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**Urban Planning in Tokyo
- a European Perspective**

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Introduction

For a visitor from Europe, the growth of Tokyo is overwhelming. From almost total destruction in the war, it has in an unprecedented burst of urbanisation entered the stage as a world city. Never before has a city of this size been built in so short a time, has basic urban infrastructure been provided for so vast an urban area, has a sophisticated transportation system been developed for so many people. In no other city is change so rapid, the transformation of the cityscape so fast as in Tokyo. Yet besides all its progressiveness and dynamics, Tokyo has preserved the small-scale variety of its neighbourhoods and the tranquillity of the pockets of green around its shrines and temples. Tokyo is safe, clean, efficient and convenient.

For an urban planner from Europe, Tokyo is therefore an object of admiration, but also of scrutiny. Is Tokyo a model for urban life of tomorrow? Love makes blind, but true affection sharpens the eye. So it cannot remain unnoticed that the rise of Tokyo has not always been a smooth one.

Tokyo is unsurpassed among the large cities of the world by its extraordinary land prices. During the last two decades, land prices in Tokyo have increased many times faster than consumer prices and much faster than in the rest of Japan. At the same time, despite its highly efficient public transport system, Tokyo has also the longest commuting times of comparable world cities, with work trips of one and a half hour one-way being not uncommon.

These two phenomena are not unrelated. The long commuting times are the result of an unprecedented decentralisation of population during the last decades stretching the city's boundaries to more than 50 km from central Tokyo. On first sight, this rapid decentralisation is the unavoidable consequence of the growth of the Tokyo metropolitan area, which with a population of nearly 30 million now comprises almost a quarter of the population of Japan.

A closer look however reveals that decentralisation has been much greater than in comparable cities and it has been to a large part a displacement process by which middle-class households are forced to move farther and farther away from their still centralised workplaces. The reasons can be traced to exaggerated land prices and a system of land ownership rewarding speculative land hoarding. It is shown that under the conditions of a distorted land market urban planning is either ineffective or, despite the best ambitions, even contributes to aggravating the problems it is to solve.

In conclusion, it is argued that the organisation of the Japanese city is both an outcome and an essential element of the organisation of Japanese society. The land market and the displacement of large parts of the middle class from the city, the long working hours and commuting times, the restricted housing conditions and the organisation of family life, the situation of women and the education system: they all constitute a *coherent system* the functioning of which has been an important precondition for the economic success of Japan. If one element of it is changed, the whole system is transformed.

The paper is based on observations made during a one-year stay at the Department of Civil Engineering of the University of Tokyo in 1988/1989 and a follow-up visit in the autumn of 1991.

Urban Development of Tokyo in Historical Perspective

In the 17th and 18th century, Edo, the predecessor of Tokyo, was one of the largest cities in the world. With its one million people it was larger than London and much larger than Paris. Its size had political reasons. It rested in the regulation that Japan's feudal lords or daimyo had to hold residence with their family and retainers in the Shogun's capital. Edo consisted of two parts: the hilly areas to the north, west and south of the Shogun's palace ('Yamanote') and the marshland areas to the northeast and east ('Shitamachi'). The daimyo lived on the Yamanote hills, while the merchants and craftsmen serving them lived in the Low City. The whole urban area measured not more than five kilometres in diameter, so conditions in the Low City must have been extremely crowded (Seidensticker, 1983). Being a castle town, its roads were intentionally kept narrow and winding (different from Kyoto). The castle was protected by layers of moats with few gates, and the Low City had a system of canals with arched bridges. Like in Venice, the most appropriate transport modes were boats, walking, carrying and being carried (by palanquin). There were hand-drawn carts (Matsuba et al., 1989).

With the Meiji Restoration of 1868 the daimyo disappeared, and the city's population was reduced to 600,000. It took twelve years to get the new Tokyo back to one million. The Meiji period (1868-1912) first brought the rickshaw and the horse-drawn carriage, later the trolley (1883) and finally the electric tramway (1903), but the narrow streets inherited from Edo were badly fit for vehicles. This did not change much until the Great Kanto Earthquake of 1923, after which in the most damaged eastern part of the city new wider roads were built. The railways arrived in Tokyo in 1872 when the first train went to Yokohama. In 1890, the Chuo line going west from Tokyo was finished, and in 1891 the northern line started from Ueno. Intra-city rail travel started with the opening of the ring or Yamanote line in 1910 (see Figure 1).

At the end of Meiji, Tokyo had a population of 2.2 million. At this time private railway companies like Keio and Seibu began the combination of railway and real estate business characteristic for Tokyo. To attract passengers for their (originally electric trolley) lines fanning out from the Yamanote ring to the west, these companies developed agricultural land along their lines as residential suburbs for the growing number of office workers of the burgeoning capital. Within the Yamanote ring, electric tramways dominated, until the first subway, the Ginza line, opened in 1929.

The terminals of the private railways along the Yamanote line developed to fast growing shopping and entertainment centres, Shinjuku and Shibuya being the most prominent. The railways established department stores at their terminals and so offered their passengers/tenants a total service for all needs of life. The growing of the urban area beyond the Yamanote loop marked the first phase of the separation of workplaces and residences, while at the same time Western-style apartments were built in the inner wards (Cassim and Negoro, 1985). During the 1920s and 1930s the city grew by immigration and expansion to 6.8 million. In World War II half the houses in Tokyo were destroyed by air raids and its population decreased to 2.8 million (Hanayama, 1986).

After the war, ambitious plans to fundamentally reorganise Tokyo had to be scaled down, mainly because of lack of funds to pay the necessary compensations to land owners (Hanayama, 1986). At the same time the return of people evacuated during the war, repatriates from the colonies, and growing rural immigration created an enormous

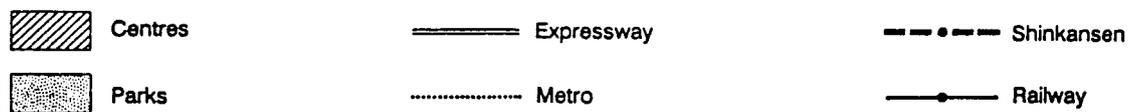
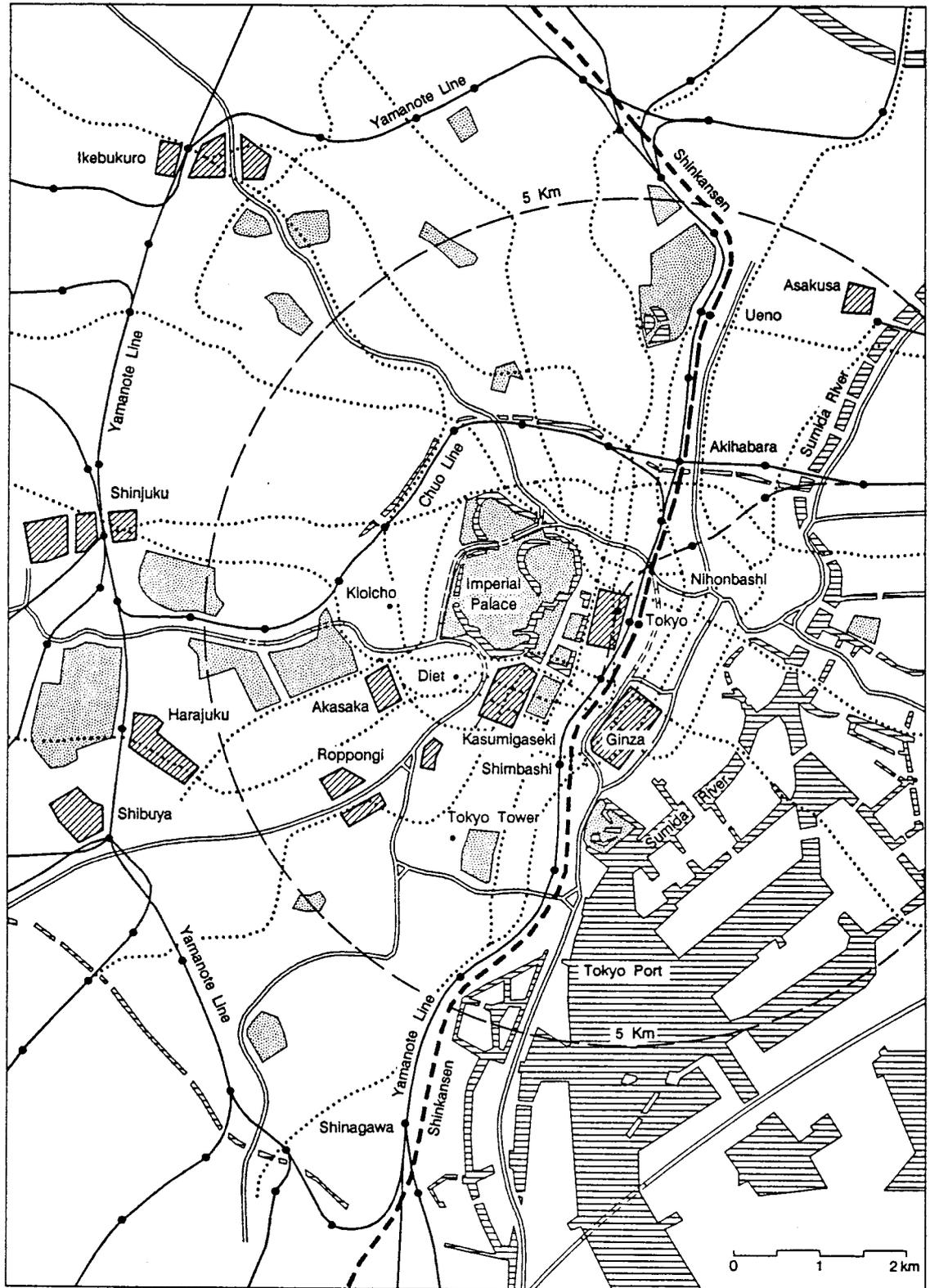


Figure 1. Central Tokyo.

need for housing which could not be met even by large public housing programs, so low-standard wooden rental flats sprung up all over the city without much planning control. By 1955, Tokyo had a population of 7 million.

During the years of rapid economic growth in the 1960s, the Tokyo metropolitan area grew by 600,000 persons annually, from 18 million to 24 million. The huge housing demand could only be met by moving farther and farther out into the suburbs. In these years the first large high-rise housing estates were built by the Japan Housing Corporation. At the same time private railway companies continued to develop low-rise housing areas at the outer ends of their commuter lines.

Infrastructure improvement concentrated on public transport in order to relieve overcrowding of rush-hour trains. From early after the war Tokyo has continuously extended its subway system to its present 10 lines with 212 km of track. Today public transport (including bus) accounts for 70 percent of the 50 million daily passenger trips in the Tokyo metropolitan area. Road construction lagged behind. Still in 1960, most residential roads in Tokyo were unpaved. Only few major thoroughfares had been widened after the war. Mass motorisation hit Japan not before the 1960s. In the 1960s Tokyo superimposed an extensive expressway system over its irregular street network. Today the expressways, despite their high toll fees, are heavily congested.

In the 1970s and 1980s Tokyo continued to grow despite a multitude of government plans to promote a more balanced polycentric development of the country (see Wegener and Shibasaki, 1989). Today the Tokyo metropolitan area has a population of almost 30 million, of which 11 million live in Tokyo itself. Its commuters come from an area extending over four prefectures within 50 km from central Tokyo.

Urban Development and Land Prices in Tokyo

There has always been a very close association between transport infrastructure and land prices in Tokyo. Unlike in other countries, most notably the USA, the most important determining factor of land price is not the location in the highway network, but in the rail network expressed as travel time to central Tokyo and, on a more microscopic level, the distance to the next rail station. Therefore land price maps typically show the areas of higher land prices extending finger-like along the radial railway lines with small peaks around rail stations. This pattern has remained stable over time despite the enormous changes in price levels (see Figure 2):

A comparison of the two maps in Figure 2 shows an average increase by a factor of 15 between 1969 and 1987. In fact, land prices in the six largest metropolitan areas in Japan grew by a factor of 130 between 1955 and 1989, compared with a consumer price index increase by a factor of five. Today a square metre of land in Tokyo costs ¥1 million (\$7,200) on average, which according to a study of the Japanese Association of Real Estate is 99 times as much as in Los Angeles or 30 times more than in London or Frankfurt. It has been estimated that the total real estate of Tokyo, at \$7.7 trillion, is worth more than twice as much as all the land in the USA. At prime locations in the Ginza or Marunouchi areas, a square metre costs as much as ¥30 million (\$215,000).

The exaggerated land prices are reflected in building rents. Retail space in the Ginza area rents for an average of ¥86,000 (\$615) per m² per month, more than in the Trump Tower in New York (\$445). Office rents in the main business areas are around ¥10,000 (\$70) per m² per month, but much higher at choice locations. A choice lo-

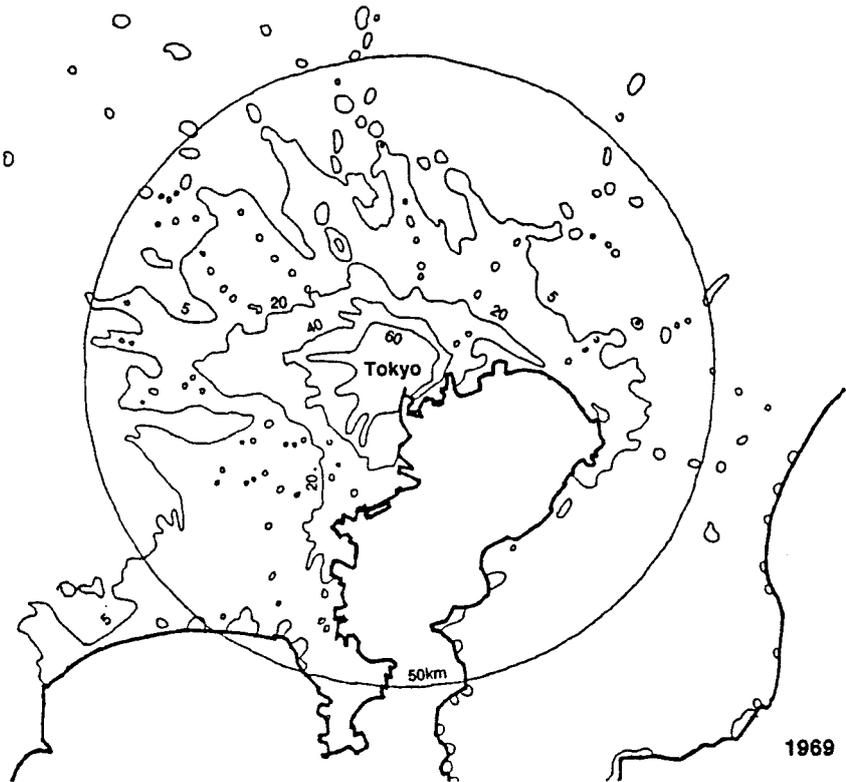


Figure 2. Land prices in the Tokyo metropolitan area in 1969 and 1987, in ¥1,000 (Source: Tokyu Real Estate Corporation).

cation is the Kioicho Building opened in November 1989 (see Figure 3). Space in one of its 17 office floors rents for between ¥14,000 (\$100) and ¥17,500 (\$125) per m² and month. The six top floors of the Kioicho Building contain apartments. They cost from ¥1.6 million (\$11,000) to ¥2.4 million (\$17,000) per month. These rents are not exceptional. Within the Yamanote loop it is hard to find a three-bedroom apartment for less than ¥500,000 (\$3,600) per month. This is more than the monthly income of the average worker household of ¥481,000 (\$3,435).

The gap between incomes and house prices is even more pronounced. This can be demonstrated using an example due to Hasegawa et al. (1988): In 1956 the average household could still buy a small house with a floor area of 66 m² on a lot of 165 m² near Ogikubo, two stations west of Shinjuku on the Chuo line, for 5.5 times its annual income. Due to price increases in construction and land, 5.5 times the average annual household income would in 1985 only pay for 55 m² floor space on 17 m² land. Another possible response is to settle down farther out where land prices are still lower. If the same household insisted on buying a house of 66 m² on 165 m² of land for only 5.5 times its annual income, then it would by 1986 have to move as far as 60 km from Tokyo with nearly two hours travel time.

In Tokyo, the household would have to spend more than ten times its annual income for a similar home. Many families in Tokyo have given up the dream of owning a house and turn into vigorous buying of consumer goods, according to the 1988 White Paper on National Life by the Economic Planning Agency. The recent 'gourmet boom' in basement floors of department stores has also been related to the purchasing power of frustrated would-be home owners. Young people, singles or newly-weds move into very modest flats in run-down inner-city apartment buildings. The majority, however, values home-ownership high. In a survey conducted in 1988, when asked whether they preferred a detached house requiring long commuting time or a flat with short commuting time, 54 percent said they preferred the detached house.

This choice behaviour is also one factor behind the extreme degree of decentralisation of population in the Tokyo metropolitan area. That population is indeed extremely decentralised, is shown in Table 1 which was adopted from Kakumoto (Ohta, 1989). Three metropolitan areas of (in 1980) similar size were compared: Tokyo, New York and Paris. Each city was subdivided into a core and an inner ring zone trying to make the subdivision as similar as possible. It is immediately observable that the core of Tokyo had much more workplaces and much less population than the cores of the two other cities. Nine out of ten employees working in the core were commuters. In New York only 71 and in Paris only 53 percent of all core employees lived outside the core. More than half of the commuters in Tokyo were long-distance commuters, i.e. lived outside the inner ring. The same proportion was 32 percent for New York and 38 percent for Paris.

If one looks at the area outside the inner ring, one is surprised by the scattered pattern of development. Between 15 and 30 km from central Tokyo one can frequently find clusters of houses surrounded by small fields still in agricultural use, and the proportion of non-developed land becomes larger as one gets farther out (Hebbert, 1985). Even in some of the outer wards of Tokyo such as Nerima Ward a surprisingly large share of the total area is still used for scattered agriculture (Hanayama, 1986). Yet despite this seemingly easily developable land, which is frequently in close proximity to rail stations, residential development occurs at the same time in areas much more distant from Tokyo. Because of this continuing urban sprawl, decentralisation of population in the Tokyo metropolitan area is much greater than in comparable cities.

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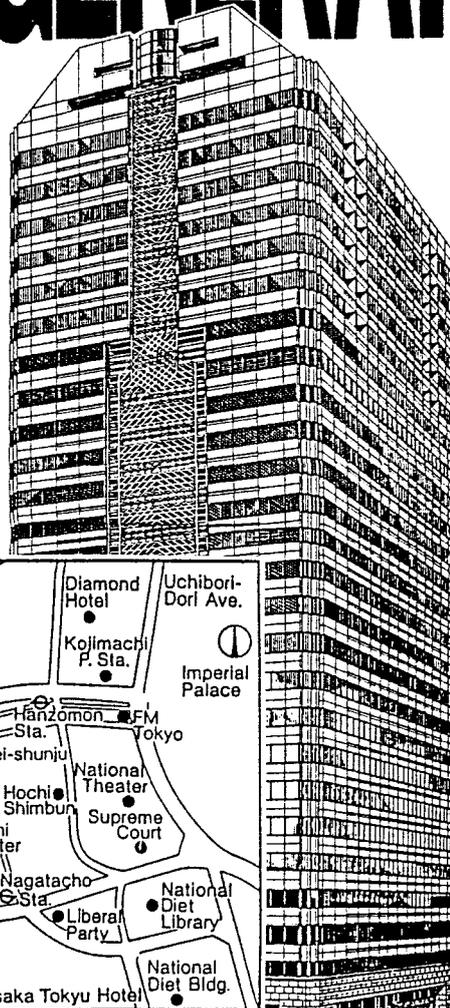
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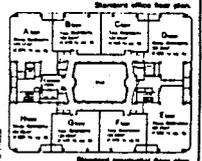
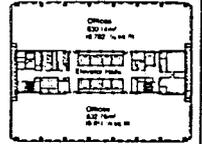
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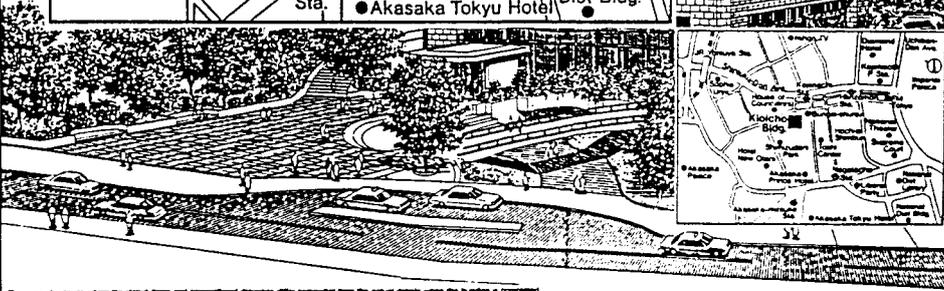


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There may be cases where the stated items and conceptual drawings differ substantially from the actual details when the building is completed.

Figure 3. Advertisement for the Kioicho Building, with location map enlarged (The Japan Times, 17 January 1989).

Table 1. Comparison of Tokyo, New York and Paris.

		Core ^a	Inner Ring	Total ^b
Tokyo (1980)	Area (km ²)	59	533	592
	Population ^c	638	7,669	8,352
	Employment ^c	2,406	3,828	6,234
	Commuters ^c	2,111	1,144	3,255
New York (1980)	Area (km ²)	57	725	782
	Population ^c	1,428	5,644	7,072
	Employment ^c	1,949	1,351	3,300
	Commuters ^c	1,379	291	1,670
Paris (1975)	Area (km ²)	105	656	761
	Population ^c	2,300	3,977	6,277
	Employment ^c	1,918	1,640	3,558
	Commuters ^c	1,016	500	1,516

^a Tokyo: Chiyoda, Chuo, Minato, Shinjuku; New York: Manhattan; Paris: City of Paris.

^b Tokyo: Tokyo (23 wards); New York: New York City; Paris: Paris, Seine-St. Denis, Val-de-Marne and Hauts-de-Seine.

^c in 1,000

Source: Kakumoto (Ohta, 1989).

The reasons for this are also related to the continuous increases in land prices. Agricultural land ownership in Japan is fragmented - a heritage from the land reform after World War II - and protected, as long as the land is used for agriculture. Moreover, it is taxed as low-value agricultural land instead of by its much higher market value as residential land. Even in areas not zoned as residential, frequent zoning changes in the past have nourished the expectation that eventually the land will become residential. All this makes it profitable for small landlords to sell as little land as possible and to hoard the rest in the expectation that suburban land prices will continue to rise. It follows that not lack of land is at the core of high land prices, but unavailability of existing land.

It has also been argued that the low-density urban-rural mixture now characterising Tokyo's suburbs may be environmentally and socially more acceptable than many forms of crowded city housing or mono-functional suburban subdivisions (Hebbert, 1985). These ideas deserve serious consideration. However this model would require a consistent and effective policy of decentralisation of employment.

Employment in Tokyo, however, is highly concentrated in the core, and this concentration is increasing due to the still growing importance of Tokyo as a financial center. Why foreign and domestic companies insist on a location on a few square kilometres of central Tokyo in a time of computer networks and telecommunications remains "a riddle wrapped in a mystery inside an enigma" (Lester Thurow), but is aptly summarised in the advertisement for the Kioicho Building where the little map shows what the text calls a "strategic location and prestigious environment": National Diet,

Liberal Democratic Party, House of Councillors, and the Hotel New Otani and the expensive restaurants in Akasaka where the receptions and luncheons take place which are so important for business. As long as they are important, the concentration of office space in central Tokyo is not likely to be reduced.

The problem is that each new office building is likely to displace more of the small houses still existing in central Tokyo, and that their residents, willingly or not, have to become commuters. If trends continue, the urban area will expand further even beyond the 50-km radius around central Tokyo.

A Distorted Land Market

It is by no means natural that urban land is in private property. In the Middle Ages in many cities in Europe all land was public and was only given away to individual citizens on a lease-hold basis, say for 99 years. From the point of view of urban planning, the land market has only one function: to bring about the most efficient allocation of urban land.

From a theoretical point of view, land prices are capitalised land rent where land rent is the revenue that can be derived from a piece of land by any economic activity minus the costs of other factors such as labour, capital, transport and a normal profit. Because transport costs vary with location, land rents vary by an amount called differential rent, i.e. centrally located sites tend to be more expensive than remote ones. Land is a normal good, i.e. more is better than less. If demand for land is higher than supply, scarcity rents appear to match demand and supply. In a price-quantity diagram, the demand curve slopes downward, i.e. demand decreases if prices go up. The supply curve slopes upward, i.e. if prices go up, so does supply. Market clearing occurs at the quantity and price where the demand and supply curves intersect. The top diagram of Figure 4 shows the demand curve (D) and supply curve (S) of the 'normal' land market and the price effects of growing demand (D').

What matters here is the relationship between land price and land revenue. Firms have other costs besides land costs and so can only spend a certain part of their income on rent or lease. Similarly, households have to divide their income between expenses for housing, clothing, food, etc. and so can spend only a certain share of their budget for their dwelling. If rent or lease exceed these limits, the firm or the household has to move. If, however, no firm or household willing to pay the asking price is found, lease or rent must fall. These simple mechanisms become distorted if there is land speculation. Land speculators are firms or individuals who buy land not for using it but for reselling it with a profit. For large-scale land speculation to occur, two conditions must prevail: the availability of money and the expectation of rising land prices.

Both conditions were ideally met in the Tokyo metropolitan region until recently. Since the Plaza Accord in 1985 and before the increases of the prime rate by the Bank of Japan after 1988 and again today Japan has been a country with very low interest rates and large amounts of floating money looking for investment opportunities and with unbroken confidence in the great future of the Japanese economy and the continued growth of Tokyo. Many firms and private investors therefore turned to the domestic real estate market as an attractive alternative to investment abroad or in Japanese stocks. These investors are not interested in the revenues from lease or rent but in the far higher profits from reselling buildings or land at higher prices.

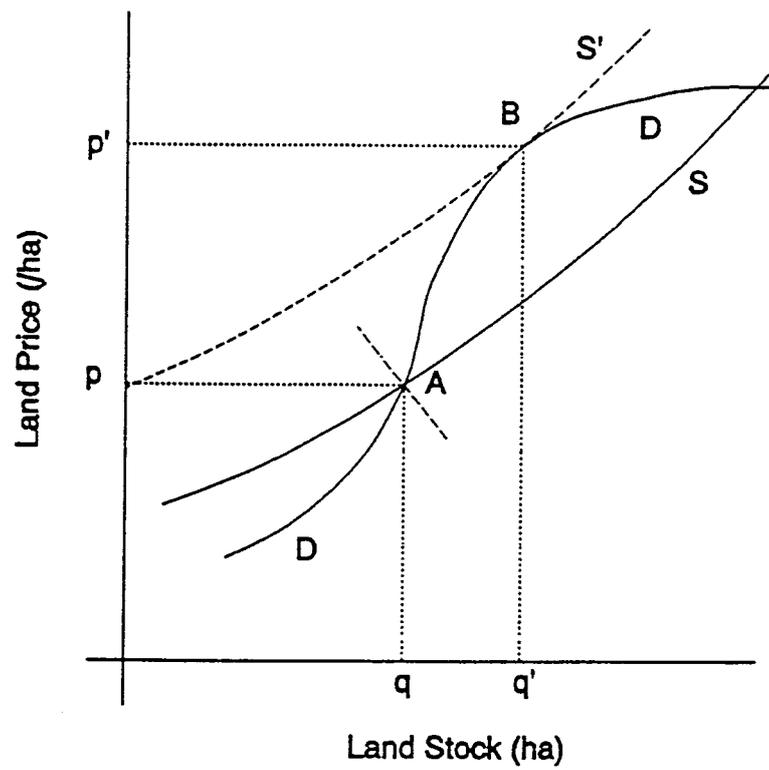
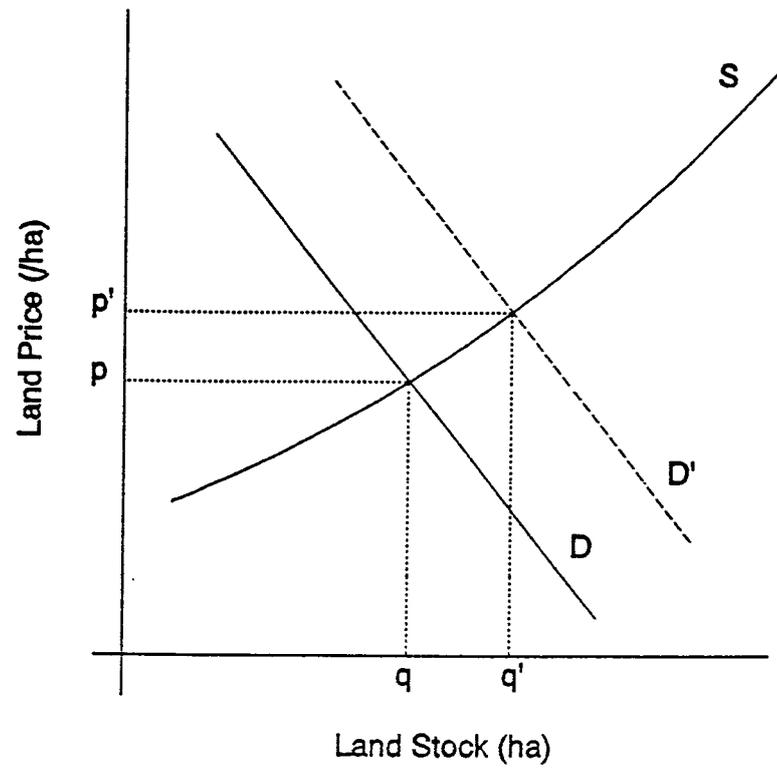


Figure 4. Demand and supply in the normal (top) and distorted (bottom) land market (adopted from Seo, 1989).

The problem is that land speculation disrupts the connection between land prices and land revenues. Once land prices reach a certain level, the return on land investment can no longer be generated from rent or lease income but only from speculative gains. From then on, there is in principle no limit on the speculative cycle. Even worse, speculative investors develop a bidding behaviour which under normal market conditions would be considered perverse: they prefer objects that promise to increase in price in the near future, and these tend to be those that have shown price increases in the recent past. In other words, they buy rather expensive than cheap and so accelerate the land price escalation. The bottom diagram of Figure 4 (cf. Seo, 1989) illustrates the effect of this demand behaviour: As the demand curve (D) slopes upward, the supplier can without penalty move from point A to point B, i.e. raise the asking price from p to p' . B is the point beyond which the investors consider the risk too high.

Another deviation from 'normal' market behaviour is mentioned by several authors (Hanayama, 1986; Flüchter and Wijers, 1990; Simko, 1990). The small land owners already referred to have an emotional relationship to their land and sell only if they need money for building a house or for the wedding of a daughter or the education of a son. That implies that they do not behave as profit maximisers but target a certain sum of money, and under a regime of rising prices, sell *less* if market prices rise.

In a land market, in which with rising prices demand increases and supply decreases, the pressure on untapped land reserves must become excessive. This is especially felt by the still existing small land and house owners in the inner Tokyo wards. It is well known that they are almost daily harassed to sell by representatives of banks or real estate firms or even the *yakuza*. It is easy to predict that many of them will sooner or later yield to this pressure or to the seduction of a large sum of money. If they resist until their death, the inheritance tax will force their children to sell the house and so open the way for its demolition, and so help to destroy another part of the small-scale variety of Tokyo's inner-city neighbourhoods.

In either case population will become more decentralised and commuting will increase. The costs of this are partly carried by the public in form of construction costs and subsidies for transport infrastructure, partly by the employers in form of commuting allowances, and partly by the commuters in form of long commuting times. If the causal analysis relating decentralisation and long commuting times to high land prices is correct, this result contains a large degree of unfairness, because high land prices benefit only a relatively small number of land sellers, whereas the much larger number of land users pay through heavy financial burden and long commuting times.

Urban Structure and Society

The spatial organisation of cities fundamentally determines the life and life opportunities of the people who live in them. At the same time it is not random but the result of economically and culturally determined decisions about the allocation of space. It can be hypothesised that also the present Japanese city, including its distorted land market, is not accidental but both an outcome and an essential element of the organisation of the present Japanese society. If this hypothesis is true, it has implications for the likely success of policy alternatives. In the following section a few conjectures on the relationship between city structure and society in Japan based on own observations and referring to studies such as Nakane (1970), Hijiya-Kirschner (1988) and Neuss-Kaneko (1990) are proposed. Figure 5 is an attempt to visualise this relationship in an admittedly highly reductionist diagram:

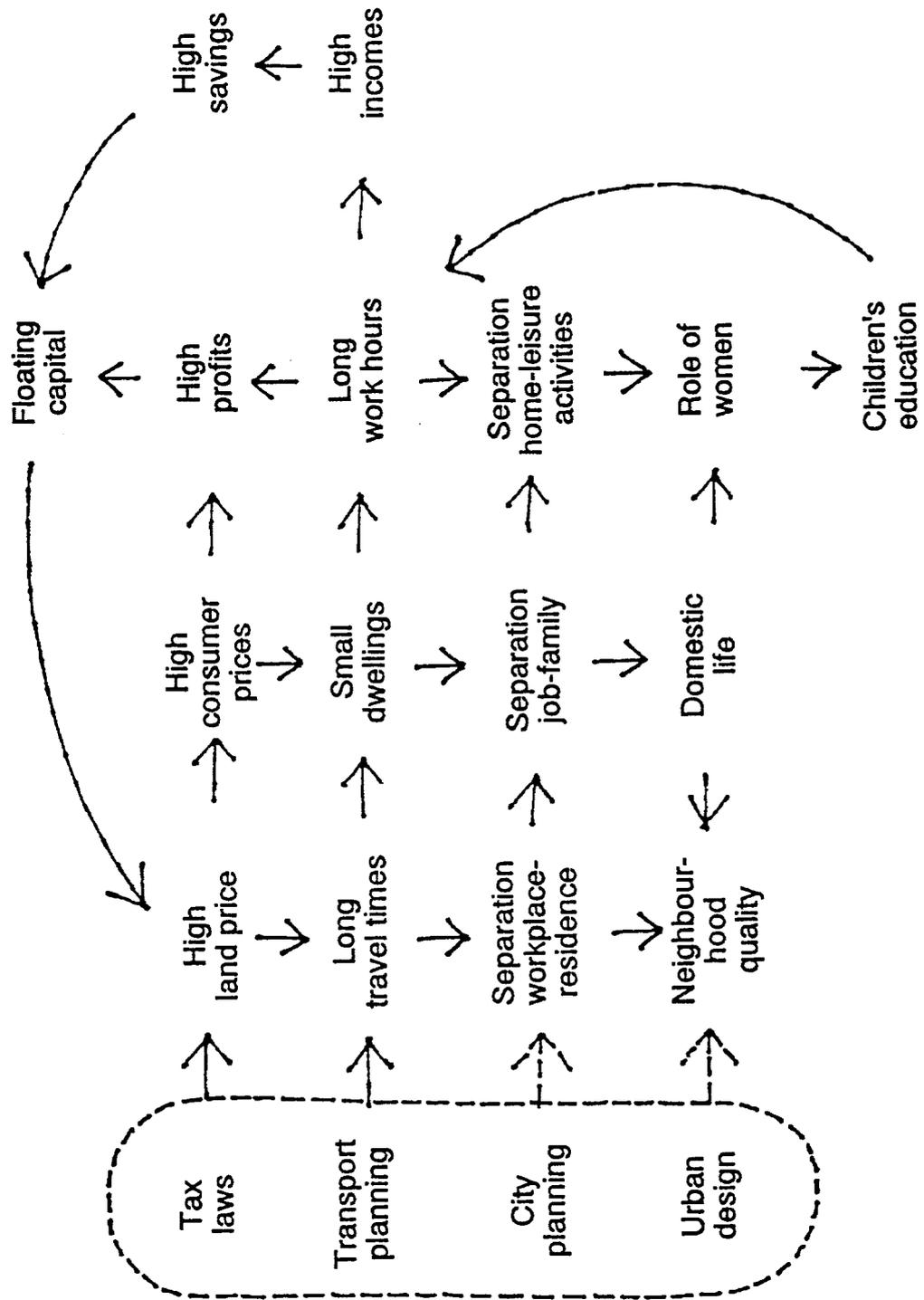


Figure 5. Urban structure and society in large cities in Japan.

The point of departure are the long travel times and small dwellings. The long commuting times without doubt determine the rhythm of life of the majority of white-collar workers in large cities in Japan. In conjunction with the, compared with other countries, long working hours, they leave only little margin for self-determined activities.

The result is the typical life style of the male Tokyo *salariman*, who leaves his home early and returns home towards midnight. Even his after-work free time is spent more often with colleagues or customers than with his wife or children. His after-work social contacts take place near his workplace and more often than not are off-limits for his wife, irrespective of the fact that it would be too far for her to come into the city. On the other hand, his home would be too far to invite his friends or acquaintances there.

Besides, in many cases the flat would be too small. The smallness of the flat is another reason for the late return of the husband; he might be in the way. Of course the small flat is not the principal reason for his long working hours but certainly contributes to his willingness to stay late in the office and demonstrate his relentless identification with his company.

This is good for the family income but also good for the company because the hard work of its employees is the key to its success. High salaries imply high consumer prices, but these are also a result of high land prices which in Tokyo constitute a substantial share of total product costs. High consumer prices, in turn, restrict the housing budget of households and so contribute to the smallness of the dwellings. High company profits and the traditionally high savings rate and even today relatively low interest rates are the basis for the large amount of floating capital searching for investment opportunities, the real source of land speculation and hence exaggerated land prices.

The extreme spatial separation of workplaces and residences, and hence of job and family, essentially determines the situation of the wife. As she after her marriage in most cases has given up her job, she is confined to the household. As the men are absent during the day, women have to take care of neighbourhood problems, but given the lack of a counterpart on the side of the local administration, improvements are not easily accomplished. The main responsibility of the woman is the education of the children. Without an alternative to an education system geared to conformism rather than to self-determination, she inevitably educates her children after the model of the absent father and so lays the foundation for the perpetuation of the system.

This system of interlocking mechanisms was not planned or deliberately designed, it has developed historically over a long time and has displayed a surprising degree of stability. The important fact is that it seamlessly blends into the all-encompassing orientation of the present Japanese society, the primary objective of which continues to be long-term economic expansion. The spatial organisation of the Japanese city is ideally suited to maintain the readiness of the population for hard work and to prevent its degeneration into the individualism and hedonism of the Western leisure societies.

If this hypothesis is only partially correct, it is easy to understand why all attempts to reform the current practice of urban land markets have not achieved very much. The politicians and bureaucrats, who personally do not suffer under high land prices (and frequently as land owners benefit from them), have no reason to pursue the matter with urgency. The real victims, the families, who are deprived of the right of a dwelling

conforming to the affluence of their country, and the workers who spend a disproportionate share of their best years in crowded commuter trains, have been trained to sacrifice without questioning the necessity of their suffering and will continue to do so as long as the system offers them sufficient surrogates in form of consumption goods, travel and career opportunities.

The Role of Urban Planning

Urban planning in Tokyo is by no means without power to halt or at least slow down the displacement of inner-city residential neighbourhoods by commercial and office developments. In fact, Japan's planning legislation - which is largely modelled after the German *Bauleitplanung* - has all the instruments necessary to effectively control and guide the physical development of a city. Unfortunately, however, they are not used.

There are several reasons for this. First, because of high land prices it is almost impossible to buy the land required for public infrastructure or land readjustment projects, in particular where individual land owners use all legal possibilities to delay a sale in the expectation of further land price increases.

Second, the planning departments of Japanese cities are not capable of fully using the control privileges afforded to them by the law. For instance, to effectively apply the control possibilities of the District Planning Law of 1980 - a Japanese version of the German *Bebauungsplan* - each ward of Tokyo would have to have hundreds of skilled planning officers, which do, however, not exist. Therefore today only a fraction of all urban developments are subject to any form of planning coordination or control.

A third, and probably most important reason is that there is no public demand for such planning coordination or control. The same Japanese who when travelling in Europe admire the Place Vendôme, the Piazza di Spagna or the market square of Rothenburg cannot see any reason why at home a public authority should interfere in the economic exploitation of urban land by an individual owner.

The result is the well-known clutter of disparate structures of different height, shape, orientation, and purpose found all over Tokyo - picturesque at best but in most cases simply uneconomical, impractical and unsightly. The result are the *pencil buildings*, the unlit courtyards, the obstructed windows and balconies, the ubiquitous waste bins, parking lots, billboards and electricity wiring characteristic for the Japanese cityscape.

There are defenders who celebrate all this as the 'hidden order' of Tokyo (Ashihara, 1989) or admire the 'subtle transition between private and public spaces' in Japanese cities (Greenbie, 1988). However, this typical architects' jargon only testifies a remarkable lack of sensitivity for the simple requirements of a harmonious and practical living environment. It is true that nowhere else as in Japan architects enjoy so much freedom to express their ideas. Indeed there are in Tokyo innumerable examples of exciting, sophisticated and beautiful modern office buildings and houses, which would probably have no chance to pass the scrutiny of, say, a German planning permit official. Unfortunately, they are difficult to find among the much more frequent examples of thoroughly commercialised cheap or bombastic architectural staple food found everywhere.

Under these circumstances it is almost a miracle that so many of the old residential neighbourhoods still exist. Their human scale and sophisticated layout built on mutual consideration, respect and cooperation, their economical use of urban space and efficient methods of car restraint make them examples worth studying for European planners. Unfortunately, they are more and more difficult to find. It seems that during the rapid urbanisation process the harmony and economy of the traditional Japanese house, which once stimulated the avantgarde of the modern movement of world architecture, such as Frank Lloyd Wright, Mies van der Rohe or Walter Gropius, has largely been forgotten. The rediscovery and revitalisation of these qualities could be a challenging task for modern affluent Japan.

Policy Alternatives

The Metropolitan Government expects the population of Tokyo to grow to 12.3 million in the year 2005, 3.7 percent more than in 1985. However, provided that no major disturbances will affect the development of the Japanese economy, its daytime population will reach 14.8 million, 5.6 percent more than in 1985. That means that the 'commuter gap' between the daytime and nighttime populations will increase from 2.18 million in 1985 to 2.52 million in 2005. Of the inbound people, 1.46 million will be coming to the four central wards of Tokyo (see Table 1), 23 percent more than in 1980. It is predictable that the 500,000 new residents will need housing, but also that the 11.8 million already living in Tokyo will want to improve their housing conditions as the Japanese society gets more affluent. The additional housing demand thus generated will put enormous pressure on the land market and stimulate further land price increases.

There have been numerous proposals how to cope with the problem of high land prices and long commuting times. They can be roughly classified into seven groups.

(1) Policies to create new land

These policies aim at increasing the supply of land by creating new land underground, on the water, or in the air. The most substantial land gains are expected from land reclamations from Tokyo Bay. In the northern part of the Bay housing for 60,000 people and workplaces for 110,000 people are planned on several artificial islands. More than one hundred other schemes have been proposed. These projects have one thing in common: Because of their high construction costs, their financing schemes work only under the prospect that the land they create can be sold after completion at market prices. So these projects cannot be expected to bring land prices down, even though they may take some pressure from central Tokyo. The effect on commuting time depends on the number of residences that will eventually exist in the new developments.

(2) Policies to mobilise untapped land supply

These policies aim at making it less attractive for land owners to hold vacant land. The greatest impact is expected from abolishing the tax privilege of farming land owners in suburban areas (Hanayama, 1986). If the property tax on suburban agricultural land would be made equal to that on residential land, most farmers would be forced to sell or develop their land. Depending on the amount of supply released, land prices should go down. This would lead to shorter commuting times. However, the new property law going into effect in 1992, has again failed to solve this problem as it

retains the privileges of suburban farmers. The effects of an increase in the tax on capital gains from land sales are difficult to predict. In the case of speculative land transactions the effect on price formation is likely to be minimal. Other proposals include an increase in the city planning tax or compulsory inclusion in land readjustment schemes (Hanayama 1986). Increasing the city planning tax would have a similar effect as the property tax except that it would also increase the tax load of residential lots. Land readjustment actually reduces the amount of residential land, the new lots however have a higher use-value and may carry more dwellings, so commuting times would decrease. Land prices are likely to go up.

(3) Policies to increase housing supply

One way to protect households from the financial burden of high land prices and rents is to subsidise housing construction. In the Tokyo metropolitan area there have been extensive housing projects both by the Japan Housing Corporation and by local government. Being in general high-rise developments, these projects have helped to fight urban sprawl. However, as land for them had to be bought at market prices, they have not contributed to a reduction of land prices. Because of high land prices, in particular housing projects of the Japan Housing Corporation have tended to be at distant locations and have thus effectively contributed to the increase in commuting times.

(4) Policies to subsidise housing demand

Besides subsidising housing projects, housing subsidies can be given to households in form of housing loans or allowances. Housing loans from public loan corporations have lower interest rates than private bank loans, but not everybody is eligible. With rising land prices, not only the number of households being in debt has grown considerably, but also the share of their income required for monthly instalments and the duration of repayment have increased (Shitara and Sugimoto, 1985). Housing loans create demand at market price and hence stimulate land price development. Many large corporations, in particular foreign firms, give housing allowances to their employees to make it possible for them to live in Tokyo. Housing allowances frequently exceed the salary. Clearly they create demand in the high-price sector stimulating rent increases. In fact a special market of luxury apartments and houses has developed in the southwestern suburbs of Tokyo to cater to the growing number of such households.

(5) Policies to subsidise commuting

Practically all firms subsidise the commuting expenses of their employees by commuting allowances. While it is fair that at least the financial burden of long commuting is taken from commuters, it has the undesirable effect that when choosing a residence they consider only travel time. If they had to pay for commuting from the same budget as for housing, many households would probably choose a closer location. The government supports this system of wrong incentives by tax-exempting expenditures for commuting allowances by employers up to a limit of ¥50,000 per month, good for 100 km of commuting. To abolish the tax exemption of commuting allowances would be a first but unpopular move to discourage long commuting. Another certainly even more unpopular policy would be to raise public transit fares. While this would be highly effective in reducing average commuting distances, it would do so at the expense of those who are the least to blame for the long commuting.

(6) *Policies to reduce commuting time*

The most direct way to reduce long commuting times, is to provide faster transport. On existing commuter rail lines this can be achieved through higher train speeds, shorter stops and more frequent trains. In fact all of these measures have been extensively applied to produce the impressive efficiency of the public transportation system in Tokyo. Therefore dramatic further reductions in the door-to-door journey times are not likely. The greatest impacts will occur where entirely new lines open up land at the periphery of the metropolitan area for commuting. The irony is that such a transport improvement, under the conditions of a speculative land market, may contribute to its extension. With an upward sloping demand curve, the added land supply does not help to bring land prices down, instead, through the land price increase along the line, forces many households to move farther out. The benefits of the new line largely go to the developers and land owners, while the households, through higher land prices and longer commuting times, are in a worse situation than before. A similar phenomenon in the Munich metropolitan area was described by Kreibich (1978).

(7) *Policies to reclaim transport costs*

These policies originally were discussed to open up new channels of financing transport infrastructure in the face of rising construction costs and land prices using the principle of value captures (Hayashi 1989). However, some of these measures serve also to distribute the benefits and burdens of transport improvements in a more equitable way between land owners and land users. If for instance land owners along a new rail line are charged a higher property tax in proportion to the increase in price of their property due to the new line, a fairer distribution of benefits would result. Apart from the difficulties of objectively imputing the benefits to individual lots, the problem is that nothing can hinder the land owners to pass these extra costs on to their tenants or buyers, in which case the value capture measure would contribute to justifying further land price increases. A positive effect would result in the case of speculative land hoarding as it would make it more expensive to withhold vacant land from the market.

Comparison of policies

Summarising the policies reviewed so far, it is possible to give an overview of their most likely impacts in Table 2:

It is apparent that there are a number of policies which might mobilise suburban land presently withheld from the market, but only few policies in which the additional supply would also lead to reductions in land prices. Of these, raising agricultural land taxation to the level of residential land, thus creating a land holding tax, would probably be the most successful.

All sorts of financial assistance to households, be it in form of loans or allowances, improve their housing situation, but at the same time create demand at market conditions and thus reinforce high land prices and long commuting. To increase public transport fares would reduce commuting times, but at unacceptable social costs. Faster trains would do the same, but would induce land price increases likely to outweigh that benefit. Transport investments will make commuting faster, but may contribute to further land price increases, even where they make new land supply at the periphery of the urban area accessible. In that case they may even make commuting times longer.

Table 2. Impacts of policies on the land market and commuting.

Policy	Likely impact on		
	Land supply	Land prices	Commuting time
(1) Land reclamation	++	-	-
(2) Land holding tax	+++	--	---
Capital gains tax		-	
City planning tax	++	-	-
Land readjustment	+	+	-
(3) Public housing			+
(4) Housing loans		+	
Housing allowances		++	
(5) Commuting allowances			++
Fare increases			--
(6) Faster trains		+	-
New lines	++	+	++
(7) Value captures	+	+	

Legend: +/+/+/+++ small/medium/large increase -/--/-- small/medium/large decrease.

In short, except the land holding tax, there is no single policy that would achieve the two objectives of lower land prices and shorter commuting times without negative side effects. The land holding tax for suburban agricultural land, however, seems to be the most difficult to implement because it collides with vested political interests.

Conclusions

It has been shown that the extreme decentralisation of population in the Tokyo metropolitan area is a consequence of high land prices and fragmented land ownership. The exaggerated land prices, however, are less the result of land scarcity but of large-scale speculation and withholding of land due to imbalances in the property tax system. It was also shown that transport investments, under the conditions of a speculative land market, may contribute to increasing land prices and even commuting times. The review of policies addressing the two objectives of reducing land prices and commuting times showed that a change in the property tax making withholding of agricultural land in suburban areas more expensive would be most effective.

However it was also suggested that the present spatial organisation of the Japanese city, including high land prices, small dwellings and long commuting times, are elements of a coherent system the functioning of which has been an important precondition for the economic success of Japan. If one element of it is changed, the whole system is transformed.

There are two ways to draw conclusions out of this. The first would be that the problems of Tokyo are not genuinely urban problems but have their cause in the one-dimensional growth orientation of the Japanese society and so cannot be solved by

urban planning at all. If this view is correct, only a thorough transformation of the financial and economic system of the country can put an end to the destructive impacts of land speculation on the city. An alternative view would hold that reform policy in Japan would be in the first place urban policy and that changing the Japanese city would trigger a long-term process of redirection of societal goals. From a European perspective, the example of Tokyo can teach a lesson to fight similar harmful tendencies now already in full force in London and Paris, but also beginning to appear in lesser European cities such as Brussels, Madrid, Munich or Berlin.

Epilogue

In the history of urban land booms there has not been a single case in which exaggerated land prices have been gracefully reduced to a normal level. In all cases the collapse was sudden and had disastrous consequences such as failed banks, vanished fortunes and crippled communities (Meier, 1989). The collapse of the Tokyo land market, however, would be of a new magnitude. It has been estimated that a decline of land prices by 30 percent would destroy assets equivalent to 25 percent of a year's GNP of Japan with yet unpredictable consequence for the international financial system.

That the bubble will burst some day is as certain as the next Tokyo earth quake, but it is equally unknown when. In 1989 for the first time land prices in Tokyo remained nearly stable but continued to rise even more rapidly in Osaka and Nagoya, in 1990 they picked up again in Tokyo though at a considerably lesser rate than in the 1980s. These minor irritations were enough to lead to the near failure of a number of Tokyo real estate firms and spectacular rescue operations by banks. The Finance Ministry urgently advised banks to restrict loans to real-estate customers. At the Tokyo stock market, in 1990 real estate stocks went down by 60 percent (Newsweek, March 25, 1991). It is said that half of the approximately one thousand major real estate companies in Tokyo are in difficulty (DIE ZEIT, 15 March 1991).

Is that the beginning of the end? The financial experts are still cautious to predict a quick collapse. They point to the strong demand and near-zero vacancy rates on the office market in Tokyo and believe that the big banks will do what they can to contain the damage by "warehousing distressed property for a while", but there are limits to that as real estate credits make up 25 percent of their loan portfolio (Newsweek, 25 March 1991).

Whatever happens and at which speed, the adjustment processes ahead will not be pleasant. Though the main victims will be the big speculators, many thousands of small buyers will find themselves in debt for the rest of their life for property worth only a fraction of what they bought it for. For urban planning the situation after the crash would be both a relief and a new menace. On the one hand, it would be possible again to acquire land for the badly needed infrastructure. On the other hand, planning authorities would be faced with a huge demand for more spacious housing hitherto artificially constrained by the high costs of land - a demand that, if satisfied, would fundamentally change the Japanese way of life.

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