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Housing Question in Japan

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Abstract

This article first examines how bad housing conditions are in Japan based on international comparisons. The next question is whether the extremely high land prices in Japan can be explained by economic logic. We then turn to more specific housing policy questions that are peculiar to or important in Japan, such as tax advantages of owning land that have caused under-utilization of land and the reasons why the average size of Japanese rental housing is so small.

JEL code numbers

R2, R1

Key words

housing, land price, housing policy, Japan, land taxation, land use control

1. Introduction

It is widely believed that housing conditions in Japan are very bad: houses there are small and extremely expensive. A French Prime Minister even claimed that a house in Japan is as small as a rabbit's cage. This paper first examines whether or not this perception is correct. Our conclusion is that housing conditions in Japan as a whole are not markedly worse than those in European countries in terms of price and size, although they are very bad in the Tokyo metropolitan area.

The second major issue that this paper focuses on is extremely high land prices in Japan. The land price of a prime site in downtown Tokyo exceeds 40 million yen (320 thousand dollars at the exchange rate of 125 yen per dollar) per square meters. In 1990, the total land value of Japan is more than three times as large as that of the U.S. Interpreted literally, this means that by selling a third of Japanese land one can buy the entire land in the U.S. Our task is to see if the land prices in Japan can be explained by economic logic. A byproduct of the analysis will enable us to predict whether or not the land prices in Japan will fall in the future when its economic growth rate declines.

After examining housing conditions and land prices in Japan, we turn to more specific housing policy questions that are peculiar to or important in Japan: (1) tax advantages of owning land which result in under-utilization of land in major metropolitan areas; (2) taxes and subsidies that cause distortions in choice between owning and renting, and the reasons why the average size of Japanese rental housing is so small; (3) high transaction costs that discourage transactions of second-hand

housing; (4) housing subsidies and public housing; (5) land use regulation and infrastructure provision for housing development.

The organization of this paper is as follows. Section 2 compares housing prices and housing conditions in Japan with those of other developed countries. Section 3 discusses reasons why land prices in Japan are so high compared with other countries. Sections 4 to 8 focus on some of the most important housing policy issues in Japan: section 4 on tax distortions that cause under-utilization of land, section 5 on tenure choice distortions, section 6 on transaction costs, section 7 on housing subsidy and public housing programs, and section 8 on land use regulation and infrastructure provision.

2. Housing Conditions

Let us first look at statistics on housing conditions in Japan.

Housing Price

Table 1 offers international comparison of affordability of housing.

Table 1. New housing price/Annual income: National Averages²

Country	<u>New housing price</u> <u>annual income</u>
USA	3.4 ('87)
UK	4.4 ('87)
Germany	4.6 ('86)
Japan	4.4 ('89)
Tokyo	7.4 ('89)

Source: *Juutaku Keizai Data Shu* (Collection of Housing Economic Data), (1990), p.22.

The ratio between the average housing price and the average annual income is 4.4 in Japan. This is about the same as those in the United Kingdom and Germany, although it is considerably higher than that in the U.S. The ratio in Tokyo is however 7.4 that is much higher than the national average. This shows that high housing prices in Japan are limited to large metropolitan areas such as Tokyo.

The other side of very high housing prices in Tokyo is that the average commuting time is very long. Table 2 reports that over 30% of commuters in the Tokyo metropolitan area have to spend more than one hour (one way) for commuting. The problem is again limited to large metropolitan areas such as Tokyo, Osaka, and Nagoya, and the proportions in other cities are fairly small.

Table 2. Proportion of households whose commuting time exceed 1 hour

Metropolitan Area	Proportion
Tokyo	31.1%
Osaka	19.7%
Nagoya	11.7%
Other	5.8%

Source: *White Papers on National Land Use* (1987), p.87.

Floor Spaces

Table 3 offers an international comparison of average floor spaces of existing housing stocks. It should be noted that the definitions of floor spaces are different across countries. First, in Japan the floor space of a room is not the actual available space but is measured from the center of a wall, whereas in European countries the net available space is used. In the U.S. the floor space includes outer walls. In order to

make them comparable to the Japanese data, the floor spaces in European countries must be inflated by about 4%, and those in the U.S. must be deflated by about 4%.

Second, the floor space data in European countries do not usually include basements and attics of a house, whereas those in Japan often include them. Very few Japanese houses have basements and attics, however, because of humid climates and tight building code restrictions. If we adopt the European definition of not including basements and attics, necessary adjustments are fairly small, although they can be substantial if we adopt the Japanese definition.

Table 3. Floor space per person and per house

Country	Floor space	Floor space per house		
	per person (m ²)	total	owner	rental
U.S.A	**62.5 ('84)	*151.9 ('85)	*159.0 ('85)	*115.7 ('85)
U. K.	*30.0 ('86)	75.1 ('86)	81.5 ('86)	69.7 ('86)
W. Germany	32.0 ('82)	79 ('78)	102 ('78)	67 ('78)
France	30.5 ('84)	82.3 ('84)	96.1 ('84)	67.9 ('84)
Japan	27.9 ('88)	89.3 ('88)	116.8 ('88)	44.3 ('88)
Tokyo	23.3 ('88)	69.5 ('88)	97.2 ('88)	38.0 ('88)

Note: * indicates median values. ** indicates estimates by the Japanese Ministry of Construction. The U.S. data do not include multi-family housing.

Source: Data for Japan and Tokyo are from *Housing Survey of Japan* (1988). Data for other countries are from *Juutaku Keizai Data Shu* (Collection of Housing Economic Data), (1989), p.84. and *Kyoju Suijun no Kokusai Hikaku* (International Comparison of Housing Conditions) Housing Research and Advancement Foundation of Japan, (1991), p.94, Table 4-17.

Because of these two differences in definition of floor space, floor space data in European countries must be inflated by 5 to 20% in order to make them comparable to the Japanese data.

Although the floor space per person in Japan is the lowest among the five countries listed in Table 3, differences from European countries are not substantial. In the Tokyo metropolitan area, however, it is distinctly smaller than the national average. The table also indicates that rental units in Japan are markedly smaller than those in other countries. The U.S. data are limited to single-family housing, which is one of the reasons why the floor spaces there are much larger than in other countries.

Owner-Occupancy Rates

Table 4 compares owner occupancy rates and vacancy rates in several developed countries. The owner occupancy rate is high in the U.S. and the U.K., and low in European countries such as West Germany, France, and Italy. The rate in Japan exceeds 60% and is close to those in the U.S. and U.K. The vacancy rate in Japan is also fairly high compared with other countries.

Table 4. Owner occupancy and vacancy rates

Country	Owner Occupancy Rate (%)	Vacancy Rate (%)
U.S.A.	64.0 ('87)	8.4 ('85)
U.K.	64.1 ('87)	5.6 ('80)
W. Germany	38.5 ('87)	2.7 ('87)
France	51.2 ('84)	7.7 ('84)
Japan	61.3 ('88)	9.4 ('88)

Source: *Juutaku Keizai Data Shu* (Collection of Housing Economic Data), (1990), p.92. Vacancy rate data for the U.S., U.K., and France are from *Kyoju Suijun no Kokusai Hikaku* (International Comparison of Housing Conditions), Housing Research and Advancement Foundation of Japan, (1991), Table 2-24, p. 37.

Housing Expenditures

Next, let us examine housing costs on the flow basis by looking at housing expenditures per year. A report by Housing Research and Advancement Foundation of Japan (HRAFJ) compares housing expenditures among Japan, U.S.A., France, U.K., and Germany. Table 5 reports the shares of housing expenditures (including rents, water, and energy costs) in the total national consumption, using national income accounts in 1986. This table shows that housing expenditures on the flow basis are not much different between Japan and other countries. The data however may not be reliable because rents of owner-occupied housing are computed from comparable rental housing. In Japan where rental housing is concentrated on the small-size, low-quality section of the market, housing costs are likely to be under-estimated.

Another report by HRAFJ compares housing construction costs between Japan and the U.S. by asking for a quotation for a house of the same design. Quotations by American contractors are on the average 21% lower than those by Japanese contractors. This result indicates that the housing construction industry in the U.S. is more efficient than the Japanese counterpart.

Table 5. The Shares of Housing Expenditures in the Total Consumption

Nation	Japan	U.S.A.	France	W. Germany	U.K.
Housing Shares	18.6	19.6	18.8	21.1	20.4

Source: *Juukyo-hi no Kokusai Hikaku* (International Comparison of Housing Costs), Housing Research and Advancement Foundation of Japan, Research Report No. 89203, (1992).

Housing Construction

Although the vacancy rate is close to 10%, much more housing construction is going on in Japan than in the U.S. and Germany as shown in Table 6. On the average over the 80's, the numbers of housing units constructed per year per 1000 people are about 11 in Japan, 6 in the U.S., and 5 in West Germany. This reflects frequent reconstruction of houses in Japan.

Table 6. Average New Housing Construction per Year (thousand units)

	1971 - 80	1981 - 90
Japan	1,519	1,395
U.S.A.	1,753	1,483
W. Germany	489	294

Source: OECD Main Economic Indicators

Table 7. Composition of New Housing Construction (thousand units, average per year)

Year	Total	Owner-Occupied	Rental
1971-75	1,570	944	568
1976-80	1,469	1,021	418
1981-85	1,172	749	401
1986-90	1,619	795	797
1991-95	1,460	826	620

Source: Housing Starts Statistics (Ministry of Construction)

Among the newly constructed units, the share of rental housing is very high in the latter half of the 80's as shown in Table 7. On the supply side this reflects an increase in tax incentives to build rental housing. On the demand side, there has been a steady increase in small-size households. Of course, a reduction in household size is partly caused by abundant supply of small-size rental units.

Summary

The statistics that we have looked at in this section indicate that housing conditions in Japan are not as bad as many have believed: (1) the ratio between the new housing price and the annual income is about the same level as in Germany and the U.K., (2) floor space per person is smaller than those in European countries but the differences are not large, (3) the vacancy rate is very high at 9.4%, and (4) the share of housing expenditures in the total consumption is smaller than other countries. Because per-capita housing construction is about twice as much as in the U.S. and Germany, housing conditions in Japan will continue to improve.

Although housing conditions in Japan as a whole are not bad, residents in the crowded Tokyo metropolitan area suffer from extremely high housing prices. This is not surprising considering the fact that the population size of the area exceeds 30 million. A significant improvement in housing conditions is unlikely there unless its population size is reduced.

3. Land Price

Land Values in Japan and the U.S.

Table 8 shows the total land values and GNP's in Japan and the U.S. The land value data for the U.S. are based on Balance Sheets for U.S. Economy 60-91. They are substantially larger than land values in Balance Sheets for U.S. Economy 45-90. This is the reason why our numbers differ from those in Boone and Sachs (1989).

Table 8. Land values and GNP

Year	Japan		U.S.A.	
	Land Value in billion yen (in billion dollars)	Land Value GNP	Land Value in billion dollars	Land Value GNP
1970	181,531 (508)	2.48	751	0.74
1975	376,406 (1,234)	2.54	1,396	0.87
1980	705,793 (3,467)	2.88	2,998	1.09
1985	1,004,073 (5,005)	3.09	4,272	1.05
1990	2,338,239 (17,269)	5.35	5,007	0.90
1993	1,855,143 (16,580)	4.01	-	-

Source: *Annual Report on National Accounts* (Economic Planning Agency, Japan) and *Balance Sheets for U.S. Economy 60-91*, (U.S.A.). Numbers in parentheses are the Japanese land values in the U.S. dollar evaluated at the exchange rate at the end of the year.

In the U.S., the ratio between the total land value and GNP is fairly stable ranging from 0.74 to 1.09. The Japanese counterpart is much higher and shows large fluctuations. The ratio in Japan had moved between 2 and 3.5 until it shot up dramatically in the latter half of 1980s to reach 5.35 in 1990. This period of high land prices is called the 'bubble economy' although some economists argue that they reflect changes in fundamentals. In the beginning of the 90's land prices started to fall and the ratio came down to 4.01 in 1993.

Economic growth in Japan has been remarkable until early 1970's. The real rate of growth had been around 10% until the first oil crisis. After the oil crisis it has come down to about 4% average, but even this growth rate is much higher than those in the U.S. Land prices are high in a country with a higher growth rate because land rents rise at rates comparable to the growth rates.³

Suppose the rate of increase of land rent, the interest rate, and the property tax rate are constant at q , i , and t respectively. Then, land price at t (i.e., p_t) and land rent at t (i.e., r_t) satisfy

$$p_t = \frac{r_t}{i + \tau - \theta}.$$

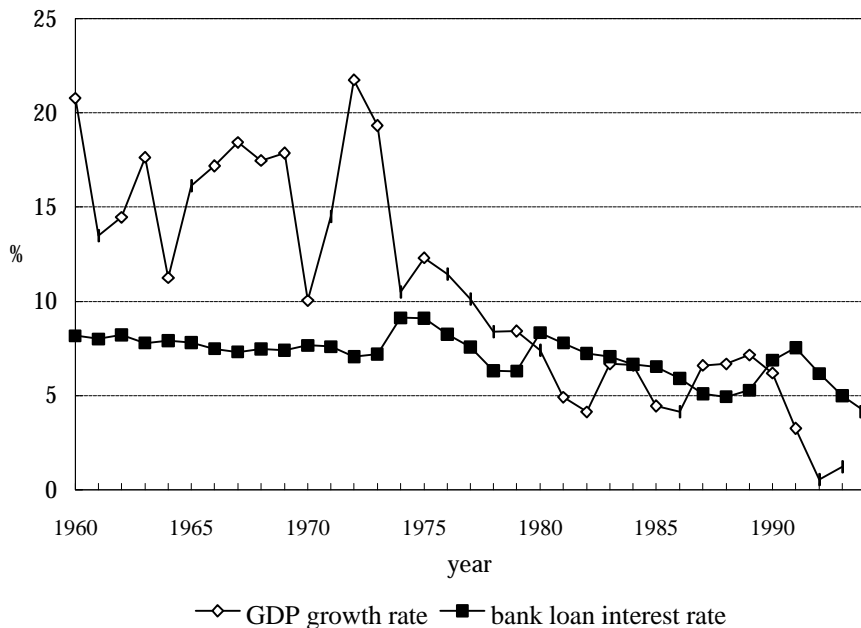
If the economic growth rate equals the rate of increase of land rent and if land rent is a fixed proportion, α , of the GNP, then

$$\text{Land Value} = \frac{\alpha}{i + \tau - \theta} \text{GNP}.$$

Using a formula similar to this, Boone and Sachs (1989) argue that the difference between the U.S. and Japanese measures of land value relative to GNP can be justified by the fundamentals. They proposed the following parameter values: the real rate of interest is 5% in both countries, the expected growth rates in Japan and the U.S. are 4% and 2% respectively, and effective property tax rates are 0% in Japan and 1% in the U.S. With these parameter values the land value/GNP ratio in Japan is 4 times that in the U.S., which is higher than the ratios in the data until the mid 80's.

We can make this calculation more elaborate by using better estimates of the property tax rates. The proportion of the property tax revenue to the national income in 1988 is 1.6% in Japan and 2.8% in the U.S. The ratio between the tax revenue and the total land value is then 0.3% in Japan and 2.67% in the U.S. If we use them as the effective property tax rates, then the land value/GNP ratio in Japan is about 4.36 times that in the U.S. Another modification would be to introduce differences in real interest rates. Because the real interest rates in Japan have been lower than those in the U.S., the ratio can be higher than 4.36.

Figure 1. GDP Growth Rates and Bank Loan Interest Rates in Japan (Nominal)

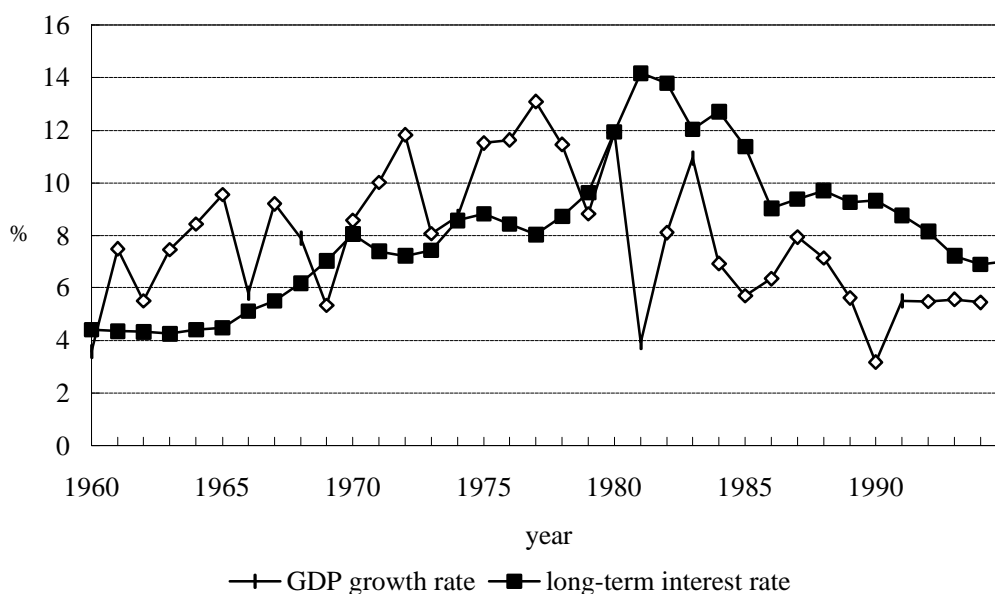


Source: *OECD Economic Outlook*, OECD Statistics, Paris and *Economic Statistics Annual* (Bank of Japan) .

Of course, the land value/GNP ratio is very sensitive to the real interest rate. For example, if the real interest rate is 6% instead of 5%, then it is difficult to justify the actual difference between the U.S. and Japan. What is crucial for the argument is that the difference between the interest rate and the expected GNP growth rate is very small (somewhere around 1%) in Japan. Figure 1 depicts the interest rates of bank loans and the GDP growth rates (both are in nominal terms). In many periods, the GDP growth rates are higher than the interest rates. The interest rate data may be biased downward, however, because banks usually require a fair amount of low-interest deposits from a debtor in order to raise the effective interest rate. Furthermore, credit rationing occurred when the financial market was tight. Even after considering these biases, the difference between the GDP growth rate and the

interest rate must have been fairly small in Japan. It is therefore quite natural that land prices have been very high in Japan.

Figure 2. GDP Growth Rates and Long-Term Interest Rates in the U.S. (Nominal)



Source: *OECD Economic Outlook*, OECD Statistics, Paris.

Figure 2 shows the relationship between the GDP growth rate and the long-term interest rate in the U.S. Until the late 70's, the interest rate is often lower than the GDP growth rate also in the U.S., but the tendency is much less pronounced than in Japan. Furthermore, since the late 70's the prime rates have been almost consistently higher than the GDP growth rates.

Regional Differences in Land Values

Land is heterogeneous reflecting differences in locational, topographical, and environmental characteristics and the total land value in a country is subject to the serious aggregation problem. Let us next look at differences across regions.

Table 9 shows that the land value of the Tokyo metropolitan area constitutes 43.5% of the entire Japan even in 1985 (before a sharp rise in land prices in Tokyo). The ratio between land value and regional income in the Tokyo area is 4.06 which is about twice as high as the national average.

Table 9. Land Values in Metropolitan Areas (1985)

Regions	$\frac{\text{Land Value}}{\text{Regional Income}}$	$\frac{\text{Regional Land Value}}{\text{National Land Value}}$ (%)
Tokyo	4.06	43.5
Osaka	3.16	16.4
Nagoya	2.24	7.0
The Rest of Japan	2.02	33.1

Source: *Annual Report on National Accounts* (Economic Planning Agency, Japan)

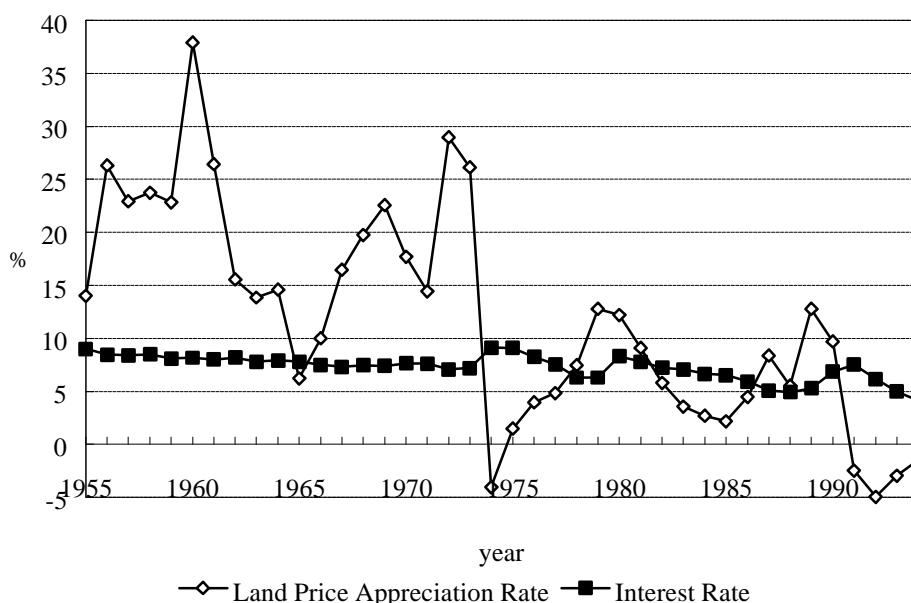
It should be noted however that even if we split Tokyo up into smaller cities, the total land value in Japan would not fall that much. If the land value/income ratio in the Tokyo area becomes the same as that in the rest of Japan, the land value there will become a half, which will reduce the total land value in Japan only by about 20%.

Land Price Appreciation Rates

Figure 3 shows the (nominal) rate of appreciation of the average urban residential land price in Japan.⁴ Until 1973 the appreciation rate had been consistently high. For example, in the 60's (from 1961 to 1970), the land price appreciation rate exceeded the bank loan interest rate by 8.6% on the average.

In 1975 (right after the first oil crisis), the land price fell by about 5%. Because the inflation rate was high in that year, the real land price fell by about 15%. On the average over the 70's, the land price appreciation rate exceeded the bank loan interest rate by about 3%.

Figure 3. Land Price Appreciation Rates and Bank Loan Interest Rates (Nominal)



Source: *The Urban Land Price Index* (Japan Real Estate Institute), *Economic Statistics Annual* (Bank of Japan)

From 1986 the land price started rising sharply especially in Tokyo. The boom ended in 1991 when the land price started to decline. Even with the land price boom in the late 80's, the average appreciation rate in 80's is significantly lower than that in the 70's: it exceeded the bank loan interest rate by less than one percent.

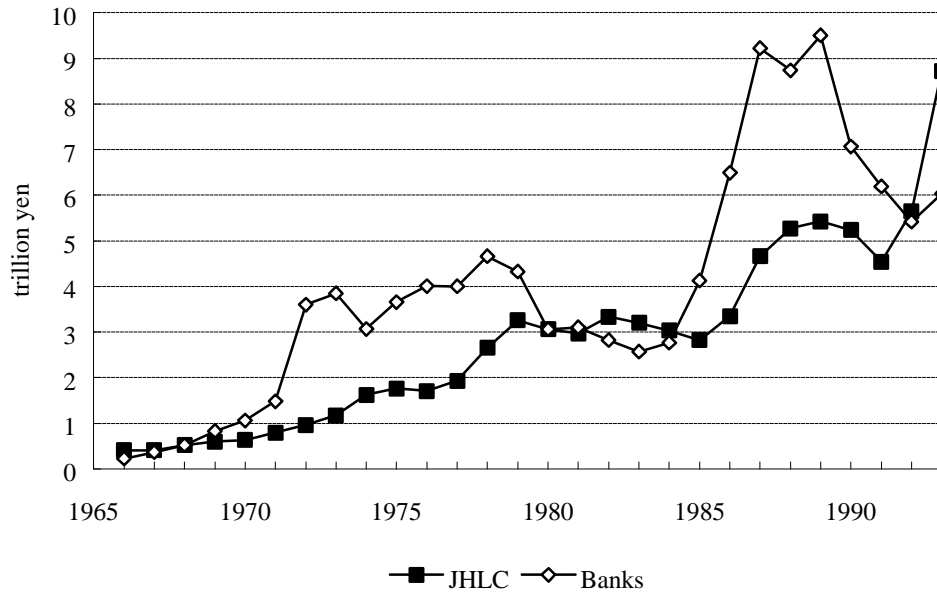
A puzzle here is why the rate of land price appreciation had been so high until the mid 70's. The average rate of return on land was more than twice as high as the average bank loan interest rate. Obviously this situation is not compatible with a

perfect financial market. The Japanese financial market had been tightly regulated and credit rationing had been common until recently. For example, housing loans became widely available only in the 70's as shown in Figure 4 below. Since the early 70's, housing loans increased dramatically, which is one of the reasons why the difference between the land price appreciation rate and the interest rate declined since the mid 70's.

Figure 4 also shows that in the latter half of the 80's the amount of new loans rose sharply as the land price soared. HLC in Figure 4 indicates the amount of subsidized loans from the Government Housing Loan Corporation. As will be discussed later, this program is the largest among housing subsidies provided by the government.

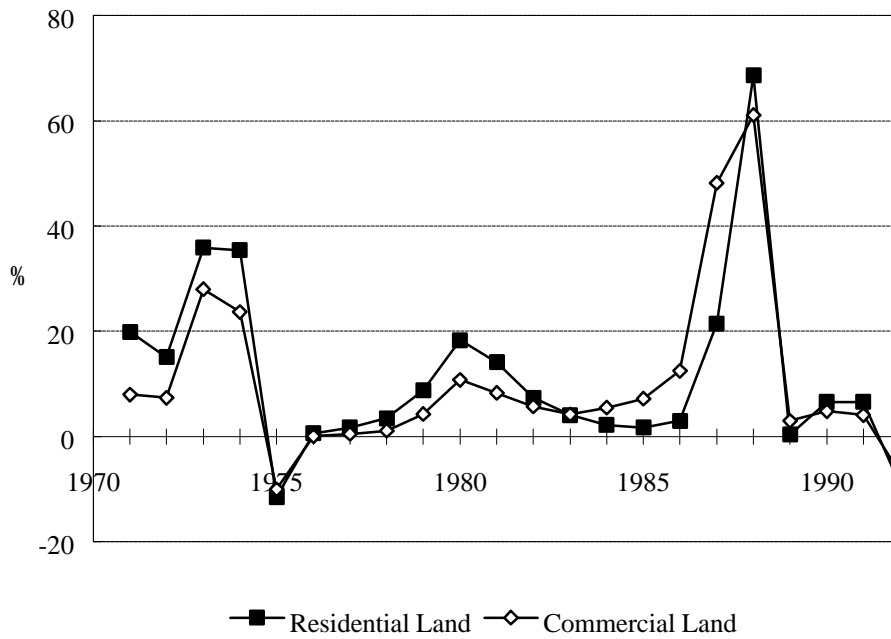
Figure 5 shows that the land price in the Tokyo metropolitan area moved parallel to the national counterpart. The rate of appreciation is however higher in Tokyo. This is quite natural because migration to the Tokyo metropolitan area from the rest of Japan continued throughout the period.

Figure 4. New Housing Loans (Real: 1980 price)



Source: *Economic Statistics Annual* (Bank of Japan)

Figure 5. Land Price Appreciation Rates in Tokyo



Source: *Chika Koji* (Public Announcement of Land Prices), National Land Agency.

Land prices in Tokyo rose sharply in 1987. The distinguishing features of this rise compared with earlier ones are: (1) Commercial land price rose before residential land price, and (2) Commercial land price rose more sharply than residential land price. In earlier periods, the two prices moved in parallel and the rate of appreciation of residential price is higher than that of commercial land price.

The land price boom in Tokyo ended in 1989. Unlike the stock prices that fell by over 60 percent from 1989 to 1992, land prices did not fall much at the end of the boom. The market prices after the crash are difficult to estimate, however, because the trading volume has become very small. Many real estate industry observers believe that market prices fell more than the data indicate.

Some economists (e.g., Noguchi (1993)) strongly believe that the land price boom in the 80's is a typical example of speculative bubbles. The fact that many people who invested in real estate in the boom period have lost money would indicate a bubble. As noted by Stone and Ziemba (1993), however, we do not yet have sufficient econometric evidence for a bubble in the land market. Most of the studies that try to establish the existence of bubbles are rather naive, and their results will be reversed if their choices of the rate of increase in land rent and the interest rate are changed slightly.⁵

Summary

Land prices in Japan are extremely high: her total land value is more than three times that of the U.S. in 1990 despite the fact that the size of the Japanese economy is about a half of the U.S. economy. As suggested by Boone and Sachs (1989),

however, the difference in land prices between the two countries can be explained by fundamentals if we take into account differences in economic growth rates, property tax rates, and interest rates. Many economists however believe that the land price boom in the latter half of the 80's is caused by speculative bubbles. Unfortunately, it is difficult to test the existence of speculative bubbles and we do not yet have conclusive statistical evidence.

The Boone-Sachs hypothesis also means that with a decline in growth rate and a rise in real interest rate, land prices in Japan will fall eventually.

Land prices appreciated at rates much higher than the bank loan interest rates until the early 70's: on the average over the 60's the land price appreciation rate exceeded the bank loan interest rate by 8.6%. The difference between them has become smaller since the mid 70's. The liberalization of the financial sector must have been the major cause of this change. If loans are widely available to those who invest in land, the rate of return on land cannot significantly exceed the interest rate.

4. Tax Advantages and Under-Utilization of Land

One can find plenty of vacant and under-utilized land in Japanese cities. For example, according to a survey conducted by the Agency of National Land⁶, under-utilized land with large lot sizes (over 2,000 m²) in the urbanized areas in the Tokyo metropolitan area and urbanization promotion areas within 20km from the central Tokyo amounts to about 17,400ha.⁷ This constitutes about 14.5% of the total land area in the region. Out of these under-utilized areas, 27% are agricultural and forestry land, 34% are factories and warehouses, and 10% are vacant land. It is a

puzzle for economists that so much land is kept under-utilized in Tokyo where land prices are extremely high.

Fujita and Kashiwadani (1989) argue that durability of a building is the reason for vacant land. That is, the owner keeps his/her land vacant in order to wait for the optimal timing for the most profitable type of development. For example, suppose a high-rise apartment is the most profitable type but there is not sufficient demand for that type now. Even if low-density detached houses are in demand now, it will be costly to convert them into a high-rise apartment at a later date. In such a case, land is kept vacant until the time is ready for a high-rise building. Carrying out a simulation study of the Tokyo metropolitan area, they conclude that the amount of vacant land in Tokyo is efficient.

Although vacant land can be efficient in the presence of durability, the Japanese tax structure and institutional frameworks give rise to excessive incentives for keeping land under-utilized. The argument is that the Japanese tax system generates distortions that make selling under-utilized land unattractive. Of course, tax incentives to own land do not cause under-utilization of land if the rental market is functioning smoothly. Even an owner who invests in land primarily for tax avoidance would welcome a higher rental income. He would then rent the land to the person who can use the land most efficiently. If the rental market is imperfect, however, the owner must use the land for himself. The owner who lacks the relevant management ability would opt for leaving the land vacant.

The rental market for real estate is imperfect for two reasons. First, asymmetric information makes it impossible to write and enforce a perfect rental

contract.⁸ In rental contracts of land, specificity of capital in the presence of imperfect information results in market imperfection. In rental contracts of buildings, moral hazard on maintenance makes them inferior to owner-occupancy. Second, the tenancy law in Japan that heavily protects tenancy rights has virtually destroyed the rental market as will be discussed later.

Because the rental market is not working well, tax advantages of owning land can yield inefficient land use. The reason is that the individual that obtains the largest tax advantages from owning land is not necessarily the best person to use it. A typical example is a farmer in the suburb of Tokyo. He earns very little income from his farm land but obtains an enormous amount of tax savings (in inheritance and property taxes). A potential buyer who would use it for residence would earn much higher (imputed) rent but obtain much less tax savings. In such a case the land remains in agricultural use even though it is much more efficient to convert it into residential use.

Major tax advantages from owning land are as follows.

The Inheritance Tax

The inheritance tax generates strong incentives to hold under-utilized land. Land is an attractive asset to bequeath because the inheritance tax is levied on an assessed value of land which is much lower than the market price. No accurate data exist for the ratio between assessed and the market prices, but many people believe that the ratio is around 50% for the inheritance tax (at least until the end of 80's). With a gap between market and assessed values, a person can reduce the inheritance tax to

zero by borrowing to invest in land. For example, suppose a person expects to bequeath 1 billion yen of financial assets such as stocks and bonds. Then, borrowing 2 billion yen to buy land of the same market value and bequeathing both the debt and the land in addition to the financial assets will make the inheritance tax zero if the assessed value of land is a half of the market price.

The inheritance tax in Japan is progressive with a very high maximum tax rate. The tax schedule had been the same for a long time until it was finally changed in 1988. The maximum tax rate before the change was 75% and it was reduced to 70% in 1988. The basic deduction was also increased at the same time. The fact that the tax rate is much higher than those in most countries creates strong incentives for inheritance tax avoidance. Because the basic deduction for the inheritance tax had been kept constant for a long time, there had been a steady increase in the number of people who pay the inheritance tax. The number of taxed deaths had increased until 1987 when almost 8% of the deceased are taxed.⁹ Among inherited assets, land has the largest share: 64.2% out of which 43.6% is urban land in 1987.

In order to reduce the incentive to buy land for the purpose of inheritance tax avoidance, a provision was recently introduced where land that is bought within 3 years of inheritance is taxed at the purchase price instead of the assessed value. Furthermore, the tax authority is raising the assessed value so that it will become about 80% of the land value assessment by the Ministry of National Land (called Chika Koji).

Special Treatment of Agricultural Land in Cities

Even within a 20 km radius of downtown Tokyo one can find a considerable amount of agricultural land. It is not unusual that a farmer does not even try to sell his/her agricultural products. Farmers are politically powerful in Japan as in many other countries and have obtained many favorable treatments. These special treatments are applied even to farmers in urbanized areas if their land is classified as "long-term" agricultural land. This is the reason why a fair amount of agricultural land remains in areas with extremely high land prices.

The "long-term" agricultural land enjoys two tax advantages. First, the effective property tax rate is much lower than those on other uses. Because the effective property tax rate is low for other uses as well, however, quantitative impacts of this special treatment are fairly small. More important is that the "long-term" agricultural land is virtually exempt from inheritance taxation. If an heir continues to farm the inherited agricultural land, the inheritance tax is deferred, and after 20 years of continued farming the tax is exempted. Because the market value of a farmer's land holding is enormous in metropolitan areas, he would easily face the maximum tax rate of 70%. The exemption from the tax therefore gives him a strong incentive to leave the land in agricultural use.

The government changed the tax law in 1992 to restrict these special treatments of urban agricultural land. In order to obtain the tax advantages, a farmer must keep the land agricultural for more than 30 years. If they want to keep the option of converting the land use within 30 years, they have to pay the higher taxes.

Personal and Corporate Income Taxes

Capital gains income is taxed on the realization basis in Japan as in most countries. Taxation of realized capital gains has the well-known lock-in effect as the owner has an incentive to delay the sale of land in order to avoid the tax. Although Kanemoto (1992) showed that the lock-in effect does not occur if the original purchase price is sufficiently high, land that was acquired long time ago is likely to be subject to the effect. Although there have been frequent changes in the tax rates, the current tax rate (as of 1992 fiscal year) is fairly high at 39% (for land owned for longer than 5 years).

Taxes on ordinary income also create distortions in the land market. Because the personal income tax rate is very progressive in Japan (the maximum rate is 65%), strong incentives for tax avoidance exist for wealthy households. The corporate income tax rate is also high (a flat tax of an effective rate of 49.98%). Land can be used to reduce personal and corporate income taxes in the following two ways.

First, a household with fluctuating income is faced with a high marginal tax rate in high-income years. Investing in land in a high income year and selling it in a low-income year (e.g., after retirement) reduces the total tax payment if interest payments are tax deductible (as has been the case until recently). This is true also for a firm which has an incentive to transfer its income from a period with positive income (with the marginal tax rate of about 50%) to a period with negative income (with zero tax rate).

Second, personal capital gains income has always been taxed at rates lower than other types of income. Investment in real estate transfers the current income to

capital gains income which is taxed at a lower rate. In the Japanese tax regulation, real estate losses are the only negative income that can be deducted from employment income (such as wages and salaries). For example, I can deduct costs incurred in writing a book from the royalty part of my income but not from my university salary. I can however deduct losses from my real estate investment from my salary. For wage and salary earners, therefore, real estate investment is virtually the only vehicle for tax savings.

Although investment in land can reduce income taxes, the magnitudes of tax savings may not be large because only interest payments are tax deductible. Investment in the structural part of a real estate is more effective in transferring taxable income between different periods. The reason is that depreciation as well as interest payments are tax deductible, where accelerated depreciation is permitted for rental housing for the first 5 years. Therefore, the net effect of personal income tax distortion may well be over-investment in buildings rather than under-utilization of land. This is one of the reasons why more rental units than owner-occupied units were constructed in the latter half of the 80's as shown in Table 7 even though the vacancy rates were already fairly high.

Recently, tax regulations have been changed in order to reduce incentives for land ownership. First, from 1992 interest payments for loans to purchase land cannot be deducted from other personal income. This new provision is limited to the land part of a real estate, and the structural part remains to be effective as a tool for income averaging. Second, a provision was introduced in 1989 which disallows the tax deductibility of interest payments for loans to purchase land for 3 years after the

purchase. That is, the interest payments can be deducted only after 4 years of the purchase.

Property Taxes

Some Japanese economists argue that the fact that property tax rates are low in Japan is one of the major causes of under-utilization of land. Although I am not against raising the property tax rate, its effects on land use appear much too exaggerated.¹⁰

First, the claim that taxes on property owners are very low in Japan compared with other developed countries is somewhat misleading. The proportion of the property tax revenue to the national income in 1983 is 1.9% in Japan (this includes the property tax, the city planning tax, and the special land holding tax). The proportions in the U.S. and U.K. are respectively 3.4% and 5.6%, which are considerably higher than that in Japan. In France, however, it is 1.8% which is about the same as in Japan, and in West Germany it is much lower at 0.5%.

Second, the part of the property tax that is levied on structures tends to lower the intensity of land use. The low property tax rates in Japan have the effects of encouraging investment in structures.

Third, Bentick (1979) and others show that the only distortion that the property tax on land generates is to raise the discount rate for land development. This has the effect of favoring a development project with lower construction costs and earlier development timing. In the short run, therefore, this speeds up development,

but in the long run land use intensity will be lower because projects with lower development costs are carried out.

Summary

Even though land prices in Japanese cities are extremely high, we can find plenty of vacant and under-utilized land in urbanized areas. Because the tenancy law that heavily protects tenants' rights has virtually destroyed the rental market in Japan, tax advantages of owning land cause inefficient use of land. For example, agricultural landowners in the suburb of Tokyo keep their land in agricultural use because that reduces inheritance taxes.

Major tax advantages that cause under-utilization of land are (1) under-assessment of land values for inheritance taxation, (2) special treatment of "long-term" agricultural land, (3) lock-in effects due to capital gains taxation. There is however a counteracting tax incentive to build rental housing because (1) the loss from real estate business can be subtracted from other income and (2) capital gains are taxed at a lower rate than ordinary income. This is one of the reasons why there was an increase in rental housing construction in the 80's.

In the early 90's tax regulations have been changed to reduce distortions caused by inheritance taxation and special treatment of agricultural land. It remains to be seen whether these changes have significant impacts on the land market in Japan.

5. Tenure Choice Distortions

As shown in Section 2, the owner-occupancy rate in Japan is fairly high (about the same level as in the U.S. and England and much higher than in European

countries). Furthermore, the average floor space of rental housing in Japan (44.3 m² in 1988 as shown in Table 3) is distinctly smaller than those in other countries. This means that in Japan virtually no rental market exists for family housing. This section examines the reasons for these phenomena.

Taxes and Subsidies

Owner-occupied and rental housing receive different treatments in taxes and subsidies which can be summarized as follows.

(1) Imputed rents of owner-occupied housing are not taxable, but income from rental housing is subject to the progressive income tax.

(2) Interest payments, depreciation, and local property taxes can be deducted from taxable income in the case of rental housing. In contrast to the U.S. tax system, however, they cannot be deducted in the case of owner-occupied housing. Furthermore, accelerated depreciation is permitted for rental housing that satisfies certain conditions on floor space and acquisition costs. In 1986 a tax credit program based on the remaining balance of housing loans was started. Initially, the tax credit was given only for 3 years after purchasing the house. Since then, the program has been expanded and as of 1992 the tax credit is given for 6 years after the purchase and the maximum credit is 250,000 yen.¹¹

(3) Capital gains income from a house that has been used as the main residence is allowed 30 million yen deduction from the capital gains tax. Furthermore, if the house is owned for longer than 10 years, the tax rate for the part exceeding 30 million

yen deduction is reduced to 14% (for up to 60 million yen) and 20% (for more than 60 million yen). Rental housing cannot receive this special treatment.

(4) Owner-occupied housing has a considerable advantage in inheritance taxes. Up to 200 m², the residential land is permitted automatic deductions. The deduction rate has increased over time to reach 60% in 1992. Rental housing does not receive no such special treatment.¹²

(5) The largest housing subsidy in Japan is low-interest loans from the Government Housing Loan Corporation (HLC). The interest rates on the subsidized loans are 2 to 3 percent lower than the market mortgage rate. The upper limits of the loans differ between different types of housing (e.g., between detached houses and condominiums) and have changed over time, but they are somewhere between 15 and 29 million yen. The amounts of subsidies involved in the HLC loans are therefore quite sizable. The HLC loans are available also for rental housing construction, but subsidies involved are much smaller. The HLC loans therefore favor owner-occupied housing over rental housing.

Iwata (1992) computed costs of capital for owner-occupied and rental housing. His calculation includes the above tax and subsidy advantages except for capital gains and inheritance taxation. His result is that costs of capital are slightly higher for rental housing than for owner-occupied housing, although the differences are very small (less than 0.5%).¹³ If capital gains and inheritance taxes are included, the differences will become larger, but they will remain to be much smaller than those in the U.S. where according to Aaron (1972) the tax subsidy to owner-occupied housing reduces its rental price by 10% relative to rental housing.

The fact that the owner-occupancy rates in Japan and the U.S. are close to each other even though differences in costs of capital between owner-occupied and rental housing are quite different provides a challenge for an economist. One of the reasons for the result is the extreme tenure protection in Japan.

Tenancy rights protection

In Japan, tenancy rights of land and housing are protected by a special law which restricts the liberty of contract. In many states in the U.S. no such restriction exists, but some of the European countries (e.g., Germany) as well as some states in the U.S. protect tenancy rights. There are however two somewhat subtle differences between Japan and European countries.

First, in order for the owner to terminate the contract the owner must have a 'just cause.' In European countries, a just cause on the side of the owner is sufficient for termination. In Japan, the court compares a just cause of the owner with that of the renter. That is, in determining a just cause, the court compares the degrees of 'necessity' of the house (or land) for the owner and the tenant. Even if the owner needs the house for his/her own residence, this is not sufficient for a just cause: his/her need must be compared with the need of the tenant. For example, the owner rents his house for a year while on sabbatical, there is no guarantee that he can get the house back when he returns. Furthermore, even if both sides sign a contract explicitly specifying the date of termination, this provision is deemed ineffective.

Another difference is concerned with rent increases. At the beginning of the contract the rent is determined freely between the owner and the tenant. Because of

the security of tenure, however, the market mechanism works only at the beginning of the relationship. After renting starts, the owner cannot evict a tenant who refuses a rent increase. A rent dispute must be resolved by the court on a case-by-case basis. Because a law suit in Japan is time consuming and costly, an increase in rent is usually quite difficult, which creates rent differences between new and old tenants.¹⁴ In Germany, for example, a clear rule exists for rent increases, and the owner can increase rents to levels prevailing in the neighborhood without going through a formal law suit.

The tenancy law was amended in 1992. Most of the changes are in the land rental part, however, and there are very little changes in housing rentals. Even in the new law, a fixed-period rental contract is permitted only when the owner temporarily vacates his/her house for reasons such as a temporary transfer to another branch of the employer.

The extreme tenancy protection in Japan has resulted in serious distortions in the rental market. As can be seen from Table 3, supply of rental housing is concentrated on very small units of about 45 m². The reason for this is that turn-over rates are low for large-size units and high for small-size units. Because rent increases are difficult except when a turn-over occurs, supply of rental housing is limited to small units with high turn-over rates. A family with children therefore has difficulty finding a suitable rental housing. This partly explains why the owner-occupancy rate in Japan is high even though no big difference exists between costs of capital for owner-occupied and rental housing unlike in the U.S.

Summary

A variety of tax distortions influence choice between renting and owning, but they tend to counteract each other. Although the cost of capital is lower for owner-occupied housing than for rental housing in Japan, the difference is much smaller than in the U.S. The reason why the owner-occupancy rate in Japan is close to that in the U.S. appears to be the extreme form of tenancy right protection in Japan. Because of the tenancy law, the supply of rental housing is concentrated on very small units whose turn-over rates are high.

6. Transaction Costs

The market for used houses is very small in Japan. The number of used houses that are purchased in 1992 is 137,000 in Japan, and the corresponding number is 3,520,000 in the U.S. This means that the number of transactions per household is about ten times larger in the U.S. than in Japan. Although it is perhaps true that the Japanese tend to prefer new houses to old houses, the difference in preferences is not the only reason for the difference in the used housing markets. The Japanese tax system and subsidy programs favor new housing over used housing.

First, a buyer of a real estate must pay three types of transaction taxes: the real estate acquisition tax levied by prefectures, the national registration tax, and the stamp duty. These taxes are levied on purchases of new as well as used houses. The amounts of these taxes depend on the value of the house. The sum of these taxes is around 2 percent of the value of a house (about 0.7 million yen for a house of 40 million yen and 1.4 million yen for a house of 70 million yen).

In addition to these transaction taxes, a household which sells its house and buys another house must pay the capital gains tax even if the value of the latter exceeds that of the former. From 1983 to 1989, the capital gains tax could be deferred in this case, but this special treatment for replacement of a household's main residence was abolished in 1989. Since then, capital gains on owner-occupied housing are taxed at lower rates than other capital gains income. As noted before, a seller of an owner-occupied house can claim a special deduction of 30 million yen, however. If the house is owned for more than 10 years, then lower tax rates of 14% (up to 60 million yen) and 20 % (over 60 million yen) will be applied. If the house is owned for 5 to 10 years, the regular tax rate of 39% is applied to the part above the 30 million yen deduction.¹⁵ If the house is owned less than 5 years, then the tax rate is progressive with the minimum rate of 52% and the maximum rate of 71.5%. The Japanese capital gains tax therefore discourages frequent moving of owner-occupiers.

Subsidized loans from the HLC also favor new housing over used housing, since (1) the upper limits of the loans are lower than those for new houses, and (2) houses that are more than 10 years old are not eligible for the HLC loans.

In sum, high transactions taxes, high capital gains taxes (especially for houses owned for less than 5 years), and unfavorable treatment of used houses in the HLC loans are (at least partially) accountable for the small size of the market for used houses in Japan.

7. Housing Subsidy and Public Housing

National government expenditures on housing programs are 1.4% of the total budget of the Japanese national government in 1993. As can be seen from Table 11, this is close to that of the U.S. but lower than those of the U.K. and France and higher than that of Germany. Housing related tax reductions are fairly small in Japan (0.8% of the total tax revenue) compared with other countries because interest payments on housing loans are not tax deductible. Although these percentages do not include expenditures of state and local governments, one can perhaps say that public support of housing is quantitatively quite modest in Japan compared with other developed countries.

Table 10. The Shares of Housing Related Expenditures and Tax Reductions in the Total National Government Budget

Nation	U.S.A. (1993)	U.K. (1992)	France (1993)	Germany (1993)	Japan (1993)
Expenditures	1.5%	6.9%	2.8%	0.6%	1.4%
Tax Reductions	5.3%	3.2%	1.6%	1.0%	0.8%

Source: *Juutaku Keizai Data Shu* (Collection of Housing Economic Data), (1995), p.163.

Subsidized Loans

Housing subsidies are provided both to purchasers and suppliers, where the suppliers here include developers and rental housing owners. The former is an implicit subsidy through loans at below-market interest rates provided mainly by the Government Housing Loan Corporation (HLC). The latter includes loans to

developers and rental housing builders from the HLC and the Japan Development Bank.

The HLC provides low-interest loans to people who buy new houses or build their houses. As noted before, interest rates for these loans are 2 to 3% lower than the market rates. The most important features of the loans are: (1) there are upper limits for the amounts of the loans and it is usually necessary to supplement them with loans from commercial banks; and (2) loans are made only when certain conditions are met on the floor space, the price of the house, and income of the purchaser. Roughly speaking, the first feature implies that the subsidy does not change the marginal price of housing. This however has to be qualified because interest rates are different depending on the floor space. As shown in Seko (1993), the budget constraint has jumps, which distorts the choice of floor space. For example, the floor spaces of many houses in Japan are around 120 square meters because the HLC interest rate is higher for larger houses.

Higher interest rates (about 0.5% higher) are applied to loans for high income households. Currently, the cut-off level of annual (taxable) income is 10 million yen per year. Even the higher interest rates are significantly lower than the market rate.

From 1980 on, the proportion of newly constructed owner-occupied houses that have received loans from the Government Housing Loan Corporation has consistently exceeded 40%. Because most households must supplement the public housing loans with bank loans, the share of the HLC loans in the total housing loans is smaller: 25.5% for new loans in 1990 (33.4% for the remaining balance at the end of

1990). The shares of other public loans are 6.1% for new loans and 8.7% for the remaining balance.

Public Housing

Abundant supply of small-size rental housing means that there is much less need for public housing for the poor than in other developed countries. Furthermore, income distribution is more equal in Japan than in most of other developed countries.

Public rental housing in Japan can be classified into two parts: (1) public rental housing for the poor; (2) public rental housing for the non-poor. The first type constitutes 5.38% of the housing stock and the second type 2.19% in 1988 as shown in Table 11.

Table 11. Composition of the Housing Stock

Type of Housing	Share (%)
Public Housing for the Poor	5.38
Public Housing for the Non-Poor	2.19
Private Rental	26.15
Employer Provided	4.19
Owner-Occupied	62.08

Source: Housing Survey of Japan (1988).

Public rental housing for the poor attracts an enormous number of applicants in Tokyo (the average number of applicants per unit is 35.5 for housing provided by Tokyo prefecture in 1989). In Tokyo prefecture, the prefecture provides 244,138 units of low-income housing and local governments in the prefecture has 6,482 units in 1989. The situation is quite different in rural areas where public rental housing sometimes faces difficulty in attracting a sufficient number of applicants.

In addition to public rental housing, government subsidies are available for private rental housing that obeys certain regulations on floor spaces and rental prices. This program was modeled after German social housing program. The subsidy in this program is provided by the Government Housing Loan Corporation. The average rent is 105,170 yen in Tokyo and 68,200 yen in the nation as a whole in 1991. The average income of renters is fairly high at 5,843,000 yen. The number of housing units that are newly constructed under this program is around 20 to 30 thousand units per year.

In addition to supplying rental housing, the Housing and Urban Development Corporation develops residential land, build houses, and sell them to the public at somewhat lower prices than the private sector's. Many prefectures have their own public corporations with the same purpose. Their roles have been diminishing however as private developers accumulate business know-how and become stronger financially. In 1990, public corporations sold only about 15,000 dwelling units altogether. One feature of public housing corporations that is worth mentioning is that they can (although seldom do) buy land using eminent domain whereas private developers cannot.

Summary

Public expenditures on housing appear to be rather small in Japan compared with other developed countries although it is difficult to obtain data for expenditures by state and local governments. The most important housing program in Japan is

subsidized loans from the Government Housing Loan Corporation. The stock of public housing is also fairly sizable at around 8.5% of the total stock.

8. Land Use Regulation and Infrastructure Provision

In Japan, the owner's discretionary power on how to use the land is constrained only when there exists explicit regulations. This is in contrast to other countries such as Germany and the U.K. where the owner cannot develop land unless explicitly permitted by the government. This section briefly reviews regulations that limit the right of landowners. They are: (1) development control that prohibits development of land in Urbanization Control Areas; (2) land use regulation which prohibits certain types of land use in particular areas; (3) transaction control which restricts land transactions in areas where land price is rising fast. This section also discusses planning and financing of urban infrastructure such as roads, parks, and sewerage.

Development Control

The process with which development control is established is as follows. First, a prefectural governor establishes a City Planning Area where city planning is applied. In doing so the governor must consult with relevant local governments and the Prefectural City Planning Commission and must obtain permission of Minister of Construction of the national government. City Planning Areas cover 89.6% of the total population and 24.6% of the total land area. The major effect of setting up a City Planning Area is that certain types of development (which will be explained below) must obtain permission of the prefectural governor.

A City Planning Area is divided into Urbanization Promotion Areas and Urbanization Control Areas. In Urbanization Promotion Areas urban development has already occurred or should occur within about 10 years. In these areas local and prefectural governments (also the national government) are supposed to invest actively in urban infrastructure and developments by the private sector is permitted so long as they satisfy certain technical standards. In contrast, urban development is discouraged in Urbanization Control Areas. In principle public infrastructure investment is not made and urban developments are not permitted in Urbanization Control Areas.

The prefectural governor designates Urbanization Promotion Areas and Urbanization Control Areas after obtaining permission of the Minister of Construction, but not all city planning areas are divided into these two types of areas. As of 1988, division has been established in 329 areas out of 1,236 City Planning Areas. The total area of the Urbanization Promotion Areas is 1,362,999 ha, and that of the Urbanization Control Areas is 3,715,118 ha.

In Urbanization Promotion Areas, developments smaller than 1,000 m² need not obtain permission of the governor. A larger residential development must obtain permission of the governor and the governor issues permission only when the development satisfies several 'technical' standards for high quality residential land.

Although it is the governor who issues permission of development, local governments have strong influence on the decision and in many cases the local government is the one which effectively makes the decision. In conjunction with development permission, many local governments have 'guidelines for residential

development'. The guidelines usually require roads and parks that exceed the technical standards in the City Planning Act, financial contributions in the name of burden sharing of school facilities, and agreements of neighborhood residents. Developments smaller than 1,000 m² which are not required to obtain the permission of the governor are in effect exempt from the guidelines. This raises the costs of large-scale developments relative to small-scale developments. One of the reasons why large-scale developments have become rare in Japan is this asymmetry.

In Urbanization Control Areas, development is prohibited in principle. However, a development of larger than 5 ha is possible if permitted by the governor after consultation with the Development Panel.

Land Use Zoning

Because land use regulation was started when mixed land use had been already in place, regulation is not very strict and tends to maintain the current land use rather than to change it in a certain direction.

In Japan there exist eight types of land use areas: (1) a Type 1 Exclusive Residential Area, (2) a Type 2 Exclusive Residential Area, (3) a Residential Area, (4) a Neighborhood Commercial Area, (5) a Commercial Area, (6) a Semi-Industrial Area, (7) an Industrial Area, and (8) an Exclusive Industrial Area.¹⁶ Each of these areas has its own regulation on uses and forms of buildings.

Detailed physical planning like the German Bauleitplanung system of 1960 and British Town and Country Planning system of 1968 had not existed until recently. In 1980, however, the District Planning System as an optional planning system was

introduced by the Japanese government. The system has not had much impact on Japanese cities however because not many municipalities have adopted the system.

Infrastructure Investment

Residential development requires a variety of public infrastructure investment, e.g., roads, parks, water supply, sewerage, and schools. Most of these investments are the tasks of local governments. Local governments do not usually welcome residential development because it does not bring sufficient tax revenues to cover necessary public expenditures. As noted before, residential land receives favorable tax treatment and the property tax rate on a typical residential lot is a quarter of the regular rate. Furthermore, residential developments often require more expenditures on social overhead capital and local services than commercial and manufacturing projects. Local governments therefore tend to welcome factories and offices much more than residences.

Local governments often require developers to make sizable donations to them in addition to regular taxes. This practice is based on the so-called "guidelines for residential development" which was already discussed in connection with development control. It is often argued that this practice discourages residential development and raise housing prices. As noted before, however, small-scale developments (smaller than 1000 m²) are in effect exempt from the guidelines, and their net effect is to discourage large-scale developments relative to small-scale developments.

The national government provides subsidies to local and prefectural governments on their public projects. It sometimes directly manages urban public

projects. Prefectural and local governments may be required to contribute to projects directly controlled by the national government.

Each ministry of the national government tries to control expenditures by local and prefectural governments using elaborate subsidy schemes. The merit of this is the homogeneity of public services across local governments. Many drawbacks however exist. First, because the total budget of the national government is limited and it is allocated among many local governments more or less equitably, it takes a long time to finish a project if a local government tries to take the full advantage of the subsidy from the national government. Second, administration of elaborate subsidy schemes costs a large amount of manpower on the part of local governments. Third, subsidies may destroy incentives of local governments to improve their management.

Transaction Control

The National Land Use Planning Act introduced in 1974 has provisions for regulating land transactions. First, a prefectural governor can designate as a transaction control area an area where speculative land transactions are concentrated and land prices are rising rapidly. In such an area all land transactions must obtain permission of the governor.

Second, in areas other than transaction control areas, transactions of land whose area exceeds a certain lower bound (2,000 m² in Urbanization Promotion Areas) must be reported to the governor. If the price and proposed use of the land are improper, the governor can give 'advice' to take necessary actions such as canceling the contract, after consultation with the land use panel. The 'advice' will be made public.

Although there is no explicit penalty for not obeying the 'advice' of the governor, the publicity has worked as a sufficient deterrence.

Third, the governor can lower the lower bounds for transaction reporting in an area where land price is rising rapidly by designating it as a surveillance area. In a surveillance area, judgment is made concerning whether or not the transaction is speculative in addition to the price and use of the land.

There has not been a single case where a transaction control area is set up, but in mid eighties several prefectures designated surveillance areas. The effects of this mild form of transaction control have not been evaluated yet.

Summary

The government influences the housing market through land use regulation and infrastructure provision. First, developments are in principle prohibited in Urbanization Control Areas. Of course, the development control of this sort has the effect of reducing housing supply. Second, local governments do not often welcome residential developments because they cannot expect sufficient tax revenues to finance required public services and infrastructure investment. Ironically the favorable treatment of housing in property taxes is one of the main causes of this situation. A mild form of transaction control was set up in the late 80's. Unfortunately, there is no systematic empirical study of its effects on the land market.

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Footnotes

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² Definitions of new housing price and annual income are:

U.S.A.: The median value of the sales price of newly constructed detached housing (Statistical Abstract), and the median value of annual household income

U.K.: The price of newly constructed housing by the Construction Union (BSA Bulletin), and national average household income

W. Germany: The average price of newly constructed detached housing (Bendesbaublatt), and the average annual 4-member household income of employees (Statistisches Jahrbuch)

Japan: The average purchase price of detached housing with JFC loans, and the average annual household income of employees (Savings Survey)

Tokyo: The average price of developer-built detached housing in Tokyo, Kanagawa, Chiba, Saitama, and the Southern Ibaraki (Fudosan Keizai Kenkyusho), and the average annual household income of employees in the Tokyo metropolitan area

³ The relationship between the GNP growth rate and the rate of increase of land rent depends on the shape of the production function. Boone and Sachs (1989) used a Cobb-Douglas production function and in their model the land value grows at the same rate as GNP along the steady state path. If land is not an inferior input, land rent grows at a rate faster than or equal to the GNP growth rate.

⁴ The appreciation rate is calculated from the end of March of a year to the end of March of the next year. For example, the appreciation rate for 1955 is from March 31, 1955 to March 31, 1956.

⁵ For an example of such a study, see Economic Planning Agency (1991).

⁶ Agency of National Land (1991), pp. 152-156.

⁷ See section 8 on the definition of urbanization promotion areas.

⁸ See Henderson and Ioannides (1983) and Kanemoto (1989) on sources of market imperfection in the rental market.

⁹ Because of the increase in the basic deduction, the percentage dropped to 4.6% in 1988.

¹⁰ In the Japanese tax system, four types of taxes are levied on property owners: (1) the property tax which is levied on virtually all real estates, (2) the city planning tax which is levied only in the Urbanization Promotion Area which will be explained later in the section on land use control, (3) the special land holding tax which is levied on "under-utilized" land, and (4) the land value tax which is newly introduced in 1992. Only a small fraction of land is subject to the special land holding tax and the land value tax.

¹¹ The credit is not given to loans for purchasing land. If loans for land and building parts are not separated, the tax credit is applied to the minimum of the total amount of the loans and the value of the building part. The tax deduction in the U.S. provides relatively large benefits to high income households whose marginal tax rates are high, whereas the amount of the tax credit is the same regardless of the marginal tax rate. For equity reasons, the credit is not given to households whose taxable income is higher than 30 million yen. There is another regulation on the tax credit: the credit is given only when the floor space of the housing unit is larger than 40 m². Housing reconstruction and major improvements whose costs exceed 1 million yen can also receive the benefits of the tax credit.

¹² As noted before, however, because the assessed land is considerably lower than the market value, anyone can reduce the inheritance tax by obtaining loans to build rental housing.

- ¹³ The marginal income tax rates that he used are much lower than the official rate in order to account for deductions. His estimates may however be too low for wage and salary earners.
- ¹⁴ Adding special provisions on automatic rent increases in the contract does not solve the problem because they may be deemed improper by the court.
- ¹⁵ From 1995, the tax rate is 32.5% for the first 40 million yen (of the taxable capital gains income) and 39% for the rest (if any).
- ¹⁶ The city planning law was amended in 1992. Major changes are additions of new types of residential land use categories and introduction of temporary regulation until detailed plans are established.