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Property Tax in Urban China

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Abstract

This paper examines the urban housing sector of China and proposes a property tax reform. Over the past decade, housing price in urban China has been increasing dramatically because of strong demand for self-use, investment and speculation. The booming housing market, however, has brought several challenges for further development, such as housing affordability, inequality, and possible housing bubble. One strategy is to reform the current property tax system. Specifically, this paper proposes that China significantly reduces taxes in circulation but levies property tax during possession. Doing so will increase housing affordability because of lower transaction costs, reduce speculation because of higher cost of holding, stabilize fiscal system because of more sustainable tax revenues, and improve the efficiency and fairness of the property tax system because of the implementation of "ability-to-pay" and "who use who pay" principles.

PROPERTY TAX IN URBAN CHINA

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Abstract

This paper examines the urban housing sector of China and proposes a property tax reform. Over the past decade, housing price in urban China has been increasing dramatically because of strong demand for self-use, investment and speculation. The booming housing market, however, has brought several challenges for further development, such as housing affordability, inequality, and possible housing bubble. One strategy is to reform the current property tax system. Specifically, this paper proposes that China significantly reduces taxes in circulation but levies property tax during possession. Doing so will increase housing affordability because of lower transaction costs, reduce speculation because of higher cost of holding, stabilize fiscal system because of more sustainable tax revenues, and improve the efficiency and fairness of the property tax system because of the implementation of "ability-to-pay" and "who use who pay" principles. (JEL R31, R21, H20)

I. INTRODUCTION

China's urban housing price has been increasing dramatically for years driven by strong demand for self-use, investment and speculation. A big imbalance of housing conditions exists between the rich and poor, causing social unsteadiness. Improper taxes and fees make housing price too high for the majority, especially those with average income or below. Additionally, the overheating of housing market heats up its supportive industries such as metal and cement. It has aroused the worries of the housing bubble and inflation.

In order to reduce housing speculation and stabilize prices, policymakers have introduced a series of macro regulations during the recent three years. For example, the State Council issued "Document 121" in June 2003 to regulate the financial policies related to real estate market developers, tightening the grant of construction loans. On August 31st 2004, the central government requested all local governments to stop leasing out public land under internal agreements. All leases have to be implemented through open market process. On March 16th 2005, People's Bank of China raised the mortgage interest rate. On May 29th 2005, the document of "Adjusting Housing Supply Structure and Stabilizing Housing Prices" was issued. As a whole, macro regulations cover all aspects of real estate and its related industries, from financial to land system, for both sides of supply and demand.

Macro regulation measures taken during the recent three years have worked, however, to a limited extent. Opposite to policy makers' expectations, housing

price keeps its momentum of increasing.   The data issued by the National Bureau of Statistics of China and the National Development and Reform Commission on September 13th 2006 show that housing price of August 2006 increased by 5.5 percent on average nationwide compared to August 2005.   Among the 70 cities in the analysis, housing prices increased in 68 cities.   Macro regulations do not seem to take much effect on housing price.

The necessity of finding an effective housing market regulation tool as well as saving local governments from future fiscal shortage makes it urgent for the Chinese government to reform the property tax system.   In this paper, we propose that China significantly reduces taxes in construction and transaction but levies property tax during possession.   Doing so will increase housing affordability because of lower transaction costs, reduce speculation because of higher cost of holding, stabilize fiscal system because of more sustainable tax revenues, and improve the efficiency and fairness of the property tax system because of the implementation of "ability-to-pay" and "who use who pay" principles.

The structure of this paper is as follows.   Section II examines China's current property tax system and its inefficiency.   Section III provides policy recommendations for property tax reform and discusses possible consequences of the reform.   Section IV concludes.

II. PROPERTY TAX SYSTEM OF CHINA AND ITS INEFFICIENCY

China's current property tax system was formed after the general tax reform

in 1994, which established the Tax Sharing System between the central and provincial governments. Real estate taxes and fees were classified as local taxes, collected and administered by local tax bureaus. Local governments retain 100 percent of all property tax revenue (Hong, 2005). Since then, real estate taxes have become a significant part of local government revenue.

Several unique features make China's property tax system complicated and inefficient. First, urban land in China is owned by the state and thus property owners only have the use right of land. Because of the separation of land ownership and property ownership, the property owner needs to pay taxes respectively for both the property they own and the land they lease from the state, in the form of housing tax and urban and township land use tax. The housing tax is implemented by "Provisional Regulations of the People's Republic of China on House Property Tax Detailed Rules for Its Implementation," promulgated on September 15th 1986 by the State Council.[1] It is a tax levied on property's acquisition value with a rate of 1.2 percent. The urban and township land use tax is regulated by "Provisional Regulations of the People's Republic of China on Urban and Township Land Use Tax," promulgated on September 27th 1988 by the State Council.[2] It is a charge on using the land that belongs to the state, with tax rate being determined by each provincial government and varying among cities. By definition, the housing tax and urban and township land use tax together are regarded as the real estate tax in China.

Second, home buyers pay numerous taxes and fees during housing

transactions but not during possession (Song et al., 1999).   Therefore, home owners pay property taxes for only one time when they buy houses.   Taxes and fees include title tax (since June 1, 2005, it is 2 percent of the price for houses less or equal to 144 square meters and 4 percent for houses larger than 144 square meters), contract stamp tax (5 RMB), certificate stamp tax (0.05 percent of the price), registration fee (80 RMB), certificate of ownership fee (10 RMB), mapping fee (0.8 RMB per square meter), security appraisal fee (4 RMB per square meter), assessment fee (0.42 percent of the price), maintenance fee (2 to 3 percent of the price), termite protection fee (200 RMB per unit for houses below 50 square meters, 300 RMB per unit for houses between 50 to 80 square meters, 400 RMB per unit for houses between 80 to 100 square meters, and 500 RMB per unit for houses over 100 square meters).   For an average size house of 70 square meters at an average price level of 3,800 RMB per square meter, the transaction price is 266,000 RMB.   The minimum taxes and fees would be 15,281 RMB, which is 5.7 percent of the transaction price and about 72.8 percent of the 2006 average annual income of Chinese urban workers, which is 21,001 RMB.[3]

Third, the high property tax burden in urban China is largely invisible because it occurs mostly in the phase of construction and thus become part of the housing price, which is comprised of land-use fee, taxes and fees, construction cost and profit.   Estimated by Chinese housing bureau, land price plus tax and fee payment accounts for above 50 percent of housing price, construction cost accounts for 30-40 percent and profit takes the remaining 15 to 20 percent.[4]   For example,

Table 1 shows house price composition in 2006 by using data of Xi'an, the city with an average national housing price.[5]

<INSERT TABLE 1 HERE>

Land cost, which is a lump-sum leasehold charge that real estate developers pay to the government for acquiring land-use right of 70 years, represents 30 percent of housing price.   According to "Contract of Lease Use Right of State Land," local governments share this revenue with the central government on a 70/30 split basis.[6] Tax and fee payments together are about 20 percent of housing price.   Construction cost, accounting for about 30 percent, is relatively low compared with the case in America where construction cost accounts for 70 percent of housing price while land cost and profit account for about 20 percent and 10 percent of housing price, respectively (Zhang and Jiang, 2004).   It is also commonly accepted that the profit rate of Chinese real estate developers is well underestimated.   Revealed by a cost list of a newly built residential subdivision in Fuzhou City, profit represents 37 percent of the housing price.[7]

According to An and Wang (2005), there are between 60 to 180 taxes and fees pertinent to real estate construction, varying across cities.   During land acquisition, 22 taxes and fees are levied, including leasehold charge which is rent for land use right, city infrastructure fee which is paid for infrastructure construction of the city, land management fee, relocation compensation, land title tax, and business

tax.   During construction, at least 20 taxes and fees are levied, including business

tax, city maintenance and construction tax, education tax, and fees for facilities in

the community such as road, water, gas, electricity, sewage, waste disposal, and

parking lot.[8]   Besides taxes and fees that are required by laws, there are many other

fees charged by governments at different levels.   Some cities charged more than

200 types of taxes and fees, with most not relevant to housing (Song et al., 1999).

A survey in Shanghai, for example, shows that 115 taxes and fees are unnecessary

(Lu, 1996).   It was estimated that, in 1998, all fees collected from real estate

industry amounted to 120-150 billion RMB, while tax revenue from real estate

industry   was only 45 billion RMB, about a third of all fee revenue (An and Wang,

2005).

The above features make the Chinese housing market and property tax

system inefficient.   The high tax and fee cost, including the one time lump-sum

land leasehold charge, dramatically increases the housing price, making urban

housing unaffordable to average households.   House price to income ratio (P/I), the

standard indicator of housing affordability, is defined as the ratio of median house

price divided by median household income.   The higher this ratio is, the lower

housing affordability becomes.   In 2005, the P/I ratio was 2.3 on average for the

USA and 3.4 for the State of Nevada where the authors locate.[9]   Table 2 presents

P/I ratios for 37 major Chinese cities in 2004 based on average size of 70 square

meters.

<INSERT TABLE 2 HERE>

Almost all cities had P/I ratios higher than 5, with some exceeding 10 and an average of 7.3. Actual P/I ratio would be much higher because most newly built houses are larger than 70 square meters. No doubt, housing in urban China is too expensive relative to income. In addition, paying all the taxes and fees one time in transaction increases the financial burden of home-buying. It delays housing consumption and thus diminishes urban residents' life-cycle welfare.

Zero property tax during possession loses the role of property tax to adjust resource allocation. One of the economic characteristics of a property tax is its capitalization of future cash flow into present housing price. A high property tax would lower the present housing price and decrease the incentive for holding a property. For speculators and investors, as the housing price increases, so do their property tax costs, which make the transaction less profitable and riskier. Without a property tax, cost of holding a property is almost zero while the appreciation of house value over time can be fully realized. It encourages speculation in housing markets and leads to inefficient use of residential property. A direct way of observing this is the high housing vacancy rate. See Beijing for instance, estimated by Chinese Ministry of Construction, in 2005, 17 percent of residential house purchasing is aimed at investment, in which 48 percent is left vacant waiting for rising of house value.[10] Speculation not only causes a big waste of resources but also pushes up housing prices, which in turn harms ordinary urban residents and leads to serious imbalance of living conditions.

Potential fiscal insufficiency is another problem of China's current property tax system. As discussed in the review section, property tax serves as one of the most important taxes and contributes one-third of total revenue to state and local governments. Because real property is durable and easy to be assessed, property tax is the most reliable tax of local governments that generates sustainable tax revenue through the lifetime of property. In the case of America, property tax is on an ad valorem basis, with a rate determined by an estimated budget of providing local public services, education and other human services. Hence, a fiscal balance could maintain. In urban China, the current system exempts residential property from taxes during possession. Such system violates the "who-use-who-pay" principle. During possession, urban residents use public services without paying user fees, causing potential fiscal insufficiency in the future. Some may argue that home owners have already paid for public services through many taxes and fees when they bought their houses, and local governments should use the revenue to finance future services such as police, fire protection, and local schools. However, without a linkage between the revenue and expenditure, it is difficult to save current tax revenue for future expenses and services. For instance, in order to acquire high achievement during tenure, government officials tend to carry out big projects, using out available capital and leaving little to the successors.

China's current property system also lacks of mechanism to capture the increment of property value, which would help to generate more tax revenue. It hasn't resulted in serious problems so far, because the housing market is still

booming with housing price and number of transactions increasing every year.   But in the near future, the housing market will get saturated and transactions will slow down.   On one side, proportionally, fewer and fewer new houses will be built. Thus, the tax base will diminish and government tax revenue will decrease.   On the other side, due to fast urbanization and inflation of material and service price over time, local governments face with rising responsibilities and average cost for the provision of public services.   The gap between revenue and spending could get larger as time goes by, making fiscal balance impossible.   In the future, China either provides less public service or asks urban residents to pay more property taxes.

III. POLICY RECOMMENDATIONS

Based on the discussion above, we propose a general framework of China's property tax reform that is to create an ad valorem property tax during the holding period of property and reduce or eliminate some of the existing taxes and fees in construction and transaction phases.   In principle, three characteristics of property tax make it a "good tax."   First, it is impartial and fair because property tax reflects the taxation principles of "ability-to-pay" and "who-use-who-pay."   Occupants of more valuable housing have greater ability to pay taxes due to higher income than those who live in less valuable housing.   Householders who demand more local public services pay higher property tax than those who demand fewer public services. In addition, recent studies have shown that property tax is neither regressive nor progressive (Goodman, 2005; Plummer, 2003).   Second, property tax is relatively easy

to manage and thus administratively efficient. Real property is attached to land and unmovable. It is easy to identify and record information and collect tax payment. Third, property tax is sustainable. During the long lifespan of real property, it generates revenue in according to the assessed value of property every year, rather than a one-time income. Empirical data also show that property tax revenue increases proportionally with GDP, confirming the sustainability of property tax. Using 1988-2005 data on property tax revenue (PTR) and GDP,[11] we ran a regression model on these two variables and obtained the following results:

$$\ln(PTR) = -3.59 + 0.9982\ln(GDP) \tag{1}$$

with an adjusted R^2-value of 0.979 and t-stat of 27.87 for the estimated elasticity, suggesting an excellent overall fitness and a high significance. The estimated elasticity of 0.9982, very close to 1, indicates that property tax revenue increases proportionally with GDP, further confirming the sustainability of property tax.

Specifically, we recommend that China converts most one-time lump sum taxes and fees into taxes that are collected on an annual basis over the entire property possession period. Taxes and fees that finance local public services, such as education, police, fire protection, public infrastructure construction and maintenance, public transportation, water and drainage system, heat and electricity system, as well as child and senior services, should be part of the proposed property taxes. Based on the characteristics of each tax, at least city maintenance and construction tax and city infrastructure fee need to be eliminated and combined into the standard property tax.

Land-use fee should also be a part of the property tax and collected on an annual basis. Land in urban China is leased to users for 70 years and thus home-owners only have land-use right. Charging a one-time lump sum fee not only disobeys the economic principle of rent but also double taxes home-buyers. Once a developer acquires a piece of land, a 5.5 percent business tax and a 4 percent title tax are levied with land leasehold charge as the tax base. The tax payment in turn goes to land cost and becomes a part of housing price. In transactions, home-buyers pay taxes based on housing price, being double taxed on the land leasehold charge (Wang, 2005). Converting land-use fee from a one-time lump-sum payment into an annual user-fee will greatly reduce housing price, lower tax burden, and make urban housing more affordable.

We also recommend that China continues its efforts to reduce and eliminate taxes and fees on urban housing. On January 2, 1997, the central government eliminated 48 categories of taxes and fees that had been charged inappropriately by local governments (Song et al., 1999). Still, there are too many taxes and fees, which together contribute 20 percent to urban housing price. For example, China could reduce title tax and assessment fee, combine taxes (such as contract stamp tax, certificate stamp tax, registration fee, and certificate fee of ownership), and eliminate some fees such as mapping fee and maintenance fee.

The primary goal of suggested property tax reform is to increase housing affordability for urban residents. By converting most taxes and fees into an annual property tax, housing price can be significantly reduced. To exam the effect of such

reform, we assume the housing price with no property tax to be 1 and would drop to P_{new} with property tax rate t and discount rate r. The model that predicts P_{new} is as follows:

$$\left[1+\Sigma\frac{1}{(1+r)^N}\times t\right]\times P_{new}=1, \text{(N=0,1,2......)} \tag{2}$$

The term of $\Sigma\dfrac{1}{(1+i)^N}$ (N=0,1,2......) calculates the present value of one-dollar property tax payment under discount rate i through the lifetime of N years of the house. Under the assumption of full capitalization, this amount would be fully deducted from the present housing price.

When N approaches infinite, $\Sigma\dfrac{1}{(1+i)^N}$ equals to $\dfrac{1+i}{i}$ and Equation (2) becomes:

$$\left[1+\frac{(1+r)}{r}\times t\right]\times P_{new}=1 \tag{3}$$

For a 70-year land lease, N in Equation (2) is from 0 to 69 and the equation can be written into as follows:

$$\left[1+\left(1+\frac{1}{1+r}+\cdots\cdots+\frac{1}{(1+r)^{69}}\right)\times t\right]\times P_{new}=1 \tag{4}$$

Equations (3) and (4) can be used to estimate the reduction of housing price under different tax rates for infinite lifetime and 70-year lifetime, respectively. Assume discount rate to be 4.5 percent, the prevalent 10-year interest rate in China, Table 3 shows P_{new} and price reduction for both N of infinite and 70 years. It is obvious that the higher property tax rate is levied on residences, the more housing

price will decrease.   Under the same tax rate, housing price decreases more when the lifetime of the house is longer.

<INSERT TABLE 3 HERE>

The results in Table 3 suggest that housing will be more affordable after the property tax reform even with the same present value of total housing expenditure. That is because house-buyers could trade off between a higher current housing price and future annual property tax payments.   Life-cycle consumption is thus improved and so is residents' welfare.   For example, a property tax of 2 percent with a 50 percent degree of capitalization of the property tax would lower China's national average P/I ratio from current 7.3 to 6.2.   If the property tax rate were 3 percent, new P/I ratio would become 5.9.

If, besides levying property tax on an annual basis, China could reduce and eliminate unreasonable charges and at the same time make the real estate market more competitive and transparent, housing price could be further reduced.   To investigate price cut potential, we assume that profit rate is lowered by 15 percent from 37 percent to 12 percent, share of taxes and fees in price is reduced by 10 percent from 20 percent to 10 percent, a property tax of 2 percent is levied, and degree of capitalization of the property tax in housing price is 50 percent.   Under these conservative assumptions, housing price could be reduced by 36.5 percent as it can be calculated by *1 – [(1-15%-10%) * (1-30.71% * 50%)] = 36.5%*.   No doubt,

China has a big room to decrease urban housing price and improve housing affordability.

Our proposed property tax reform also will help local fiscal system. In the USA, property tax is the most important single tax and the second largest source of revenue for local governments. It generates on average a third of total state and local governments' tax revenue and more than half of local governments' tax revenue for decades. In China, after tax system reform in 1994, local governments are neither able to receive enough tax income due to losing the independence in taxation nor can they be dependable on internal transfer from the central government (Ma, 2005). Table 4 shows that the percentage of local government tax income among national total tax income decreased from 73.9 percent in 1991 to 41.4 percent in 2004.

<INSERT TABLE 4 HERE>

With relatively less revenue while taking on even more responsibilities, local governments are encouraged to seek more off-budget revenue sources. Land leasehold charge is one of the favorite off-budget revenue sources of local governments, due to its quickness, large size and profitability as well as it doesn't have to be under the supervision of the central government. Local governments thus are greatly attracted to lease out public land in order to earn easy money in short term, regardless of the outcomes this action may cause. Land leasehold charge

contributed 35 percent of total income of local governments during 2001-2003. This ratio increased to 47 percent in 2004 after the central government commanded public auction of land. It is estimated to exceed 50 percent in 2006 (Gao and Wu, 2006). Land leasehold charge has become "the second finance" of local governments. The flourish of off-budget revenues causes a big fiscal mess and hardship of management. Macro regulations, which use taxes as instrument, are hard to achieve expected goals because of the insignificance of taxes in the fiscal system. Further more, without a clear definition of off-budget incomes and fiscal transparency, it encourages governmental corruption and imposes excessive burdens on citizens.

Therefore, property tax reform should be considered as an important step to formalize China's local government financial system. On one hand, the property tax has a large and stable tax base. It generates revenue at the rate of GDP growth and has the capability to provide local governments with sufficient and stable income as economy develops. Also, taxation and administration cost for property tax is relatively low. All these make property tax an ideal tax type that can save local governments from future tax income shortage. On the other hand, consolidation of several real estate taxes and fees into a uniform tax would be able to move many off-budget items into the formal budget, relieving the mess of current fiscal system and making the central government management easier. Collecting tax payment on an annual basis would also be able to prevent local governments from leasing out all public land in a short period, thereby regulating their short-term

fiscal behavior to help avoiding future fiscal insufficiency.

With the reform, property tax revenue would replace land leasehold charge to become the main reliance of government finances. It is inevitable that some local governments could have temporary fiscal shortages due to the postponement of tax collection during possession instead of a lump sum income at transaction. However, it would not necessarily run into a deficit, because local government can issue municipal bonds to finance the temporary shortage. Issuing municipal bonds is a common way for local governments in the USA to raise funds for short-term deficit or governmental projects. Future property tax revenue can be used to pay off the obligations.

We would recommend that property tax be levied on city basis to assure fairness and efficiency. Differences among cities in China are large. If property tax were collected at the provincial level, it is harder to balance between demands for local public services and willingness of local residents to pay for them. Allocation of tax revenue among cities would be a problem, too. Interest groups with diversified needs would fight for more funds and blame each other for taking away "their" money. They would complain the provincial government of the unfair allocation. In the USA, property tax is collected at the county level, as an outcome of long-time evolution. China may learn from the US experience.

It should be mentioned that our proposed property tax should take effect only on new residential property. Old houses have paid for the taxes and fees, as a share of housing prices thus should not be included in the reform. As a result, tax base of

the property tax is expected to be small at the beginning of the reform.   However, as more newly built residences are added into the housing market every year, tax base will expand and property tax revenue will rise quickly due to both the tax base expansion and property value appreciation.

Our proposed property reform will facilitate China to implement its macro policies in relation to urban housing sector.   Since 2003, the Chinese central government has been devoting to housing market macro regulations, promulgating a series of documents regarding all aspects of the housing market.   As the situation changed under the effect of regulations, the attention of the central government has gradually switched from limiting fixed assets investment to current improving basic housing demand of urban residents.   For instance, on March 26, 2005, a Document for keeping price of residential houses stable was issued, which focuses on increasing the housing affordability of urban residents with average income or below.[12]   The document requires local governments to adjust housing supply structure and offer more economic housing.   Soon after, another document of adjusting housing supply structure and stabilizing housing price was issued on May 29, 2006, reemphasizing the previous requirement.[13]   It comes up with the specific guideline that starts from June 1, 2006, houses below 90 square meters in size should account for 70 percent of total amount of all newly developed housing.

While government policies focused mostly on the supply side of housing market, our proposed property tax can be used as a demand side adjustor, which can be a supplemental regulation tool to fulfill government's macro policies.   Collected

based on assessed value, the property tax itself can dampen the willingness of holding a house vacant for speculation or investment. Also, disparities of housing conditions between the rich and ordinary residents can be narrowed if property tax is levied progressively. A preferential tax rate can be offered to economic housing to encourage self-using demand. A higher tax rate can be imposed on luxury residences. Exemptions or special benefits can be offered to selected groups of residents to increase their affordability and willingness to improve living conditions. In short, property tax can be utilized as an effective way to lower speculative housing demand and improve equality.

IV. CONCLUSIONS

This paper has discussed the current real estate tax system in urban China and its inefficiency. Under the current real estate tax system, property owners pay taxes for the property they own and the land they borrow from the state respectively due to the separation of use-right and ownership of urban land. Too many taxes and fees are charged in phases of construction and transaction, which together push housing price up by 20 percent. During possession, however, no property tax is levied. We argued that such property tax system is inefficient because the high tax and fee cost plus the one time lump-sum land leasehold charge dramatically increase the housing price and thus make urban housing unaffordable to ordinary households. Zero property tax during possession loses the role of property tax to adjust resource allocation. It also encourages speculation in housing market and leads to inefficient

use of residential property. Zero property tax during possession not only violates the "who-use-who-pay" principle but also causes fiscal insufficiency for Chinese local governments in the future.

Therefore, we propose a general framework of China's property tax reform that is to create an ad valorem property tax during the holding period of property as well as reduce or eliminate some of the existing taxes and fees in construction and transaction phases. Specifically, we recommend that China converts most one-time lump sum taxes and fees, including the land leasehold charge, into taxes that are collected on an annual basis over the entire property possession period. Meanwhile, China should continue its efforts to reduce and eliminate taxes and fees on urban housing. The primary goals of our proposed property tax reform are to increase housing affordability for urban residents, help to formalize local fiscal system and facilitate the Chinese government to implement its macro policies in relation to urban housing sector.

Several questions have not been fully resolved in this paper. What tax rate is appropriate? What exact off-budget fees can be cancelled or reduced? What taxes and fees can be consolidated into the proposed property tax? Should the land leasehold charge and residential property tax be combined? By what percentage will the property tax be partially capitalized in property value? How do Chinese cities collect new property tax from new houses and avoid double taxing on existing home? Should houses built and sold before the property reform ever be taxed? Should China provide any income tax incentives to encourage home ownership?

These questions call for future research and need to be answered in the process of property tax reform, in according to economic principles of property tax as well as China's unique situations.

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TABLE 1
House Price Composition of China (per square meter)

Item	Amount (RMB)	Amount ($)	Percent
House Price	**2200-3100**	**275-387.5**	**100%**
Land Cost	600-900	75-112.	27%-29%
Taxes and Fees	400-600	25-37.5	20%
Construction Cost	700-800	87.5-100	26%-32%

Profit	340-600	42.5-75	15%-20%

TABLE 2
House Price to Income Ratio of China Major 37 Cities in 2004

City	Average Housing Price/sq M ($)	Average Housing Price ($)	Average Household Income ($)	P/I
Wenzhou	1160	81183	7098	11.4
Shanghai	1078	75486	6680	11.3
Hangzhou	901	63088	5832	10.8
Beijing	779	54530	6262	8.7
Shenzhen	755	52824	11050	4.8
Ningbo	738	51625	6359	8.1
Guangzhou	708	49525	6760	7.3
Xiamen	645	45115	5783	7.8
Nanjing	620	43400	4646	9.3
Tianjin	595	41650	4591	9.1
Qingdao	580	40591	4440	9.1
Suzhou	558	39025	5786	6.7
Dalian	530	37109	4155	8.9
Fuzhou	421	29470	4579	6.4
Jinan	397	27755	4807	5.8
Kunming	394	27563	3622	7.6
Guiyang	388	27125	3599	7.5
Taiyuan	381	26688	3745	7.1
Xian	376	26311	3421	7.7
Shenyang	366	25603	3556	7.2
Chengdu	359	25095	4162	6.0
Wuhan	357	25008	3830	6.5
Changsha	353	24719	4413	5.6
Nanning	352	24649	3227	7.6
Nanchang	347	24299	3480	7.0
Chongqing	342	23905	3692	6.5
Zhengzhou	331	23188	3749	6.2
Haerbin	322	22523	3580	6.3
Shijiazhuang	309	21613	3452	6.3
Lanzhou	305	21333	3077	6.9
Haikou	291	20388	3596	5.7
Wulumuqi	285	19950	3896	5.1
Hefei	278	19425	3448	5.6
Changchun	274	19171	3564	5.4
Huhehaote	245	17150	4071	4.2
Yinchuan	241	16888	3197	5.3
Xining	228	15934	3054	5.2

Average	475	33268	4547	**7.3**

[a] Average size of residence is assumed to be 70 square meters. Average House Price = Average Price/ 70.

[b] Average Household Income data are estimated based on Average Household Per Capita Disposable Income. Average number of household member was 2.98 in 2004; disposable income accounts for 93 percent of total income, data available from China Statistical Year Book 2005. Average Household Income = Average Household Per Capita Disposable Income * 2.98 / 93%.

TABLE 3
House Price Changes Prediction under Property Tax Rate t (r = 4.5%)

t	P new (N=70)	Change (N=70)	P new (N=infinite)	Change (N=infinite)
0.5%	90.03%	9.97%	89.60%	10.40%
1.0%	81.86%	18.14%	81.15%	18.85%
1.5%	75.06%	24.94%	74.17%	25.83%
2.0%	69.29%	30.71%	68.29%	31.71%
2.5%	64.35%	35.65%	63.27%	36.73%
3.0%	60.07%	39.93%	58.94%	41.06%
3.5%	56.32%	43.68%	55.16%	44.84%
4.0%	53.02%	46.98%	51.84%	48.16%

Data source: author's calculation.

TABLE 4
Tax Revenue Sharing between the Central and Local Governments

Year	Central Government Share (%)	Local Government Share (%)
1991	26.1	73.9
1992	25.9	74.1
1993	20.8	79.2
1994	55.2	44.8
1995	53.1	46.9
1996	50.1	49.9
1997	51.4	48.6
1998	49.5	50.5
1999	51.1	48.9
2000	52.2	47.8
2001	54.9	45.1
2002	58.0	42.0
2003	58.0	42.0
2004	58.6	41.4

Data Sources: China Statistical Year Book (2002-2005), Ma (2005).

1 "Zhong Hua Ren Min Gong He Guo Fang Chan Shui Zan Xing Tiao Li."

2 "Zhong Hua Ren Min Gong He Guo Cheng Zhen Tu Di Shi Yong Shui Zan Xing Tiao Li".

3 Data is obtained from "Announcement As To 2006 Urban Employer Average Annual Income," issued by National Bureau of Statistics of China on March 22, 2007,   http://www.stats.gov.cn/tjdt/zygg/sjxdtzgg/t20070323_402393903.htm.

4 Data are obtained from "2005 China Real Estate Industry Research Report" from www.hounews.com.

5 "House Price Composition of China," hexun web, 03/11/2006.

6 "Guo You Tu Di Shi Yong Quan Chu Rang He Tong."

7 Data are obtained from "Residential Housing Cost List" by journalists Chen, Fang, Song, Zhenyuan, Shen, Rufa, issued on www.xinhuanet.com on August 24, 2005.

8 Data are obtained from Nanjing Price Bureau, "Residential Property Pricing," 2003.

9 Data are obtained from: Viva Las Vegas Housing, by Blanche Evans, 2005.

10 Data are obtained from "2004 China Real Estate Finance Report" issued by the People Bank of China.

11 PTR data are obtained from U.S. Census Bureau publication: National Totals of State and Local Tax Revenue, By Type of Tax. GDP data are used instead of GNP, due to the unavailability of GNP data. Data are obtained from U.S. Bureau of Economic Analysis data: Current-Dollar and "Real" Gross Domestic Product.

12 "Guan Yu Qie Shi Wen Ding Zhu Fang Jia Ge de Tong Zhi," briefly called *Guo 8 Tiao*.

13 "Guan Yu Tiao Zheng Zhu Fang Gong Ying Jie Gou Wen Ding Zhu Fang Jia Ge de Yi Jian," briefly called *Guo 6 Tiao*.

ABBREVIATION

RMB: Ren Min Bi
GDP: Gross Domestic Product