Housing

A room of one's own

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After several false starts in the early 1990s, China undertook a massive privatization of its public housing stock in 1998, which was largely complete by the end of 2003. The impact of this reform on China's subsequent economic development appears to have been enormous. Enterprises received an immediate cash infusion and were freed from the costly burden of building housing for their employees. Employees got an implicit subsidy when they bought apartments at well below market rates. The commercial real estate market exploded, as did the market for mortgages to finance new home purchases.

Zhu's legacy

Housing privatization ranks with state enterprise reform and China's WTO accession as one of the great achievements of premier Zhu Rongji (1997-2002) and is certainly one of the most significant economic events of the past decade. But astonishingly little systematic research has been done on it. An excellent PhD dissertation remains to be written tracing both the implementation of housing reform and its multifarious economic impacts. This article represents a very preliminary stab at quantifying housing reform's effect on the Chinese economy. Briefly, we find that privatization probably contributed to the post-2001 investment boom by making more investment funds available to enterprises. The wealth transfer to households did little to boost consumption; instead it was expressed as a subsidy for the commercial housing industry, whose share of GDP quadrupled in the past decade.

How many houses, how much space?

Scattershot efforts at privatization of the public housing stock started in the early 1990s, but these attempts fizzled and as late as 1997 the large majority of urban Chinese still lived in apartments allocated by the state-owned work unit of one of their family members. Large-scale privatization began following a July 1998 State Council policy which ordered state work units to stop allocating housing to their employees and give them cash subsidies instead. The new policy also encouraged banks to offer mortgages, and stepped up the role of individual housing provident funds, compulsory savings schemes intended to help individuals finance house purchases. Broadly, it is clear that most of the public housing stock was privatized in the five years following this decision. But getting at the details is a devilish task.

Because the ownership of housing was scattered among so many different types of work units, there are no comprehensive data on the number of public housing units and exactly how much got privatized when. We constructed estimates based on the number of public-sector workers in 1995. This was chosen as the baseline year in order to avoid undercounting people who subsequently got laid off in state-sector restructuring, but who had already been allocated housing and so could benefit from housing privatization. There were 149m public sector workers in that year, of which 114m worked in enterprises, 25m in non-enterprise institutions (such as universities) and 10m in government. We estimate that the number of housing units was about 60 percent of the number of workers, since in many cases married public-sector employ-

Table 1
Summary of housing privatization, 1998-2003

Number of state sector employees, 1995, m	149
State-sector housing units, 1995, m	91
Total amount of public housing privatized, bn sq meters	4.1
Average sale price per sq meter, Rmb	500
Average market price, Rmb	1,600
Total receipts, Rmb bn	2,050
Total implied market price, Rmb bn	6,499
Implied subsidy to households, Rmb bn	4,449
Key figures in US$ bn	
Total housing privatization receipts	247
Implied subsidy to households	536

Source: NBS, CEIC, *CEQ* estimates

ees shared a house, and some of the 149m listed workers would not yet have been allocated housing. The average assumed house size was 50 or 60 sq meters, depending on the type of work unit.

Using these assumptions, we reckon that when privatization began in earnest in 1998 there were 91m state-owned housing units with a combined area of 4.8bn sq meters. Based on reports from 17 provinces on the rate of privatization, about 84 percent of this stock, or 4.1 bn sq meters, was privatized over the next five years.

Cheap at twice the price

The next problem was to figure out what price all this housing sold at. Here if anything the data are even worse. Reports from localities suggest that each seller of public housing set a benchmark sales price, based on the cost of construction. These benchmarks (which were revised annually) fell in a range of Rmb700-1,300 per sq meter. But the actual price paid by the employee was generally lower, since discounts were given according to rank and years of service. In some cases, the discount was so big that the final sales price did not cover the cost of the building. To prevent a leakage of state assets by enterprises selling their housing stock at below cost, the central government set a minimum price of Rmb260 per sq meter. Based on these parameters we have assumed an average selling price of Rmb500 per sq meter.

And the winners were ...

This price estimate is fairly arbitrary. If one believes that the actual average sales price was lower (as reflected by the central government's floor price), then a greater share of the benefits of privatization went to households, through the implicit subsidy created by the difference between sales prices and market prices. If one thinks the true average sales price was higher, then a greater share of the benefit went to the enterprises who collected the cash payments for the housing.

The results of these estimates are summarized in Table 1. We calculate that in the peak era of housing privatization, 1998-2003, sales receipts from housing privatization exceeded Rmb2trn, or around US$250bn. Housing was sold at an average discount to market prices of nearly 70 percent, implying a notional wealth transfer to households of Rmb4.5trn (US$540bn).

Table 2
Housing privatization year-by-year, 1998-2003

	Area sold m sq m	Sales value Rmb bn	Subsidy Rmb bn
1998	787	393	774
1999	745	373	735
2000	704	352	745
2001	663	331	738
2002	621	311	729
2003	580	290	729
1998-2003	4,100	2,050	4,449

Source: NBS, CEIC, PBoC, *CEQ* estimates

Table 3
Housing sales and mortgage issuance

	Mortgage issuances	Mortgage issuances as % of	
	Rmb bn	Privatization sales	All housing sales
1998	30	8	5
1999	106	28	17
2000	215	61	32
2001	245	74	33
2002	304	98	38
2003	414	143	44
1998-2003	1,312	64	30

Mortgage issuances includes both commercial mortgages and an estimate of subsidized mortgages made through housing provident funds.
Source: NBS, CEIC, PBoC, *CEQ* estimates

Follow the money

Murky financing

Exactly how these purchases were financed is not entirely clear. Mortgages do not appear to have been a major factor. Total mortgage issuance, including subsidized mortgages handed out by housing provident funds, equaled 64 percent of the privatization sales of housing in 1998-2003 (Table 3). But the average level of mortgage finance must have been far lower because it is likely that a large proportion of mortgages were for commercial housing sales, which grew quite rapidly during this period (Table 4). If we assume that privatizations and commercial housing sales were financed at the same rate, mortgages would have covered just 30 percent of the cost of privatization. We suspect the true figure was much lower.

Table 4
Privatized housing vs commercial housing sales, 1998-2006

	Residential area sold, m sq meters		Sales value, rmb bn	
	Privatization	Commercial	Privatization	Commercial
1998	787	108	393	201
1999	745	130	373	241
2000	704	166	352	323
2001	663	199	331	402
2002	621	237	311	496
2003	580	298		654
2004		397		1,036
2005		496		1,456
2006		554		1,729

Source: NBS, *CEQ* estimates

One source of funds was undoubtedly household savings; another was cash subsidies from work units, which were widely reported at the time. In effect, many enterprises simply gave their employees some or all of the money with which to buy their flats. A common stipulation in such instances was that if the employee subsequently sold the flat, a very large share of the capital gain would have to be paid back to the work unit. It is impossible to determine what proportion of the Rmb2trn in privatization receipts represented actual cash flows from households to enterprises, and what share was simply enterprise funds being traded back and forth.

To the extent that households used their own money to buy their flats, where did the cash go? Legally, the proceeds from housing sales were supposed to be deposited in municipal housing funds, and enterprises could only withdraw them to finance housing related expenses: construction of new buildings, maintenance of existing buildings, or employer contributions to employee housing provident funds.

We could find no data recording how much of the proceeds of housing privatization went into these funds or how much was pocketed by the selling units. We believe that the vast majority of the funds were pocketed. The only report we could find stated that at the end of 1998, a year in which we estimate Rmb400bn was raised from privatizations, a total of 3,500 municipal housing funds nationwide controlled just Rmb3bn.

Cui bono?

The ultimate question, of course, is what economic impacts housing privatization had on households, on state enterprises, and on the real estate market. For the real estate and mortgage markets, the answer seems quite clear: commercial housing sales multiplied nearly nine-fold between 1998 and 2006, rising from 2.4 percent to 8.2 percent of GDP. Mortgage issuances rose more than 16-fold between 1998 and 2006, and since 2001 have accounted for about 15 percent of bank lending.

Household arbitrage

For households, it is fairly easy to sketch out a stylistic account of the effects. Households shifted part of their savings from a financial asset (bank savings) to a physical asset (a home) and reaped a hefty unrealized premium from the difference between what they paid for the house and what it was worth on the market. On the other hand, household consumption rates probably fell, for three reasons. First, to the extent that the purchase was financed by a mortgage, a portion of monthly expenditure previously devoted to consumption was diverted to mortgage payments. Second, it is likely that once their bank accounts were depleted by the house purchase, households increased their levels of saving in order to bring their cash reserves up to what they considered a safe level. Finally, households that did <u>not</u> benefit from privatization were confronted with an expensive commercial market, so the saving they had to do to enter that market almost certainly exceeded the amount of saving required by households in the 1980s and early 1990s who could count on a housing allotment from their work unit.

Finding the data to justify this story is a large task and beyond the scope of this article. Probably the two biggest questions are 1) how big was the "wealth effect" that households enjoyed and how was this wealth expressed; and 2) how severely did the commercialization of housing depress household consumption?

On the first question, the most obvious hypothesis is that notional capital gains on old housing were recycled in the purchase of new housing. In most cases the housing purchased via privatization was old and of poor quality, and significant amounts – we do not know how much – were subsequently demolished and the occupants moved to new housing. Even if it were not demolished, residents might find it advantageous to sell the old home and use the proceeds to finance the purchase of a more modern apartment. In effect, housing privatization created a subsidy that jump-started the new commercial real estate industry.

On the second question, the data are unclear. Urban household consumption growth has slipped dramatically in recent years. From 1980 to 1997, urban household consumption growth ran about 15 percent faster than GDP growth as a whole, mainly as a result of the movement of population from the countryside into the cities. Since 2001 urban household consumption has grown on average 20 percent *slower* than GDP, despite the fact that the urban population continues to grow rapidly (Table 5). However in the first three years of housing privatization (1998-2000) urban consumption grew much faster relative to GDP than in the previous two decades. This reflects that those three years were a growth recession during which investment and exports were extremely anemic, so that GDP growth was unnaturally low. Even so, it is a bit hard to draw a straight causal line between housing privatization and weaker household consumption.

Table 5
Ratio of urban household consumption growth to GDP growth, 1980-2006

1980-1997 average	1.15
1998	1.81
1999	1.96
2000	1.47
2001	0.85
2002	0.82
2003	0.87
2004	0.81
2005	0.70
2006	0.78
2001-06 average	0.81

Source: CEIC, *CEQ* estimates

Reaping the windfall

The impact of housing privatization on the enterprises that sold the housing may be the most significant, but strangely it is also the least discussed. These enterprises benefited in two ways. First, to the extent that households used their own cash for house purchases, their employers enjoyed a windfall gain – particularly if, as we believe, they did not fulfill the requirement to deposit these receipts in the municipal housing funds. Second, they were relieved of the need to continue building housing for their employees, a substantial burden in the old planned economy.

Investment explanation

Through both of these channels, enterprises would have been able to increase the amount of funds available for investment. It is possible that the money made available by housing privatization partly explains the enormous boom in investment seen from 2001 onwards. As Table 6 shows, estimated housing privatization receipts for 1998-2003 equaled 11 percent of fixed asset investment during that period. Assuming that the construction cost of state housing in the mid-1990s was Rmb1,000 per sq meter (i.e. the midpoint of the range of benchmark privatization prices, which were based on construction costs), the annual construction cost burden of the state sector

Table 6
Housing privatization receipts versus investment

	Housing receipts Rmb bn	Fixed asset investment Rmb bn	Housing receipts share of FAI, %
1998	393	2,249	17
1999	373	2,373	16
2000	352	2,622	13
2001	331	3,000	11
2002	311	3,549	9
2003	290	4,581	6
1998-2003	2,050	18,374	11

Source: CEIC, *CEQ* estimates

immediately prior to privatization would probably have been on the order of Rmb50-100bn. Eliminating that burden could have enabled firms to direct even more money to investment, or it could have helped finance buyouts and pensions for the tens of millions of state sector workers that were laid off during the same years that housing privatization was at its height.

Either way, it seems clear that the cash flow from housing privatization played a crucial role in paying for the massive restructuring of state enterprises in 1998-2003. In addition, by spurring the rapid creation of a huge commercial real estate market, and by providing enterprises with additional investment funds, it almost certainly laid the foundations for the dramatic investment boom that has driven China's growth since 2001.

