

## Local Public Goods and Property Value in a Model of a Metropolitan Area

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### Abstract.

The idea that the quality of local public goods is fully capitalized into property values has been considered to be the theoretical basis of imposing the property tax on residents. The purpose of this paper is to examine this idea. A metropolitan area model is first set up, and the model is modified to include the relation between the provision level of local public good and tax rate. A small-open city model and a closed-city model are discussed in connection with the tax liability in the aforementioned metropolitan area model framework.

### 1. Introduction

Property tax is imposed on residents as the liability of provision of local public goods. The theoretical basis of imposing property tax on residents is that the quality of local public goods is fully capitalized into property value.

Recently a drastically different perspective on the effects of the property tax is provided by the so-called new view of the property tax, which holds that the property tax is not an efficient benefit tax but a distortionary tax on capital that is borne primarily by capital owners (See Mieszkowski and Zodrow, 1989). Most of the empirical research in this area has focused on the extent to which property taxes and local government expenditures are capitalized into house values.

Assuming a long-run equilibrium with perfectly mobile individuals, capitalization is likely to occur under both views, i. e., the benefit view and the new view, of the property tax. However the nature of capitali-

zation is different in the two cases.

Under the benefit view, fiscal differentials (the present value of all future differences between benefits received and taxes paid on a property) are capitalized into land values. In contrast, under the new view, capitalization reflects the change in land rents that occurs as a result of capital migration induced by tax differentials relative to the national average. Further the expenditure increases in a single community would result in capitalization of the associated fiscal differentials, but should not change the aggregate value of land in the community under the benefit view. In contrast, under the new view, the capital out-migration induced by an increase in the property tax should result in lower land values in the community.

The purpose of this paper is to examine this property tax problem again. In our paper a metropolitan model will be used instead of a regional model (see Hagihara and Hagihara, 1991) for a simpli-

fication.

Tiebout's classic paper (see Tiebout, 1956) is cited as the paper in which the local finance is considered from the viewpoint of the relation between local public expenditure and residents' preference. Tiebout showed that the problem of inefficient provision of a pure public good in an economy with heterogeneous consumers, raised in Samuelson (1954), would be mitigated by the Tiebout hypothesis, that is consumers have an incentive to segregate into homogeneous communities by taste and income, where public goods are provided efficiently.

Oates (1969) showed the validity of the Tiebout hypothesis, by examining the empirical study of the effects of local property taxes and local expenditure programs on property values. The result of the study indicated that local property values bear a significant negative relationship to the effective tax rate and a significant positive correlation with expenditure per pupil in the public schools.

The problem that the output of public services (as well as taxes) influence the attraction of a community to potential residents and thereby affect local property values is studied by many economists: e.g., Brueckner (1979), Edel and Sclar (1974), Hamilton (1976), King (1977), Pauly (1976), Pollakowski (1973), Rosen and Fullerton (1977), etc.. On the other hand, since Ridker and Henning's (1967) study, there has been growing interest in using property value data as a source of information on the benefits to be expected from controlling environmental disamenities such as air pollution, water pollution, and noise; e. g. Polinsky and Shavell (1975 and 1976) and White (1979), etc..

Along with these studies there has been continuing controversy and debate over the proper theoretical framework for the analysis of property values: some argues the theoretical framework from the viewpoint of the short-run aspect. A short-run model framework

corresponds to a closed-city model framework, in which residents' mobility is restricted, whereas a long-run model framework corresponds to an open-city model framework, where perfect mobility is assumed. Nevertheless, there is an inconsistent assumption; that is, perfect mobility is assumed in the short-run model.

In our paper, the problem whether the quality of local public goods is fully capitalized or not is investigated under consistent assumptions, i. e., perfect mobility is assumed in the long-run model and no migration is assumed in the short-run model. According to the classification in our paper, the external and internal models which Starrett (1981) showed is the long-run model and the short-run model, respectively. Furthermore, the effect of the tax liability on property values in both the open-city model and the closed-city model framework is considered.

In section 2 below a metropolitan area model is set up and a bid rent curve (see, e.g. Alonso, 1964) is introduced. In section 3, the model is modified to include the relation between the provision level of local public goods and the tax rate. In section 4, a small-open city model and a closed-city model are discussed in connection with the tax liability. In section 5, the result of the paper is summarized.

## 2. Residential Choice

Consider a simple model of residential choice in which the following assumptions will be introduced. A fixed population lives in a closed metropolitan area and they are partitioned into  $R$  exogenous governmental jurisdictions, denoted by the set  $J = \{1, \dots, R\}$  which collect taxes and provide public goods. An individual consumes the public goods only of the jurisdiction to which he belongs. Let  $g_j$  denote the vector of public goods provided by jurisdiction  $j$ . The

number of residents residing in the jurisdiction is  $N_j$ , and the amount of residential land in the  $j$ -th jurisdiction is  $D_j$ . Each resident must occupy one and only one place, and his income,  $y$ , is independent of his place. Residents have identical tastes and income. Taxes are raised through a tax proportional to the rent. The price of the composite private good is assumed invariant throughout the metropolitan area and is set at unity. Land is assumed to be the only input into the production of housing; the land is owned by agents living outside of the metropolitan area, and it is supplied perfectly inelastically within each jurisdiction. Jurisdictions lie at various distance from a central business district (CBD) in the metropolitan area, where there are many common public services to the residents in the metropolitan area and the distance is taken to be identical for all places in a given jurisdiction. The commuting costs from the  $j$ -th jurisdiction to the CBD will increase with distance from the CBD. These costs will be represented by the function  $k(t_j)$ .

Given these assumptions, the utility function for a representative individual is denoted by

$$U = U(x, q, g_j, t_j) \quad (1)$$

where

$x$  = consumption of a composite private good;

$q$  = consumption of housing;

$g_j$  = quality of local public goods in the  $j$ -th jurisdiction;

$t_j$  = distance from the CBD to the  $j$ -th jurisdiction.

It is assumed that

$$U_x > 0, U_q > 0, U_{g_j} > 0, \text{ and } U_{t_j} < 0.$$

All other things being equal, the individual will prefer to have more than less of the public good. Assume

that, all other things being equal, a rational individual will prefer a more accessible location to a less accessible one. Since  $t$  represents the distance from the CBD, and thus the distance the individual must commute to the principal place of shopping, amusement, and employment, it may be said that accessibility decrease as  $t$  increases. In other words, the individual would prefer  $t$  to be smaller rather than larger, so that  $t$  may be thought of as a good with negative utility.

The budget equation for a representative individual is as follows:

$$y = x + R_j q + k(t_j) \quad (2)$$

where

$y$  = income;

$R_j$  = rent in the  $j$ -th jurisdiction;

$k(t_j)$  = transportation cost from the  $j$ -th jurisdiction to the CBD.

The residential choice for a representative resident may be stated as

$$\text{Max}_{x, q, g_j, t_j} U(x, q, g_j, t_j) \text{ subject to } y = x + R_j q + k(t_j). \quad (3)$$

The indirect utility function is introduced. A residents' utility is expressed as a function of income net of transportation costs from the  $j$ -th jurisdiction, rent at the  $j$ -th jurisdiction, quality of local public good at jurisdiction  $j$ , and distance from jurisdiction  $j$  to the CBD. Since the indirect utility function is related to each specific location, the price of the composite consumption good does not enter into it since this price is assumed to be the same everywhere. The indirect utility function is

$$V = V(y - k(t_j), R_j, g_j, t_j) \quad (4)$$

All other things being equal, an increase in net income

increases utility; an increase in rent decreases utility; an increase in quality of local public goods increases utility ; an increase in distance decreases utility. Namely, assume that

$$V_1 > 0, V_2 < 0, V_3 > 0, \text{ and } V_4 < 0, \tag{5}$$

where  $V_1$  denotes partial derivative of  $V$ 's first element, and so on.

It is assumed that an individual chooses to reside in the community where it can attain the highest level of utility: i.e., the jurisdiction  $j$  for which  $\max_j V(y - k(t_j), R_j, g_j, t_j)$  is attained. An individual's bid rent function is defined as that the resident would offer for jurisdiction  $j$ , given some indifference level  $V^0$ . That is,  $V^0$  must satisfy the following equation:

$$V(y - k(t_j), R_j, g_j, t_j) - V^0 = 0 \tag{6}$$

From Eqs. (6), the resident's bid for jurisdiction  $j$  is

$$R_j = f(V^0, y - k(t_j), g_j, t_j). \tag{7}$$

Though the form of the bid rent curve cannot be stated explicitly without knowing the form of the utility function, characteristics of the bid rent curve can be stated as follows. Using Eqs. (4), the following equation is derived from  $dV = 0$ :

$$dR_j = \frac{V_1 \left[ \frac{dk}{dt_j} \right] - V_4}{V_2} dt_j - \frac{V_1}{V_2} dy - \frac{V_3}{V_2} dg,$$

We have:

$$\frac{dR_j}{dt_j} = \frac{V_1 \left[ \frac{dk}{dt_j} \right] - V_4}{V_2} < 0 \tag{9}$$

$$\frac{dR_j}{dy} = - \frac{V_1}{V_2} > 0 \tag{10}$$

$$\frac{dR_j}{dg_j} = - \frac{V_3}{V_2} > 0 \tag{11}$$

The sign of  $dR_j / dt_j$  is negative when  $t_j$  increases, other things being equal, jurisdiction  $j$  is a less accessible one and commuting cost rises. When commuting cost rises, less income is left expenditure on  $x$ , and  $R_j$  must fall to allow the individual to maintain his  $x$  consumption. When income increases,  $R_j$  increases. Since utility increases with quality of local public goods,  $R_j$  must rise to allow the individual to maintain his  $x$  consumption.

### 3. Local Expenditure and Tax Liability

Property tax is introduced. Property tax is levied on land values at a constant tax rate,  $\alpha_j$ , i.e.,

$$R_j = r_j (1 + \alpha_j) \tag{12}$$

where

$r_j$  = land values in jurisdiction  $j$ ;  
 $\alpha_j$  = property tax rate in jurisdiction  $j$ .

The budget equation for a representative individual is denoted by

$$y = x + r_j (1 + \alpha_j) q + k(t_j). \tag{13}$$

The indirect utility function is

$$V = V(y - k(t_j), r_j (1 + \alpha_j), g_j, t_j). \tag{14}$$

Similarly as above, it is assumed that

$$V_1 > 0, V_2 < 0, V_3 > 0, \text{ and } V_4 < 0. \tag{15}$$

And we have

$$\frac{dr_j}{dt_j} = \frac{V_1 \left[ \frac{dk}{dt_j} \right] - V_4}{V_2 + V_2 \alpha_j} < 0 \quad (16)$$

$$\frac{dr_j}{d\alpha_j} = \frac{V_2 r_j}{-V_2 + V_2 \alpha_j} < 0 \quad (17)$$

$$\frac{dr_j}{dg_j} = - \frac{V_3}{V_2 + V_2 \alpha_j} > 0 \quad (18)$$

$$\frac{dr_j}{dy} = - \frac{V_1}{V_2 + V_2 \alpha_j} > 0 \quad (19)$$

The sign of  $dr_j/d\alpha_j$  is negative because when the property tax rate increases, less of the fixed rent  $R_j$  is available to the owner, and land values falls. Other signs is the same as before.

Equilibrium state where any resident cannot increase utility by migration, is attained when market values of land is decided such that all residents' utility is equal. Hence, land values in equilibrium market is a decreasing function of distance,  $t_j$ , and property tax rate,  $\alpha_j$ , and an increasing function of quality of local public,  $g_j$ , and income,  $y$ .

The budget constraint of the local government is introduced. Suppose that the cost,  $C_j$ , of providing the public goods is an increasing function of the quality of lcal public goods,  $g_j$ , and the number of residents in the jurisdiction,  $N_j$ :

$$C_j = C(g_j, n_j) \quad (20)$$

The cost function is assumed to exhibit " constant returns to scale":

$$C_j = C_j(g_j) N_j \quad (21)$$

Local tax revenue,  $T_j$ , is raised through a proportional tax,  $\alpha_j$ , on the value of land:

$$T_j = \alpha_j r_j D_j \quad (22)$$

where  $D_j$  is the amount of residential land in the  $j$ -th jurisdiction. If each local government balances its budget, then:

$$C_j(g_j) N_j = \alpha_j r_j D_j \quad (23)$$

Defining  $n_j = N_j/D_j$ , the rent,  $R_j = r_j(1 + \alpha_j)$ ,

$$\text{becomes } n_j C_j(g_j) + r_j \quad (24)$$

Eqs. (24) shows the rent when property tax rate is closely related to the provision of local public goods.

Then the budget constraint of a representative individual is

$$y = x + \{n_j C_j(g_j) + r_j\} q + k(t_j). \quad (25)$$

The indirect utility function is

$$V = V(y - k(t_j), n_j C_j(g_j) + r_j, g_j, t_j) \quad (26)$$

and assume that

$$V_1 > 0, V_2 < 0, V_3 > 0, \text{ and } V_4 < 0.$$

Then we have

$$\frac{dr_j}{dt_j} = \frac{V_1}{V_2} \frac{dk}{dt_j} - \frac{V_4}{V_2} < 0 \quad (27)$$

$$\frac{dr_j}{dg_j} = - n_j \frac{dC_j}{dg_j} - \frac{V_3}{V_2} \neq 0 \quad (28)$$

$$\frac{dr_j}{dy} = - \frac{V_1}{V_2} > 0 \quad (29)$$

The ambiguous sign of  $dr_j/dg_j$  is due to two opposing effects. When  $\frac{V_3}{V_2} > n_j \frac{dC_j}{dg_j}$ , the resident desired the increase of local public goods (or the increase of liability). However, when  $n_j \frac{dC_j}{dg_j} > \frac{V_3}{V_2}$ , he desires the decrease of local public goods(or the decrease of liability).

Given other variables, marginal utility of  $g_j$  is decreasing with increase of  $g_j$ . There is a point where

the decrease of utility which is caused by the increase of liability is not covered. If there is such a point, given some  $t_j$ , a curve which increases with  $g_j$  and after some point it decreases with increase of  $g_j$ .

#### 4. Migration of Residents

##### 4. 1 The open city and the constant tax rate

To fix the level of utility, the urban area is assumed to be small and open. Since the area is open — there is perfect migration between it and other areas —, there will be a common level of utility throughout the system. Because the city is small, this level of utility may be treated as exogenous.

In equilibrium, land values display a pattern such that none of the identical individuals could increase their utility by changing residence. Each individual enjoys a common level of utility,  $V^1$ , which is independent of his location:

$$V^1 = V(y - k(t_j), r_j(1 + \alpha_j), g_j, t_j) \quad (30)$$

Adjustment in land values is the mechanism by which utility is equalized over space. If jurisdiction  $A_1$  is more attractive than jurisdiction  $A_2$ , considering the rent, the quality of the local public goods, and distance at both places, then rents at  $A_1$  are bid up and rents  $A_2$  fall until  $A_1$  and  $A_2$  become equally desirable. This process occurs throughout the metropolitan area, generating the equilibrium rent schedule. As income, transportation cost, and the quality of local public good are given, there is only one land value which brings utility,  $V^1$ . In other words, in this case, since  $V^1$  is exogenously fixed, the change of the quality of local public goods gives no effect on  $V^1$ . The increase in the quality of local public goods in some juris-

diction makes utility increase ( $V_3 > O$ ), whereas land values change in order to hold  $V^1$  constant. Land values rise as being shown in Eqs. (15), so that the decrease in utility ( $V_2 < O$ ) offsets the increase in utility ( $V_3 > O$ ). And  $V^1$  is hold constant. Thus, utility of residents does not change, whereas the benefits from the increase in the quality of local public goods is capitalized into the land values.

##### 4. 2 The open city and the closed relationship between the provision of local public goods and the tax rate

Similarly to the above, land values change in order to hold utility constant. In equilibrium, a common level of utility is

$$V^2 = V(y - k(t_j), n_j C_j(g_j) + r_j, g_j, t_j). \quad (31)$$

$r_j$  changes to offset the effect of the increase of  $g_j$  ( $V_3 > O$ ). In this case, however, the increase in quality of local public goods is connected with the increasing liability of the residents through rent,  $n_j C_j(g_j) + r_j$ . Therefore, since the offset effect in the increase of rent involves a part of the increase of tax liability,  $r_j$  may rise or fall or may not change according to the extent of tax liability. This is the case in which Eqs. (28) occurs. And the case of  $dr_j/dg_j < O$  corresponds to the empirical result in Oates (1969) in which he showed that high property tax rate lowered the property value.

##### 4. 3 The closed city and the constant tax rate

The object of this analysis is short-run. It does not allow migration to or from the jurisdiction. The equilibrium condition, analogous to (30), is

$$V_3 = V(y - k(t_i), r_i (1 + \alpha_i), g_i, t_i) \quad (32)$$

for some  $V_3$  to be determined.

The equilibrium level of utility  $V_3$  is now endogenous since the jurisdiction is isolated from the rest of the system. While utility of the residents increases by an increase in  $g_i$ , the increase in  $g_i$  is not capitalized into land values. For, no migration occurs, so that land values cannot be adjusted by residents' mobility. The aggregate land values in the jurisdiction understates the benefits from the increase in  $g_i$ . In an opposite case, namely, the case of a decrease in  $g_i$ , land values overstate the benefits from the decrease in  $g_i$ .

#### 4. 4 The closed city and the closed relationship between the provision of local public goods and the tax rate

The equilibrium condition in this case is

$$V^4 = V(y - k(t_i), n_i C_i(g_i) + r_i, g_i, t_i) \quad (33)$$

for some  $V^4$  to be determined.

Utility of residents increases with an increase in  $g_i$ , whereas residents' utility decreases with an increase in tax liability,  $n_i C_i(g_i)$ . Utility of residents may increase, decrease or not change, depending on cases in which  $|V_3|$  is larger than  $|V_2|$ ,  $|V_2|$  is larger than  $|V_3|$  and  $|V_2|$  is equal to  $|V_3|$ , respectively. Since the residents do not move at all,  $r_i$  does not change. Thus, in the case where the increase of utility by the increase in  $g_i$  is so large that it offsets the decrease of utility by the increase in tax liability,  $V^4$  increases. But since  $r_i$  does not change, the change in aggregate land values will understate benefits. On the contrary, in the opposite case, the change in aggregate land values will overstate benefits.

#### 4. 5 Intermediate cases

Intermediate cases between the purely closed and purely open cities might in fact be more relevant for policy purposes.

In the first place, in the case of the constant tax rate, an increase in  $g_i$  makes both residents' utility and aggregate land values increased. However, an increase in residents' utility is not fully capitalized into land values, so that aggregate land values understate benefits. Since benefits are more capitalized into land values in the long-run situation than in the short-run, the public investment in local government becomes efficient in the long-run situation according to Brueckner's fiscal efficient condition, viz. public investment in local government is efficient so as to make the aggregate land values maximum (see Brueckner, 1979).

Secondly, the case of the closed relationship between the provision of local public goods and the tax rate is concerned. In the case where tax liability is so large by the increase in local public goods, both residents' utility and land values decrease. The decrease in residents' utility is capitalized into land values. However, since the increase in local public goods brings no benefit, the local government invests inefficiently. On the other hand, in the case which tax liability is not so large, utility of residents increases. If land values increase with the increase of utility, then benefits are capitalized into land values. In this case the local government invests efficiently.

### 5. Concluding Remarks

No matter whether the constant tax rate or not, the result of each case varies depending on whether the full adjustment of land values is done or not. In other words, availability of residents' mobility changes the

adjustment mechanism of land value. When the adjustment mechanism works sufficiently, the quality of local public goods is fully capitalized into property values in a small-open model. However, in the closed-city model and the open-city model with tax liability, the quality of local public goods is not fully capitalized into property values. Land values may both understate and overstate quality of local public goods.

In the intermediate cases, the quality of local public goods is somewhat capitalized into land value, but is not fully capitalized. Since, in general, we do not know whether the land value effects of the local public goods are an over- or under-estimate of its benefits, the benefits of the local public goods cannot be measured by its effects on land values. Consequently, the property tax is not considered to be a tax on beneficiary.

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## 地域的公共財と資産価値に関する考察 — 都市圏モデル —

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### 要 約

地域的公共財の質は資産価値に完全に資本化されるという考えが住民に対して資産税を課する理論的根拠となっている。しかし、この考えについては理論的に多くの研究者によって疑問がなげかけられている。本考察の目的はこの考えを理論モデルを整理して再度検討することである。

都市圏モデルをまず設定し、このモデルを地域的公共財の供給水準と税率の関係を考慮したモデルに拡張する。開放型小都市モデルと閉鎖型モデルを上記の都市圏モデルによって税負担との関連で議論する。その結果、資本化は認められるものの地域的公共財の質が場合によって過大に評価されたり過少に評価される可能性があり、地域的公共財の便益評価には注意を払う必要がある。したがって、理論的には資産税を応益税とみなすことが難しいことになる。

### Key Words (キー・ワード)

Local Public Goods (地域的公共財), Property Value (資産価値), Capitalization (資本化), Metropolitan Model (都市圏モデル)

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## 新キャンパス完成記念国際シンポジウム

テーマ：「大都市の成長：その限界と管理」

### GROWTH OF MEGALOPOLIS : LIMITS AND MANAGEMENT

趣旨：1970年代に問題となった世界的な「大都市の衰退」は、1980年代に入って克服されたといわれ、1980年代後半には「大都市の再生」が喧伝され、あるいは新たな発展の局面が到来したと楽観的に語られる傾向がある。

特に東京は、世界都市として、最も活動的で魅力的な都市として、大きな発展を続けているとの認識が一般である。しかし、その成長の背後には、不確かな要素が多く存在していることも否定できない。

そして、一方で発展途上国においても、多くの巨大都市が、しかも極めて急激に、多くの問題をかかえながら生成している。まさに「巨大都市の時代」の到来である。

このような時に当たって、先進資本主義国の巨大都市問題をもう一度深く検討し、衰退は確かに克服され、大都市は再生し、今後、問題なく成長を続けられるのかどうかを再検討し、その成長の管理方策を探らうというのがこのシンポジウムの趣旨である。

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専門分野 都市計画学

# The Prospectus of International Symposium on Urban Problems

## GROWTH OF MEGALOPOLIS : LIMITS AND MANAGEMENT

### 1. Background

This symposium will be held by the Center for Urban Studies in Tokyo Metropolitan University.

The symposium will celebrate a new building of the Center for Urban Studies. The center was moved to this place with all other Faculties of Tokyo Metropolitan University in April 1991.

The Center for Urban Studies was established in 1977. The Center is the only institute on urban studies in universities in Japan. Tokyo, where Tokyo Metropolitan University is located, is one of the megalopolis in the world such as New York, Paris, London, Berlin, Seoul, and other Asian cities. Consequently, the symposium was planned to investigate common and/or different features of urban problems in these huge cities.

### 2. Purpose

It is said that the problem of the worldwide "decline of megalopolis" during 1970's has overcome in 1980's. The state of "revival of megalopolis" has been widely known over the world during late 1980's. Further, they tend to say optimistically that a new phase of development in megalopolis has come. Especially, it is generally considered that Tokyo is keeping on growing as an international and active city. The opposite side of the growth, however, there are a number of uncertainties on future states such as population, economic activity, urban environment, and so on.

On the other hand, in developing countries a lot of megalopolis are now growing too rapidly. These cities have also many problems such as overpopulation, environmental degradation, unemployment, and so on. We can just say that "the age of megalopolis" has come.

In this situation, we need to investigate again the problems of megalopolis in developed countries. The purpose of the symposium is consequently as follows.

Firstly, we try to verify the following problems: 1) has the decline of megalopolis really overcome?; 2) can megalopolis revive again and keep on sustainable growth?

Secondly, we try to search for the measure in order to manage the sustainable growth of megalopolis.

### 3. Organizing Committee

The following are the members of the symposium organizing committee.

Dr. Yorifusa Ishida Director of the Center for Urban Studies (CUS).

Dr. Kiyoko Hagihara Associate Professor of the CUS.

### 4. Participants

(i) The invited researchers on urban studies from three fields of research such as Economics, Geography, and Urban Planning : Prof. D. F. Batten, Center for Regional Science Research, University of Umeå ; Dr. D. Henckel, German Institute for Urban Studies, Prof. G. Burgel, University of Paris X.

(ii) The researchers on urban studies in Tokyo Metropolitan University (TMU).

(iii) The researchers on urban studies in other major universities in Japan.

(iv) The researchers and administrative officials in other organizations.

### 5. Venue

The venue of the symposium will be as follows :

The center hall of TMU International House

Tokyo Metropolitan University

1 - 1, Minami - Ohsawa, Hachioji

Tokyo, 192 - 03, Japan

Chairman of the symposium : Dr. Yorifusa Ishida

Tel : 81 - 426 - 77 - 2358

Fax : 81 - 426 - 77 - 2352

### 6. Language used

Japanese and English

### 7. Method of interpretation

Simultaneous interpretation

## Programme

Oct. 25 (Fri. )

9 : 30 10 : 00 Registration

10 : 00 10 : 15 Opening ceremony

Welcome address

by Dr. H. Sano/President, Tokyo Metropolitan University

Symposium on Urban Problems

Chairperson : S. Kurasawa, Faculty of Social Sciences and Humanities, TMU

Former Director of the Center for Urban Studies

10 : 15 10 : 55 "The Network Megalopolis : A Creative Path for Urban Futures?"

by D. F. Batten

10 : 55 11 : 10 Coffee Break

11 : 10 11 : 50 "Berlin after Unification Problems and Prospects of Urban Development"

by Dietrich Henckel

11 : 50 12 : 30 "Social Consequences and Economic Constraints in the Growth of the Paris Area"

by Guy Burgel

12 : 30 14 : 00 Lunch

14 : 00 14 : 40 "Problems on Megalopolis in the Third World"

by Lo, Fu - chen

14 : 40 15 : 20 "Toward the Policy on Growth Management for Tokyo"

by Yorifusa Ishida

15 : 20 15 : 35 Coffee Break

15 : 35 17 : 15 Comment and Discussion

by K. Kobayashi

T. Isobe

N. Tougou

17 : 15 17 : 30 Closing ceremony

18 : 00 20 : 00 Reception

# THE NETWORK MEGALOPOLIS : A CREATIVE AND SUSTAINABLE PATH FOR URBAN FUTURES ?

David F. Batten

## ABSTRACT :

This short paper summarizes findings from some recent studies undertaken by the author and his colleagues concerning metropolitan development in the industrialized world. Three particular aspects are stressed :

- (1) The need to extend the way in which we analyze city systems – from the traditional perspective of centres within subnational hierarchies of settlements to the cosmopolitan perspective of urban nodes, corridors and hubs forming a complex system of interdependent cities feeding on various transnational networks.
- (2) The need to modify our lifecycle theories of urban development in order to cater for the dynamic synergies inherent in these networks, and the fact that collective stocks of knowledge reside in constellations of network cities rather than in any single centre alone.
- (3) The need to recognize the different speeds of urban adjustment processes, and the fact that because infrastructure is one of the slowest facets of development , it actually plays a fundamental role in controlling the nature and pace of other faster processes of adjustment.



## 1. INTRODUCTION

Throughout the world, cities serve as regional centres for business and governmental decision-making, for negotiations, for knowledge creation, and for numerous other face-to-face activities. Many cities also drive their nation's industrial systems. A select few have been instrumental in a global perspective, serving as principal nodes in one or more of the various international networks facilitating migration, trade, finance and information exchange. Irrespective of the spatial boundaries limiting their domain of influence, cities are the key driving forces behind regional, national and international economies. Consequently, studies of their development are at least as important as nations or even clusters of nations in any comparative framework (Jacobs, 1984).

Like products, cities follow a lifecycle trajectory. They possess vintage properties, in the sense that large and previously prosperous ones eventually decline in the absence of sufficient renewal and revitalization activity. The rise and fall of cities is indeed well documented in all parts of the world. To catch a glimpse of this lifecycle phenomena, we may turn to Europe over the last millenium (see Table 1). Many European cities which dominated several centuries ago are relatively small today, whereas many of those which have grown to greatness in our lifetime were quite small a few centuries ago.

**Table 1 : The Ten Largest Cities in Europe,1000 – 2000  
(By Population in Thousands)**

1000		1400		1700		1900		2000	
CITY	POPULATION	CITY	POPULATION	CITY	POPULATION	CITY	POPULATION	CITY	POPULATION
Constantinople	450	Pris	275	Constantinople	700	London	6480	Moscow	3000
Cordoba	450	Milan	125	London	550	Paris	3330	Paris	3500
Seville	90	Bruges	125	Paris	530	Berlin	2424	London	7000
Palermo	75	Venice	110	Naples	207	Bienna	1662	Leningrad	5500
Kiev	45	Granada	100	Lisbon	188	Leningrad	1439	Madrid	3000
Venice	45	Genoa	100	Amsterdam	172	Manchester	1255	Berlin	3000
Pegensburg	40	Prague	95	Rome	149	Birmingham	1248	Rome	2300
Thessalonika	40	Pouen	70	Vunice	144	Moscow	1120	Birmingham	2500
Amalfi	35	Seville	70	Moscow	130	Glasgow	1072	Manchester	2500
Rome	35	Gnent	70	Milan	124	Liverpool	940	Budapest	2100

Sources : Hohenberg and Lees (1985) and author's estimates.

In this paper, we argue that the future prospects of a city during the next millenium will be strongly influenced, among others, by the following factors :

- (1) the nodality, density and efficiency of all tangible networks (i.e.infrastructure) linking it to the rest of the world ;
- (2) its strategic position in the cosmopolitan system of intangible networks which facilitate the global exchange of people, knowledge, money, goods and services ;
- (3) its creative and adaptive capacity to exploit the potential synergies (e.g. economies of scope) inherent in these networks , as well as the collective knowledge permeating across them ( see Batten, Kobayashi and Andersson, 1989).

These three factors are important when we come to examine urban renewal and revitalization activities for the cosmo – creative city of the twenty – first century.

## 2. NETWORK CITIES VERSUS CENTRAL PLACE CITIES

It is often argued that city size fosters innovative propensity. This has even been given a title: “The HVLТ hypothesis” (after Hoover, Vernon, Lichtenburg and Thompson), since these authorsemphasized the unique advantages enjoyed by New York City in the production of those commodities for which continual innovation or a constant flow of new information played an important role (see Hoover and Vernon, 1959). Whilst the supportive evidence linking size and innovative capacity is impressive, some recent observations suggest that part of the innovarive growth potential which traditionally resided in larger U.S. and European cities may now be found in somewhat smaller urban concentrations (see, for example, Norton and Rees, 1979 ; Hohenberg and Lees, 1985). The innovative activity of multinational companies may be seeded in various locations simultaneously, and is by no means restricted to the creative resources of the big cities. Table 1 also reminds us that size alone has rarely been an adequate guarantee against eventual decline and obsolescence.

Such a trend reversal is consistent with the ongoing transition towards a global network economy. The internationalization process implies a weakening in the relative importance of intraregional accessibility in favour of stronger international contacts. Mushrooming growth among firms responsible for information processing, telecommunications and air transport capacity is greatly facilitating point – to – point contacts between many dispersed locations, thereby increasing the network character of the world economy. Knowledge about important innovations can spread rather quickly under these conditions. As these tendencies proliferate further, the geographical contiguity of regions and the relative size of places in a local context may become less important than they were in the past. Instead we must concern ourselves with diverse changes permeating across interdependent networks. In this new arena, a global perspective is mandatory.

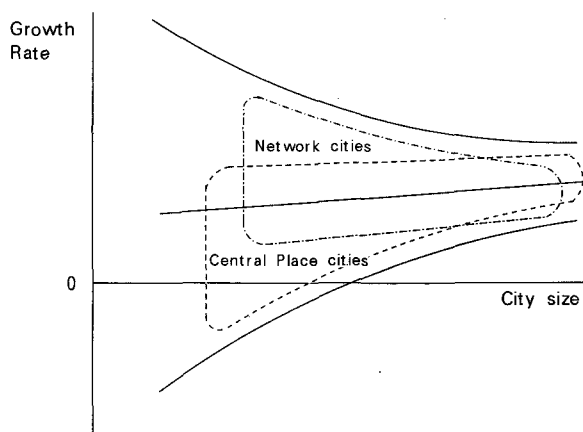


Figure : 1 The Relationship of Growth to Size in Two Urban Systems

In the traditional theory of central places, growth potential is proportional to size. This need not be the case for a network city. It is in fact network cities or urban "hubs" that have accounted for an above-average share of all urban development in today's Europe (see Figure 1). Although larger cities and urban hubs (Like the Randstad system) possess both network and central place characteristics, it is the smaller network cities that have counteracted the central place trend towards primacy and contributed to the **size-neutrality** of urban growth (see Robson, 1973 ; Hohenberg and Lees, 1985).

A natural extension of this trend is that future phases of growth and decline among systems of cities may be intimately associated with each city's acquired role in both national and international economies. It also suggests that competitive leadership may not be restricted to those few larger urban centres who have served traditionally as the seedbed of innovative activity. Smaller settlements may be able to enjoy relative prosperity by specializing in specific innovations which capitalize upon their "interactivity" across associated networks. Knowledge-sharing becomes a more realizable process.

### 3. YESTERDAY'S NETWORK ECONOMY OF EUROPE

The seeds of a new European network economy were sown as far back as the 11th century, when safer trade routes triggered the revival of many medieval cities (Pirenne, 1925 ; Mees, 1975 ; Andersson, 1986). To see this network economy transformed into its modern equivalent, we may turn to the Netherlands in the 19th century. The new economic stimulus of development along the Rhine and its tributaries prompted the rapid growth of two Dutch cities to challenge Amsterdam's primacy - The Hague as the royal residence and political capital and Rotterdam as the port commanding the mouth of the Rhine. Their relative growth paths may be traced more closely by reference to Table 2.

Table 2 : Population Growth in Three Dutch Cities, 1800 to 1985

City	Average Growth Rate (% p. a.) over the Period		
	1800 – 1900	1900 – 1950	1950 – 1985
Amsterdam	0.94	0.91	0.62
The Hague	1.73	2.08	0.36
Rotterdam	1.81	1.63	1.02

Source : European Historical Statistics, 1750 – 1970 and Statistical Yearbook of Sweden, various years.

Rotterdam and The Hague grew from 26 % and 19 % of Amsterdam's size, respectively, in 1800 to 102% and 67% by 1985. What appeared to be a balancing procedure was actually the formation of a well-articulated, polycentric urban hub that came to be known as Randstad. The network patterns are possibly clearer in Holland because its land has been so actively managed. Today Randstad Holland incorporates a number of other towns, such as Leiden, Haarlem and Utrecht in particular. In this type of network system, close links are forged between places of complementary function rather than simply on the basis of distance or demand thresholds. A similar hub system is developing in the Kansai region of Japan, focusing on Osaka, Kyoto and Kobe.

The hub system may generally be viewed as a more sophisticated combination of corridors. The latter consists of two (or more) major nodes linked by a linear segment of infrastructure. It may also include some smaller intervening nodes and is often associated with a science park and/or clusters of high-technology firms. European examples of this type of corridor development include the Mill Corridor linking Cambridge and London, as well as the Stockholm-Uppsala corridor. Each of these corridors also incorporates an international airport. Not surprisingly, the airport-university combination turns out to be one of the most synergistic factors currently contributing to faster and more prosperous urban growth in the European context (Andersson, Anderstig and Harsman, 1987).

#### 4. THE SYNERGISTIC ROLE OF INFRASTRUCTURE

When viewed in terms of key service attributes, the evolutionary patterns of infrastructure become relatively clear and predictable. Figure 2 illustrates this observation. Both transport and communication systems have evolved by embracing faster, more flexible and reliable means of interaction offering a much larger choice of destination possibilities. It may also be fruitful to regard many other types of infrastructure as network systems of social and economic overhead capital, and then to distinguish between intranodal and internodal networks (Batten, 1990).

ROUTE FLEXIBILITY OR  
RATIO OF NODAL  
TO LINK INFRASTRUCTURE  
INVESTMENT

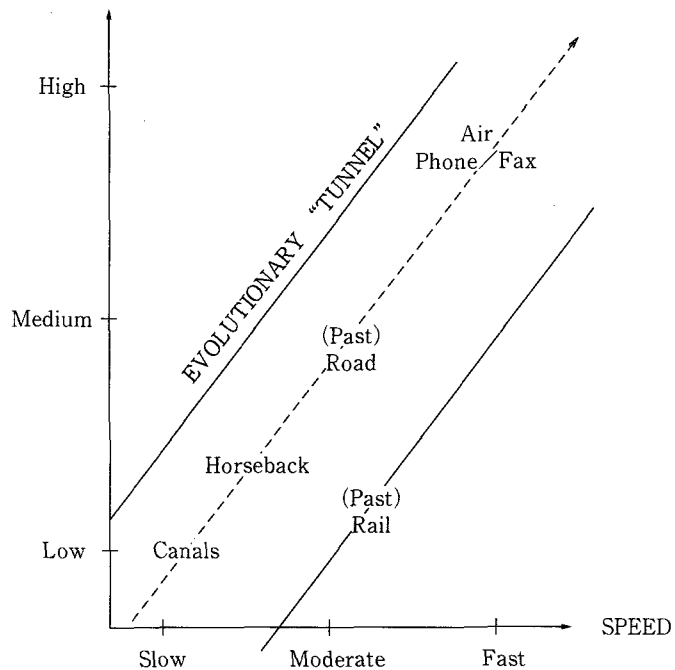


Figure2 : Evolutionary Pattern of Two Network Systems  
in terms of their Service Characteristics

One key observation is that the growing tangible networks of today invest a higher share of their budget on nodal rather than link infrastructure. As our societies become more "node-intensive", the contiguity of various places is becoming less important. Instead it is accessibility to other key nodes and their collective stocks of knowledge, the degree of interactivity with them, and the ability to exploit those scope economies arising from the interactive character of different networks, that signifies the successful cosmo-creative city of tomorrow.

The mobile telephone is an elegant example of transport communication synergies (or scope economies) at work. Today's important savings are measured in units of time, so the ability to communicate while on the move is invaluable. Integrated systems like the mobile telephone clearly demonstrate the principle of synergy, where the whole is superior to the sum of the parts. One of the crucial differences between the more prosperous and the less prosperous cities of the next century will be the ability of the former to identify and exploit a wide range of synergies inherent in the many different network combinations. In this context, a crucial policy change will be the need to address the interface between processes which are relatively slow (e.g. the evolution of transportation networks) and those which are much faster (e.g. the decision to use a particular street).

## 5. SLOW AND FAST PROCESSES OF ADJUSTMENT

A common characteristic exhibited by metropolitan development as a whole is a degree of inertia in the adjustment mechanisms of some processes, which may result in the appearance of location-specific bottlenecks or tensions. For example, when new housing is constructed in peripheral rings to accommodate an increase in population, pressure on the land in the central business district may accelerate and the demand for cross-city travel may increase. Various relocation patterns among households and workplaces give rise to tensions in the land market, the job market and the transportation system. Some of these subsystems may be slow to respond because the existing infrastructure (e.g. road and rail networks, pipelines, telephone lines, etc.) is heavily constrained by the date and place of its initial installation.

Such differences between the speed of replacement or relocation of capital stock ( typically a slow adjustment process) and changes in factor mobility (typically a fast adjustment process) create bottlenecks and capacity tensions simply because they operate on different time scales. Tension signals arise when a state of excess demand or excess supply worsens owing to inconsistencies in the speed or direction of change of the underlying components ; namely supply and demand.

Many metropolitan management decisions correspond to strategies devised to remove the underlying imbalances and alleviate capacity tensions in the urban system . The supply capacities might refer to given types of dwellings, categories of land or floorspace, human skills or transport and communication modes. The conditions specified in (1) typically manifest themselves in the form of price movements or changes in the length of consumer queues.

Changes to supply capacities are often delayed by inadequate information or time-consuming decision processes . Adjustments will therefore tend to be slow and discontinuous as depicted in Figure 3. The staircase character of these adjustments may not result simply from rigidities in the decision system but also from sunk costs and indivisibilities with respect to capital. The latter consideration causes realized capacity changes in specific locations to occur quite abruptly in discrete jumps, even though the overall adjustment process may appear to be quite slow. For example, the annual construction of new dwellings would amount to about 2-3 percent of the value of the existing housing stock in Sweden and a number of other industrialized countries.

However, the demand for new dwellings in specific locations may be 4 to 5 times greater. Recognizing the different speeds of various adjustment processes can be very helpful in our attempts to explain, model, and forecast metropolitan dynamics. For example, we often find that a typical slow variable - such as the macrostructure of the urban economy - is actually changing at a variety of speeds in different cities. Nevertheless, in each case the restructuring process is proceeding at a steady pace and the pattern of change is therefore readily predictable (Batten, 1985). If we choose to study only the fast adjustments, then the slower processes will remain disguised in the form of seemingly constant parameters within the chosen model. On the other hand, a model

addressing the slow adjustments will contain parameters which are either explicitly or implicitly affected by the faster adjustment processes. In each case, these parameters are not really constants but will change over time.

The field of synergetics, pioneered by Hermann Haken, affords us the opportunity to study the effects of fast and slow adjustment processes within the same framework. Sometimes we may then identify sudden shifts (based on singularities or bifurcations) in the value of the fast variables for a specific range of parameter values. This means that although slow phases of urban development will prevail for the vast majority of the time, a sudden and unexpected fast phase may transform the system into a completely new regime. This new regime may be brought about by a relatively small change initially, but the final ramifications may be quite profound.

## 6. FINALE : TOMMOROW'S COSMO — CREATIVE NETWORKS

During the seventies and eighties, the study of cities and city networks has been directly related to the world economy. Questions about the spatial organization of the new international division of labour have prompted various approaches to a **world city hypothesis**. Does this world network of cities correspond to the new regime we referred to above? Not exactly. What the world — city hypothesis reconfirmed is that size may be less important than socio — economic function in assessing global influence, thereby demonstrating that global networks are becoming increasingly independent of national boundaries. Furthermore, prominence in more than one global network — such as London's key role in financial (banking and brokerage), insurance and merchanting networks — stresses the need to explore multiple networks and their potential synergies.

To fully understand the new regime we must probe more deeply than this. Two of the key trends proliferating across the industrialized nations are the growing importance of **knowledge — oriented activities** and the pursuit of higher levels of **infrastructure quality** (e.g. in transport, communications, other services, and the environment). These are arguably the two most important components of tomorrow's cosmo — creative network of cities. Why? Because in order to properly explain differences in economic (i.e. urban) development, we must search for those slow variables of the collective variety which have significant implications for the faster economic, cultural and political processes. In essence, the faster processes are intrinsically constrained by the slower ones. Infrastructure, in both its tangible and intangible forms, constitutes this slowly changing public capital, providing the **arena** upon which the faster technological, economic, political and social games are played. Most forms of daily life may be analyzed as if this arena was stationary and stable. But when it comes to developments in the longer run, infrastructure does change (albeit very slowly). The consequences are complex and difficult to predict, but certainly require a cosmopolitan perspective.

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## BERLIN AFTER UNIFICATION

### PROBLEMS AND PROSPECTS OF DEVELOPMENT

Dietrich Henckel

#### 1. Introduction

The situation of Berlin has changed dramatically with the fall of the wall and the German unification. The smaller, economically weaker and politically failing part of Germany ceased to exist; as a consequence the eastern part of the city lost its function as capital. The western part of the city was only the formal capital of Westgermany but with practically no governmental functions. This part of the city lost its isolated position, the western island in the eastern sea became mainland (cf. Graph 1). And only recently the German parliament decided to relocate the federal government of the united contry from Bonn to Berlin.

Geographically Berlin thus has become a central position within a Europe which is going to and has to integrate the eastern parts . Berlin, once a metropolis of global significance, has the potential to regain a similar position.

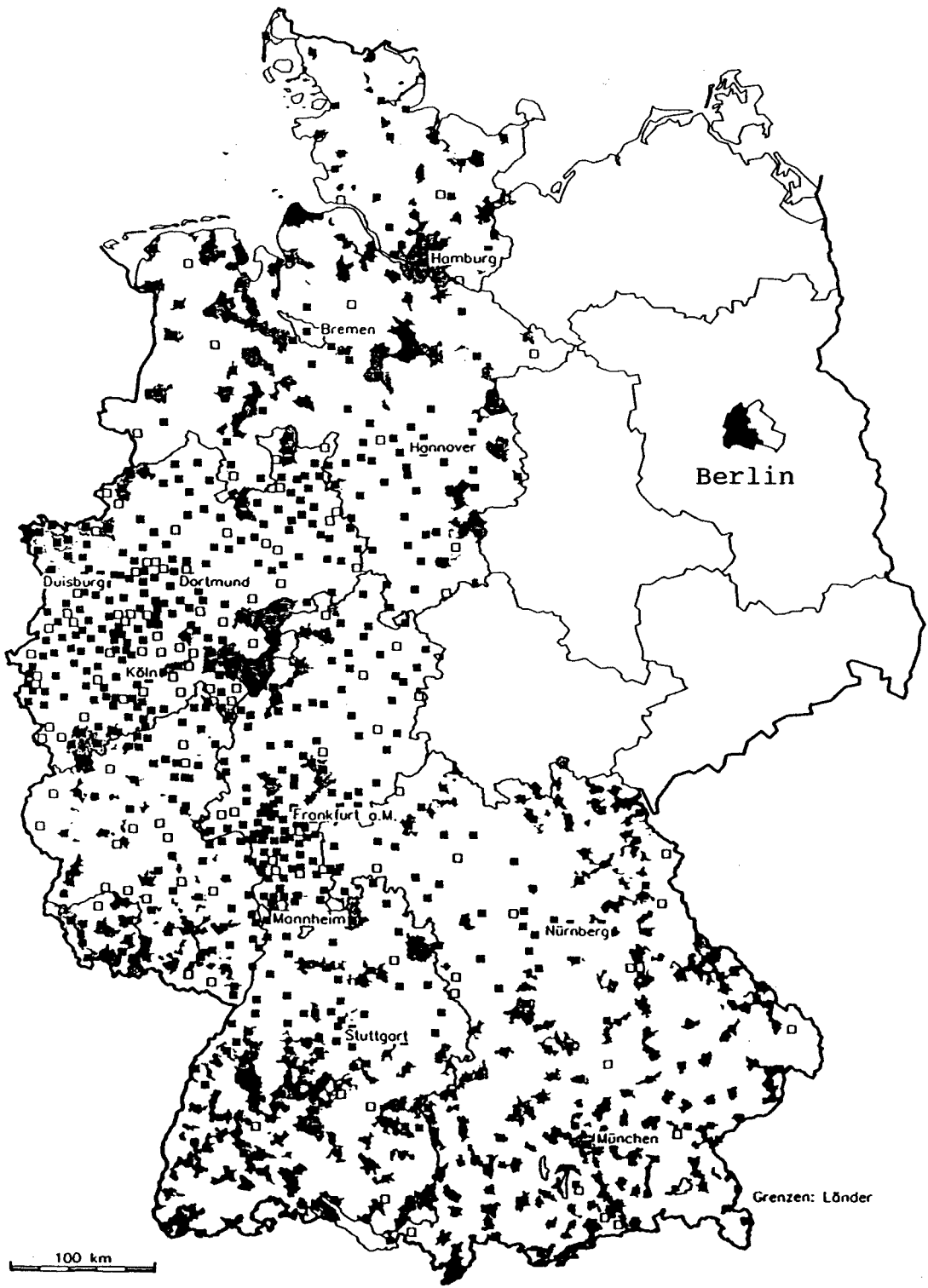
Moreover the city is the very focus of German unification.

In this city the problems of unification have to be solved immediately, because it is the only place in Germany where unification happens within one city. In this way the word by the former famous mayor of Berlin, Ernst Reuter, "people of the world look at this city" gets a new, a different meaning.

To have a rough idea of the position of Berlin in a global and European context it is useful to look at the size of different cities (cf. Graph2). It is obvious that Berlin is a comparably small metropolis, by far smaller than the most important European metropolises Paris and London, let alone the metropolises in the USA, in Asia or the Third World.

With the future chances, the potential to become again a metropolis of global significance and with the risks of this city I am going to deal in more detail in the following paragraphs.

Graph 1 : Berlin in the middle of Eastgermany



## 2. History

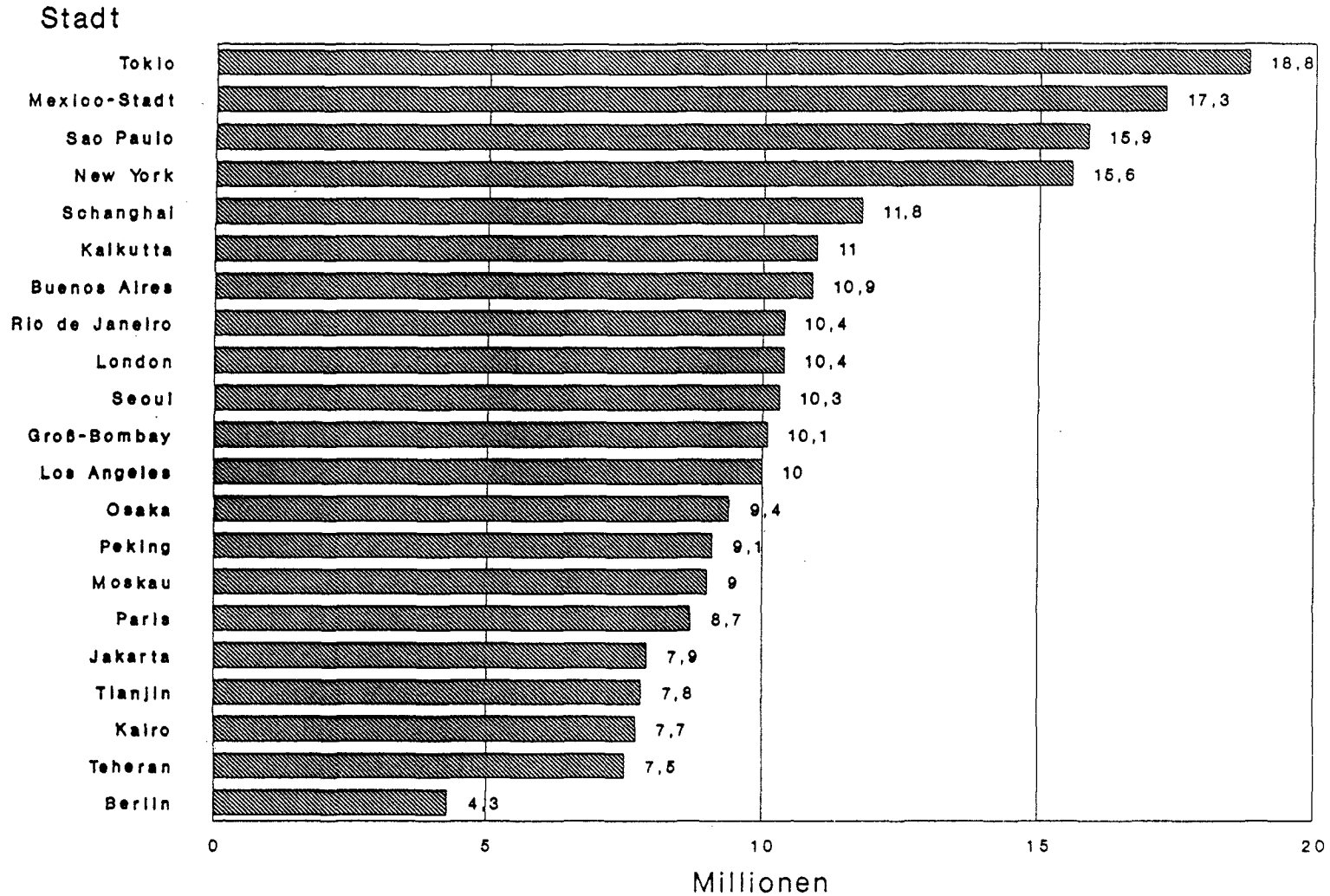
Berlin became capital of the German empire only very late in 1871. Despite the traditionally decentralized structure of the German city system Berlin gained an overwhelming position in comparison to the other German cities. Towards Berlin as Prussian and German Capital there has always been a great deal of resentment. These resentments are still existing, even more so since Berlin was also the capital of Third Reich, the center of Nazi – Germany, where so many disastrous decisions were taken. Today also its role as capital of the socialist Germany is part of the negative emotions towards Berlin.

The city had its best time in the “roaring twenties”. After World War II Berlin – not mentioning the physical destruction – lost most of its functions – at least for its western part.

Among the functions the city lost are :

- Government. The location of the government of the federal republic became Bonn, always meant as a temporary seat. Still the eastern part of the city stayed the definite center and the capital of the GDR. Only a few months ago (20. 6. 91) it was decided with a very small majority to relocate the government of united Germany from Bonn to Berlin within the next up to ten years.
- Parties, lobby groups etc. Along with the government most of the functions in close connection with the government located in Bonn, Köln and even in other cities.
- Media. Before the war Berlin was undoubtedly the dominant media center in Germany. With respect to the FRG it became more of a provincial character. Hamburg, Köln, München, Frankfurt became the dominant places.
- Banking. The decision to locate the German Federal Bank in Frankfurt established Frankfurt as the dominant banking city in Germany. After unification it was decided that the Fed should not relocate to Berlin. Thus Berlin has no chance to become the dominant banking place in Germany again.
- Corporate headquarters. Many important headquarters relocated from Berlin to other German cities in the period after 1945, Siemens only being one prime example. Only two headquarters of more important enterprises are left. And only few are inclined to relocate again to Berlin.

# Berlin im Weltmaßstab



Quelle: UN-Bericht zur "Lage der Weltbevölkerung".

difu

This loss of functions, of economic and political power together with the island situation of Westberlin resulted in population losses over a long period<sup>1</sup>, a deterioration of the age structure and an erosion of the economic base.

Economically Westberlin could only survive by heavy subsidies. Over 50% of the public budget came from the federal government. The subsidies lead to a rather unsound structure: The public sector was and still is hypertrophic, industry was mainly of the assembly type and lacks modernization. The industry in the eastern part of the city is even more obsolete and has to undergo severe structural changes. Moreover Eastberlin has a hypertrophic public administration too, and on the other hand a severe lack of tertiary functions. In other words, Berlin as a whole is overindustrialized and has too big a public sector.

Because of its strategic location – Westberlin in the middle of Eastgermany – the competition of the political systems during the cold war took place in Berlin in a nutshell. Both parts of the city were the show case of the respective political system. On the other hand Berlin was a place of exchange of ideas and persons between East and West, too. Some people even make the point, that because of the growing orientation of Westgermany towards Western Europe and the Western hemisphere, the decreasing interest especially among younger people in the East and in German unification without Berlin the German unification might not have taken place.

### 3. Development Aims and Conflicts

Today, after unification, Berlin has to be reconstructed in several ways. Therefore the city has to deal with a lot of different tasks at the same time. To name only a sample of these tasks:

- The economic reconstruction and modernization to build up a sound economic base. The decision for the relocation of the German government has made this easier.
- The modernization and integration of the city's infrastructure.
- The construction of new and modernization of older residential areas because of a severe housing shortage due to a rising population and a huge stock of run down buildings, especially in the eastern part of the city.
- An enforcement of office development because of a severe shortage of modern office space and an increasing demand.
- The integration of the two city centers (around Kurfürstendamm and around Alexanderplatz, Unter den Linden) and the new development of the so-called "central area", the Potsdamer Platz – once the busiest square in Europe, now a desert since the war (Graph 3). It is a

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<sup>1</sup> Already during 80ies population began to rise again.

challenging architectural and urban planning task which is going to influence the image of Berlin significantly.

Important investors have already decided to locate there, among them Debis of Daimler Benz, Sony and ABB.

- Despite the relatively good infrastructure indowment in Westberlin and its integration into Westgermany the accessibility of the city has to be improved – by air, rail and highway. To give an indicative example : the time distance between Hamburg and Berlin by train is about one hour bigger than before the war. Especially the east – west connections have to be improved, since in the divided Germany all major traffic flows were north – south. Berlin is going to be “on the way” as well in the improved north – south as in the east – west relations.
- Berlin once had the most advanced public transport system. With the reconstruction and modernization of this traffic ring the city has the chance to reinforce a decentralized model of urban development.
- The cooperation with the surrounding state of Brandenburg. Since Westberlin was an island the suburbanization, which characterizes all the cities in the western world, was blocked by the wall. Even in Eastberlin there was little suburbanization. Now it is getting great momentum, which has to be channeled.
- Berlin decided very soon, even before unification, to apply for the Olympics in 2000. The other German competitors resigned in favour of Berlin. But on the international scale Berlin has to compete with Braslia, Sidney, Manchester, Milano etc. The Olympics are meant to fulfill several aims: firstly to use the city as a symbol for the integration and the growing closeness between East and West; secondly to improve the infrastructure, to use this internationnal event to establish a city structure which is suitable for the next century. The olympics in München in 1972 are the case in Germany which showed the potential in this respect; thirdly to show the potential of Berlin to deal with an international event of this size in an efficient manner; and forthly to overcome the image of the Nazi Olympics in 1936.

Berlin has always been a kind of doorway to the East. This is a potential which might be fruitfully exploited as well politically as economically. Berlin has the chance to become a meeting place for the exchange of ideas and persons, a trading place, a place for fairs, a central location for the integration of the eastern part of Europe which is ever more drifting to the West. For the integration of the eastern countries into the common market, the EEC, Berlin might become a prime place for negotiations, thus growing in political importance.

Two of the major risks for the city are :

- Berlin is, being a western city rather far in the east, a very attractive city for immigrants. This expected immigration from the Soviet Union, Poland, Romania especially by poor people, by migrant workers might pose a heavy burden on the city – economically, politically and culturally. The situation might become especially hard in social and cultural terms because of the growing hostility towards foreigners, primarily among the Eastgerman population.
- Berlin is unused to growth. Therefore one of the most important and most difficult tasks will be the channeling of the growth of Berlin, which is nearly inevitable. If Berlin is successful in handling this in a social and ecological acceptable and sustainable way some solutions might become a model for other cities.

#### 4. Economy

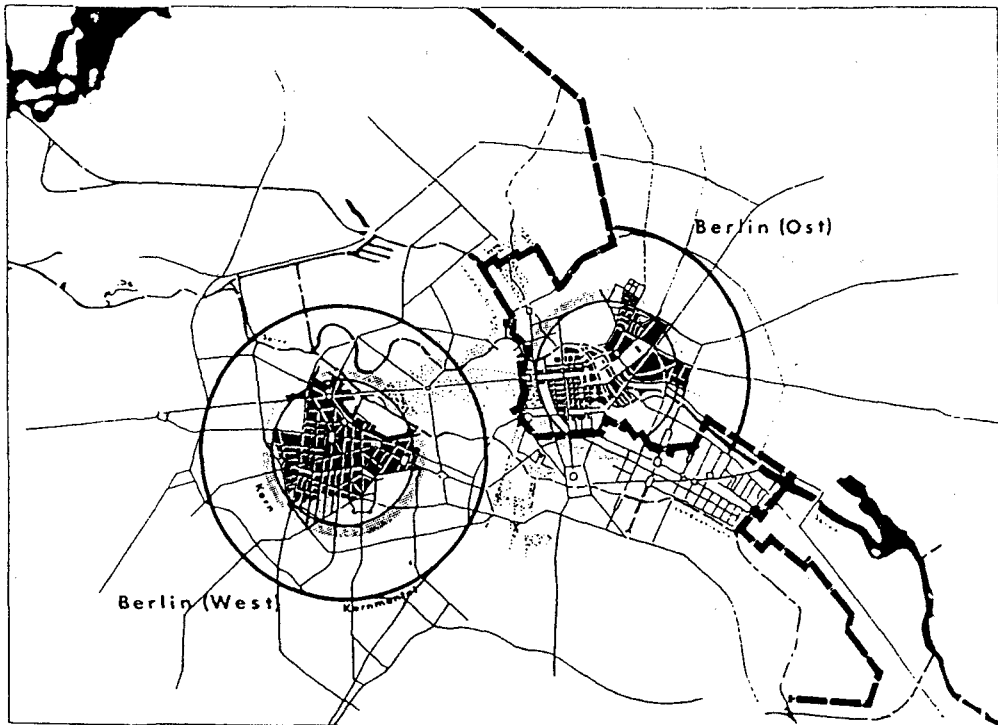
As already indicated above the economy of Berlin is characterized by a lot of problems and structural shortcomings. To name the most important ones :

- An overindustrialization and a lack of modernization in industry ,
- a corresponding weakness of the tertiary sector and a lack of tertiary functions,
- a hypertrophic public sector,
- a small tax base, which was substituted by subsidies for Westberlin and which are now going to be cut back,
- heavy labour market problems with about 30 – 50 % of the industrial labour force of Eastberlin made redundant and also quite a proportion of public sector employees.

These brief indications show the challenge of the economic tasks. But in the medium term there are a lot of chances ; they lay for example in :

- the acquisition of headquarters of new branches (Debis, the service and software branch of Daimler – Benz, being an example),
- the acquisition of more modern production and service branch plants,
- the acquisition of foreign companies seeking locations in Europe with respect to the coming single market and to Eastern Europe (Sony being an example),

Graph 3 : The two city centers



*Tatsächlich entwickelten  
sich zwei getrennte  
Zentren verbunden durch  
eine grüne Mitte.*



- the forming of new headquarters with the rests of Eastberlins "Kombinate" (former industrial conglomerates within one sector),
- the promotion of the city as a media center for Germany ; relocations from other parts of Germany to Berlin in this field are very likely and with the existing base of newspapers, radio and television stations, the important and famous studios in Babelsberg, the most modern video center in Eastberlin (equipped among others by Sony),
- the extension of the function as location for international fairs and conferences ; its very likely that Berlin is going to gain importance at the expense of other German cities,
- the development of a service industry in connection with the relocation of government and related activities,
- in a growing function as a tourist center, as a cultural and political center in central Europe.

The prices on the land market in Berlin could be seen as an indicator for the coming boom in the city. For a very long time the prices for industrial land, office space and residential land have been comparatively low. By now they are the highest in Germany, surpassed even München and Frankfurt, which is a tremendous increase in a very short time. But it indicates not only the scarce supply, but also the high estimation among investors and speculators.

Westberlin always had a significant shadow economy. The shadow economy is going to increase because of high unemployment rates, an influx of immigrants from eastern Europe, third world immigrants (applying for asylum), and an influx of migrant workers.

## 5. Culture and 'soft Factors'

Both parts of the city have been the cultural show case of their respective political systems. Therefore Berlin is very well equipped with cultural institutions. Even in the times of the cold war, and even more so when it lost momentum, Berlin was a center of cultural exchange between East and West. As a major cultural official stated it : "Berlin was the anchor of Westgermany in Middleeurope".

Moreover Berli is in the middle of Eastgermany and therefore the prime candidate for the real fulfillment of the German unification and its cultural reflection.

Also befor the war Berlin was an important cultural center with respect to eastern Europe. It had big Russian and Polish communities with own newspapers and theaters. Berlin has the chance to become again a major place of cultural exchange and integration between East

and West. If Berlin is accepting this challenge and dealing with it in a liberal, open, tolerant way Berlin might become a key location for the integration of the East and the unification of Europe, for "the construction of the common European house". And it should be kept in mind, that at least Westberlin has been a multicultural city since a long time. It might be sufficient to mention, that Westberlin was and still is the third or fourth biggest Turkish city in the world.

In the German context Berlin has always been a place of major cultural importance. With the "duplication of resources" by the unification it reaches again a standard – in hard ware equipment – which existed also in the twenties. The competition among the German cities will get sharper. Other cities won't lose so much to Berlin, but Berlin will grow into another dimension, thus leaving the other cities behind. Also culturally Berlin has the potential to become a metropolis of not only European but worldwide significance.

One aspect should not be neglected regarding soft factors. Berlin is a very green city with a lot of open space. The surroundings of Berlin are very attractive with lakes, rivers and forests. Therefore Berlin is an attractive residential location, with a lot of potential in comparison to other German cities, because suburbanization is yet to happen.

## 6. Conclusions

Berlin is undergoing dramatic changes. The decision to relocate the government is not the most important one for Berlin. But that decision has a symbolic value which can hardly be overestimated. Even if foreigners could not understand the debate about the location of the government and thought, that the decision taken was the only possible one, the decision has a big importance for the Republic as a whole. It was only with this decision that the West of Germany understood, that not only the GDR ceased to exist but also the FRG and that the united Germany will not be a bigger and extended FRG but something different.

Some of the arguments of the Bonn promoters were, that Bonn has been a good symbol for the democratic and federal Germany, that the relocation would cost too much and that Berlin as capital would revive resentments because of its Prussian and Nazi history. Moreover they expressed the fear that Berlin might become too strong and powerful.

Regarding the German city system one of its advantages is its very well established system of division of labour between different cities. This decentralized structure is one of the main differences of the German city system in comparison to the monocentric systems in Great Britain and France; and it is one of the reasons also for the economic success of Germany.

Therefore this division of labour and functions should and will continue, with each of the

important centers having its speciality, e. g.

- München being the city of high technology production and development and of insurances ;
- Stuttgart being also a high tech center and the center of advanced manufacturing ;
- Frankfurt being the banking place and one the centers of national and international consultancy ;
- Köln being a center of insurances and media ;
- Hamburg being a trade center, a media center and a prime place for advertising.

With the new Berlin coming into the game as a new and real competitor this structure will change significantly but not dramatically. Size alone is a relevant argument in favour of Berlin. Its geographical location makes Berlin a very important place for the development and integration of East Europe. Berlin will become may be the most important meeting place in this respect. These factors give Berlin a weight which tends to drag new potentials to the city.

Despite the fact that there are some relocation decisions by major enterprises the vast majority of locational choices in Germany will persist. But openings of new branches (like DEBIS the software branch of Daimler Benz), openings of establishments of European or other international corporations (like Japanese) will locate to a high proportion in Berlin. Also selective investments of multiplant corporations will strengthen Berlin.

With the decision to relocate the government notwithstanding the fact that this is going to take a long time – Berlin will not only gain as a center of political power (part of which is going to Brussels anyway as a result of the European integration) but also as a cultural center. Bonn never had the strength to become a media center, Berlin is going to be one.

Despite the fact that Berlin will not be comparable in its functional concentration to London or Paris, Berlin is growing into another scale of city. No other German city has the potential to become a city of global importance – notwithstanding that it is still far away from being it. The other German cities will more or less keep their absolute importance or weight, but with Berlin playing in the “first international league” they are losing relatively. The days of the “hidden capital” (München) are over with the decision for a ‘real’ capital. Berlin has therefore the chance to regain a similar importance – but partly with other functions than before the war – it used to have before the war – a very interesting question with regard to stability and change in city systems.

The way to economic, political, cultural strength and global importance are on the other hand

paved with dangers and risks—in part typical for metropolises, in part a result of the special situation of Berlin after unification :

- The big differences in the economic levels between Germany and eastern Europe make especially Berlin to a gateway and as a big and the only real western city (a western outpost) near to the borders to a big attractor for migration. Some studies expect millions of immigrants from eastern Europe. A small immigration to Berlin would bring an extra element of liveliness, expertise, international flair and the like to the city. But great numbers of poor, unemployed immigrants with little qualifications would bring severe social and economic problems to the city. Already now the city is confronted with rather high numbers of illegal immigrants, migrant workers (mainly working on the black labour market).
- Becoming a metropolis will mean an increase in economic, social and cultural polarization. This polarization will be the harder the bigger the immigration of the poor will be. Economic polarization means a division of society according to property, income and labour market position ; social polarization cuts society along the lines of education, social integration, position on the housing market ; cultural polarization signifies a separation of ethnic groups, religions, and normative orientations. These processes will also foster the spatial segregation in Berlin.
- The city lost or is going to loose part of the subsidies for the public budget and part of its (potential) tax base. On the other hand the tasks of the Senat are increasing steadily. Therefore the city is running into severe financial problems and a big public deficit. In this respect Berlin has to pay its – may be extra – share of the costs of unification.
- The 40 years of different development in the FRG and the GDR have resulted in different mentalities of the respective populations. In the year after unification the differences and resentments have even increased. Conflicts between East – and Westgermans are therefore and because of the still very high differences in the economic level inevitable. Berlin, the only city in which the unification took place at one place literally, has to be the “melting pot” for unification. Berlin has to be the model. In this respect Berlin has a great burden and responsibility. Since, if the unification doesn’t work out, Germany will loose its stability and economic strength and the prospects for eastern European countries with less economic help would worsen dramatically.
- The fall of the borders and the growth push will lead to an suburbanization which is typical for all similar cities with all its bad effects on the traffic system etc. Space demand will increase heavily and ecological conflicts will become harder. Berlin has the chance to be one of the forerunners of an ecological restructuring of the economy. Expertise is in the city with its high number of research institutions also in this field. The question is whether Berlin has the strength to tackle this problem along with all the others.

To cope with these problems, to channel the development towards a sustainable situation and to exploit the chances to produce model solutions for an ecological transformation of the free market system and urban development is the challenge for this city. I hope we will meet it. Otherwise the city and may be Germany as a whole will loose momentum and international importance with probably negative effects on the integration of the part of Europe which we were accustomed to see as laying far behind the iron curtain.

## SOCIAL CONSEQUENCES AND ECONOMIC CONSTRAINTS IN THE GROWTH OF THE PARIS AREA

Guy Burgel

The economic and social evolution of the Ile-de-France (the Seine river basin around Paris) cannot be separated either from the deepseated tendencies of urban evolution in the world's greatest metropolitan areas, nor from the voluntarist policies which carry them along, accompany them or combat their effects, according to the degree of confidence and effectiveness one grants to urban planning documents and normative actions. It would be just as illusory to deny the autonomy and thus the decision-making power of the economic and demographic actors – businesses and households – as it would be dangerous to abandon ourselves to a “laissez-faire” attitude, which might, in the long run endanger the main social and political balances of the region and consequently its credibility and its efficiency in international competition. In these mechanisms of constraint, often contradictory, of which the resultant can only be a narrow crest-line, which does not exclude either the ambition of a project or the solidness of its realization, we must show the forces in action in their continuity and their breaks, and the regional and national stakes which underlie the logic of action and intervention in the French capital. But it is just as indispensable to set a clear limit analyses and approaches of the university professor or researcher, who has been promoted to the rank of expert, and the forms of his propositions and convictions which come from his civic commitment, even though illuminated by privileged professional information. For the choices are political before being technical and spatial, and as such, belong, in a democratic regime, to all, whether citizens, associations, political parties or elected officials. At the very most, it is advisable to trace the possible options and alternatives. As long as we do not impose as a prerequisite forms demanded in the name of some so-called scientific rigour or ideological fidelity. Our times are less than ever times of certainties and dogmatic respect for the letter of the law. Furthermore, nothing is ineluctable. But it is when we confuse different spheres that we risk losing everything and falling into the disaster scenarios that we wish to avoid.

## I — CONTINUITY AND BREAKS

Our present time, with its intense economic mutations — which are more than a severe passing crisis — brings us to question about the validity of geographical systems born of a conjuncture of continuous regular growth of individual income and collective wealth. Not only have the best established urban theories been unable to resist the test of economic and demographic reversals, but the facts themselves, attested to by decades of continuity give the impression of becoming shaky and being called into question. It is in our mental structures that it is the most difficult to put things in order and loosen rigidity. This is the case for the Geography of activity localization and the evolution of the relationship between the capital and the rest of the country. The whole post-war generation, which had lived according to the image — and the reality — of Paris surrounded by the French desert, was able to bring about the triumph of its decentralization policies, at the very moment in the 1950's and 1960's, when the normal incline of technologies and mentalities was leading to a spread of growth. Nowadays, we still think and live in terms of the dispersion and diffusion of initiatives, consumption and life — styles, at a time when new centralities are in gestation. This contradiction between temporalities and periodicities leads beyond the facts, which are widely known, to an analysis of tendencies in terms of continuity and breaks, and to an attempt to discover in the mass of statistics, the deviant data, that which only reorients the system in place or which augurs more profoundly for a new order of things.

### 1) Four Fundamental Tendencies

#### Demographic slow — down

A few outstanding characteristics will be recalled here to enable us to draw a picture of the French capital and its surrounding area, which, though a caricature, resembles it nonetheless. The first of these is unquestionably a demographic slow — down, which can be seen in all the available statistics<sup>1</sup>. In the space of 10 years, from January 1st, 1977 to January 1st, 1986, the Ile — de — France gained less than 300000 inhabitants, going from 9912000 residents to 10206000. However, the first results of the 1990 census show a certain acceleration of Paris demographic growth with a net gain of almost 600000 inhabitants between 1982 and 1990.

The lesson of the last two decades has been that a century and a half of unique economic and demographic concentration has resulted in a multipolarisation of French geographical space. The possible reorientation of these structural reversals is less to be found in the simple statistical evolution of numbers (increase in population or in the number of people active) than in the increasing flexibility of the relationship that an area's inhabitants have with their place of residence or their jobs. Localized enumeration is no longer the best indicator of urban space.

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1 Tableaux économiques de l'Ile — de — France, édition 1986, Paris, I. N. S. E. E., 1987.

### **Geographical outward movement**

Furthermore, this stagnation in the Paris area at about 1/6 of the national population is accompanied by slow and continuous internal modifications in the localization of people and their activities. Geographical outward movement (from centre to suburbs) is certainly the key term here.

Concomitantly and correlatively, there is a constant progression and rejuvenation of developed space in the outlying areas, in spite of the renovation projects in city centres.

### **The development of the service sector**

At the same time, profound changes in the economic apparatus were being made. These can be summed up by the terms "de-industrialization", "development of the service sector" and "decline of labour-based industries". In just the one intercensal period from 1975 to 1982, which is far from covering the most rapid transformations, industry again lost more than 200000 employees in the Ile-de-France, going from 36.2% to 30.6% of the total active population (the national average is 34%), while the service sector gained almost 300000 jobs, exceeding the distribution for France as a whole by more than ten points in 1982 (68% of the total active population in the Ile-de-France as opposed to 57.7% in the country as a whole). This means that here again, the long-range movement for purifying and refining activities to the advantage of administration and economic high command, and to the detriment of production as such was continued and deepened. Obviously one finds effects of this long economic history in the social structuring of this area that is both capital and region. In 1982, executives and members of the intellectual professions represented 15% of those active in the Ile-de-France, that is, nearly five points above the national average, and there were almost twice as many workers in France as a whole (44%) as in the Paris area (24%). In spite of the slow movements of standardization and homogenization of life-styles and social stratifications, the gap between Paris and the rest of France still exists.

### **Innovation**

This apparent contradiction comes from the fact—and this will be the fourth tendency to be distinguished—that the French capital has always had an innovative effect, both social and economic, in the process of evolution in life-styles and systems of production. Of course, it is always difficult to bring together figures on the economic aspects of this phenomenon. But it is easier to show its role as a precursor and the part it plays as a premonition of the mechanisms at work behind the events of civilization. We know that the 1982 census threw a bright light, at least insofar as public opinion was concerned, on "single-parent families". They represent, in fact, nearly one tenth of the total number of families in the city of Paris (9.6%), 7.9% in the Ile-de-France, and only 6.3% in the country as a whole. This is more than a simple demographic curiosity in the evolution of morals. We have here a sign that Paris retains its specificity. In the societies and spaces that the information and transportation revolution daily helps make more standardized and interdependent, the pre-eminence of a few central places continues, by the sudden appearances of something new,



to differentiate between geographical localizations.

## 2) Provocative Assertions or Impertinent Observations

### The recovery of employment

But now, a few recent events have somewhat upset these well worked out schemes. There is, first of all, as seen through the UNEDIC<sup>2</sup> series, analyzed between 1981 and 1984, an indication of much more dynamic activity and employment in the Ile - de - France region than the overall assessments, which were always negative and therefore portended disaster, would show.

### The return of centrality

What is most surprising is that this economic dynamism concerns city centre locations as well as those in the outskirts, even though the balances are still more favourable to the outlying suburbs (table n° 1).

This mass effect continues to be felt therefore, in an impressive way, since the city of Paris, with one fifth of the region's active population, has a concentration of much more than one third of the jobs that have appeared in the newly created establishments in the private sector.

Table n° 1

Assessment of the active personnel  
in the establishments created or liquidated  
in the private sector from 31 Dec. 1981 to 31 Dec. 1984  
(in thousands of jobs).

	Creations	Liquidations	Balances
Paris	183 (37 %)	209 (39 %)	- 26 (56 %)
Inner departements	174 (36 %)	192 (36 %)	- 18 (39 %)
Outlying departments	130 (27 %)	132 (25 %)	- 2 (5 %)
Entire Ile - de - France	487 (100 %)	533 (100 %)	- 45 (100 %)

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<sup>2</sup> Organisation which collect management's contributions.

### The preservation of ordinary activities

In any case, the decline of industry in Paris is much more diversified than we are generally led to believe.

The de-industrialization of Paris thus does not seem to be the result of a univocal process, nor can it be subject to a general study.

Mastery of this phenomenon is much more sector-based than geographical; the Ile-de-France region has not been inexorably struck by a generalized decline, nor are its outlying areas any better off in the general misfortune.

On the whole, it is true that the Ile-de-France region is continuing its de-industrialization, but especially, as in all the world's capitals, a dual society is emerging which provides not only "high-tech" jobs, but also service jobs which require little or no qualification. In Paris, as in New York, there are more and more industrial activities which one might tend to consider as being part of a peri-industrialization which is maintained or reestablished in the central zones of the urban area (table n° 2).

Table n° 2  
Assessment of the active personnel  
in the industrial establishments  
of the private sector from 31 Dec. 1981 to 31 Dec. 1984  
(increases and decreases in personnel,  
creations and liquidations of establishments)  
(in thousands of jobs)

	Equipement industries		Standard consumer goods industries	
Paris	- 7.5	(17 %)	- 6.5	(50 %)
Inner departments	- 27.0	(61 %)	- 6.5	(50 %)
Outlying departments	- 9.5	(22 %)	0	
Entire Ile - de - France	- 44.0	(100 %)	- 13.0	(100 %)

### The large and the small

Finally, if we continue down the path of iconoclasm, we will also have to go back over the interest politicians and observers bring to bear, after the experience of the United States, on activity units, if not businesses, of small size. "Small is beautiful"; in another words, a reduction to the smallest component part as well as dispersion may be the real way out of the present crisis, just as concentration was the corollary of growth. The observations made show that we must at least soften our enthusiasm (table n° 3)

Table n° 3

“Apparent balances” of active personnel in the establishments of the private sector from 31 Dec. 1981 to 31 Dec. 1984 according to the size of the establishment.  
(increases and decreases in personnel, creation and liquidations of establishments)  
(in thousands of jobs)

	Establishments with less than 10 salaried employees	Establishments with more than 200 salaried employees
Paris	- 38	+ 11
Inner departments	- 26	- 7
Outlying departments	- 9	...
Entire Ile - de - France	- 73	+ 4

## II — QUESTIONS AND CONSEQUENCIES.

The problem of the importance of these deviant characteristics in modifying the overall significance of Paris space still remains, as does that of their specificity in appreciating the differential evolution of Paris in relation to the whole of France.

### 1) The different levels in the city

#### Centre and outskirts

The first hypothesis is the return of centrality thanks to the current crisis. The years of growth were synonymous and concomitant, everywhere and at all levels, with the diffusion and dispersion of economic initiative, of consumption and income, and finally of the lifestyles in an urban and industrial society. A deep-seated logic and voluntarist policies in the matter of national and regional development were objectively allied in these effects of homogenization of space and people. When you have all the jam you want, it's easy to spread it over the whole piece of bread. Going from an economy of satisfying needs to an economy of competition — competition between the developed countries and their capitals, competition between regions, competition between cities, and competition between towns in the urban area — we once again give meaning to the differentiation between places, to the inequality of their images, to their capacity for focusing information, communications and decisions, in short, to the power to create and profit from centrality.

This new historical mutation of economies and societies makes the formulas for conversion or success (what is good for one is not necessarily good for another, at the risk of losing one's own competitiveness) difficult to apply and renders obsolete the prediction of futurologists who previously foretold the generalized dilution of urban centralities into a tele-computerized civilization. What has happened is quite the opposite<sup>3</sup>. In Paris, as well as in New York, the

acceleration of technological and cultural transformations is reinforcing the importance of the world's metropolitan areas, and inside each of them, a few nodal points, whether they be traditional (such as the Champs - Elysées), recent parallel developments (like La Défense) or creations in the outlying areas (the new towns to the west of Paris, and first of all, Saint - Quentin - en - Yvelines).

The result of all this is that there can no longer be any national or regional development which can be called redistributive. The problem is no longer the opposition between Paris and the provinces - Paris and the French desert - if one considers the national level, nor is it that of creating metropolitan areas which counterbalance Paris. The problem is to learn whether we will have in France, after all, areas which are likely to attract sufficient power for the accumulation of wealth. And it is for this reason that, on all levels, the spatial and functional stakes have radically changed. Henceforth, the question is less one of redistributing the wealth, but of being able to preserve it and to continue to accumulate it.

### The Local Level and the Worldwide Level

Thus the transformations of urban centrality lead to a paradoxical conception of the evolution of western cities - at least of very large cities - in terms of an ambiguous materiality. On the one hand, built - up space is increasing in surface and in height ; on the other, the weight of demography and even economic functionality remains stable.

But these revolutions are only possible because those who play the non - institutional roles in the city - inhabitants and businesses - transform their scale of valorizations of the area themselves. Our contemporary societies seem torn between privileged attachments to things both local and distant. Everything is done as though the intermediate levels between one's dwelling and the neighborhood, on the one hand, and the nation and the world on the other, had simply been rubbed out. The towns, especially if they are large or included in an urban development, the whole urban area itself and the region, lose their power to attract in the collective imagination. Thus the discontinuities of space already noticed on the plane of economic polarization are confirmed on the level of public consciousness.

This double adherence to both what is local and what is distant, which is felt and acted upon by social and economic players, explains why urban competition is played and won, both on the concrete ground of prestige urbanistic realizations, which associate cultural and leisure activities and the media with architectural aspects (cf. the "Arche de La Défense"), and on the continuous itinerant representation of the interests and the image of the city. A city's form and the organization of society and economy are more than ever interdependent sides of the same whole.

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3. cf. Guy Burgel : "L'informatique, nouvel ordre spatial ou nouvelle information géographique, Saga, n ° 2, 1989. (Computer science, a new spatial order or new geographical information )

## 2) Spaces and Societies

### New social stratifications

These new dimensions in the geography of Paris are more social than truly spatial, insofar as it is much more transformed social stratifications which are developing, owing to a crisis or to mutations, which, for the sake of convenience, are called economic. Growth, here again, had consolidated "new urban social levels", from employees to top executives, in a constant numerical progression, divided by income but united by the same respect for diplomas and merit and the wish to aspire to, if not attain all of the consumer possibilities of an industrial society. On the contrary, recent years have seen a fragmenting of this unity into at least two types of segmentation. On the one hand, those I will call the "mobile elite" (top management executives in both the public and private sectors, providers of information and top intellectuals) are bringing back urban centrality. On the other hand, the "technicians", whether they be in production or in distribution, who are capable of understanding and applying these innovations, to draw profit from them in their professional or personal lives, contrast with those who submit to them, fear them or suffer from them. This break is progressively replacing the traditional opposition between the secondary sector and the tertiary sector, and between workers and employees. At least as an exploratory field, the Ile-de-France provides a good ground for an advance study of these evolutions.

### New mobilities

There is something else that is new. We have to live in contradictory urban spaces, in which the static and statistical immobility of the city, which no longer has anything to do with the rhythms of wild growth of the years from 1955 to 1970, coincides with internal and interurban mobility which tends to stay the same, or even increase, whatever may be the principal place of residence of urban families. It is therefore a delusion, even more so in 1990 than in 1965, to think that one can convincingly bring closer together, in a lasting as well as a functional way, places of employment and places of residence.

### Activities and employment

Finally, if the French capital has been able to get back a certain economic vigour and reaffirm its competitiveness, unemployment has progressed, here as everywhere else in the 80's, even though its rise was almost stabilized in 1987. This deterioration is not only due to the structural consequences of the increase in the potential active population by the entry of more young people into the labour market. What connections of causality are there in modern societies between competitiveness, economic efficiency and underemployment? Or if we were to ask the question more bluntly, is what is good for activity necessarily good for employment? The answer we give to that question might explain the present difficulty in combining the resumption of growth with the maintenance of stringency and even of unemployment for the most impoverished, or of allowing in the same places the coexistence of the most prestigious capitals, the most advanced technology, the most securely established

wealth and the most abject despair. Here again, the evolution of employment in Paris would be a good introduction to serious thought on the whole question of the indispensable effort to be made for solidarity and the necessary imagination in the areas of professional and cultural training for citizens. Isn't this the only way to remain competitive and profit equitably from growth?

### III — THE OPTIONS FOR ACTION

Once the facts have been established and questions outlined, the debate, we must remember, remains a political one, before being a choice of spatial options or opposing master plans. It is political on two accounts. First of all, because it is a social problem. What can we do once wealth has been accumulated, to permit us to share it as equitably as possible among all the social strata of the population. The question is also political because these decisions imply an interaction between institutional actors — from the towns to the state — with its own rules of functioning. But it would be useful to recall the terms of the debate and the possible means of action open.

#### 1) Economic accumulation and imbalance

The first point bears on the method and the nature of capitalist accumulation. There is no point in closing our eyes to the problem. The end of this century gives constant confirmation of the fact that you have to accumulate wealth before you can redistribute it, and for accumulating, there is as yet nothing better than our liberal system. But we have known for a long time now, since de XIXth century in fact, that this accumulation cannot be accomplished without paying the price in two basic areas, those of spatial imbalance and social inequality.

In applying this analysis to the Paris area, we all agree on two objectives: on the one hand, social levels, income, equipment and transport must be better balanced and better distributed; on the other, we must be economically efficient. And without trying to fix positions rigidly on irreducible bases, two courses appear open:

- \* that of those who state strongly, with tenacity and precision, that we must first bring the region into balance, this is a condition necessary for social justice.

- \* that of those who maintain that we must first be economically efficient if we are to have anything to distribute, that we must accumulate so that we can endeavour to be just to the highest degree possible.

#### 2) The two disaster scenarios

Beyond the choice of methods for achieving the best economic and social results possible for Paris, we can always elaborate the two disaster scenarios that must be avoided at all cost. Neither is spatial, for when it comes down to it, geographers do not really trust the explanation based on space, whether it be positive or negative.

The first scenario would be the penalization scenario. It would be a mistake to penalize Paris in favour of the provinces, on the pretext that there are more people in the provinces than in Paris, for this would be penalizing Paris to the detriment of France.

The second disaster scenario would be to give free rein to the natural consequences of a liberal system of growth, or to let double-level urban societies and double-level spaces be set up, with their disparities in wealth, in consumer goods and services, and mentalities.

Between these two disaster scenarios, there is a narrow but essential path. It is of no use to lay it out with an old-fashioned voluntarism, of which all the experiments—in the East as in the West—during periods of growth, crisis or recovery—have been seen to fail when they struck fundamental tendencies head on. It would be much better, in the name of a political objective—social equity, or, why not, democratic control of power—to act with determination, imagination and realism.

### 3) Interdependence and a mixed economy

From this point on the reflection suggested could be brought to bear on the double notion of interdependence and a mixed economy. The key ideas in this process should be 1—not to penalize accumulation and 2—to redistribute, thus becoming more interdependent. This may seem like wishful thinking, but if there is very little likelihood of Paris becoming another Beirut, or even another New York, it is just possible that social and ethnic tensions and the difficulty in having a decent life might intensify and become intolerable, first of all, for the most impoverished, but also for the greatest number. Here again, the cure might prove to be worse than the disease, if serious thinking about the relationship between spaces and societies were insufficient or based on a rigid interventionism. One does not act on space by space, but on the mechanisms which govern it, develop it or correct it.

We can take up again a quick analysis of the main questions which apply to the Ile-de-France. The presence of poles of economic wealth and pockets of poverty in investments and initiative does not depend only, nor doubtless even mainly, on the setting up of zones of activity or even differential fiscal taxation of which the univocal effects have always been uncertain. It is often easy to dissuade, or even prohibit a decision to proceed with the creation of something, but it is more difficult to impose a positive localization for it.

In the same way, if all the experiments carried out over the last decade (cf. the Harlequin project in Grenoble) show that social integration cannot be legislated any more than ethnic mixing can, we have known for a long time the virtues of public education, improving the appearance of towns, and access to the full rights of citizenship, which generate social fluidity and residential mobility, and we must find our way back to all of these things.

They touch, by a spirit of imagination and experimentation, on all the consequences of a mixed society and economy in which France is engaged on a long-term basis. To illustrate this point by example of the university, the localization of a future Paris XIV or XV is of less importance—on condition that there be a close collaboration with the area as a whole—than knowing whether these new institutions will be given innovating structures, which would allow the combination of the public university's traditions of humanism and basic ideas

with the flexibility of management and adaptation of private universities.

We must have the courage in these uncertain times, to make audacious wages. Voluntarism and authoritarian spatial planification, under cover of rigour, take us back half a century. If we hope to win the fight against political, social and economic egoism, the time has come for creative imagination.



# Growth and Management of the Third World Megalopolis

Fu - chen Lo

## 1. Trend of Urbanization in the Third World Countries

The post World War population explosion and rapid rural to urban migration in the densely populated Third World has created an alarming management problem throughout the Third World Cities.

The urban population of the developing world was 286 million in 1950 and quadrupled to 1.14 billion in 1985. It is estimated that by the year 2000, 75 percent of Latin America's population, 42 percent of Africa's and 37 percent of Asia's will live in urban areas.

With the 21st century less than a decade away, the growth and management of the newly emerged big cities has become one of the central concerns of governments and citizens in the Third World countries. At the turn of the 20th century, there were only 11 metropolises with more than one million inhabitants, most of them located in advanced countries. By the end of this century, we expect 400 cities in the world with populations of over one million, among them, there will be 20 mega - cities with populations well exceeding 10 million. Furthermore, over three fourths of those big cities will be located in the Third World.

It is commonly observed from historical data that urbanization normally enters into rapid growth when the level of urbanized population exceeds 30 percent of the total population. This implies further rapid urbanization in the developing countries in the next few decades toward the first half of the 21st century.

However, mega - cities in developing countries are aggravated by the pressures of mounting population and cumulative economic activities. The need for services and infrastructure to

Table 1

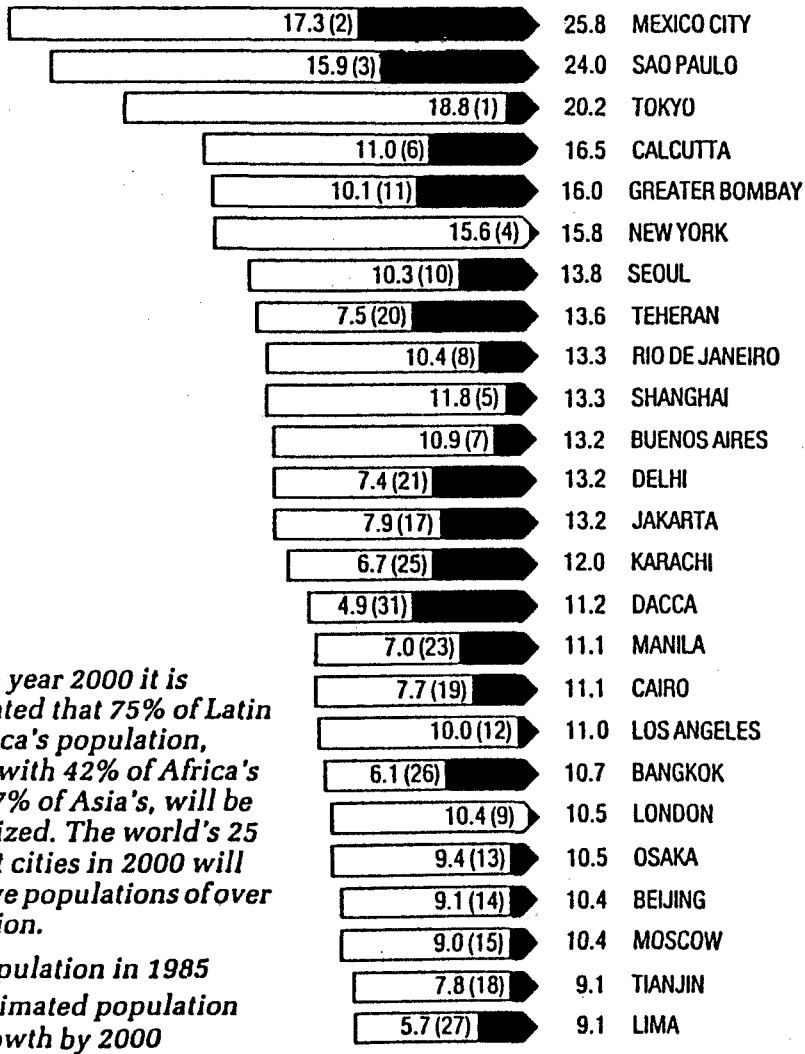
World's 35 Largest Metropolises Ranked by Population Size (in millions),  
1950 – 2000

Rank	Metropolis	1950 Size	Metropolis	1985 Size	Metropolis	2000 Size
1	New York/Northeastern NJ, USA	12.4	Mexico City, Mexico	18.1	Mexico City, Mexico	26.3
2	London, United Kingdom	10.4	Tokyo/Yokohama, Japan	17.2	Sao Paulo, Brazil	24.0
3	Shanghai, China	10.3	Sao Paulo, Brazil	15.9	Tokyo/Yokohama, Japan	17.1
4	Rhein – Ruhr, Federal Republic of Germany	6.9	New York/Northeastern NJ, USA	15.3	Calcutta, India	16.6
5	Tokyo/Yokohama, Japan	6.7	Shanghai, China	11.8	Greater Bombay, India	16.0
6	Beijing (Peking), China	6.7	Calcutta, India	11.0	New York/Northeastern NJ, USA	15.5
7	Paris, France	5.5	Greater Buenos Aires, Argentina	10.9	Seoul, Republic of Korea	13.5
8	Tianjin, China	5.4	Rio de Janeiro, Brazil	10.4	Shanghai, China	13.5
9	Greater Buenos Aires, Argentina	5.3	Seoul, Republic of Korea	10.2	Rio de Janeiro, Brazil	13.3
10	Chicago/Northwestern IN, USA	5.0	Greater Bombay, India	10.1	Delhi, India	13.3
11	Moscow, USSR	4.8	Los Angeles/Long Beach, CA, USA	10.0	Greater Buenos Aires, Argentina	13.2
12	Calcutta, India	4.4	London, United Kingdom	9.8	Cairo/Giza/Imbaba, Egypt	13.2
13	Los Angeles/Long Beach, CA, USA	4.1	Beijing (Peking), China	9.2	Jakarta, Indonesia	12.8
14	Osaka/Kobe, Japan	3.8	Rhein – Ruhr, Federal Republic of Germany	9.2	Baghdad, Iraq	12.8
15	Milan, Italy	3.6	Paris, France	8.9	Teheran, Iran	12.7
16	Rio de Janeiro, Brazil	3.5	Moscow, USSR	8.7	Karachi, Pakistan	12.2
17	Mexico City, Mexico	3.1	Cairo/Giza/Imbaba, Egypt	8.5	Istanbul, Turkey	11.9
18	Philadelphia/Western NJ, USA	3.0	Osaka/Kobe, Japan	8.0	Los Angeles/Long Beach, CA, USA	11.2
19	Greater Bombay, India	2.9	Jakarta, Indonesia	7.9	Dacca, Bangladesh	11.2
20	Detroit, MI, USA	2.8	Tianjin, China	7.8	Manila, Philippines	11.1
21	Sao Paulo, Brazil	2.8	Delhi, India	7.4	Beijing (Peking), China	10.8
22	Naples, Italy	2.8	Baghdad, Iraq	7.2	Moscow, USSR	10.1
23	Leningrad, USSR	2.6	Teheran, Iran	7.2	Bangkok/Thonburi, Thailand	9.5
24	Manchester, United Kingdom	2.5	Manila, Philippines	7.0	Tianjin, China	9.2
25	Birmingham, United Kingdom	2.5	Milan, Italy	7.0	Paris, France	9.2
26	Cairo/Giza/Imbaba, Egypt	2.5	Chicago/Northwestern IN, USA	6.8	Lima/Callo, Peru	9.1
27	Boston, MA, USA	2.3	Istanbul, Turkey	6.8	London, United Kingdom	9.1
28	Shenyang (Mukden), China	2.2	Karachi, Pakistan	6.8	Kinshasa, Zaire	8.9
29	West Berlin, Federal Republic of Germany	2.2	Lima/Callo, Peru	5.7	Rhein – Ruhr, Federal Republic of Germany	8.6
30	San Francisco/Oakland, CA, USA	2.0	Bangkok/Thonburi, Thailand	5.5	Lagos, Nigeria	8.3
31	Leeds – Bradford, United Kingdom	1.9	Madras, India	5.2	Madras, India	8.2
32	Glasgow, United Kingdom	1.9	HongKong, HongKong	5.1	Bangalore, India	8.0
33	Jakarta, Indonesia	1.8	Madrid, Spain	5.1	Osaka/Kobe, Japan	7.7
34	Hamburg, Federal Republic of Germany	1.8	Leningrad, USSR	5.1	Milan, Italy	7.5
35	Vienna, Austria	1.8	Dacca, Bangladesh	4.9	Chicago/Northwestern IN, USA	7.2

SOURCE : United Nations (1985 : Table A – 12).

1985 POPULATION AND  
(WORLD RANKING)

THE WORLD'S MEGACITIES  
IN THE YEAR 2000  
(POPULATION IN MILLIONS)



*By the year 2000 it is estimated that 75% of Latin America's population, along with 42% of Africa's and 37% of Asia's, will be urbanized. The world's 25 largest cities in 2000 will all have populations of over 9 million.*

□ population in 1985  
 ■ estimated population growth by 2000

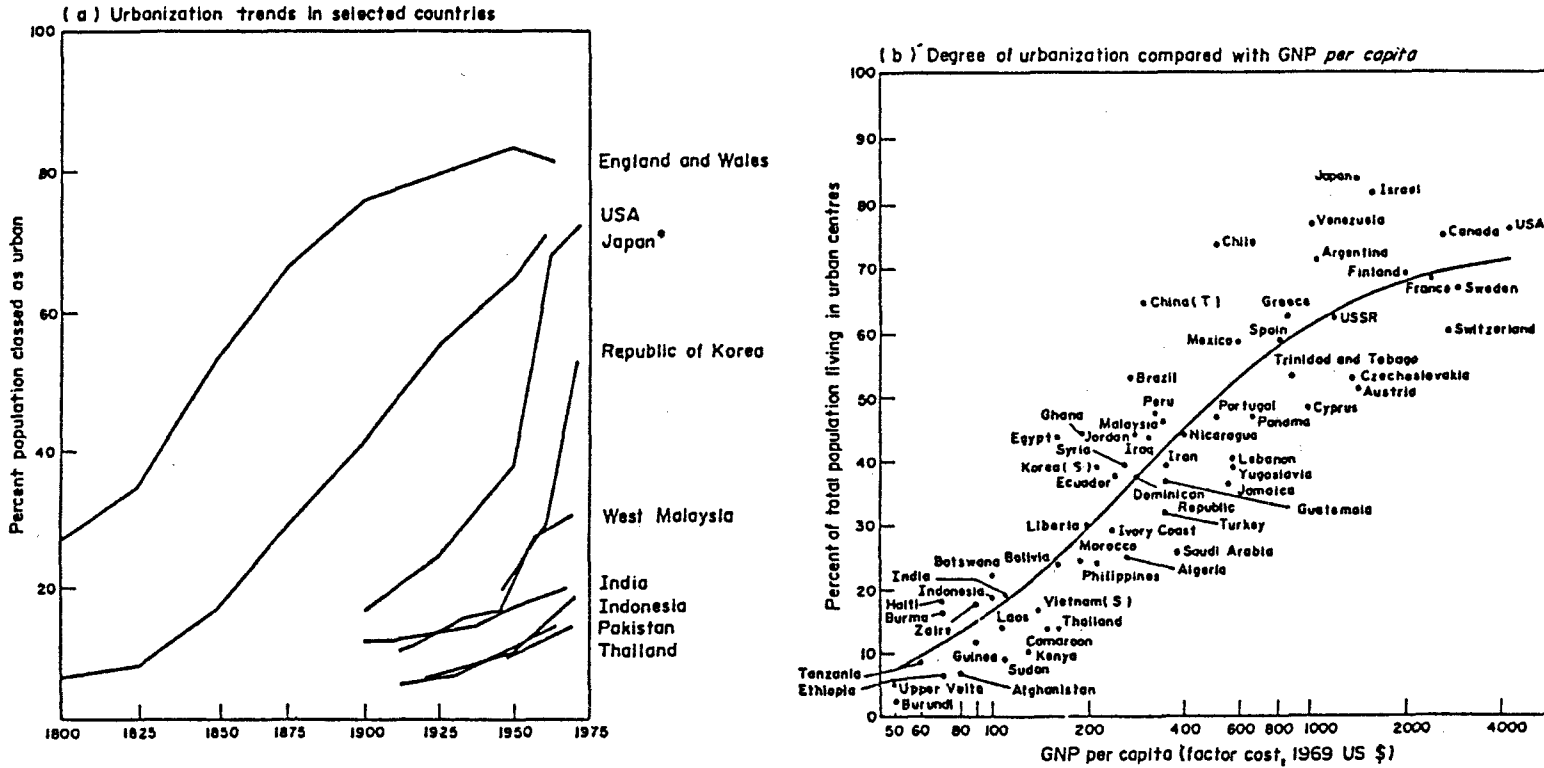


Fig.1. Urbanization trends and cross – sectoral GNP percapita.

Source : Fu – chen Lo and Kamal Salih (ed)

Growth Pole Strategy and Regional Development Policy 1978

accommodate these growing mega – cities far exceeds the financial means and capabilities of their urban administrations, often resulting in chaotic situations. The lack of basic urban services has contributed to inadequate housing for low – income residents, unemployment among the urban poor, traffic congestion, irregular land – use patterns, and environmental deterioration.

## 2. Urban Dualism in the Third World cities

The structure of the large cities in the Third World is characteristically different from that of the metropolitan centers of developed countries in that the Third World cities are typified by a dualistic structure consisting of modern industries and co – operation with the traditional economy. This dualism has been described in terms of a formal/informal sector dichotomy.

The formal sector is dominated by domestically and foreign financed modern industries and business of the corporate type with institutionally set high incomes and wages, and maintaining a relatively high standard of living. Since the labour absorptive capacity of the formal sectors is rather limited, a fairly large portion of urban population in the Third World countries tends to be absorbed into the urban informal sector consisting of a wide range of traditional activities such as hawkers, vendors, daily labourers and services which are distinct from professional and white collar occupations. A large percentage of those in the informal sector population live in the growing slum and squatter settlements in big cities in the Third World. Due to increasing rural – urban disparities and limited labour absorption capacity of the formal sector, the momentum of rural to metropolitan migration is enlarging with increasing newly urbanized population settled in the slums and squatter settlement each year. It is estimated that from 25 percent to as high as 65 percent of household are the slum/squatter households in the Third World metropolises.

Between the formal sector and the informal sector, there is not only income disparity, but a sharp contrast in living styles and different needs for urban amenities in housing, transportation and other urban infrastructures.

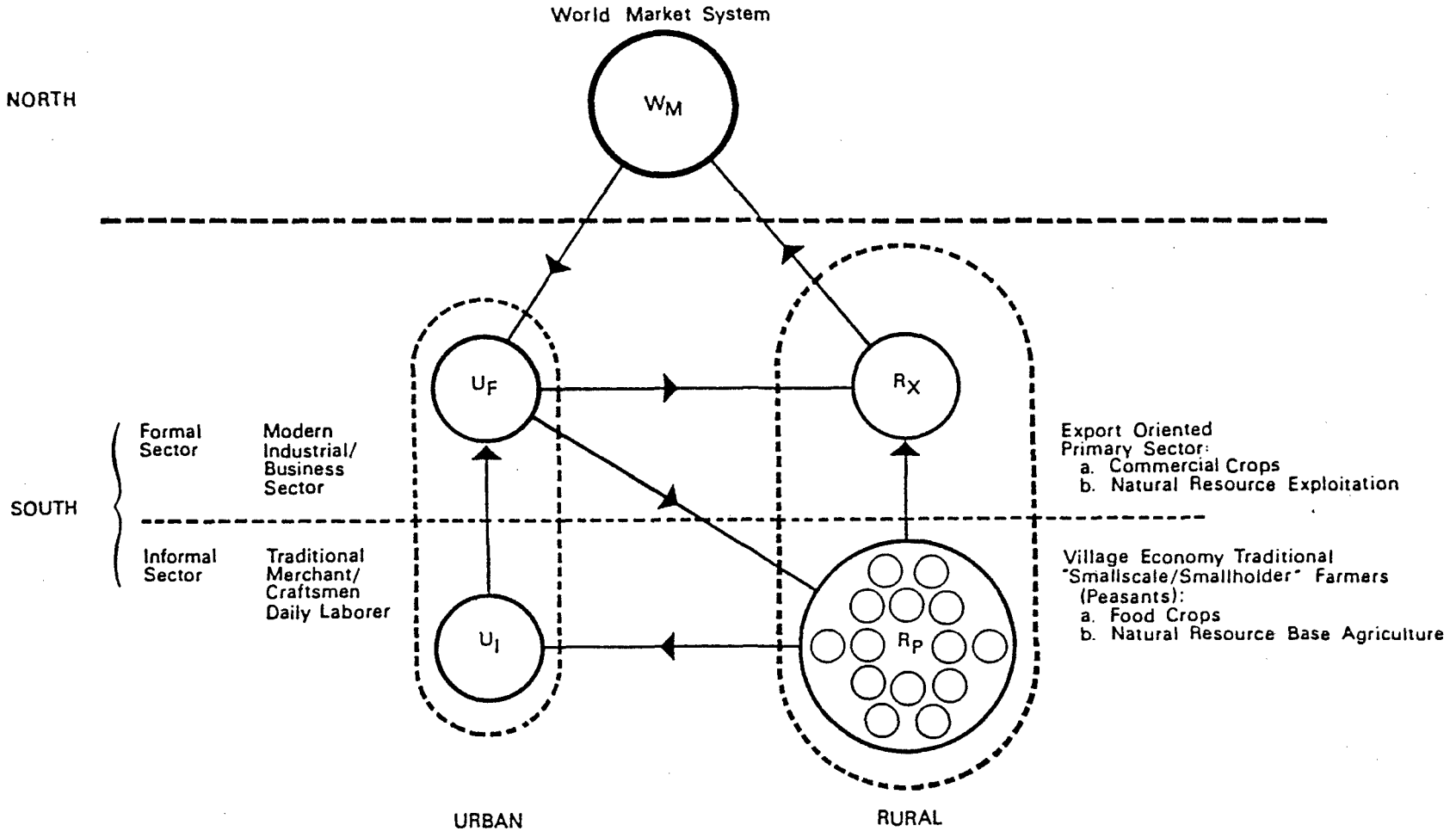


FIGURE 2-6  
BASIC MACRO-SPATIAL MODEL

Source: Fu - chen Lo (ed)  
Rural - Urban Relations and Regional Development 1981

Table 2

## Incidence of Slums and Squatter Areas in Selected Cities

region and country	City	Slums and squatter settlements as percentage of city population	Year	region and country	City	Slums and squatter settlements as percentage of city population	Year
Sub-Saharan Africa				Middle-income Asia			
Cameroon	Douala	80	1970	Hong Kong	Hong Kong	16	1969
	Yaounde	90	1970	Korea	Seoul	30	1970
Ethiopia	Addis Ababa	90	1968		Busan	31	1970
Ghana	Accra	53	1968	Malaysia	Kuala Lumpur	37	1971
Ivory Coast	Abidjan	60	1964	Philippines	Manila	35	1972
Kenya	Nairobi	33	1970	Singapore	Singapore	15	1970
	Mombasa	66	1970	Latin America and the Caribbean			
Liberia	Monrovia	50	1970	Brazil	Rio de Janeiro	30	1970
Madagascar	Tananarive	33	1969		Belo Horizonte	14	1970
Malawi	Blantyre	56	1966		Recife	50	1970
Nigeria	Ibadan	75	1971		Porto Alegre	13	1970
Senegal	Dakar	60	1971		Brasilia	41	1970
Somalia	Mogadishu	77	1967	Chile	Santiago	25	1964
Sudan	Port Sudan	55	1971	Colombia	Bogota	60	1969
Tanzania	Dar es Salaam	50	1970		Cali	30	1969
Togo	Lome	75	1970		Buenaventura	80	1969
Upper Volta	Ouagadougou	70	1966	Ecuador	Guayaquil	49	1969
Zaire	Kinshasa	60	1969	Guatemala	Guatemala City	30	1971
Zambia	Lusaka	48	1969	Honduras	Tegucigalpa	25	1970
North Africa and Middle East				Mexico	Mexico City	46	1970
Iraq	Baghdad	29	1965	Panama	Panama City	17	1970
Jordan	Amman	14	1971	Peru	Lima	40	1970
Lebanon	Beirut	1.5	1970		Arequipa	40	1970
Morocco	Casablanca	70	1971		Chimbote	67	1970
	Rabat	60	1971	Venezuela	Caracas	40	1969
Turkey	Ankara	60	1970		Maracaibo	50	1969
	Istanbul	40	1970		Barquisimeto	41	1969
	Izmir	65	1970		Ciudad Guayana	40	1969
Low-income Asia				Note: Definitions of "slums" and "squatter areas" vary from region to region and from city to city; therefore, these data only present the roughest of impressions of the housing problem in these cities.			
Afghanistan	Kabul	21	1971	Source: Grimes (1976).			
India	Calcutta	33	1971				
	Bombay	25	1971				
	Delhi	30	1971				
	Madras	25	1971				
	Baroda	19	1971				
Indonesia	Jakarta	26	1972				
	Bandung	27	1972				
	Makassar	33	1972				
Nepal	Katmandu	22	1961				
Pakistan	Karachi	23	1970				
Sri Lanka	Colonbo	43	1968				

### 3. The World city System and World Economy

The population explosion and massive rural to urban migration in the developing countries during the post – world war period is one of the key determinants of the rapid growth of the Third World megalopolises. In addition, policies and measures to promote economic development and industrialization in the developing countries have been transforming predominantly agricultural and rural societies to a more industrialized and urbanized societies in a relatively short period. The growth and structural transformation of megalopolises is an integral part and process of national development. Furthermore, global economic integration, increased international trade, capital flows, telecommunication, new waves of technologies, and shifts in the comparative advantage of production, continue to play a central role in integrating the national territories and the shaping up the spatial organization of the country economies at the world level. At the center of this global economic integration and structural adjustments is the inter – linkage of mega – cities and other major metropolises which form a world – city system.

The rise and fall of OPEC cities, the debt burden of Latin America metropolis; the collapse of commodity prices and stagnation of importsubstitution industries in African urban centers, and rising role of Tokyo and other Asian cities as new dominant trade and financial centers in East Asian and the world economy, clearly demonstrate how the major metropolitan centers in the world have been affected by the current global economic adjustments occurring over the recent past. The new wave of techno – economic paradigm are in the process of replacing the old production paradigm and reshaping the major metropolitan centers both in developed and developing countries in the decades to come.

Lewis Mumford wrote in 1961 that “Megalopolis is fast becoming a universal form, and the dominant economy is a metropolitan economy, in which no effective enterprise is possible without a close tie to a big city”.

Whether it should be called a megalopolis, a mega – city, or a world city, the role of the dominant cities at the world or the national levels is increasingly associated with its economic capacity and its external linkages as the world economy has increased its interdependency during the post – world war period. During the past decade, the world economy has undergone a series of economic upheavals which have changed the configuration of mega – cities and defined new conditions for its transformation toward the early 21st century.

Global adjustments which took place in the early 1980’s continue to transform the world economy into a pattern of uneven growth among the major economic blocs. East and Southeast Asia are leading with the highest growth rates while the U.S., E.C. and the rest of the world remain at a much lower level. The process of uneven growth and regionalization of world economic development is not a short – term phenomenon. It is mid – term to long – term in



scale and structural in nature.

The emerging pattern of the World City System based on the current global adjustment and the national economic performance can be summarized as Table 3. The Latin America and African cities are plagued by the high dependency on primary commodities. These cities face immense difficulty in financing structural adjustment and urban infrastructural expenditure.

The stagnation of the commodity prices has also lead to massive rural to urban migration, escalating the pressures for the expansion of the stock of urban infrasture. Heavy external lending and sluggishness in commodity export earnings is further aggravating financing future urban development. This spiral of stagnation is casting a dark shadow in immediate recovery of cities in these countries.

In the medium growth group lies a whole range of cities from both developed and developing countries. The cities in the United States and Western Europe have been suffering from the trend of deindustrialization in the 70's accompanied by a continuous decline of blue-collar jobs in the traditional industrial centers. It is also evident that the structural change of those metropolis corresponds with the increasing role of the service sector. Lately a new trend of information processing and high-technology industries has begun to serve as the new impulse for the future growth. But this does not necessarily coincide with some of the old metropolises. In Europe, opening of East European cities and incoming of a larger integrated EC market is expected to stimulate the revitalization of European industries with increasing role of high technology. These new trends are likely to induce a structural adjustment in European cities.

Major cities in South Asia and Middle East are traditionally more inward looking thus less effected by the current global adjustments and has maintained moderate growth.

In contrast, the cities with high economic growth rates have been highly concentrated in the East and Southeast Asia. These cities have had phenomenal expansion in their share in world trade and production. The share of Japan's GNP to the world GNP has raised from 4.1 percent in 1960 to a 13 percent level in 1990. Tokyo has quickly emerged as a world financial center as Japan has assumed the role of the largest creditor in the world. Many Asian economies also have experienced a two-digit growth in the recent past. Trade and inter-industrial linkages together with a massive flow of the capital among Japan, Asian NIEs and ASEAN has led to a rapid growth and structural transformation of Asian cities.

A network of Asian cities is expected to form a new growth corridor in the world city system.

Table 3

## Grouping of Major World Cities by Regional/National Economic Performance

High – Debt, High Inflation High Primary Export Economies		Medium Growth (2 – 4 %) Economies		High Economic Growth (4 % and over) Economies	
		<u>U.S.A.</u>	New York Los Angeles Cicago San Francisco	<u>Japan</u>	Tokyo/ Yokohama Osaka/Kobe
		<u>W. Europe</u>	London Paris Milan Rome Rhein – Ruhr Berlin Madrid		
		<u>E. Europe</u>	Moscow Leningrad		
<hr/>					
<u>Latin America</u>		<u>South Asia</u>	Bombay Calcutta Delhi Madras Karachi Dacca	<u>NIEs</u>	Seoul Taipei Hong kong Singapore
Buenos Aires	ARGENTINA				
Lima	PERU				
Lapaz	BOLIVIA				
Santiago	CHILE				
Caracas	VENEZUELA				
Bogota	COLOMBIA				
Mexico City	MEXICO				
Sao Paulo	BRAZIL	<u>Middle East</u>	Istanbul Teheran Baghdad	<u>ASEAN</u>	Jakarta Bankok Kualalumpur
Rio de Janeiro	BRAZIL				
<hr/>					
<u>Africa</u>		<u>ASEAN</u>	Manila	<u>China</u>	Beijing Tianjin Shanghai Guangzhou
Lagos	NIGERIA				
Kinshasa	ZAIRE				
Cairo	EGYPT				
Nairobi	KENYA				
Accra	GHANA				
Abidjah	IVORY COAST				
Algiers	ALGERIA				

#### 4. Environment and Third World Urban Management

In Third World cities, the need for infrastructural services to accommodate the rapidly growing urban population far exceeds the financial means and capabilities of their government, resulting in chaotic urban management. This has created inadequacy in basic services for a livable urban environment, including poor housing, traffic congestion, irregular land – use patterns and general environmental deterioration.

For instance, one of the mega – cities in the Third World known for its beauty is the city of Rio de Janeiro, however it is also known for its squatter settlements and slums. Authorities estimate that of Rio's 502 shanty – towns housing over 3 million people, two – thirds of these are perched on steep slopes in hillsides surrounding Rio. Thousands of tin and cardboard shacks have been put up by squatters. As more poor people build “temporary” shelters, they strip away the vegetation on the steep hills – vegetation that anchors the soil and protects the watershed. The bare soil exposes itself to the tropical storms and mud slides. In February 1988, mud slides claimed the lives of 277 and leaving over 20,000 homeless. Although many of Rio's middle class and wealthy neighborhood were flooded, destitution and human suffering was greatest in this squatter settlements and shanty – towns that cover the hills.

Those problems and other chaotic urban management issues are commonly shared and experienced by most of the big cities across the Third World. Furthermore, with up – coming rapid urbanization and polarization of new rural to urban migrants in the cities, the problems will be further aggravated.

Under the government policies to promote modernization and industrialization the modern sector is always given priority in infrastructural improvement. However, the majority of the people are still in the economically weaker traditional informal sector which is often left behind in the provision of even the basic minimum services. The disparity between those two sectors is widening. The urgent issue is how to strike a better balance between economic efficiency and social equity.

One common objective often adopted by those in charge of designing urban policies in developing countries is the goal to make cities serve more effectively the preferences of the formal sector (the better – off sections).

As such it may tend to view the growth of slums as an infringement on the beauty of the city ; to regard street vendors, and overcrowded buses as a nuisance impeding the mobility of private automobiles. The policy prescriptions that may follow from this diagnosis of the urban problem is the adoption of public measures on : the beautification of cities through slum removal ; construction of high cost public housing ; the banning of street vendors from commercial districts, etc. An alternative set of objectives call for an increase in the overall

efficiency for the majority and for the alleviation of the poverty affecting substantial portions of the population in the cities of the developing world. At the same time, the emphasis of public involvement in supplying transport, housing, and services world have to shift to areas such as low – cost urban infrastructure and basic education and health programmes in which private supply responses are least able to meet the increases in demands associated with rapid urban growth.

Basic needs for the urban poor to maintain a decent life in the city is to be consider as their entitlement as an urban resident. Prioritization of those basic urban amenities is one of most urgent policy issues in the Third World cities. Excess to affordable quality of life by marginal urban residents must be taken into account in city management policies. The perceived deprivation to social and economic opportunities sow the seeds for delinquent behaviour as well as fosters illicit social and economic activities. As a matter of urgency, sustaining peace and order requires addressing the basic needs of the urban poor.

## 5. Sustainability of Urban Environment

Many Third World mega – cities are facing bottlenecks in the provision of basic amenities and in their carrying capacities of the urban environment. Based on a “global average”, it has been calculated that a city of 1 million inhabitants consume every day about 625,000 metric tons of water, 2,000 metric tons of food, and 9,500 metric tons of fuel, while at the same time generating 500,000 metric tons of waste water, 2,000 metric tons of solid wastes and 950 metric tons of air pollutants. However for many Third World mega – cities the continuous deterioration of urban environment and trends of rapid migration are pushing its sustainability to its limits. Mexico city for instance with 3 million automobile plus 7,000 public buses and 130,000 factories (which is half of the entire of Mexico) concentrated in this most crowded mega – city, generated 110,000 tons of air pollutant a day where the air was recently declared unfit to breathe. It was estimated that as high as 100,000 people died of pollution including 30,000 children. In Calcutta, over 12 million population in sharing all urban public infrastructure which is capable to support 2 million population. 1.5 million live in the street without shelter. In many low – income countries as high as 70 percent of the urban population is a one room family, and an average of only 5 percent of solid waste is properly treated. According to WHO, over 1.2 billion people lack safe drinking water. This leads to 1 billion cases of diarrhoea and the death of 4.6 million children per year.

Improvements in the urban environment and its sustainability are the most urgent priority beyond the beautification of the third world cities, and it requires both financial and technical assistance from advanced countries.

## 6. Population Distribution Policy and Urban Management

Rapid rural to urban migration is not only the result of the pull factor due to the income

disparity between the countryside and the big cities but also is a consequence of the push factor attributed to the deterioration of population pressure on the limited arable land. For the same reason rural poverty has led to opening of forest and marginal land for survival which has created further encroachment of "green areas" in the Third world. Tropical forests are shrinking by 11 million hectares a year due to commercial logging and the enlargement of poverty enclaves.

Therefore it requires a close examination of the population distribution policy and its impact on the environment. In coping with polarized urban population and rapid growth of the mega-cities, growth pole approach or policy of concentrated decentralization has been adopted by many governments. This effort to create counter-magnetized centers to decentralize population has had mixed results. The role of small and medium cities has been recognized as vital to overcome rural stagnation and in providing urban accommodation at a lower cost. Restructuring of the city system to cope with better population distribution has a role in coping with the deterioration of the mega-city environment and rural poverty. The environmental issue in the Third World especially in its cities can not be separated from the overall concern of population explosion and poverty.

Today mega-cities around the world are in transition and would face new and complex challenges in the decades to come. Its gigantic size in terms of its number of population and cumulative economic, social and cultural activities would continue to shape-up mega-cities as vital centers of civilization for mankind. The dynamism of its size can invigorate the old socio-economic structures to innovate new approaches to city management and the creation of new forms of vitality in the mega-cities. At the same time the complexities of its size impose difficult policy choices in addressing the needs of its different constituents. A number of mega-cities are facing bottlenecks in the provision of basic amenities. Their carrying capacities of urban environment primarily as a result of rapid migration into the city is pushing its sustainability to its limits.

Hence the policy choice is to balance the trade-off between short term strategy and long term goals. The need to resolve some of the crises of sustaining its gigantic population in mega-cities must be addressed. This must be done in the perspective of long term policies that attempt to create mega-cities as new centers of civilization. Short term policy measures must be directed at establishing the minimum threshold of maintaining affordable quality of life within the available means and resources in these cities. At the same time the long term measures should provide the window of opportunity to create the continued sustainability of its existence in the 21st century.

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## TOWARD GROWTH MANAGEMENT POLICY FOR TOKYO

## Uni-polarization Phenomena in Tokyo and Growth Management

Yorifusa Ishida\*

## 1. Will 1973 Come Again ?

## 1-1. Three big events occurred in 1973

In the spring of 1973 three big events or troubles took place in the Tokyo Metropolitan Region (in this paper refers to South Kanto; Tokyo, Kanagawa, Saitama and Chiba), arising from such factors as the concentration of population, industry and urban functions in Tokyo, the increase of high-rise buildings and overcrowded areas in Tokyo and the huge expansion of built up area in the Tokyo Metropolitan Region. These three events are referred to as the 'Ageo Riot', the 'Rubbish War' and the direct call for Ordinance on Access to Sunlitht.

I would like to begin my discussion of the problem of excessive concentration or uni-polarization phenomena in Tokyo by referring to events which took place eighteen years ago. First of all let me describe briefly the three big events.

The 'Ageo Riot' took place late on night at the yard of Ageo Station on the Takasaki Line when commuters, angered by delayed trains and inadequate responses by station personnel, smashed train cars and station facilities and started a fire. It is actually symbolic that the trouble took place at Ageo Station. At that time, frequent commuter service in the direction of the Tohoku/Takasaki Line were made as far as Omiya Station, the final destination on the Keihin-Tohoku Commuter Line. Going further out of Omiya, the frequency of train runs dropped sharply. On the other hand, from the latter half of the 1960s, rising

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\* Director of the Center for Urban Studies

land prices in Tokyo Metropolitan Region forced the Japan Housing Corporation (now the Housing and Urban Development Corporation) and private developers to develop their housing estates in areas beyond the distance limit of commuter travel. Thus Ageo, which is two stops beyond Omiya Station, became the focal point of contradiction in residential developments without any means of commuter transportation. The commuters who experienced daily frustrations resulting from this contradiction were thus incited to riot at Ageo by merely a slight provocation. The 'Ageo Riot' is one manifestation of the contradictions attendant upon the huge growth and outward expansion of urbanized area in the Tokyo Metropolitan Region.

The 'Rubbish War' refers to an incident in which the residents of Koto Ward, led by the ward chief and the members of ward assembly, forcibly blocked the transportation of rubbish from Sugunami Ward to 'Yume no shima (literally means dream island)' rubbish disposal site in Koto Ward. The residents of Sugunami Ward had been opposing to construction of a refuse incineration plant. At the time (and now a day as well) large volumes of rubbish were disposed of by burial at land reclamation sites along Tokyo Bay because of shortage of incineration plants. Koto Ward, which has disposal sites along the sea front and in the offshore, thus became the focal point of high concentration of refuse pollution; for example, concentrated travel by garbage trucks and swarms of flies breeding at refuse burial sites. The 'Rubbish War' is one manifestation of the contradictions resulting from the excessive concentration of population and industry in Tokyo, delays in the establishment of urban facilities, and massive consumption coming in the wake of high economic growth.

As population and urban functions became more and more concentrated in Tokyo in the course of high economic growth, construction of high-rise buildings stepped up dramatically in the latter half of the 1960s. The campaign involving a 'Direct Call for Ordinance on Access to Sunlight' arose amid grave concern among citizens about the obstruction to sunlight by high-rise buildings. A group of citizens drafted a bill which would make consent by neighbouring residents mandatory for building certification of high-rise buildings, and this draft was submitted as direct proposal to the Tokyo Metropolitan Assembly. After four years of consecutive deliberations, this draft bill was eventually abolished, but it served as a stimulus to the creation of restrictive provisions on sun shadow in the Building Standards Act. This event thus represents at least one victory by citizen's movement in its response to the aggravation of urban problems caused by further concentration in Tokyo.

We have thus seen that each of the three events occurring in the spring of 1973 came as a result of contradictions brought about by excessive concentration of population, industry and urban functions in Tokyo, by more and more high-rise buildings and high density built up areas, and by enormous expansion of Tokyo, all of which came in the wake of high economic growth in the 1960s.

#### 1-2. Interim examination of the New Comprehensive National Development Plan

In the fall of 1973, a report on interim examination of the new Comprehensive National Development Plan (new CNDP) covering large city problems was issued by the Economic



Planning Agency (EPA). This is one of the interim results of work undertaken as a basic endeavor to create a framework to the third CNDP. In this report, the future population of the Tokyo Metropolitan Region in 1985 was estimated as 38.1 million, 33.0 million and 28.7 million people each by three stochastic methods; trend type estimation, trend slowdown type estimation and dispersion (especially younger age strata) type estimation, accordingly. For each estimation, the urban problems of the Tokyo Metropolitan Region are then examined. Inspection and analysis were undertaken with a cautious, impartial attitude rarely found in this type of report by the central government. Difficult problems currently faced by the gigantic metropolis of Tokyo, or problems to be confronted in the near future, including those pertaining to land, housing, commuter transportation, water supply and sewerage, the environment, waste treatment, and disaster prevention, were subjected to multilateral analysis in search of the limits for large metropolises.

In conclusion, the report pointed out that even if population of the Tokyo Metropolitan Region could control to approximately 28.7 million, numerous difficult problems pertaining to such things as land and housing, electrical power supply, water resources, commuter traffic and transportation, air pollution and waste disposal, will inevitably emerge. This population was the lowest figure estimated under the condition of adopting policy for forceful dispersion of population centering on younger ages from Tokyo, or policy of 'closed population' which inhibits all inflow of population into Tokyo Metropolitan Region from outlying region and other rural regions.

This examination served as the foundation for launching by the third CNDP of a concept of 'Koiki Seikatsu-ken' (regional living spheres) with emphasis on local districts, as well as the stimulus for adoption of a policy for restraint of concentration in the Tokyo Metropolitan Region.

### 1-3. How were the problems of 1973 overcome?

In fact, however, the population of the Tokyo Metropolitan Region (Tokyo, Kanagawa, Saitama and Chiba) in 1985 reached 30.27 million, and ever since the Tokyo Metropolitan Region has been expanding as a center of world information and finance so that the concentration of population and urban functions in the city has continued. Indeed, the population has been held down so as to be lower than that of 'trend type' or 'trend slowdown type' estimation but it far exceeds that of 'closed area type' estimation. And looking at the subsequent increase in population, the growth of population in the Tokyo Metropolitan Region between 1985 and 1990 reaches 5.03%, and the population is close to that of a 'trend slowdown type' estimated population. This rate of increase far exceeds the rates for Greater Osaka, at 1.28%, and for the nation as a whole, at 2.12%.

Have the problems of 1973 really been resolved?

Looked at over a very short term, the factors which made it possible to avoid the problems of 1973 can be regarded as three conditions which materialized throughout the 1970s. The first comes from citizens' movements, mostly on environmental problems, which became vigorous from the second half of the 1960s, and from policies of reformist self-government

bodies, which increased rapidly on the basis of these movements. This also had a definite impact on national policy.

The second originates from the fact that, after the oil crisis of 1973, policy for high economic growth was no longer possible; it had to be replaced by a policy of stable growth, and as a consequence, certain revisions were also added to urban policies. Events such as the establishment of the National Land Use Planning Act of 1974 can certainly be viewed as a manifestation of such a process. In terms of urban planning policy, already from the second half of the 1960s severe regulation type policies began to be adopted, which were clearly different from conventional approaches. Control against urban sprawl, subdividing of zoning and intensifying of regulation, for instance, were inaugurated by such means as enforcement of the Urban Planning Act of 1968 and the 1970's overall revision of 'Shudan-Kitei (planning regulations)' of Building Standard Act.

The third factor comes from attempts to increase, correspond to increasing demand, supplies of commuter transportation capacity, electric power, and natural water resources etc, through bold public investment. These measures fell far short of solving the problems but they did prevent the problems from exploding into incidents or riots.

## 2. Ten-Year Cycle of Growth/Concentration and Control/Dispersion Argument

Tokyo was dealt a devastating blow by the Second World War, and its population temporarily fell to as low as 3 million people. Later, however, its population was quickly recovered the prewar level, and thereafter, it has continually expanded; urban functions and urban activities have continued to develop and built up area has continued to expand.

Various arguments have been made concerning policy for responding to these developments, but in general there are two predominant standpoints. One argument is that although the concentration on Tokyo and the growth of Tokyo should not be left totally to take its own course, they should be permitted for the most part. The other argument is that the growth or massive expansion of Tokyo should be controlled and that population and urban functions should be dispersed. These arguments come to fore alternately in cycle of about ten years [Ishizuka & Ishida, 1988].

(1) Immediately after the Second World War and during in the 1950s, that is the period from the post war urban rehabilitation programme to the first National Capital Region Plan (first NCRP), restoration and growth of population and urban functions in Tokyo continued due to such factors as favorable business climate spurred by post war rehabilitation and the Korean War. In terms of policy, the basic themes were curtailment of large cities and dispersion to rural districts or systematic control of the same through metropolitan regional planning.

(2) The 1960s are characterized by high economic growth and rapid expansion of Tokyo.

“Tokyo Plan 1960” published at this time by famous architect Kenzou TANGE and his associates, affirmed the existence of Tokyo as a city of ten million people and proposed the construction of magnificent ‘Kaijo Toshi (marine metropolis)’ in the huge expanse of Tokyo Bay in answer to the Tokyo problem which, he believed, originated from delays in the improvement of facilities for growing Tokyo. This plan is indeed symbolic of the trend at that time.

(3) In 1970s, contradictions in the massive urban sprawl of Tokyo, as mentioned previously, erupted, and the oil crisis occurred, so that again the curtailment of large urban growth became a problem. Moreover, environmental issues as exemplified by photochemical smog and the question of sunlight exposure, came to serve as a framework for considering problems in general, and in this respect, the initiatives by reformist self-government bodies cannot be overlooked.

(4) In the 1980s, as distinguished by policy of then Prime Minister Nakasone in 1982-3, a course, calling for easement of regulations on building and urban planning for the purpose of intensive utilization of urban land and introducing private initiative in conjunction with a philosophy of small government and administrative renovations, was adopted. This can be seen as a manifestation of Japan in a world wide tendency of new conservatism and new laissez faire as exemplified by the policy of the Thatcher Administration in United Kingdom. As a result, in the second half of the 1980s, construction of office buildings, especially in Tokyo, accelerated, and in taking advantage of this opportunity, real estate investments also became brisk. This was the decade of so-called “bubble economy” and skyrocketing land prices.

(5) In the 1990s, the evils brought about by the growth of large cities in the 1980s became more and more apparent. Conditions came to resemble those at the start of the 1970s, and methods for overcoming these conditions have not always been clearly evident. It is the purpose of this report to help further clarify such methods.

### 3. Uni-polarization Phenomena in Tokyo and the Current Status Thereof

#### 3-1. Meaning of uni-polarization

There is much talk about the evils caused by uni-polarization phenomena or over concentration in Tokyo, but it is not always very clear what this “uni-polarization” actually means. A number of “Plans” have been drafted to cover Tokyo, and in each of them the problem of uni-polarization is defined as given bellow, yet each of these definitions is slightly different from the others, and at times they are clearly different.

(1) Comprehensive National Development Plan (CNDP) : In the CNDP of the central government (at present the fourth CNDP), the problem of uni-polarization refers to excessive concentration

of population and industry in the Tokyo Metropolitan Region (Tokyo, Kanagawa, Saitama and Chiba).

(2) National Capital Region Plan (NCRP) : This plan is also prepared by the central government, but the problem of uni-polarization as taken up in the fourth NCRP differs slightly from the problem as defined in the fourth CNDP, pertains to the concentration of business functions in Tokyo Wards Area.

(3) Long Term Administration Plan of Tokyo Metropolitan Government (TMG) : The Long Term Administration Plan compiled by the TMG treats the problem of uni-polarization as the concentration of high-level business functions in the CBD of Tokyo, especially 'Marunouchi', 'Kasumigaseki' and 'Yuraku-cho'.

### 3-2. Persisting concentration in each levels

The trend towards concentration in each of above mentioned senses has continued, and the pace, which once slowed down in the 1970s, has accelerated since the 1980s. Characteristic numerical values can be given as follows [Table 1].

(1) Tokyo Metropolitan Region : The population of the Tokyo Metropolitan Region in 1990 was about 31.8 million. The growth of population from 1985 to 1990 reached 5.03%.

(2) Tokyo Wards Area : Office floor space increased 1.8 times from 1975 to 1988. Working

Table-1 Concentration of Population, Employment and Office Floor Space  
(Population & Employment 1,000 persons)

		1975	1980	1985	1988	1990
Tokyo + 3 Pref.	Population	27,040	28,699	30,273		31,796
Tokyo 23 Wards Area	Office sp.	2518 ha	3324 ha	3924 ha	4549 ha	5101 ha
	Employment	6118	6234	6681		7050
	Population	8647	8352	8355	8337	8163 ha
Inner 3 Wards	Office sp.	1611 ha	2000 ha	2324 ha	2640 ha	2918 ha
	Employment	1900	1959	2202		
	Population	361	339	325	289	266

population stood at 6.11 million in 1975, at 6.68 million in 1985, and at 7.05 million in 1990. The rate of increase was 1.09 times between 1975 and 1985, and 1.06 times between 1985 and 1990. The residential population dropped from 8.65 million in 1975 to 8.20 million in 1990.

(3) Tokyo three Central Wards (Tokyo's CBD) : Office floor space increased 1.6 times from 1,611 ha in 1975 to 2,640 ha in 1988. Working population increased 1.4 times from 1.9 million in 1975 to 2.2 million in 1985. Residential population dropped sharply from 545,000 in 1960 to 361,000 in 1975 and to 289,000 in 1989. The residential population in 1989 was 80 % of the same population in 1975 and only 53 % of the same population in 1960.

#### 4. Factors Behind Uni-polarization Phenomena in Tokyo

##### 4-1. Uni-polarization in Tokyo does not result from absence of planning

From the time of the war damage rehabilitation programme up to the presentday fourth NCRP, plans for the Tokyo Metropolitan Region have been drafted at least five times, and portions thereof have been implemented while other portion have been abandoned. For example, the first NCRP (1958) was an outstanding plan said to be based on the Greater London Plan (1944), but the Kinko-chitai (greenbelt) Plan was not carried out, and reclamation in the Tokyo Bay area was implemented much more than planned. The fact that a greenbelt was not realized made it possible for urban areas to expand freely, and after its reclamation, Tokyo Bay area initially served as areas for distribution and industrial functions, and at present, locations for various new functions such as business for international information exchange would be established there. This means that the aforementioned plans became factors promoting further concentration on Tokyo.

##### 4-2. Why the "limits" of Tokyo's expansion were surpassed

Why were the limits as identified in interim inspection of the new CNDP by the Economic Planning Agency in 1973, surpassed?

The answer can be given in two aspects. (1) On the one hand, the restructuring of the urban structure of Tokyo through extensive public investments from the 1970s through the 1980s and through large-scale conversion of waste and underused land to reusable land was successful in some measure. For example, the commuter transport capacity of one peak hour, at the point of crossing the JR's Yamanote Line, increased over a ten-year period from 1970 to 1980 by 1.33 times for the JR lines and 1.51 times for private and subway lines, so we can see that considerable progress is being made. (2) On the other hand, during this same period no substantial improvement was made on the rate of congestion, and the commuters of Tokyo Metropolitan Region have had to endure the congestion rate of 216.8%. Yet it is precisely because Tokyoite have endured such conditions that the limits of growth could be hardly surpassed.

#### 4-3. Concentration is beneficial to individual enterprises and has been permitted

The extensive public investments referred to above, generated a huge external economy for the corporations located in Tokyo. The reason why corporations continue to concentrate in Tokyo despite skyrocketing land prices and high rents for office space lies in the fact that Tokyo provides the advantages of close concentration, such as face-to-face interaction, but more important than these advantages is the fact that the existence of external economies ultimately made the cost of locating in Tokyo inexpensive. According to estimates by the Committee Investigating the Problem of Concentration in Tokyo, the cost of establishing a company headquarters in other cities as compared to Tokyo is Osaka 1.42 times greater, Sendai 1.74 times greater, and Sapporo 2.68 times greater than in Tokyo [Shuchu-I, 1990]. Nevertheless, this differential is almost totally eliminated when social costs, such as the cost of alleviating commuter congestion and the cost of acquiring residences for employees, are added. In other words, the over concentration on Tokyo has become inevitable because it provides advantageous conditions for individual corporations. It is very important that it has been made inevitable by the present system in which the advantages are not translated into social cost burdens for corporations. The problem is that the "general development benefit" and the "peripheral development benefit" coming with urban growth and development are restored to the land owners including corporations [Ishida, 1990-a].

What is more, corporations in Tokyo are given extremely wide latitude in the use of land. Regulations on the use of land in Tokyo have been lenient from the outset, but with execution of Yoseki-chiku Seido (the floor area ratio zoning) of 1963, an ultrahigh rate of floor area ratio (FAR) at 1000% was stipulated, due to forcible campaign by real estate and construction companies. And from the second half of the 1970s, policies were adopted to facilitate and promote advanced utilization of land. For example, individual regulation easing systems such as Tokutei-Gaiku (special block) system and Sogo-Sekkei (comprehensive design) system were provided. When such policies for promoting high land utilization are adopted, more possibilities benefiting from individual development accrued to land owners.

### 5. What is the Solution to Uni-polarization

#### 5-1. What is to be solved?

All the various plans for Tokyo at present are aimed at solving the problem of excessive concentration or uni-polarization, but they each seems to attempt to solve different uni-polarization.

Due to the difference of recognizing what aspects of problem as uni-polarization phenomena, (1) excessive concentration of population and industry on the Tokyo Metropolitan Region is taken up by the fourth Comprehensive National Development Plan (fourth CNDP), (2) over concentration of urban activities on Tokyo Wards Area is taken up by the fourth National Capital Region Plan (fourth NCRP) and (3) accumulation of office space in Tokyo's CBD area

is taken up by the second and third Long-Term Administration Plans of TMG.

5-2. What each "resolution policy" will bring

(1) The resolution of uni-polarization on the Tokyo's CBD area proposed under the TMG's Long-Term Administration Plan proposes revitalization of conventional urban subcenters such as Shinjuku, Shibuya, and Ikebukuro, and development of new subcenters within the 23 wards area and construction of water front subcenter as well; in other words, it calls for the realization of multi-center type urban structure. Establishment and development of new centers in Tama district are also proposed, but they have been delayed. Consequently, although a multi-center type structure is targeted, the result has been nothing but promotion of excessive concentration of business functions to the Tokyo Wards Area.

(2) Under the fourth NCRP, the policy for resolving over concentration on Tokyo Wards Area calls for the construction of new business center districts at such places as Yokohama-Kawasaki, Makuhari-Chiba, Omiya-Urawa, Tachikawa-Hachiohji and southern part of Ibaragi Prefecture, and for reorganizing the structure of the Tokyo Metropolitan Region into a so-called 'Koiki-Takaku Toshi Fukugo-tai (extensive multi-core urban composite)' or into a 'Ta-Kaku Ta-Keniki (multi-core and multi-sphere area)'. Under this plan some progress has already been made in operations at Makuhari-Chiba, and at Yokohama (MM21 project) - Kawasaki. However, as the functions locating in these districts are not the functions shifted from Tokyo Wards Area but rather new functions which complement the functions of the Tokyo's CBD, such as the international trade fair hall (Messe) of Makuhari and the international conference hall of Yokohama, the new business center districts would serve to strengthen concentration on the Tokyo Metropolitan Region.

(3) Another policy for resolving uni-polarization on the Tokyo Metropolitan Region has been conceived under the fourth CNDP and the Act for Promotion of Multi-polar Dispersion Type Territory. This policy calls for the propagation of regional hub cities and for the establishment of national expressway networks, bullet train routes and telecommunication networks to act as incentives to the dispersion and accumulation of urban functions to these regional centers. However, since these networks have been planned to connect local areas with the Tokyo Metropolitan Region, they have inevitably had the effect of strengthen the position of Tokyo and the policies for dispersion have thus had the converse effect of promoting concentration on Tokyo. The propagation of regional cities in itself has served to expand their positions of dominance with respect to surrounding areas but it has not readily improved their positions with respect to Tokyo. To be sure, the concentration of population on Tokyo slowed down from the 1970s to the start of the 1980s, population increases were observed in regional cities, and hardly any of the prefectures were losing population, but from 1985, a decline of population in the regional districts started up again, and it can be reviewed as evidence that the fourth CNDP did not succeed in alleviating the trend towards uni-polarization in Tokyo.

The various plans for Tokyo have all been aimed at resolving the problem of uni-

polarization, but there is concern about that the cumulative effect from the results of each, as mentioned above, will serve to advance excessive concentration on Tokyo at all levels. That the trend towards uni-polarization has been accelerating since 1985 only adds greater credence to the supposition that this is in fact the case.

## 6. Moratorium on Tokyo's Growth as the Premise of Growth Management

### 6-1. Why we must restrain the growth of Tokyo?

Before discussing restriction of the Tokyo's growth, it is essential to high-light the fact that the growth of Tokyo has reached its limit. There are at least three frameworks in which to consider this limit.

#### (1) Comparison with large cities in various foreign countries:

In comparison with various cities such as New York, London or Paris, data can be cited to show that Tokyo is overcrowded and that accumulation of functions in the city is excessive. The problem is determining the proper ranges of area in each city for comparison and whether data on hand can be used for the purpose. In making comparison with the 23 Wards Area of Tokyo (zone A+B+C=617km<sup>2</sup>), the following areas were used: for New York, City of New York (833 km<sup>2</sup>); for London, inner London area and 3 peripheral boroughs (593km<sup>2</sup>); and for Paris, City of Paris and 3 peripheral prefectures (762km<sup>2</sup>). We also defined comparable areas of three metropolis with the Tokyo's central 3 wards (zone A=42km<sup>2</sup>) and the Tokyo's inner 8 wards area (zone A+B=110km<sup>2</sup>). [Fig. 1]

Looking at residential population density (1000 persons/km<sup>2</sup>) of zone A+B+C, the rate for Tokyo is extremely high, at 13.23, in comparison to New York (8.82), London (6.39) or Paris (8.04). What is more, the residential population of Tokyo in the central area (zone A) and in the inner area (zone B) drops sharply and the population density is quite low in comparison with other cities. Hence in the peripheral area of 23 wards (zone C), the gap in residential density is further enlarged. [Fig. 2]

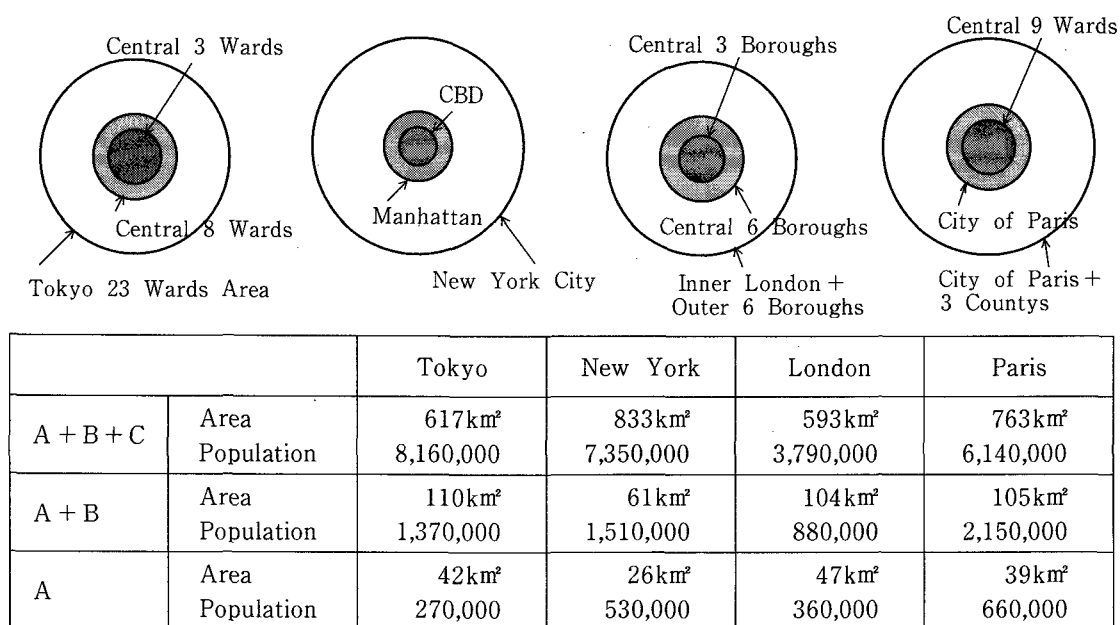
Concerning working population density (1000 persons/km<sup>2</sup>), in comparison with New York (4.99), London (4.77) or Paris (4.51), the density of Tokyo 23 Wards Area (10.82) is more than twice that of these other cities. In term of cumulative office floor space, Tokyo has a huge accumulation of floor space in comparison to these other cities. [Fig. 3]

More careful examination must be made of the significance of these figures, but at least the following conclusion can be drawn. Politician's argument insisting that land utilization of Japanese cities is very much low in comparison to western cities have no basis. The argument often based simply on the appearance of cities in Japan, for instance, on the fact that the average number of stories in Tokyo is no more than three.

#### (2) In the light of planned limits:

This approach is based on the supposition that deviations from the plan (in particular,





A + B + C = Tokyo : 23 Wards / NY ; New York City / London : Inner London + outer 6 Boroughs / Paris : City of Paris + 3 Countys

A + B = Tokyo : Central 8 Wards / NY : Manhattan / London : Central 6 Boroughs / Paris : City of Paris

A = Tokyo Central 3 Wards / NY : CBD / London : Central 3 Boroughs / Paris : Central 9 Wards

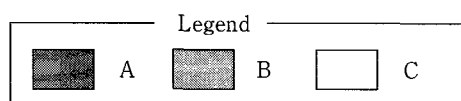


Fig-1 Areas for Comparative Study

excursions beyond the planned limits) lead to evils. This is effective in cases of clear planning, especially when concentration of population and urban functions and the conditions in support thereof have been clarified. In the case of Tokyo, studies on the relationship between generated traffic volume and gross building floor space, which were made in the early years of 1960s when Yoseki-chiku Seido (the floor area ratio zoning system) was introduced, are highly suggestive.

These studies can be summarized as follows. From an investigation of 900 ha at area of the Tokyo's CBD (311 ha of which is for road space and 589 ha for building site), the following is discovered. (a) Urban traffic volume has already reached its limit, and even if all the planned roads scheduled for improvement are improved and all the urban expressways are constructed as scheduled, the expected road traffic capacity in 1985 would be 1.8 times at the most.

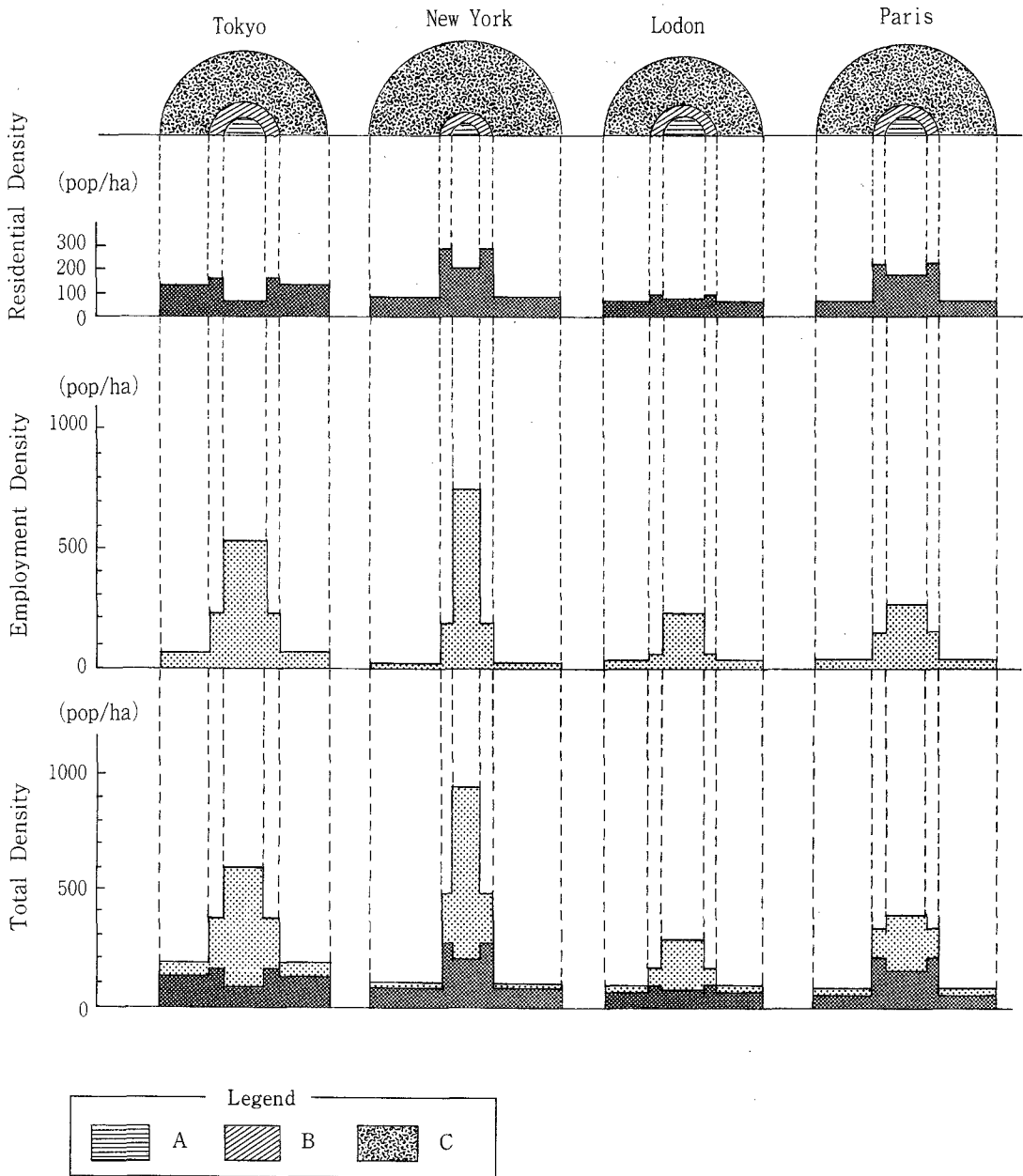


Fig-2 Density of Residential and Employment Population

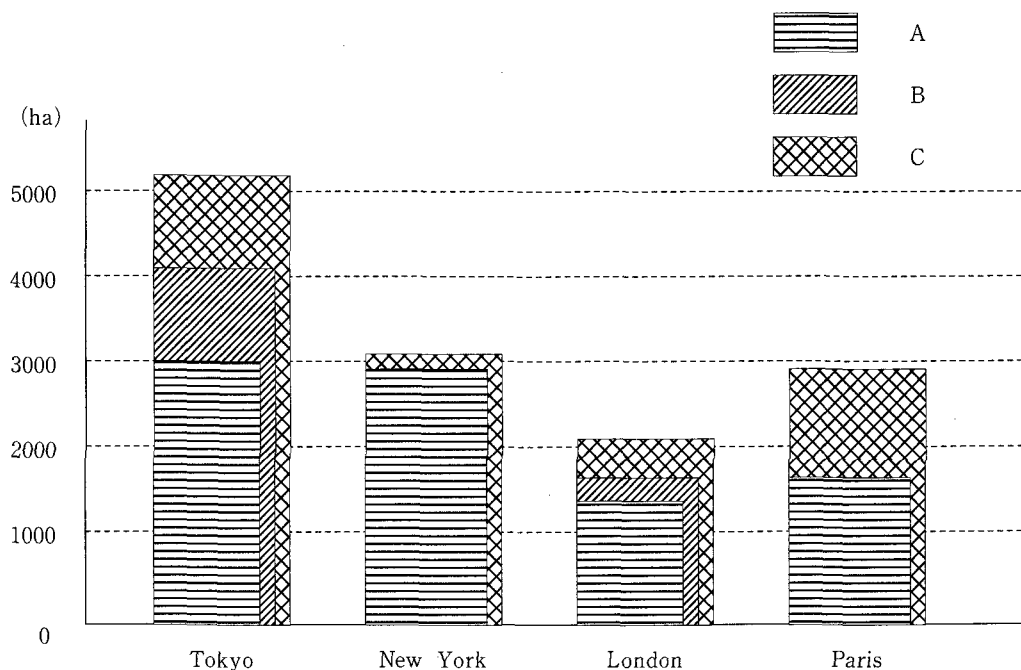


Fig-3 Stock of Office Floor Space (ha)

Table-2. Designated Areas by FRA Zoning Classification (Tokyo Wards Area)

Classification of Floor Area Ratio Zoning	1973		1989	
	designated area	ratio	designated area	ratio
%	ha	%	ha	%
1000	114	0.2	114	0.2
900	90	0.2	87	0.2
800	404	0.7	429	0.8
700	752	1.3	748	1.3
600	1,373	2.4	1,420	2.5
500	2,139	3.8	2,401	4.2
400	2,895	5.1	3,921	6.9
300	11,555	20.5	13,469	23.7
200	22,463	39.8	20,328	35.8
150	2,778	4.9	4,384	7.7
100	5,067	9.0	6,390	11.2
80	3,585	6.4	1,907	3.4
60	3,166	5.6	1,141	2.0
50	76	0.1	74	0.1
Total	56,457	100.0	56,813	100.0

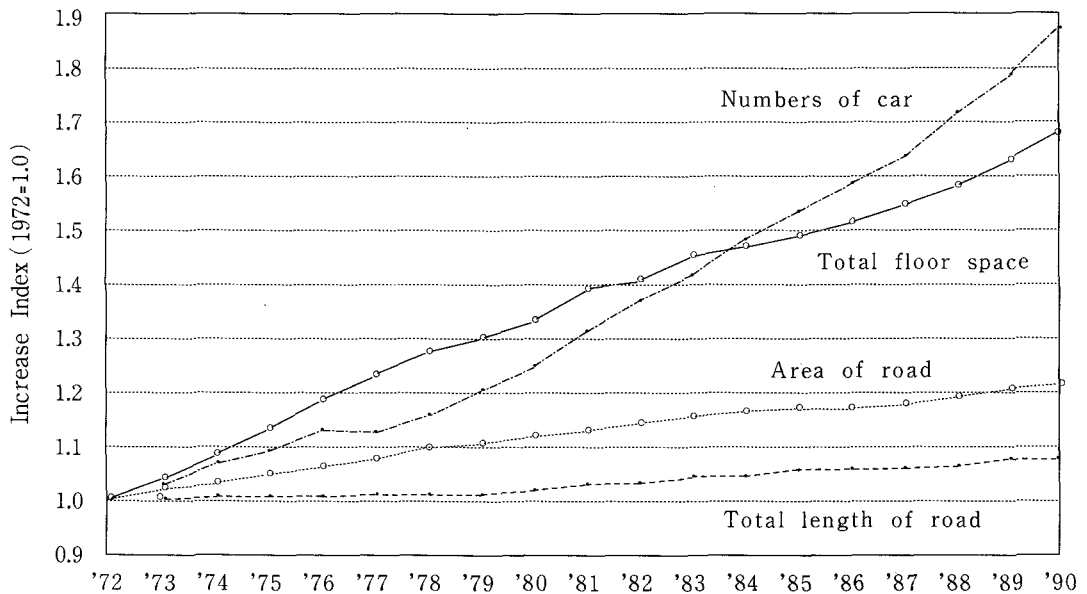


Fig-4 Increase of Floor Space, Road and Numbers of Car

(b) Even if plans to improve commuter and subway lines have been implemented, the number of commuters during rush hours in 1985, at a maximum congestion capacity of 200%, would be no more than about 1.7 to 1.8 times greater than at that time. (c) Given this fact, and if the limit of gross building floor space in 1985 is to be the same as the expected increase rate of transportation capacity, i. e. 1.8 times greater than that of 1,380 ha in 1960, it would amount to 2,480 ha, and the FAR would be at a limit of approximately 450%.

In the investigations undertaken when Yoseki-ckiku Seido (the FAR zoning) was actually applied to Tokyo Wards Area, it was estimated in accordance with trend that the gross building floor space in the 23 Wards Area would increase by about 2.1 times from 1960, with the floor space of private sector reaching 25,660 ha and the total, with floor space of public sector included, reaching 29,300 ha. This amount was then distributed among each of zones corresponding to designated floor area ratio [Table-2]. Although these figures are based on the assumption that the road development programme has been implemented, the distribution of gross floor area is relatively much more to urban centers and subcenters at the forcible request of developers and estate corporatoin. The research results, which said the permissible gross floor area of urban centers is 1.8 times greater than in 1960, suggest that these distribution are problematic.

The actual gross floor space of 23 wards area in 1985 reached 29,126 ha for taxable buildings, and increases to 32,798 ha in 1990. Moreover, when comparison is made on the basis of use of floor space by application, we find that with respect to office function, an excess of floor space over estimated limit is severe. Furthermore, road development viewed in term of road area percentage, increases no more than 1.2 times from 1963. From this, we can conclude that the status of building floor space concentration on Tokyo at present, greatly exceeds the status assumed for the purposes of planning [Fig-4].

### (3) Evils by concentration :

The points mentioned above are indeed persuasive, but it can be countered that Tokyo still functions as an attractive and energetic city. In answer to this counter argument, it must be emphasized that if conditions continue in Tokyo as at present, a situation similar to that in 1973 will inevitably arise, and it could evolve into a grave crisis in the 1990s.

This argument based on the limit on concentration of population and urban functions, from the standpoint of evils to urban activities and urban life as argued in interim inspection of the Sin Zen-so (new CNDP). In reports by the Committee on the Problem of Concentration in Tokyo of TMG, it was forecasted that grave problems will arise from such issues as waste disposal, electric power supply, commuter transportation, road traffic, parking spaces and air pollution [Shuchu-I, 1990]. Within the service area of Tokyo Electric Power Co., already in 1990 the demand for electric power outstripped the capacity for electric power supply, and although conditions have been relieved by favorable whether in 1991 i. e. low temperature and rainy, the possibility of a major power failure still remains. As for waste disposal, it is forecasted that the waste burial sites will soon be filled up, and already in the Koto Ward of Tokyo, the authorities have suggested the possibility of another 'garbage war' erupting.

#### 6-2. Dual structure in impact of concentration

In considering the history of Tokyo and urban planning as a whole, I have identified a unique characteristic in the form of an "ever recurring dual structure" [Ishida, 1991-a]. This stems from the fact that in the first year of Meiji Era, Tokyo had inherited a multilayered dual structures from the urban structure of the Edo period. Thereafter in the course of growth, the urban center and subcenters were repeatedly improved, but residential districts and mixed ahead of commercial and residential land use or industrial and residential land use were either excluded from improvement or newly formed on the basis of inadequate urban infrastructures. As a result, the inherited dual structure from Edo period underwent a transformation and new dual structures were generated, thus the urban dual structures have been ever recurring up to the present.

The same things can be said about problems recently arising from and countermeasures taking for the concentration of population and urban functions in large cities.

The accumulation of business functions at urban centers and the uni-polarization urban structure have produced inconsistencies with preparation of infrastructure and have caused many problems such as road traffic congestion at urban centers and inadequate means of transportation for commuters. And some countermeasures for solving these problems have been carried out. However, the effects of countermeasures are often of a dual character. For example, if some progress has been made in augmenting the means of commuter transportation, the effect has been to greatly improve the attractiveness of the urban center for corporations located there, and to greatly enhance the profitability of development in this area. However, as there is almost no improvement in rate of congestion and as average commuting distance inevitably increase, the 'progress' brings about a drop in the standard of living for the people who commute to the urban center, since they must endure congestion for long time periods

and since they have less free time in their daily lives. We can not afford to overlook the fact that construction and improvement of commuter transportation facilities always predicated on assumption of a congestion rate of 200%. In this process, a dual structure consisting of higher functional efficiency of urban center and poorer standard of daily urban life is reproduced.

Consequently, in discussing the evils brought about by uni-polarization, we cannot simply look at the problem from the standpoint of improving conditions in general. We must consider the problem from the standpoint of eliminating this dual structure. In other words, for Tokyo, the capital of Japan, with its economic capacity, it is not enough simply to eliminate the evils of concentration; other fundamental problems, such as development and improvement of residential environments to facilitate living standards which should have already been met, amelioration of commuter traffic conditions and improvement of urban scenery and amenities, must be taken up.

However, as new waves of concentration are advancing, steps are being taken to further improve the effectiveness of urban functions in response, but the issues pertaining to urban residents are thus being ignored.

## 7. Toward Growth Management Policy for Tokyo

### 7-1. Concentration control and growth management

In considering the growth management policy for Tokyo, the first step is to take a policy of controlling concentration or moratorium of growth. It is also essential to impose appropriate levy to the corporations and landowners who are already receiving external economies and earning profits from facilities constructed and services supplied in the past to accommodate concentration.

The dispersion policy followed up to the present, exclusive of the Act for Restricting Industry in Urbanized Area of the Capital Region in 1959, is mainly one of developing new urban areas for receiving dispersed urban functions. In line with this policy, weak land use and low-level urban functions not needed in urban centers have been dispersed and replaced by intensive land use and high-level urban functions, and as a result concentration has been exacerbated.

Even if the policy for Tokyo's growth will be not simply one of restricting growth but one of continuing management of growth, it is inevitable that the policy of non interference with growth as practiced up to the present must be reexamined and replaced once with a policy of strict restriction on growth; that is moratorium of growth. It is only when such a policy has been inaugurated that growth management policy becomes possible.

Two approaches can be considered for restricting growth.

The first pertains to fiscal tax policy. The tax burden should be put upon the private corporations that are already obtaining external economies from concentration. In the "Report of the 2010 Committee on Community and Housing" by the Planning Bureau, Economic

Planning Agency, it was proposed that tax or levy on office floor space would be introduced. It was also argued that the corporation tax should be heavier in Tokyo Metropolis than in the outlying districts and in the rural regions so as to promote dispersion. If the corporation tax burden is increased beyond the traditional level in Tokyo, it will mean that a great tax burden is expected in conjunction with acquisition of external economies.

The second approach involves urban planning methodology. The most direct approach is to reduce floor area ratio (FAR) by down zoning. In a survey of American cities, it was found that down zoning takes place as a tool of growth management policy in 12 of the 15 cities surveyed. In the case of Tokyo, it is believed that 'down zoning' should be take place as the necessary and precedent condition of some other measures of growth management, because the most important factor behind the abnormal concentration on Tokyo has been 'over zoning' in urban planning.

#### 7-2. What is the target of growth management ?

Efforts to grapple with the problems caused by concentration were first begun by a "Project Team for Balanced Urban Development", chaired by the vice-governor of TMG when it was created in the early summer of 1991. What is the balanced urban development targeted here? No doubt the Project Team has been established in full awareness of the fact that the urban problems in Tokyo originate from its highly unbalanced urban structure in which offices are concentrated in the city center while residences and population diminish as one goes further out from the city center [Fig - 5].

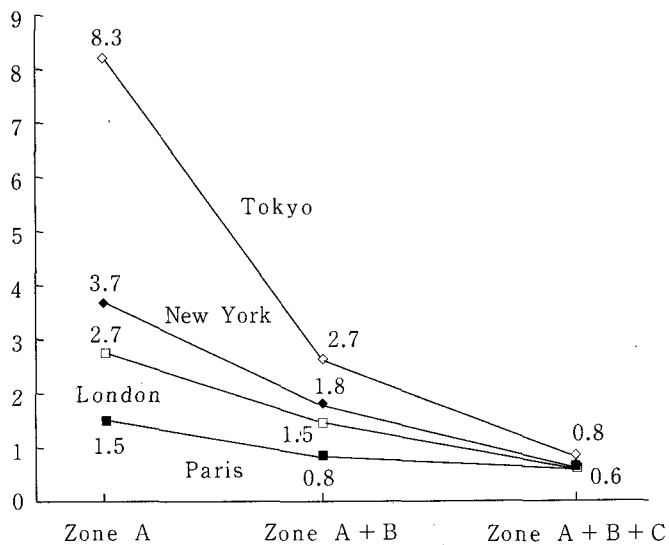


Fig-5 Employment Population/Residential Population

Yet even in considering a restoration of balance, it would, of course, be unrealistic to target a ratio of 1.0 between work place working population and dwelling place working population for Tokyo Wards Area. Even for the Tokyo Metropolitan Region, this is difficult issue. The extent of balance appropriate for each area is indeed a nebulous issue.

Another question to consider is whether restoration of balance should take place in conjunction with growth restriction or in the course of growth. At any rate, regardless of which method is selected, it is the frank opinion of those involved in urban planning that, in order to control growth and to restore at least some degree of balance, down zoning or some other method of restricting growth in Tokyo must be implemented.

### 7-3. Japanese style urban planning for growth management

The Basic Land Act was proclaimed at the end of 1989. Thereafter, with revision of taxation system, a new tax, namely 'Chika-Zei (land value tax)', was introduced. Moreover, it was decided that agriculture lands within urbanization promotion area should be divided into two categories, namely, areas where farming is preserved and areas where land use will be changed from agriculture into urban land use. For the latter category, a system of "Takuchi-nami Kazei (system for levying taxes at the same rate as for original building sites)" will be surely applied. This demarcation work has been inaugurated and expected to be completed by the end of fiscal 1991.

Since financing to real estate companies, developers and construction industries has been curtailed, the prices of land in the Tokyo Metropolitan Region have been falling downward from an erstwhile level trend. The explosive boom on the construction of office buildings in Tokyo has also seemed to taper off. Given these conditions, there is a tendency to think that land policy is no longer as urgent as in the past. Again, some people argued that the land problem will be resolved by an increase of supply. And in discussing renovation of the urban planning system in light of the Basic Land Act, it is argued by some that the goal of policy should be to promote high-level utilization of land.

In the case of Tokyo, however, it is crucial to restrict growth as much as possible and then to formulate policies for growth management on the basis of this initial effort.

I have proposed a new concept of the right to land utilization and a new system of land use planning.

According to my concept, the right to land utilization should be divided into four strata. The first stratum refers to as the right to non-urban land use. The second stratum, accruing from the ownership of individual building plot, should be limited to the extent that it does not have a significant environmental impact on utilization of adjacent land and does not impose an excessive burden on urban infrastructures. And I defined land use based on the second stratum of the right to land utilization as 'Kihon Tochi-riyo (basic land utilization)'. The fourth stratum of the right to land utilization is the extent which beyond the environmental threshold and any development utilizing this extent should not be permitted except the case which works in the high interests of the public and is sufficiently adjustable with the master plan and the developer of which is ready to bear heavy levy for improving urban infrastructures. This



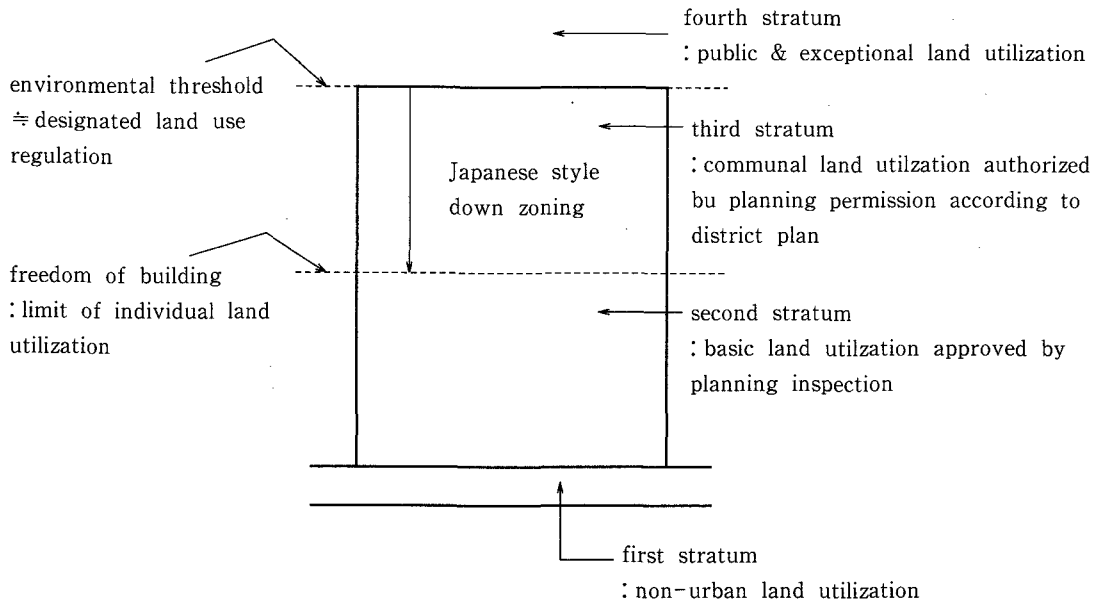


Fig-6 Concept of New Land Use Planning System based on Stratum of Land Utilization Right

This exceptional case of land utilization is defined as 'Ko-teki Reigai-teki Tochi-riyo (public and exceptional land utilization)'. The third stratum of the right to land utilization is, accordingly, defined as the extent beyond the second stratum and within the environmental threshold. Land utilization based on the right of third stratum, which is defined as 'Kyodo-teki Tochi-riyo (communal land utilization)', should be confined to cooperative or communal utilization only and not permissible for individual land owner. Using the land utilization right of third stratum accompanies a suitable burden for preservation of the environment and for improvement of local public facilities.

The outline of proposed land use planning system is as follows [Ishida 1987 ; 1990-b] [Fig -6] :

(a) Under present-day urban planning in Tokyo, almost all case of designated FAR allowed land utilization far exceeds the limit defined as the 'basic land utilization'. This is regarded as nothing but 'over zoning'. Therefore, to designate the extent of 'basic land utilization' of all the areas of Tokyo and to restrict land utilization allowed for each building plot to this level is referred to as "Japanese style down zoning".

(b) Building activities within the limit of 'basic land utilization' would be authorized by 'Kenchiku-Kakunin Seido (building inspection system)'.

(c) The scope of communal land utilization using the third stratum of right is exhibited through the formulation of 'Chiku-shosai-Keikaku (detailed district plan), and individual land use should be strictly controlled by a system of development permission, according to the

detailed district plan. The system of 'Chiku-shosai-Keikaku' is not the same as old 'Chiku-Keikaku (district plan)' enforced in 1980, but is resembling to the German Bebauungsplan system.

In this way, it is hoped that overall planning control over urban growth can be realized.

The Research Committee on Concentration Problem in Tokyo proposed the introduction of my planning concept in the form of a 'Kaiso-Yoseki-sei (classified FAR system)' to areas designated as having a FAR in excess of 400% [Shuchu-I, 1991]. Originally, however, my idea (stratified land use regulation system) was intended to apply to all forms of urban land utilization. The idea can be applied, not simply in term of FAR, but also with respect to another land use factors such as building categories and building height limitation.

As a planning system, the idea of 'Yudo-Yoseki-sei (incentive FAR system)' which is being investigated by the Central Urban Planning Council seems to resemble my idea. However, the former, which is a system to freeze land utilization in term of FAR provisionally to a level now utilized and to promote to elevate it to the designated limit by many incentive method and by the method of transfer of development right (TDR), is based on the idea that land owners are obligated to utilize their land up to the limits currently designated for land utilization. In ideological terms, the two planning systems are completely different. The system I proposed is conceived for controlling Tokyo's growth and aims to create a tool of growth management. The Central Urban Planning Council's system, on the contrary, seems to be conceived for realizing a ultra high level land utilization and aims to create a tool for unrestricted urban growth.

Nevertheless, it is not easy to obtain consent from land owners to introduce the so-called down zoning method. In a sense, therefore, an ideological reformation among urban residents is required.

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