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No.4

Population Development and Social Problems in the Inner City and  
Suburbs of the Tokyo Metropolitan Area

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and  
Social Security Research  
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### Introduction

According to the United Nations (1995), Tokyo has been the largest urban agglomeration in the world since 1970. From the same data, the tempo of the population growth of Tokyo is especially remarkable in the period 1950-1980, compared with other large agglomerations like New York, London or Berlin. The author focuses here on this rapid urbanization and its consequences in the Tokyo metropolitan area.

### Population development of Tokyo

Because of a lack of sufficient statistics, two definitions will be adopted for the Tokyo metropolitan area in this paper, namely the Tokyo Metropolitan Region (TMR) in this section and the Tokyo Metropolitan Area (TMA) in the next section. The TMR is defined on a prefectural level, composed of the four prefectures; Tokyo-to, Saitama-ken, Chiba-ken and Kanagawa-ken. Tokyo-to is surrounded by the other three prefectures. On the other hand, the TMA consists of 163 municipalities defined by the commuting flows to the central city derived from a Population Census<sup>1</sup>.

Fig.1 shows population growth of the Tokyo Metropolitan Region (TMR) and Tokyo-to. The population of the TMR has grown rapidly since 1950s, in particular in the period between 1950 and 1975, from 15 million to 27 million, while the population of Tokyo-to has been almost constant since 1965. The increase since 1965 has therefore occurred

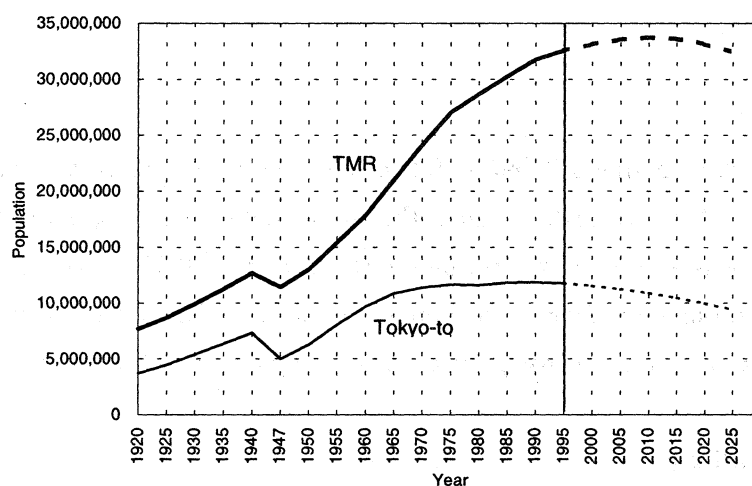
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<sup>1</sup> Central city refers to 23 Wards of Tokyo and the surrounding area consisting of those municipalities that satisfy the following two conditions: 1) The number of resident workers commuting to the central city amounts to 10 % or more of its total resident workers, and 2) the area is contiguous to the central city or to one municipality defined as a surrounding municipality. The data from the 1980 Population Census were selected for defining the TMA in this paper because 1980 is located in the middle of the study period.

only in the three surrounding prefectures. The total population of the TMR in 1995 reached 32 million, and in any case more than doubled during the last 40 years. We should recognize that the TMR is a young metropolis, because a large part of its population are migrants (first generation) and their children (second generation).

Fig.1 also illustrates future population projections conducted by National Institute of Population and Social Security Research. The TMR population is projected to increase gradually but slightly until 2010 and to reach its peak, while the population of Tokyo-to already shows a decreasing tendency.

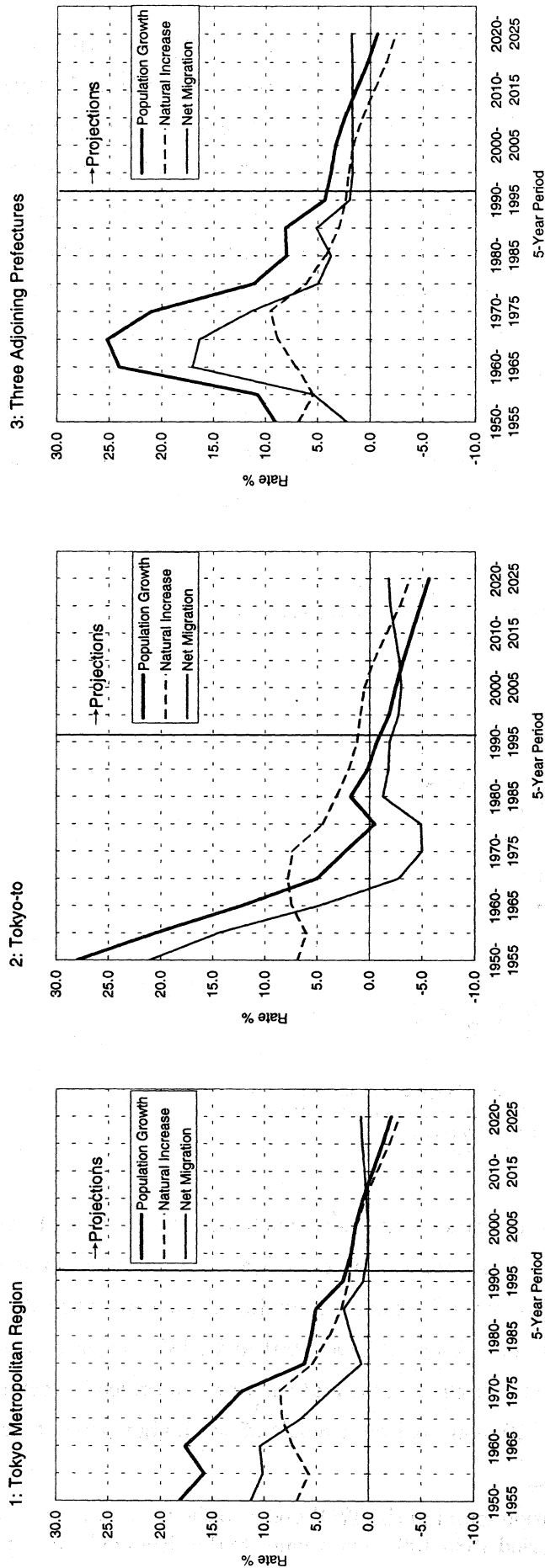
Fig. 1 Population Development of Tokyo Metropolitan Region (TMR)  
(1920-1995,1995-2025)



Note: Tokyo Metropolitan Region consists of Tokyo-to and other three adjoining prefectures (Saitama-ken, Chiba-ken, Kanagawa-ken).  
Source: Population Census of Japan (1920-1995)  
Population Projection by Prefecture 1995-2025, National Institute of Population and Social Security Research, 1997.

Population growth can be divided into two components, namely natural increase and net migration. We will examine the population development of the TMR, Tokyo-to and the three adjoining prefectures in detail in Fig. 2. During the periods 1950-1955, 1955-1960, 1960-1965 and 1965-1970, the rate of population growth in each period has kept very high around 15-20% in the TMR, while the rate has been about 5 % since the period 1970-1975. We can observe that the population growth rate has been determined mainly by the net migration until recent years. However, according to the population projections, the population growth in the future will depend on the natural increase. Natural increase rate of the TMR had its peak in the period 1970-1975. This coincides with the period when the second generation of the baby-boomers was born. While the first baby-boomers were born between 1946-1948 mostly in the non-metropolitan area, the second baby-boomers were born mainly in the metropolitan area because of the migration of their parents' generation.

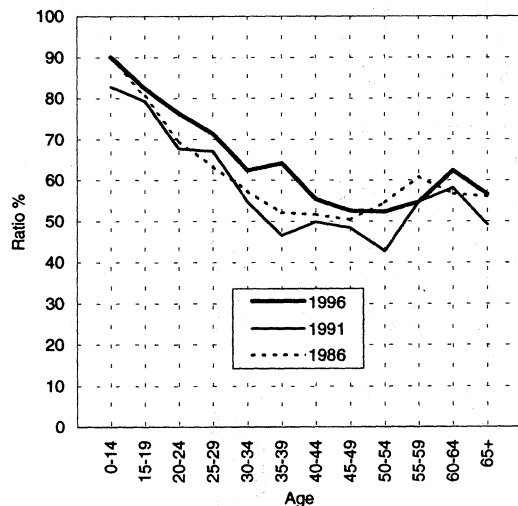
Fig. 2 Changing Population by Natural Increase and Net Migration (1950-1995, 1995-2025)



Note: Tokyo Metropolitan Region consists of Tokyo-to and other three adjoining prefectures (Saitama-ken, Chiba-ken, Kanagawa-ken).  
 Source: Population Census of Japan (1950-1995), Vital Statistics of Japan (1950-1995).  
 Population Projection by Prefecture 1995-2025, National Institute of Population and Social Security Research, 1997.

The second and third panels of Fig.2 illustrate the rates for Tokyo-to, the core area of the TMR and for the three surrounding prefectures respectively. While the both areas show a similar tendency in the natural increase, we can find a remarkable difference in the net migration. The rate of net migration in Tokyo-to had a peak in the period 1950-1955 or before, and since the period 1965-1970 it has shown decrease, while the total population of the TMR has still increased<sup>2</sup>. However, in the surrounding prefectures, the peak of the net migration rate reached its peak later in the 1960-1965 and 1965-1970 periods. The suburbanization in population hence began in the 1960s and mass out-migration from the central area to the surrounding area of the TMR was observed. Population growth in the surrounding area has calmed down since 1980. Both in Tokyo-to and in the surrounding prefectures, the population growth rate is projected to decline in the future due to the negative natural increase caused by low fertility.

Fig.3 Ratio of the TMR Residents born also in the TMR by Age Group



Note: TMR consists of Tokyo, Saitama, Chiba and Kanagawa.  
 Source: Migration Survey (1986, 1991, 1996), National Institute of Population and Social Security Research.  
 n=7504(1996), 5184(1991), 4087(1986)

Based on the data from the migration surveys conducted by the National Institute of Population and Social Security Research, we can calculate the native/non-native ratio of the TMR residents in connection with their place of birth. Fig.3 shows the ratio by age group derived from the migration surveys of 1996, 1991 and 1986. In each survey, the ratio of 0-14 age group shows the highest value and the ratio continues to decline up to the age groups around 40 or 50 years old as a result of the higher percentage of the

<sup>2</sup> The small peak of net migration found in the TMR and also the three surrounding prefectures during in the period 1985-1990 corresponds to the "Bubble Economy".



migrants to the TMR. In the age groups of 40-54, the ratio of the natives reaches barely 50%. Since the older generation did not experience mass migration, the ratio increases slightly after 55 years old. Comparing the three lines for each year, the 1996 line is located a little higher than those of 1991 and 1986, which shows a tendency toward native dominance in the TMR. We can also find from these surveys incidentally that more than 90% of those born in the TMR are still living in the TMR. The TMR natives do not move out from the TMR so often.

This section has confirmed us of the following points. Firstly, the population in the TMR has increased rapidly since the 1950s and it is composed mainly of migrants and their children<sup>3</sup>. Secondly, the population growth has occurred almost solely in the surrounding prefectures since 1960s. Thirdly, as a consequence of this process, the non-native residents have occupied the TMR to some extent, but the ratio of the natives is rising in recent years.

#### **Pattern of Suburbanization - Sedentary Process-**

We will discuss in this section a spatial pattern and mechanism of suburbanization in Tokyo. Here we focus on the Tokyo Metropolitan Area (TMA) defined by municipality (Fig.4), which almost corresponds to a sphere within a radius of 50 kilometers from the JR Tokyo Station.

As often pointed out (e.g., Tanabe 1988; Wegener 1994), a suburbanization process of the TMA shows a finger-like extending pattern along the radial railway lines. Fig. 5 demonstrates a zonal area around 40 kilometers from the center, which was rapidly urbanized and populated in 1970-1975. Fig. 6, showing the proportion of population aged 30-34 in each municipality in 1975, has a similar spatial pattern to Fig.5. The age group 30-34 in 1975 can refer to those just married or couples with small children, and they are assumed, from Fig.5, to have often settled in the suburbs in the period 1970-1975. In the suburbanization process of the TMA approximately until 1980, the age group 30-34 tended to be concentrated in the newly urbanized area, and the urbanized area has expanded outward gradually year by year. This formed a concentric zonal residential segregation pattern by age group like a tree-ring, with the 30-34 age group located in the most exterior zone at all times.

For the above-mentioned sedentary mechanism, we would like to mention the following six necessary conditions; the former three conditions are behavioral and the latter three are institutional. In the course of post-war economic development, the Japanese society met these conditions at least in the 1960s and 1970s, and

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<sup>3</sup> As the other side of this concentration, depopulation became serious in many regions in the non-metropolitan area.

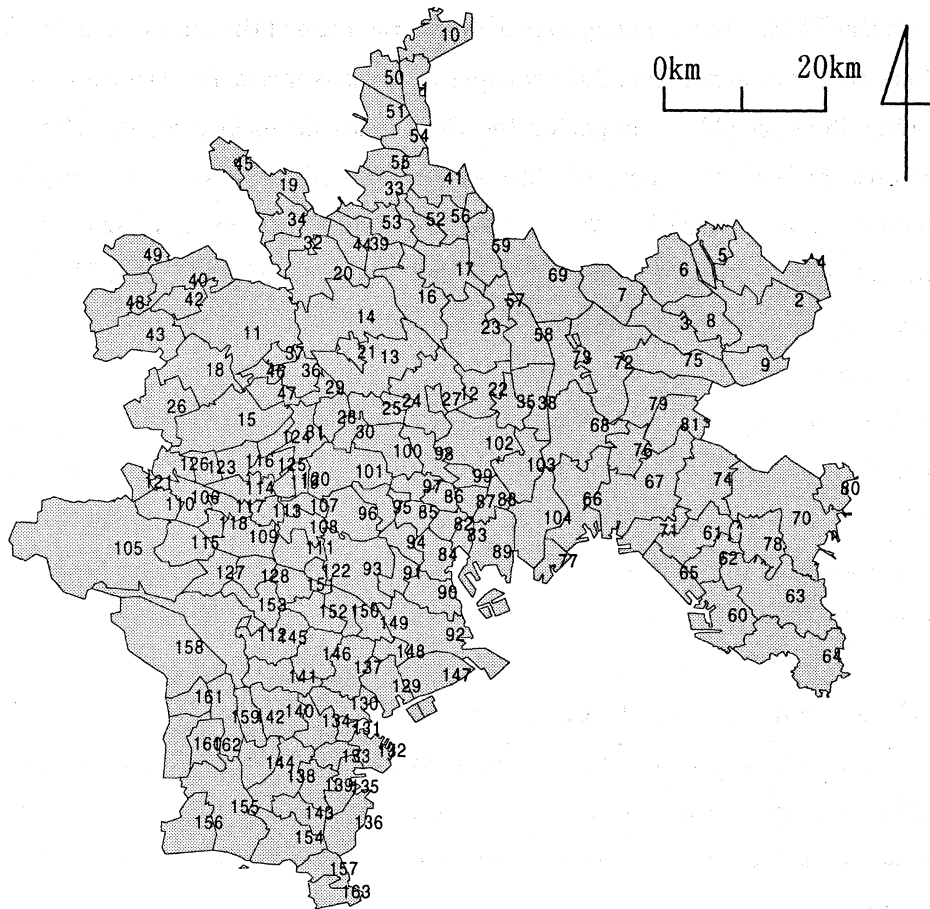
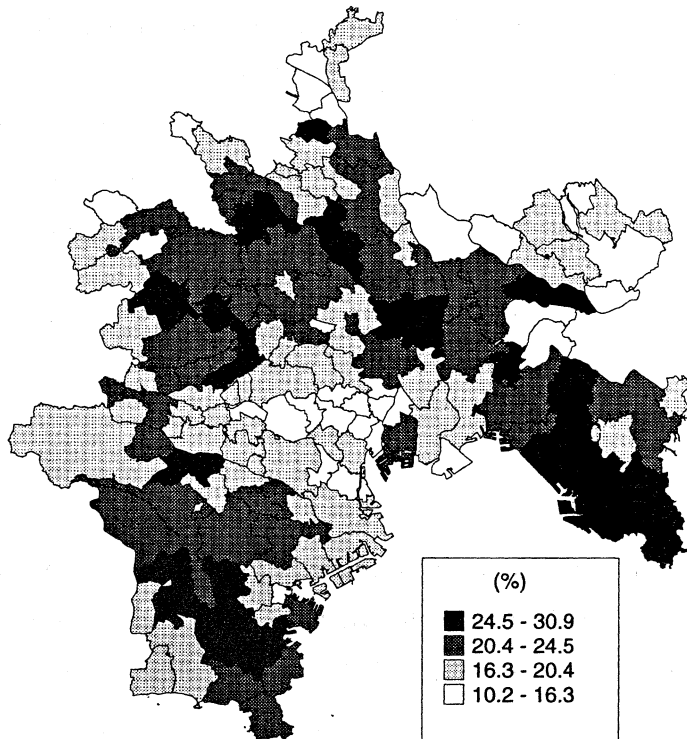


Fig. 4 Tokyo Metropolitan Area Composed of 163 Municipalities in 1995

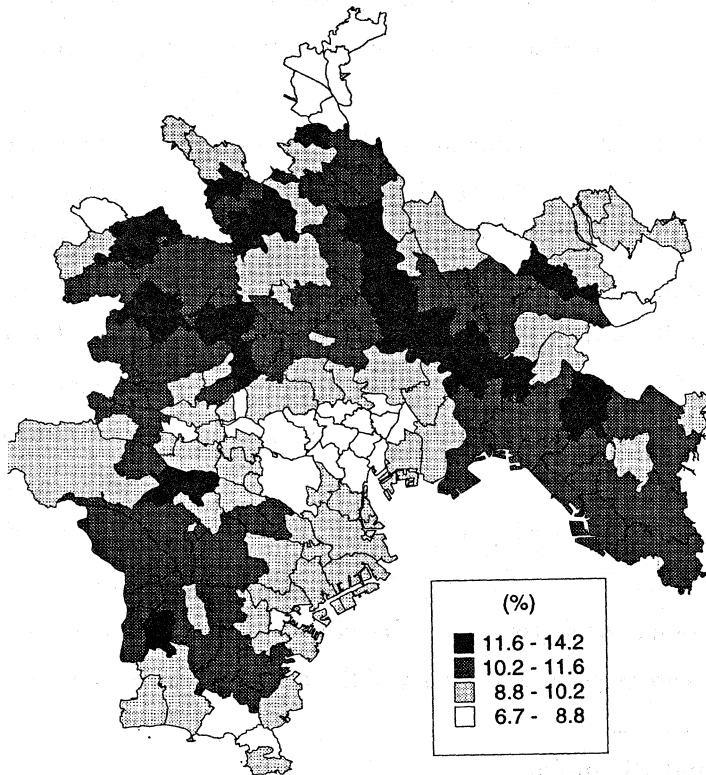
- |                   |                     |                   |                         |                     |
|-------------------|---------------------|-------------------|-------------------------|---------------------|
| 1 Koga-shi        | 34 Kitamoto-shi     | 67 Funabashi-shi  | 100 Itabashi-ku         | 133 Minami-ku       |
| 2 Ryugasaki-shi   | 35 Yashio-shi       | 68 Matsudo-shi    | 101 Nerima-ku           | 134 Hodogaya-ku     |
| 3 Toride-shi      | 36 Fujimi-shi       | 69 Noda-shi       | 102 Adachi-ku           | 135 Isogo-ku        |
| 4 Ushiku-shi      | 37 Kamifukuoaka-shi | 70 Sakura-shi     | 103 Katsushika-ku       | 136 Kanazawa-ku     |
| 5 Kukizaki-machi  | 38 Misato-shi       | 71 Narashino-shi  | 104 Edogawa-ku          | 137 Kohoku-ku       |
| 6 Ina-machi       | 39 Hasuda-shi       | 72 Kashiwa-shi    | 105 Hachioji-shi        | 138 Totsuka-ku      |
| 7 Moriya-machi    | 40 Sakado-shi       | 73 Nagareyama-shi | 106 Tachikawa-shi       | 139 Konan-ku        |
| 8 Fujisiro-machi  | 41 Satte-shi        | 74 Yachiyo-shi    | 107 Musashino-shi       | 140 Asahi-ku        |
| 9 Tone-machi      | 42 Tsurugashima-shi | 75 Abiko-shi      | 108 Mitaka-shi          | 141 Midori-ku       |
| 10 Nogi-machi     | 43 Hidaka-shi       | 76 Kamagaya-shi   | 109 Fuchu-shi           | 142 Seya-ku         |
| 11 Kawagoe-shi    | 44 Yoshikawa-shi    | 77 Urayasu-shi    | 110 Akishima-shi        | 143 Sakae-ku        |
| 12 Kawaguchi-shi  | 45 Ina-machi        | 78 Yotsukaido-shi | 111 Chofu-shi           | 144 Izumi-ku        |
| 13 Urawa-shi      | 46 Fukiage-machi    | 79 Shonan-machi   | 112 Machida-shi         | 145 Aoba-ku         |
| 14 Omiya-shi      | 47 Oi-machi         | 80 Shisui-machi   | 113 Koganei-shi         | 146 Tsukushi-ku     |
| 15 Tokorozawa-shi | 48 Miyoshi-machi    | 81 Shiroi-machi   | 114 Kodaira-shi         | 147 Kawasaki-ku     |
| 16 Iwatsuki-shi   | 49 Moroyama-machi   | 82 Chiyoda-ku     | 115 Hino-shi            | 148 Saiwai-ku       |
| 17 Kasukabe-shi   | 50 Hatoyama-machi   | 83 Chuo-ku        | 116 Higashimurayama-shi | 149 Nakahara-ku     |
| 18 Sayama-shi     | 51 Kitakawabe-machi | 84 Minato-ku      | 117 Kokubunji-shi       | 150 Takatsu-ku      |
| 19 Konosu-shi     | 52 Otone-machi      | 85 Shinjuku-ku    | 118 Kunitachi-shi       | 151 Tama-ku         |
| 20 Ageo-shi       | 53 Miyashiro-machi  | 86 Bunkyo-ku      | 119 Tanashi-shi         | 152 Miyamae-ku      |
| 21 Yono-shi       | 54 Shiraoka-machi   | 87 Taito-ku       | 120 Hoya-shi            | 153 Asao-ku         |
| 22 Soka-shi       | 55 Kurihashi-machi  | 88 Sumida-ku      | 121 Fussa-shi           | 154 Kamakura-shi    |
| 23 Koshigaya-shi  | 56 Washimiya-machi  | 89 Koto-ku        | 122 Komae-shi           | 155 Fujisawa-shi    |
| 24 Warabi-shi     | 57 Sugito-machi     | 90 Shinagawa-ku   | 123 Higashiyamato-shi   | 156 Chigasaki-shi   |
| 25 Toda-shi       | 58 Matsubushi-machi | 91 Meguro-ku      | 124 Kiyose-shi          | 157 Zushi-shi       |
| 26 Iruma-shi      | 59 Showa-machi      | 92 Ota-ku         | 125 Higashikurume-shi   | 158 Sagami-hara-shi |
| 27 Hatogaya-shi   | 60 Chuo-ku          | 93 Setagaya-ku    | 126 Musashimurayama-shi | 159 Yamato-shi      |
| 28 Asaka-shi      | 61 Hanamigawa-ku    | 94 Shibuya-ku     | 127 Tama-shi            | 160 Ebina-shi       |
| 29 Shiki-shi      | 62 Inage-ku         | 95 Nakano-ku      | 128 Inagi-shi           | 161 Zama-shi        |
| 30 Wako-shi       | 63 Wakaba-ku        | 96 Suginami-ku    | 129 Tsurumi-ku          | 162 Ayase-shi       |
| 31 Niiza-shi      | 64 Midori-ku        | 97 Toshima-ku     | 130 Kanagawa-ku         | 163 Hayama-machi    |
| 32 Okegawa-shi    | 65 Mihama-ku        | 98 Kita-ku        | 131 Nishi-ku            |                     |
| 33 Kuki-shi       | 66 Ichikawa-shi     | 99 Arakawa-ku     | 132 Naka-ku             |                     |

Fig. 5 Proportion of Population having Migrated to Present Residence during Jan.1970 - Sep. 1975 (1980)



Source: Population Census of Japan, 1980

Fig. 6 Proportion of Population Aged 30-34 (1975)



Source: Population Census of Japan, 1975

suburbanization occurred as a consequence. The first condition is that a larger part of the 30-34 age group should be non-native and have no chance to succeed to their parents' house. Secondly, they should marry and give birth to babies without delay in accordance to their age, so that they will have a housing demand with large space. Thirdly, wives with pre-school child should not work or work at most part-time, otherwise couples may not choose to live in suburbs far from their work place. Fourthly, work place should concentrate in the central districts and employers pay their employees commuting allowance. Fifthly, there should be a housing policy promoting house ownership. Sixthly, land / housing price should rise much faster than consumer price or income. According to Alden *et. al.* (1994: 35), land prices in the six largest metropolises rose approximately 24 times compared with the consumer index during the period 1955-1989. Fig. 7 illustrates a location of residence purchasable for an average employee household westward from the JR Shinjuku Station. An average income household could purchase a newly-built detached house in Mitaka in 1970, however in 1991 when the land price had a highest peak, such a family could buy a house with the same conditions only in Uenohara of Yamanashi prefecture about 60 kilometers or 90 minutes from the center.

Under these conditions, in particular under the land price explosion, most of the newly married couples with no chance to succeed to their parents' house tried to buy their own house as soon as possible. Although socio-economic status of a household has been regarded as the most important factor for shaping a spatial differentiation in many Western cities, it has not been, as shown above, the most important determinant in the TMA.

Thus, the main stream of intra-metropolitan migration flows goes outward from the central area to suburbs. If we examine the flows precisely in terms of origin-destination matrix by municipality, we will obtain a spatial pattern of migration shown in Fig.8. Municipalities are summed up into six radial sectors, each of which extends along one or two railway lines (Nakagawa 1995). The TMA is so large that not only migration but daily life of each resident is included almost only in one sector except for the household head who commutes to the three central wards<sup>4</sup> (Tanabe 1988: Okamoto 1997).

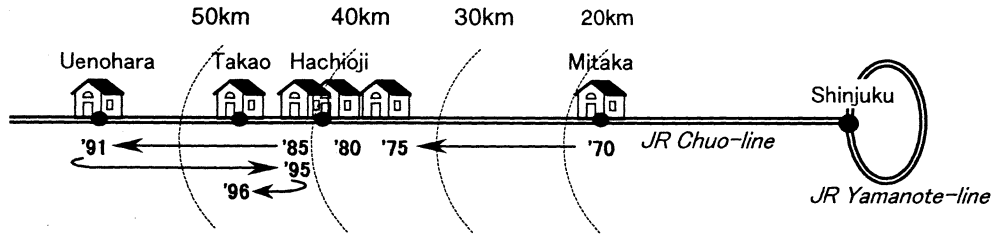
If we discuss social difference referring to an educational background within the TMA, the residents in sector 5, 6 and 7 in general tend to have higher social status. Moreover, investigating the educational background<sup>5</sup> of the stayers and movers in these three sectors from a cohort-by-cohort perspective, that of the stayers in municipalities located

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<sup>4</sup> Chiyoda-ku, Chuo-ku and Minato-ku.

<sup>5</sup> Measured by the percentage of university graduates.

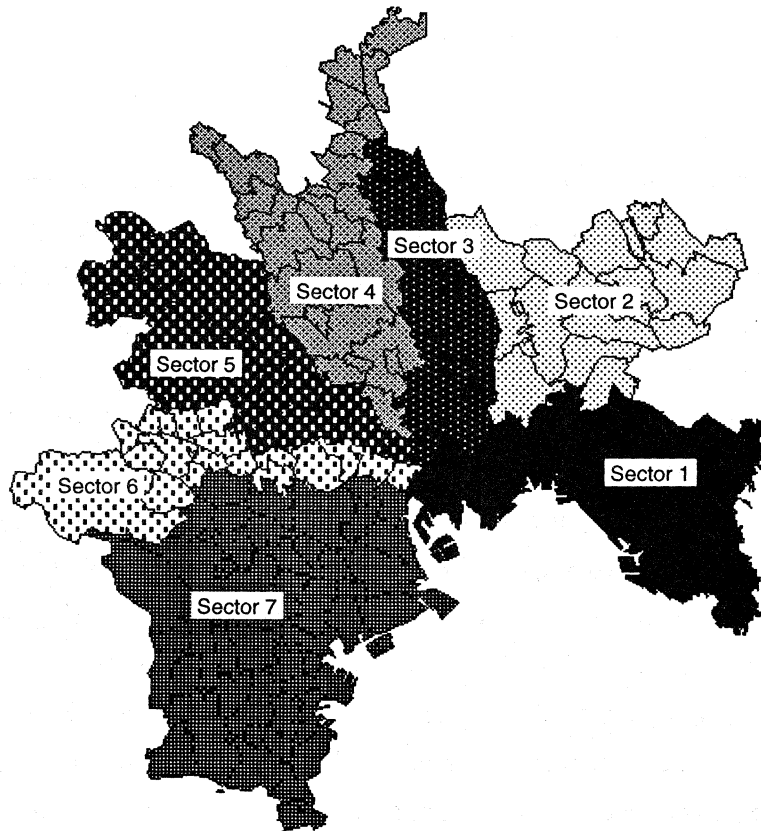
Fig. 7 Location of a Purchasable Residence within 5 Times the Annual Income of a Household



Notes: Residence means here newly-built detached house with 98 square meter floor space and 100 square meter land located about 10-15 minutes on foot from railway station  
Household is headed by an employee

Source: White Paper for Housing 1997, Tokyo Metropolitan Government

Fig. 8 Migration Pattern in the TMA (1990)



Source: Population Census of Japan, 1990

within 20 kilometers from the center is almost the same or a little higher than that of movers, those who moved out<sup>6</sup> from such municipalities (Nakagawa 1995).

In this section we considered pattern and process of suburbanization in the TMA, and found the following results. The spatial pattern of suburbanization shows first of all, a concentric zonal pattern like a tree-ring under the six behavioral and institutional conditions. Secondly, this pattern has been formed as a consequence of outward migration flows from the central area. Thirdly, the so-called filtering process (Grigsby 1963) does not seem to have functioned for the suburbanization of the TMA. Since land prices rose much faster than income, a deciding factor was not only income but also when a household purchases a house, and it depended highly on the age of a husband and a wife. In other words, if one migrated in Tokyo in the 1950s, he had a chance to own a house in a residential area within 20 kilometers from the center, but if another man came to Tokyo first in the 1970s or 1980s, what he could buy was a house located far from the center, even if his social status was considerably higher. It is just like "The early bird catches the worm"! Moreover, the stayers of the inner ring sometimes have higher social status than the movers moved out to suburbs.

#### **Recent Problems - Concluding Remarks -**

Probably, as sensible readers have already noticed, the discussion so far was concerned only with the suburbanization process up to the 1970s or at most to the 1980s. In the last section we will consider recent issues of the TMA in connection with the above mentioned six conditions. Summed up at first, the three behavioral conditions have changed considerably since 1980, however the institutional conditions have not changed fundamentally even if we experienced the "bubble economy"<sup>7</sup> in the second half of the 1980s. We will hence examine the three behavioral conditions one by one.

As shown in Fig. 1 and Fig. 2, population increase, in particular net migration, has slowed down since 1975, while, as Nakagawa (1990) estimated, the proportion and also the absolute number of the native young aged 18-19 have risen gradually in the TMA. The proportion of the native young was 50% in 1965, 48% in 1970, 55% in 1975, 68% in 1980 and 75% in 1985. The proportion is especially high after 1980 or in the cohort born after 1960, which corresponds to the second generation of the migrants, living mainly in suburbs. Thus, the first condition is not satisfied any more. The number of new migrants has declined and that of the natives has increased. In the 1990s, the second generation born after 1960 has reached already the age of marriage and childbearing.

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<sup>6</sup> Most of them are assumed to migrate to suburbs in the same sector.

<sup>7</sup> "Bubble Economy" and its influences on Tokyo were explained in detail in Flüchter and Wijers (1990) and Wegener (1994).

Some of the couples do not need to seek their own residence because they live together with their parents even after their marriage. In particular, the two-earner couples with pre-school child/children prefer to live together with their parents or to live near them expecting their help in child care.

The second and third conditions are also not totally satisfied in recent years. Mean age at first marriage<sup>8</sup> for women in Tokyo-to rose from 25.8 in 1970 to 29.2 in 1995, and total fertility rate fell down from 1.96 in 1970 to 1.07 in 1996 in Tokyo-to and 2.35 in 1970 to 1.37 in 1996 in Saitama-ken. At the same time, labor force participation rate of women aged 30-34 rose from 37.1 % in 1970 to 57.1 % in 1995 in Tokyo-to, and from 39.0 % in 1970 to 46.6 % in 1995 in the surrounding three prefectures. Low fertility does not stimulate a housing demand of large space any more and the rising trend of labor participation of women does not seem to promote living in suburbs. In particular, working women seem to prefer to live in Tokyo-to than in the surrounding area from this statistics.

Under the changing conditions, there still exist families migrating to the suburbs more than 50 kilometers away from the center indeed, the migration behavior has become more and more multifold, and the tree-ring like spatial pattern of segregation by age is hence not so clear in recent years.

Tokyo had been, as mentioned above, dominated by migrants in the 1960s and 1970s, many people had struggled to settle in Tokyo, and as a result the urbanized area extended outward further and further. A novelist Kobayashi Nobuhiko born in 1932 in Nihonbashi in Tokyo wrote sadly but critically as a native resident that the government and firms changed Tokyo fundamentally in the 1960s paying no attention to natives. At that time natives like him were minorities.

However, Tokyo in the 1990s is not a migrant metropolis any more. Even a considerable amount of the third generation of the ex-migrants is born recently. It is still true that a lot of young people come to Tokyo for studying or working every year, but many of them go back within some years and the majority of the remaining stayers in Tokyo is highly qualified in recent years (Nakagawa 1996). Gradually, Tokyo seems to become a city, where only the natives and a few migrants with higher qualification can survive and stay, and where the majority of the new comers are scarcely accepted.

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<sup>8</sup> SMAM (Singulate mean age at first marriage) calculated by the National Institute of Population and Social Security Research.

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