-income households and many moderate-income families. This method often meets the immediate needs of these households far better than publicly-sponsored formally-developed housing. The advantages of progressive informal development typically include much quicker access, lower entry costs, more flexible monthly payments, location closer to jobs better suited to households’ survival strategies, the ability to customize the construction of units to fit households’ needs and resources, and proximity of friends and family. Not surprisingly, such progressive informal housing usually out-competes formal markets except when government bulldozes these settlements or actively eliminates them through other heavy-handed means. As emerging countries have democratized, the wholesale eradication of informal settlements, which contain much of the electorate, has become politically impossible."

Yet he also describes his frustration with the process with which it is often practiced:

A review of the six steps in the process shows that progressive informal housing ends up costing many times more than formal-sector development. The first step of this process – acquisition of a lot of raw land – locks in many of these costs, creating a financial time bomb for government and households. Typically, households either invade public land or purchase a lot in an informal subdivision without full legal title. Land invasions predominated in the early stages of urbanization when many centrally-located parcels of vacant or underused publicly-owned land offered prime targets for occupation. In these beginning stages when land costs were lower, many cities also had legal low-income subdivision industries. Tighter urban land markets have now made illegal subdivisions on the distant periphery the main means of low/moderate income land development in most cities and, thus, the default mechanism for urban expansion (Ferguson, 2007).

²¹ <http://www.globalurban.org/GUDMag08Vol4Iss2/FergusonValueChain.htm>

Beyond the how of construction, an important issue is the who. One way in which the world has changed is that governments have more or less gotten out of the housing construction business. Even Singapore and Hong Kong, whose government housing construction programs arguably worked pretty well, have been trying to move toward privatization, although have not been able to do so speedily.

Governments probably should be discouraged from housing construction, because they don't have the incentives to minimize cost (unless there is some mechanism that holds them accountable, such as local elections), and perhaps more important, because governments tend to put housing in places where people don't want to live. Wong shows that even in Hong Kong, which is quite small, government estates have locational inefficiencies.

The world is full of examples of governments making poor decisions about where to locate housing. In South Africa, the government builds houses in Gauteng that are rather nice. They are roughly 50 square meters in size, and have electrical hookups and indoor plumbing. Yet when residents are given title to the houses, they resell them for less than it cost the government to construct them.

The reason: the houses are not only far from jobs; they are far from transportation to get to those jobs. The areas also suffer from inadequate security. To make things worse, in South Africa, housing subsidies often by design do not actually add to the number of housing units. When households get a subsidy for a new house, it is very often the case that the house sits on the same lot as an old substandard house. Sometimes a family is willing to rent the old house from the family that received the new house. While the housing is certainly less than ideal, it is shelter.

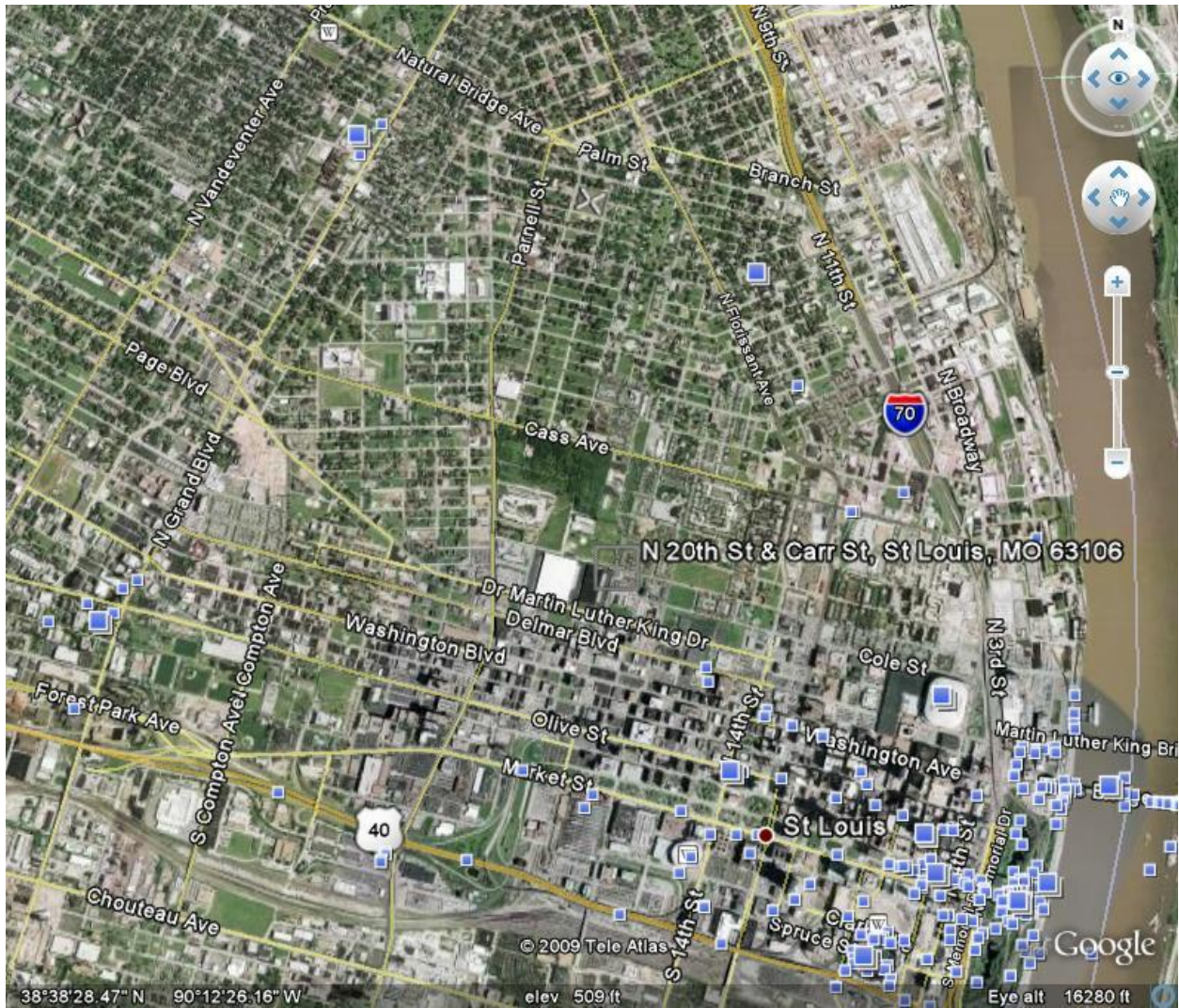
But under the South African housing program, households that receive a new house are required to demolish their old house. Needless to say, this often doesn't happen: many households with the new houses do not actually demolish their old houses. But such a policy pushes units into the informal sector.

Housing history is littered with examples of poor practices when governments attempt to construct housing. Malpezzi (1993)²² showed how in Kumasi, Ghana, houses resold for less than construction cost. In Nowa Huta, outside of Krakow, the communists built poor quality housing in a poor location: once the market became privatized, values dropped to zero.

Moscow had comparable problems to Krakow, in that settlement patterns were inefficient because central planners determined where people would settle. After privatization, buildings in convenient locations became very expensive, while those in inconvenient places fell into disrepair. The filtering process has actually worked quite well

²² See Stephen Malpezzi (1993), What can New York and Los Angeles learn from Kumasi and Bangalore: A comparison of costs and benefits from rent control. *Housing Policy Debate* 4(4) 589-626.

since privatization in Moscow.²³ United States public housing has also been condemned as a failure. The most notorious example was perhaps Pruitt-Igoe in St. Louis, which suffered from poor design and poor location. When it was developed, it brought far greater density to a St. Louis neighborhood that had previously been much less dense. The problems this created were so severe that the project was demolished when it was only 17 years old, and the area of St. Louis in which it stood still remains fairly empty. A photograph of St. Louis from Google Earth is below. Note that the area in which Pruitt-Igoe was placed (the area north west of the corner of 20th and Carr) now has very low density.



23 See Bertaud and Malpezzi (2001) *The Spatial Distribution of Population in 35 World Cities: The Role of Markets, Planning, and Topography*

This is not to say that the private sector always gets location right. There have been disastrous subdivisions developments by the private sector in Southern California. But it seems especially pernicious when the public sector spends scarce money that produces unsatisfactory dwelling arrangements, reduced access to employment and environmental harm. And if we care about alleviating poverty efficiently, there is overwhelming evidence is that subsidies to individuals go further than subsidies to building.²⁴). Wong maintains that even in Hong Kong, subsidies targeted to individuals would perform better than construction subsidies. The fact that people in Singapore find some public housing to be unsatisfactory, and that the government is giving some consideration to privatization, also indicates that even under the best of circumstances, public sector construction creates serious problems.

Strategic Recommendations for Building

- Reduce material prices as much as possible. If governments want to promote affordable construction, they cannot levy taxes on construction materials. Countries that have much lower incomes in the United States have comparable construction costs in part because of tariffs and VATs imposed on construction materials.
- Encourage the use of modern subdivision techniques. While it may seem a commonplace to say so, providing developers training by organizations such as the Urban Land Institute and the Royal Institute of Chartered Surveyors could be extremely valuable. It is clear that the best technological processes for housing are not being in most emerging countries.
- Don't underestimate the virtues of standardization. Standardization is a straightforward method for reducing costs, either in a high-rise environment (Singapore and Hong Kong produced standard flats), or in a single-family dwelling environment.
- Stay out of the way of progressive, informal housing.
- Develop indicators of settlement patterns and land use and exploit World Bank work already done by Stephen Shephard on indicators of land use.
- Develop indicators of construction costs, including explanations for why they might be unusually high.

IV. Property Rights

In 2000, Hernando DeSoto wrote an extremely influential book: *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else*. The short answer:

²⁴ See R.K. Green and S. Malpezzi, *A Primer on US Housing Markets and Housing Policy*, Urban Institute Press.

in the west property rights are well defined and well enforced, which in turn allows owners of property to fully unlock its value.

There is no doubt property rights are important: formal development can take place only when there is confidence in title.²⁵ To give one stark example, in 1995, Krakow had many parcels that were physically identical (i.e., had the same size, shape and location) and yet also had very different values: one property might be sitting across the street from another, and yet sell for ten times the price. The reason: security of title. Some properties, despite being in Nazi or Communist hands since 1939, had titles that were easily traced. Others did not.

Lack of confidence in title also stunts development. Poland serves again as an example. In the aftermath of the transition, office building rents in Poland soared, producing an excellent development opportunity. Yet it was nearly impossible to build office buildings because it was nearly impossible to assemble sufficient numbers of parcels with clean title to build such a building. Even now, developers complain that to build anything large in Poland, they "need to spend a lot of money on lawyers."²⁶

More broadly, capital market participants are reluctant to invest in markets where they lack confidence in legal institutions. When markets are functioning properly (as opposed to how they functioned between, say, 2003 and 2007), investors focus on four kinds of risk:

- Credit Risk
- Market Risk
- Legal Risk
- Political Risk

A country's culture of property rights influences three of these four risks: credit risk, legal risk and political risk. Credit Risk is the probability that lenders will be repaid. Credit risk management requires underwriting: The subprime crisis shows that poor underwriting can undermine mortgage systems in any environment—including the US environment.

But the point is that investors need to evaluate the probability that they will be repaid. Investors are willing to take risk, if they think they can characterize it properly and get appropriately compensated for it. If investors lack confidence in the ability of government institutions to enforce their property rights, however, they find themselves faced with uncertainty instead of risk. Uncertainty has a paralyzing effect on investment because it prevents investors from evaluating risk. It is one thing to think that, given

²⁵ It is not always necessary or even achievable in the short-term in some places. Incremental types of recognition – such as addressage, certificates of occupancy, etc can work in the short term.

²⁶ Western developers who do office construction in Poland and other Eastern European countries have described this phenomenon. They would prefer not to be quoted by name.

borrower and property characteristics, a default probability is three percent: that three percent is tangible, and therefore can be more or less priced by the market. It is quite another to think that, depending on the whims of a particular magistrate, one might or might not be able to take possession of collateral backing a loan.

As to legal risk, this is straightforward: no matter how laws read, or how well land registration systems are developed, if a government takes property arbitrarily and capriciously, it will drive away investors from all its country's sectors, including housing.

The broader point is that property rights fail to have meaning if actors have no confidence in legal institutions. This means that developing land registration systems and foreclosure proceedings is not enough. If courts fail to enforce rules, or if they enforce them in a manner influenced by corruption or political intrigue, the rules won't mean very much.

Capital markets need to "rate" debt: spreads are based on quality, as judged by rating agencies (although their reputation is sullied). Transparency is important, as are perceptions of credit, legal and political risk.

But while DeSoto was doubtless correct about the importance of property rights and institutions to enforce them, property rights are not a panacea. In the first place, if people are not literate, it is difficult to defend their interest. In Bangladesh, the ability to sign one's name is the definition of literacy, but the ability to sign without the ability to understand what one is signing is a dangerous thing.

In Peru, poor people who have been assigned formal property rights are at a disadvantage when confronted by sophisticated investors who wish to buy those rights. According to one Peruvian official, high wealth entities have purchased vast tracts of land at low prices from individuals who did not understand what they were selling, and then evicted people from those tracts. For these people, tenure was more secure under an informal regime than it is now under a more formalized regime. This is not to say that regularization isn't necessary; it simply implies that it comes along with its own set of problems.

But in the end, policy must determine methods for making property rights credible and practical. Property rights interact with aspects of development that stretch beyond housing. For instance, if one holds a "property right" to real estate that is not served by adequate water infrastructure, the value of the right is diminished. On the other hand, if the right is truly secure, it can create the value necessary to finance the necessary infrastructure. Causality between the value of the right and the services provided is bi-directional, which makes sequencing difficult. Property rights are perhaps best thought of as a necessary but not sufficient condition for economic development.

Alain Durand-Lasserve and Harris Selod use a review of the literature on property rights to develop a set of conditions under which tenure formalization is most likely to be successful. These include sufficient political will, property articulation of formalization strategies, recognition that

formalization requires more than a legal dimension, robust land administration, land allocation policies that meet the needs of low-income urban households, and a responsive and independent judiciary. This is ambitious, and may in many contexts be unattainable.²⁷ Consequently, Durand-Lasserve and Selod underline the need for semi-formalization, particularly in places such as Sub-Saharan Africa.

V. Do we place enough emphasis on rental housing?

Lots of literature suggests that owner-occupied housing is a good thing. Green and White (1997) showed that children who grow up in owner occupied houses are more likely to finish high school and that girls who grow up in such households are less likely to become pregnant while teenagers, after controlling for a variety of socioeconomic characteristics. Haurin, Parcel and Haurin (2004) echo the results on schooling, and DiPasquale and Glaeser (1998) show that in both Germany and the United States, owners are more civically engaged than renters.

That said, in a recent working paper, Wong (2009) shows that owners are less content with their lives than renters, and Newman (2009) challenges the results in Green and White and Haurin, Parcel and Haurin. Green (2009) notes:

Recent facts [from the United States] suggest that an obsession with homeownership has not served public policy well. A justification for subprime lending was that it would increase homeownership. Government policy—unsuccessful as it was—placed pressure on Fannie Mae and Freddie Mac to finance affordable housing. The FHA program lowered its downpayment requirements. And the upshot was that the ownership rate in 2008 dropped back to its 2000 level. With more foreclosures yet to come, it will likely fall even lower.

But there are other mechanisms for achieving these ends, such as default savings schemes (in order to spur wealth accumulation) and long-term leases on rental properties (in order to provide stability of tenure).

Policymakers seem to have a prejudice against private rental housing in general and against landlords in particular. Perhaps this reflects David Ricardo's continuing influence: landlords are viewed as lucky monopolists who happen to own property in the right place at the right time, and who are therefore able to suck up economic rents. Perhaps the tendency of societies to malign landlords is not entirely unfair: bad behavior is not uncommon among landlords, and poor treatment of tenants has a long history reaching back to agrarian times.

There are other challenges to developing a robust rental sector. The rental market cannot function if landlords are forbidden from evicting tenants. This is a problem even if

²⁷ Alain Durand-Lasserve and Harris Selod (2007) The formalization of urban land tenure in developing countries. Paper for World Bank Urban Research Symposium.

there are laws that permit eviction, because eviction is socially unacceptable in some cultures, such as the Ivory Coast.

But as UN Habitat emphasizes²⁸, renting is an important part of the puzzle. In the first place, rental housing generally has better cash flow affordability than owner housing: because renters don't get capital gains, in a user cost framework they should pay less per period than owners.

Second, rental housing allows household the ability to reserve savings for other kinds of investments, including small businesses, and produces an investment opportunity for the emerging middle class. As already noted, South African housing policy discourages "backyard housing," but this is a method that would allow at once for an increased stock of affordable housing units and allow people with pretty low incomes to accumulate wealth.

Third, rental housing provides an important information benchmark: without rents, we cannot know the capitalized value of property. Rents also provide powerful signals to governments about likely settlement patterns. Places where land rent is highest are also most economically productive, and therefore should be priority locations for infrastructure development.

Andrew Oswald argues that rental housing promotes labor mobility, because owning might tie people down to certain labor markets. When one rents a dwelling unit, the transactions costs of leaving it are quite low, while the transactions costs of leaving an owner-occupied house are high. While this hypothesis is intriguing and worth considering as we develop housing strategy, there is a large simultaneity problem as we think about the relationship between mobility and tenure type. People who expect not to be mobile are more likely to become owners, and therefore the correlation between ownership and immobility may reflect that owner's wish to be less mobile, rather than that tenure causes immobility.

Finally, even in the rental sector, affordability can be a serious problem because of feasibility issues (see the discussion on construction) In many places, even in efficient housing markets, renters will still need subsidies.

Strategies for Rental Housing

UN Habitat advances four desirable rental housing strategies:

- Governments [should] recogni[ze] that rental housing exists and is important.
- Housing policy should be neutral with respect to tenure.
- [Governments should] remove impediments to small landlords owning and developing rental property (i.e., allow backyard housing and granny-flats).

²⁸ Un Habitat (2003) **Rental Housing: An essential option for the urban poor in developing countries**

- [Governments should] Include tenants and landlords in subsidy programs/upgrading projects

Some others to consider

- Policy makers and market participants should develop a variety of lease terms. Leases should not be confined to short terms.²⁹
- Governments should avoid rent control
- Policy makers and market participants should consider a variety of tenure types, such as shared equity arrangements. Islamic mortgage is essentially a shared equity arrangement.

VIII. What about slums?

Slums are a topic to which another paper in this compendium is devoted, but it is worth considering a few points in the context of developing a housing strategy,

First, it is probably a mistake to use a catch-all word such as slums. Dharavi, the largest slum in Mumbai, is an economic "powerhouse" and is relatively safe, while Ajegunle, in Lagos, is depressed and filled with crime³⁰. Second, it is worthwhile to consider the form in which slum upgrading should take place: basic infrastructure provision or massive redevelopment? Finally, it is important to consider how slums disappeared in places such as Tokyo after World War II, Hong Kong and Seoul. Was growth largely organic, or were the poor displaced from slums in large numbers?

IX. What do we know about housing finance in emerging countries?

Mortgages don't have the best of reputations at the moment. Yet they remain indispensable. They not only make housing affordable, they affect the shape of settlement patterns. As Bertrand Renaud points out,³¹ cities are built the way they are financed. In Thailand, 80 percent of households have access to housing finance, where as in Mexico, a country whose GDP per head is three times higher than Thailand, only about 15 percent of the country has such access.

A lack of access to finance produces informal settlements, which in turn make service provision less efficient and more expensive. According to Renaud, Mexican

²⁹ See T. Sinai and N. Souleles Owner-Occupied Housing as a Hedge Against Rent Risk. *Quarterly Journal of Economics* (May 2005).

³⁰ See "Asia's Largest Slum is an Economic Powerhouse," Toronto Globe and Mail, October 3, 2005.

³¹ http://www.gyoder.org.tr/sunum/kf3s/Bertrand_Renaud.pdf

authorities estimate that the *ex-post* servicing costs of unauthorized settlements can be substantially higher than the cost of planned services in a large real estate project.

The depth of mortgage markets varies greatly around the World, and even within income classes of countries. Among OECD countries, the ratio of Mortgage Debt Outstanding to GDP ranges from around 10 percent in Italy to greater than 100 percent in the United States and the Netherlands.³² As already noted, Thais have far greater access to housing finance than other countries with similar incomes, with an MDO to GDP ratio of around 20 percent; in most countries with Thailand's income level, the MDO to GDP ratio is zero. Interestingly, Thailand also has among the most affordable housing of low-to-middle income countries, in part because it never developed a regulatory regime that impeded housing development.

A few years ago, emerging country governments were hungry to develop securities markets for mortgage finance. Securities have since fallen into disfavor. This has important implications when it comes to permanent mortgage financing. But before moving on in greater detail to *permanent* mortgage financing, we must first consider the model for housing construction financing.

Unlike mortgage finance, which requires long term lending, construction lending is a short-term phenomenon, and so is naturally funded through banks. Banks also have the benefit of being close to the ground, and so should be able to discern whether developers have sufficiently high skills to bring construction projects in on time and under budget.

Construction lending is also riskier than permanent mortgage finance, because it is not as well secured. In a traditional model of housing construction, a development partnership owns land with equity, and then gets funding to finish lots and put up houses. The funding usually is issued in stages, so that the developer draws funds as he or she needs it to pay for materials and labor. The problem is that until the house is complete, the value of the collateral is less than the value of the construction loan, meaning that the loan is risky.

As a consequence of this, construction loans, while short term in nature, are usually more expensive to borrowers than long-term mortgage commitments. In places with high short-term interest rates arising from macroeconomic instability, this makes construction finance difficult, if not impossible.

Beyond macroeconomic stability, a well functioning construction finance system requires vigilant, competent banks. In Bangladesh, where until recently all banks were nationalized, bankers did not have the incentive to underwrite developers carefully, and so loan performance was poor.³³

³² <http://www.iiese.edu/research/pdfs/DI-0562-E.pdf>

³³ I base this statement on conversations I had with bankers while in Dhaka in the summer of 2004.

China seems to have similar problems. According to Yongheng Deng, while permanent mortgages in China perform quite well, defaults on construction loans are in the neighborhood of 10 percent. Deng's work shows that China's banks (which are organs of the government) do no due diligence on developers; they rather rely on the end user of a house planned for construction. Let's say a family wants to build a new house in China. It goes to a bank and gets a long-term mortgage. It then gives the funds for the mortgage to the developer. If the developer is honest, he builds the house; if he is not, he runs off with the funds.

The key problem is that the developer has nothing at risk in China, and so has little incentive to perform. In some ways, this parallels the problems we have recently witnessed in the US subprime mortgage crisis.

Beyond bad actors, though, construction finance is inherently thorny. It relies on the existing collateral having strong legal standing: ownership challenges can stop construction projects cold, and this happened from time-to-time in the transition economies of Eastern Europe. It also relies on governments making good on promises of infrastructure provision. Places as well developed as the United Kingdom have had this sort of problem. When Canary Wharf was developed, the British government promised that a new tube line would be open and available on the development's opening day. It was not, and was one of the reasons Canary Wharf--all and all a good project--became a financial failure for its sponsors.

The other thing that hurt Canary Wharf--and can hurt all construction loans--is timing. Very often a project will seem like a good idea at the time it is conceived. Consider the situation in many East Asian countries in the middle 1990s. While some places were overbuilt (Thailand and Indonesia), others were not, and the cost of capital was cheap. In 1995, building a block of flats or an office building may well have seemed a good opportunity in Taipei, but in the end, when projects that started in 1995 were completed in 1997, they opened in the midst of a great financial crisis. The fact that it takes so long to build real estate projects means that construction lending will always be risky.

Yet a robust construction sector is necessary for development. One of the problems facing housing development in Bangladesh is that construction must almost always be self-financed (the weak banking sector described above has little capacity). This effectively bottlenecks the development of housing, and means that permanent financing could in some ways be self-defeating. If permanent finance is unleashed on a market where new housing supply is severely limited, it could simply push up prices of the existing stock, and therefore have minimal impact on the availability of housing that people can afford.

Housing markets cannot in the long-term function well in the absence of permanent finance, either. An important question is whether these mortgages are best funded through banks or capital markets. But Renaud asserts that before countries even worry about funding sources for permanent mortgages, they must develop a cornerstone retail (primary) mortgage market. He maintains this cannot exist without

- Effective Land registry systems

- Effective bankruptcy law
- Efficient foreclosure procedures
- Reliable property valuation
- Proper mortgage loan underwriting
- Modern technology in loan processing and servicing

While this is almost certainly correct, we must take care not to let the perfect be the enemy of the good. While there is a lot about Bangladesh that causes despair, Green and Wachter found a reason for optimism a few years ago³⁴:

What is remarkable is that ... private corporations (especially Delta BRACK housing finance and IDLC) were able to gain a toehold in the Bangladesh mortgage market despite a huge disadvantage in cost-of-funds. For example, in June 2003, public-sector financial institutions had a cost of funds of less than five percent, while private commercial banks had a cost of funds of nearly eight percent and housing finance corporations had a cost of funds of 12 percent. Yet, these private banks and HFCs were able to take business away from government-owned institutions because they operated with far more efficiency. Delta BRACK and IDLC are particularly interesting stories. Management at these institutions worked to develop underwriting standards for mortgages [that] are consistent with practices in the developed world. Borrowers are required to put substantial equity (typically 25 percent) into their houses, and must meet payment ratio requirements. The HFCs also attempted developing standards for evaluating potential borrowers' credit histories, having inferred from other countries' experiences that past history of bill-payment is a strong predictor of future payment.

The point is that even under the most hostile of business conditions, the application of strong underwriting and servicing techniques can produce tremendous benefits for the mortgage market.

But credit issues are only part of the issue. The discussion of property rights in this paper noted that there are four kinds of risk that investors worry about and that three are related to political and legal institutions. But mortgages are long-term assets, and long-term assets by themselves create serious problems for investors and for countries.

Many countries still lack long-term capital markets. As noted, even Korea, a very stable and prosperous country, has difficulty getting funding with a maturity of more than five years because of its saber-rattling northern neighbor. For countries without long-term markets, banks are the only source of mortgage funding.

³⁴ R.K. Green and Susan Wachter (2008), *The Housing Finance Revolution*, Proceedings of the 39th Annual Federal Reserve Bank of Kansas City conference, Jackson Hole, WY.

Many countries have developed successful mortgage systems based on banks or deposit funded housing finance institutions. But these institutions produce vulnerabilities. In the first place, in order to avoid balance sheet issues, bank based mortgages typically have variable rates. This helps manage duration risk: if interest rates on deposits rise, so do too interest rates on mortgages. As a result, banks are hedged against market risk. But while this makes depositories safer with respect to market risk, it leaves households vulnerable to payment shock. In the late 1970s, interest rates around the world rose to double-digit levels. A household that is perfectly capable of paying six percent interest on a mortgage might be unequipped to make a payment based on a 12 percent mortgage. Consequently, in the course of reducing market risk through the use of a variable rate product, lenders may increase credit risk.

Second, because the liabilities of depositories have the shortest of terms, mortgages can create liquidity problems for these institutions. Suppose an unusually large number of depositors withdraw funds because a spike in unemployment requires households to draw down their savings. Banks cannot call mortgages in order to replenish their funding, and in the absence of a secondary market, banks cannot sell their mortgages at a reasonable price. Banks can therefore find themselves in a precarious capital position even if their assets (mortgages) are performing well. Something very much like this happened in Western economies in the middle 1960s, and is happening in the commercial real estate market now.

There will therefore almost certainly a role for securitization in the future, we just need to avoid the mistakes of the past six or seven years:³⁵:

[I]nvestors made two fundamental mistakes about subprime mortgages. First, some investors thought US house prices would never fall nationally, in part because they never had (in nominal terms) in the post-War era. So long as house prices rose, these investors reasoned, mortgage borrowers would retain a powerful incentive not to default; consequently, default risk for all mortgages was deemed to be low. True story--around 2005 I was in the elevator of a large investment bank, and one person said to another, "you can't make a bad real estate loan." That happens to be the moment that I began to worry about the subprime market.

When well-underwritten mortgages are funded by over-collateralized securities, they perform quite well. Until very recently, Fannie Mae and Freddie Mac mortgage backed securities had excellent default performance, and even now, the performance of loans with loan-to-value ratios of less than 80 percent at origination is excellent. In Denmark, capital markets have funded mortgages for centuries, and they have performed well³⁶:

The Danish mortgage system has a long history, dating back to the Great Fire of

³⁵ <http://www.growthcommissionblog.org/content/securitization-and-the-future-of-emerging-capital-markets>

³⁶ See Boyce (2008). https://www.ibm.com/developerworks/blogs/resources/adler/20090325_1.pdf

Copenhagen in 1795. It has withstood several Sovereign Bankruptcy Events and was on the losing side of several wars with Germany without ever seeing a bond default. Mortgage Credit Institutions (MCIs) set up bond series, or Realkreditobligationer (RO).... MCI's compete in a transparent way and are best thought of as mortgage insurance companies which provide their customers with valuable financial advisory services. Every borrower is given the same rate by the bond market, so there is no legal basis for consumer protection disputes. Debtors are personally liable for their loans. It is not sufficient to relinquish the house in event of default. MCIs rely upon no taxpayer guarantees, yet are highly profitable. When a loan goes delinquent, the MCI is required to buy the loan out of the cover pool. Due to the balance principle, the loan can be bought at the LOWER of par or where the bond trades. This discount bond buyback also happens at the lower of par or market, acting as a significant mitigating force for the MCI. This is because credit losses are highly correlated with housing prices, which themselves are correlated with bond prices.

The point here is not to advocate for the Danish or US systems (from before 2002) per se, but rather to show that we should not write off securitization as a means for housing finance.

But it is difficult to start a securities market. The Danish system has had more than 250 years of history behind it, and the US system began in the aftermath of the Great Depression with an enormous amount of government intervention.

In the US mortgage market right now, we see market failure arising from incomplete information: the purely private mortgage market has shut down, and the private sector is unwilling to engage in price discovery. As was the case in the 1930s, the US government is finding that it must intervene in order to jump-start the market.³⁷

We therefore might contemplate how one begins the development of a secondary mortgage market. Let us emphasize here that until the retail (primary) market functions well, it is useless to think about secondary markets. As we recently learned, no amount of financial cleverness can overcome poor underwriting. Similarly, no amount of cleverness can overcome unstable macroeconomic conditions.

A beginning for developing capital markets for mortgages might be the use of sovereign debt to lower cost of funds. Instead of borrowing directly, the government could stand behind loans with a credit guarantee. Such a policy allows for price discovery, which in turn could bring about capital market funding. Governments have the advantage that they don't need returns on capital: they just want to avoid losing money.

³⁷ The United States during the Great Depression should have some resonance as we think about emerging countries. There was wide-spread poverty in the United States at the time; Franklin Roosevelt famously noted that one-third of the country was ill-fed, ill-housed and ill-clothed.

But as we now know, it is important to be careful, as moral hazard becomes a large problem. When the government is in the back of the capital queue, investors have much less incentive to do due diligence, and the potential for corruption is large. So to avoid these issues, government must combine the guarantee with strong regulation, including stout capital requirements of lenders, and consistent underwriting requirements. Governments themselves should avoid holding loans, at least in the long term.

These systems of (implicit) subsidies via guarantees and regulations can work, particularly in an environment of macroeconomic stability. It is doubtful that the private sector will alone be able to overcome the absence of information that precedes the beginning of a mortgage market. But the problem with this arrangement is that the political pressure to liberalize asset requirements while maintaining implicit subsidies seems to be fairly overwhelming, and so the danger of going down a path of government backing of mortgages is dangerous. Unfortunately, there may be no alternative.

XI. Final Point: Sequencing of Housing as Part of Economic Development

Past experience from countries that have developed successfully gives us few clues about where housing should take place in the sequencing of development, There certainly have been places that have had extraordinary development where housing lagged: South Korea and Taiwan in particular.

As we discussed earlier, the transformation of housing in South Korea in the 1990s was quite remarkable. In the early 1990s, South Korea was on the verge of OECD status, but housing conditions there were quite poor, with a household to housing unit ratio of .5. When new construction was put into place in New Towns on the periphery of Seoul, its quality was rather poor: so much so that it generated protests from residents of new units.

It is difficult to say whether Korea was following a strategy of husbanding resources for the development of human capital and plant and equipment, or whether it simply made a series of mistakes in the execution of housing policy. It is possible that both are true.³⁸Mills (1989) and Taylor (1998)³⁹ demonstrate fairly conclusively that the returns to both plant and equipment and human capital are considerably higher than the returns to housing capital, and that therefore Korea's relative starvation of its housing sector, intentional or not, may have helped its development trajectory. It is also instructive to note that while Korean housing may have been overcrowded and inadequate, Koreans did have access to basic services, such as clean water and sewerage, early on in the country's development process.

³⁸ See Green, Malpezzi and Vandell (1994) Urban Regulation and the Price of Land and Housing in Korea, *Journal of Housing Economics*.

³⁹ Edwin Mills (1989) , Social Returns to housing and Other Fixed Capital. *AREUEA Journal* 15(1):601-16 and Lori Taylor (1998), Does the United States still Overinvest in Housing, *Federal Reserve Bank of Dallas Economic Review*, Second Quarter 1998, 10-18.

Thailand gives us an example of a place where housing development has been relatively successful, while economic growth has been somewhat disappointing. As Steve Malpezzi has pointed out, the regulatory barriers to housing provision in Thailand were much lower than in many other parts of Asia (he draws a particularly striking contrast with Indonesia), and this led to the reduction of rent seeking and greater efficiencies in the housing supply process. But perhaps because it was relatively easy for capital to flow to housing, less was available for developing a robust export sector, and so Thailand has languished relative to other countries in the region.

Of course this is *not* the Singapore story, where housing conditions improved in tandem with other living standards from the beginning, in part so that the government could show its people tangible progress. The basic lack of corruption in Singapore was surely helpful. The fact that it raised so much capital through the Central Provident Fund allowed it to invest in its port, its airport, its plant and equipment, and in housing.

Finally, it is impossible to gainsay the fact that China (urban China anyway) has made tremendous progress over a 20-year period in developing both its export sector and its housing standards. Like Singapore, China is a country with a very high savings rate.

A final plea

One problem we face at the moment in attempting to develop housing strategy is that much of the data we rely on are terrible. For example, http://www.housingauthority.gov.hk/housconf/atbl_yym.htm is among the few data sets that attempts to compare housing in Asia using basic indicators.

But the data are both outdated and wrong. The dataset shows that only 10 percent of Bangladeshis are squatters. A trip to Bangladesh suggests that this is a serious underestimate. According to the data, the squatter share for the Philippines is 6 percent; a figure that most Filipinos would agree is absurdly low. If we care about making evidenced based decisions about housing, we need to develop better data. The World Bank housing indicators project from the 1980s was an excellent start.