

**THE MEASUREMENT PROBLEM
OF
PUBLIC EMPLOYMENT PRODUCTIVITY:
Public Enterprise Growth in Employment and Its Financing**

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I Preface

To pursue the way toward "Welfare State" has brought for Each Nation the reality of "Heavy Government or Expensive Government". However, it has been prevailed to say recently, "Recovery of Cheap Government or Creation & Promotion of Efficient Government". Prime Minister Masayoshi Ōhira⁽²⁾ of Japan as well as Prime Minister Thatcher of Great Britain⁽³⁾ expressed the necessity of "Cheap Government" in the speech of Diet of Japan in 1979, which would include the reconstruction of Public Finance as well as simplification or reformation of Public Administration & Management. The increase of many functions of Government has brought the portliness of government organizations and institutions, including local government. Generally speaking, we can say that these tendencies have appeared through almost all countries since New Deal Age of U.S.A. in 1930s. Especially economic and social functions of government – Public Works, Public Corporations and social welfare activities – have been greatly requested as administrative needs or financial demands of each Nation.

I think, this is a general tendency of Western Nations, including Japan after World War II. Then, I would like to start to explain the recent change of these kinds of environmental situations within and outside of our country.

II Urgent Need of Reconstruction of Public Finance and Reformation of Public Administration⁽⁴⁾

(1) The change of domestic and international environment of Japan

Since the so-called oil crises of 1973, the environmental conditions, inside and outside situations of Public Administration and Finance in Japan have fundamentally changed. Following to future prospective analysis and forecasting of various aspects, for international dimensions, those kinds of phenomenon such as, natural resources, trade conflict, imbalance of international current revenues and expenditures, unsettledness of main currencies and other serious situation of international economy, will still continue and deepen in some aspect. Under these international environmental situations, Japan will have to find the difficult way to promote the national welfare, keeping with international conciliation continuously.

On the other domestic side, the decreasing tendency of economic growth since the latter half of 1970s will continue also in 1980s by the reasons of high pricing of energy, constraints of environmental locations, decreasing of technological innovation, structural change of labour forces and other factors of economic growth decrease. And under these conditions, various structural problems, depression, inflation, employment, income distribution and others will be in all cases inevitable.

So much so that, the following factors would be expected, such as multiplication of values, demand for welfare advancement, old-age structural change of population, core small familization, high academic career and leisure hours increase, and still more difficult problems of regional development, maintenance of environment, increase of other administrative needs and further enlargement of public coordination functions.

(2) The deepening conditions of various constraints

Under these above-mentioned inside and outside environmental conditions, the present urgent constraints are financial sources problem and man-power situation of Central and Local Government.

Related to the aspect of financial sources, although the balances of revenue and expenditure have broken in recent years, the expansion tendency of public administration has not changed with the inertia of

economic growth since 1955. And since 1975, dependent ratio of public bonds for Japanese Government has become 30%, and finally has shown a higher level of 39.6% for fiscal year 1979.

Even if comparing with the situations of developed countries, this kind of abnormal issue of public bonds has brought an absorption difficulty which would lead to an increase of financial demand.

Furthermore, the following is to be worthy of notice, which is stiffness of public finance and financial load transfer from present to future generation. And it would be undesirable for Japanese Economy that financial administration would depend upon huge amount of public bonds.

According to the estimate of revenues and expenditures by the Ministry of Finance in February 1979, the balance of public bonds in 1985 will be around 140,000 billion yen (around 560 billion dollars). Also the same is a severe estimate for local government finance by the Ministry of Local Autonomy.

Under the premise of these kinds of financial structure, serious financial constraint for Central as well as Local Government will come for the allocation of financial sources which has to match with increasing administrative needs for future. Therefore, it would be necessary to rationalize or to make financial expenditures reasonable for Central as well as Local Government.

Next, explaining about man-power problems of Japanese Government, personnel expenditure is an important structural factor of financial expenditures, and the increase of personnel expenditure would be, it is said, one of the reasons which had aggravated financial structure of Japanese Government.

For example, total amount of allowance budget within general budget of Central Government for 1979 was 6,083.5 billion yen (around 24.3 billion dollars) (including obligatory education of Local Government), and also allowance budget in the Local Government Financial Program had reached 10,878.0 billion yen (around 43.5 billion dollars) in 1979 fiscal year.

Personnel expenditure ratio in general account of Central Government

has shown a gradually slow down by the succeeding regular personnel reductions since 1968. However, rapid growth of public employment (in 1955-1965) has strong influence for financial situation, and if considering the old-age progress of employment age structure, remarkable decrease of personnel expenditure ratio would not be expected, even if the present wage system of age-rank type would be something revised.

On the other hand, from the viewpoint of labour allocation in Japanese Economy, there are various opinions about the scale of man-power to input into the Public Sector.

At present, the numbers of man-power of Public Sector are Government Officials (except defence relations) 870,000; Public Corporations (Tokushu-Hōjin) 940,000; Defence Forces 290,000; Local Government Staff 3,070,000; which will be totally 5,170,000 — around 10% of whole working population 52,230,000 in Japan.⁽⁵⁾

However, if comparing with European and American countries about the ratio of Public Sector Labour Power v.s. the whole working population, as a whole, the ratio is not so high, although it is necessary to review man-power from many dimensions because of the reasons that each country has each economic structure, public service level, and different efficiency of Private Sector.

Incidentally, the ratio of total man-power of Public Sector except Military Departments v.s. working population will be in U.S.A. 16.9%, United Kingdom 21.5%, West Germany 17.9% and Japan 9.1%. However, since 1955 Private Sector has made efforts to rationalize business administration, taking advantage of the merit of market mechanism, and as the result of a lapse of years, there has been occurred differences of productivity between Private Sector and Public Sector.

On the other hand, it has been predicted that administrative needs toward man-power type services — such as social welfare, public health, medical care, education and so on — would more and more increase. And following to the improvement demand of labour conditions which will include labour reduction and two holidays a week, man-power growth in public employment will be in some sense inevitable.

So much so that, optimal allocation of man-power resources within

Public Sector and qualitative advancement of various functions will be required, in order to improve the efficiency and productivity of public employment. For that purpose, it is now being discussed that public enterprises or spheres under government direct control should be reduced and the vitality of Private Sector should be more utilized, from the standpoint of administrative coordination function of which Government should be minimized – that means the recurrence to the ideal of “Cheap Government”. Therefore, we can say that it is now the urgent need-time for Japanese Government to reconstruct the Public Finance and to reform the Public Administration.

III Summary and Productivity of Public Enterprise

Japanese Public Enterprise will include Government Enterprises such as Postal Services, Forestry, Government Printing, Mint and Alcohol Monopoly (Five Gengyō) as well as Public Corporations (Japan National Railways, Nippon Telegraph & Telephone Corporation, Japan Tobacco & Salt Corporation, and others which are so called Tokushu-Hōjin).

The numbers of these Public Corporations are at present 111 (March 31, 1979) which will be shown later in the List.⁽⁶⁾

(1) Government Enterprises (Five Gengyō)

Among Five Gengyō, Postal Services belong to Ministry of Post and Telecommunication, Forestry to National Forestry Agency of Ministry of Agriculture & Fisheries, Government Printing and Mint to Ministry of Finance, Alcohol Production to Ministry of Trade & Industry.

If we show the numbers of employment of these Five Gengyō, comparing with three Public Corporations (JNR, NTT and JTSC), the table will be as follows.⁽⁷⁾

These Five Gengyō are not different from three Public Corporations and others (Tokushu-Hōjin) from the standpoint of man-power employment and their productivity & finance. Therefore, we can discuss about their theme of Five Gengyō and Public Corporations as a common basis of public employment.

Table 1. The Numbers of Budget Regular Staff

	(unit: person)			
	End of fiscal year			
	1975	1976	1977	1978
Five Gengyō				
Mint	1,806	1,786	1,773	1,761
Government Printing	7,080	7,009	6,976	6,935
National Forestry	36,628	36,183	35,894	35,341
Alcohol	1,074	1,060	1,051	1,042
Postal Services	316,705	314,164	312,450	312,357
Total	363,293	360,202	358,144	357,436
Three Public Corporations				
JTSC	41,035	40,938	40,851	40,848
JNR	431,024	431,024	431,024	429,022
NTT	318,379	323,480	327,288	330,165
Total	790,438	795,442	799,163	800,035

Note: From "National Budget" 1978

(2) Public Corporations (Tokushu-Hōjin)⁽⁸⁾

Public Corporations of Japan, Japan National Railways and Japan Tobacco & Salt Corporation were firstly established in 1949, and Nippon Telegraph & Telephone Corporation in 1952 which were called "Kōkyō-Kigyōtai" in Legal meaning.⁽⁹⁾

However, Public Corporation will more widely include Kōdan such as Japan Housing and Road Corporation, Kōko-Local Government Enterprise Finance Corporation and Jigyōdan - International Cooperation Corporation, NHK - Japan Broadcasting Corporation, also mixed enterprise - Japan Air Line, Electric Resources Development Corporation,

KDD – International Telegraph & Telephone Corporation, etc. in wide definition of Public Corporation.

These Public Corporations will be called in Japan Tokushu-Hōjin of which employee are 940,876 (January 1, 1979) as a whole.

The original two Public Corporations (JNR and JTSC) were, it is said, established by the letter of General Douglas MacArthur (Commander Chief of General Head Quarters) from the standpoint of labour union counter measure of which labour relations were regulated by the Public Corporations and National Enterprise Labour Relations Act of June 1, 1949.¹⁰

(a) Classification of Public Corporations

Public Corporation (or “Tokushu-Hōjin” in Japanese, which literally means a corporation with a special status) is a corporation which the national government establishes as an instrument for the business operation which is necessary for the state.

A Public Corporation is established primarily when efficiency in the business performance is likely to be achieved more than under direct operation by the national government agencies, or when flexibility in financial or personnel management is more required than normally possible under the related laws and regulations governing government agencies.

The law that authorizes the establishment of a public corporation provides for matters such as the objectives of the corporation, the scope of its business activities, the organizations, financial affairs and the control by the national government. Japan has currently 111 public corporations, which fields of operation range widely over social and economic policy areas, from public works to social welfare. The titles, organization structures, the mode of control by the national government and other features of these corporations also vary according to the differences in the nature of operations.

The title of each public corporation is determined taking account of its business activities, scale of business and the like. Although the titles thus given are not necessarily standardized, the public corporations can be roughly classified into the following nine categories by

their titles in Japanese.

(i) Kōsha

Kōsha is a public corporation which is most public-service-oriented of all such corporations. Its capital is fully financed by the national government. The corporation classified into this category are the Japanese National Railways, the Japan Tobacco and Salt Public Corporation and the Nippon Telegraph & Telephone Public Corporation.

The business such as the national railway services, the production and sales of tobacco and salt, and the telephone and telegraph service had been run directly by the national government before World War II. After the war, the aforementioned corporations were established outside of the government agencies to carry on the business with a view to introduce efficiency in the provision of services through the operations on a self-supporting basis.

These three corporations have the following characteristics in common: (1) the capital is fully financed by the national government, (2) the budget is subject to the approval by the Diet, and (3) the labour-management relations is governed by the Public Corporation and National Enterprise Labour Relations Law, under which the right to strike is not granted to the employees of the corporation as in the case of the employees of five national enterprises (the Postal Service, the National Forestry Service, the Alcoholic Production, the Printing and the Mint).

(ii) Kōdan

Kōdan is established as an instrument to carry out public works projects of social needs. The projects it undertakes are generally complex and large in scale. It operates on a self-supporting basis.

Kōdan has a characteristic in that its capital is either fully financed by the national government or by both the national government or by both the national government and the local public entities, and no part of it is financed by private enterprises or other private organizations.

The corporations classified into this category total 16, including the Water Resources Development Public Corporation, the Japan Housing Corporation and the Japan Highway Public Corporation. Their operation covers wide range of project areas such as overall development and agricultural land development.

(iii) Jigyōdan

Jigyōdan is used as an instrument to implement economic and social policy programs of the country, other than the public works programs for which Kōdan is mainly responsible. Jigyōdan is smaller in scale than Kōdan, and its commercial character is weak. The corporations classified into this category total 19, including the Research Development Corporation of Japan, the Japan International Cooperation Agency, the Small Business Promotion Corporation. Their operation covers effective development of new technology, technical cooperation abroad, management consultancy for small businesses, stabilization of livestock prices and other activities.

(iv) Kōko

Kōko is a finance corporation which capital is fully financed by the national government. It supplements the operation of commercial financial institutions by financing specific subjects at a policy-oriented rate of interest. The budget of Kōko is subject to the approval by the Diet. The corporations classified into this category total 10, including the People's Finance Corporation and the Housing Loan Corporation.

(v) Ginkō

Ginkō has much in common with Kōko in that (1) its capital is fully financed by the national government, (2) it plays a supplementary role to that of commercial financial institutions by financing specific subjects on a policy-oriented rate of interest, and (3) its budget is subject to the approval by the Diet. However, it enjoys more autonomy in operations than Kōko. The Japan Development Bank of Japan belong to this category.

(vi) Kinko

Kinko is a corporation set up for the purpose of financing co-operatives. The Central Cooperative Bank for Agriculture and Forestry and the Bank for Commerce and Industrial Cooperatives belong to this category. The capital of Kinko is financed by private parties as well as by the national government. It maintains strong autonomy in operations.

(vii) Eidan

Eidan is a corporation which nature is essentially the same as that of Kōdan. The Teito Rapid Transit Authority is the only corporation classified into this category. No corporation with the title of Eidan has been established lately.

(viii) Tokushu-Gaisha

Tokushu-Gaisha is a corporation which capital is financed by both the national government and the private parties. It provides public services in the manner of a joint-stock corporation with strong corporate autonomy. The corporations classified into this category total 11, including the Japan Air Lines Co., Ltd. and Kokusai Denshin Denwa Co.

(ix) Others

There are 47 corporations classified into this category. They have titles such as "Shinkōkai" (corporation for the promotion of certain activities of social importance), "Kenkyūsho" (research institute) and "Kyōsai-Kumiai" (mutual benefit association providing benefit payments and related services to workers in certain areas of occupation).

(b) Organization of Public Corporations

Each public corporation has a president, a chairman of the board and the like, who represent the corporation and preside over its operation with the assistance of a number of directors. Some corporations have a vice president, a vice chairman and the like. The matters concerning the titles to be given to these officers, the procedure of their appointment (the president, the chairman of the board, and the like, as a rule, are appointed by the competent ministers), the number of such officers, and their terms of office are prescribed in the law that

authorizes the establishment of a corporation.

Some corporations have a management committee, an administration committee and the like, as a decision-making body on the matters of importance concerning business operations. Some also have an operation committee, a councilor and the like, as an organ to submit recommendations in response to the inquiry by the president, chairman and the like.

In addition, each public corporation has a number of auditors to carry out auditing functions.

The officers and the employees of the public corporations are not subject to the National Public Service Law. With respect to the applicability of the Criminal Law and other penal regulations, however, they are sometimes regarded as the officials who engage in public service under laws and regulations, depending on the nature of their works.

(c) List of Public Corporations

Classification	Names	Supervisory Ministry or Agency
Kōsha (3)	Japan Tobacco and Salt Public Corp.	MOF
	Japanese National Railways	MOT
	Nippon Telegraph and Telephone Public Corp.	MPT
Kōdan (16)	Water Resources Development Corp.	NLA, MHW, MAFF, MITI, MOC
	Japan Regional Development Corp.	NLA, MITI, MOC
	Forest Development Corp.	MAFF
	Agricultural Land Development Public Corp.	MAFF
	Japan National Oil Corp.	MITI
	Maritime Credit Corp.	MOT

Classification	Name	Supervisory Ministry of Agency
	Japan Railway Construction Public Corp.	MOT
	New Tokyo International Airport Authority	MOT
	Keihin Port Development Authority	MOT
	Hanshin Port Development Authority	MOT
	Japan Housing Corp.	MOC
	Japan Highway Public Corp.	MOC
	Metropolitan Expressway Public Corp.	MOC
	Hanshin Expressway Public Corp.	MOC
	Honshū-Shikoku Bridge Authority	MOC, MOT
	New Town Development Public Corp.	MOC, MOT
Jigyōdan	Research Development Corp.	STA
(19)	Japan Nuclear Ship Development Agency	STA, MOT
	Power Reactor and Nuclear Fuel Development Corp.	STA
	National Space Development Agency of Japan	STA, MOT, MPT
	Environmental Pollution Control Service Corp.	EA
	Japan International Cooperation Agency	MFA, MAFF, MITI
	Pension Welfare Service Public Corp.	MHW
	Livestock Industry Promotion Corp.	MAFF
	Japan Sugar Price Stabilization Corp.	MAFF
	Japan Raw Silk Corp.	MAFF
	Coal Mining Industry Rationalization Corp.	MITI
	Metal Mining Agency of Japan	MITI
	Coal Mine Damage Corp.	MITI

Classification	Name	Supervisory Ministry of Agency
	Small and Medium Enterprise Mutual Aid Relief Projects Corp.	MITI
	Small Business Promotion Corp.	MITI
	Post Office Life Insurance and Annuities Welfare Corp.	MPT
	Labour Welfare Projects Corp.	MOL
	Smaller Enterprise Retirement Allowance Mutual Aid Project Corp.	MOL
	Employment Promotion Projects Corp.	MOL
Kōko (10)	Hokkaido and Tohoku Development Corp.	HDA, NLA, MOF
	Okinawa Development Finance Corp.	ODA, MOF
	People's Finance Corp.	MOF
	Medical Care Facilities Financing Corp.	MHW, MOF
	Environmental Sanitation Business Financing Corp.	MHW, MOF
	Agriculture, Forestry and Fisheries Finance Corp.	MAFF, MOF
	Small Business Finance Corp.	MITI, MOF
	Small Business Credit Insurance Corp.	MITI, MOF
	Housing Loan Corp.	MOC, MOF
	Finance Corp. of Local Public Enterprise	MHA, MOF
Kinko and Ginkō (Depositories and Banks) (4)	Japan Development Bank	MOF
	Export-Import Bank of Japan	MOF
	Central Cooperative Bank for Agriculture and Forestry	MAFF, MOF
	Central Bank for Commercial and Industrial Cooperative	MITI, MOF
Eidan	Teito Rapid Transit Authority	MOT, MOC

Classification	Name	Supervisory Ministry of Agency
(1)		
Tokushu	Tohoku District Development Co.	NLA
Gaisha	Electric Power Development Co., Ltd.	MITI
(Special Companies)	Japan Urea and Ammonium Sulphate Export Co., Ltd.	MITI
(11)	Nihon Aeroplane Manufacturing Co., Ltd.	MITI
	Small Business Investment Co., Ltd. (3)	MITI
	Okinawa Electric Power Co., Ltd.	MITI
	Japan Air Lines Co., Ltd.	MOT
	Japan Motor Terminals Co., Ltd.	MOT
	Kokusai Denshin Denwa Co., Ltd.	MPT
Others	Northern Territories Issue Association	PMO, MAFF
(47)	Overseas Economic Cooperation Fund	EPA
	National Consumer Information and Advisory Center	EPA
	Japan Atomic Energy Research Institute	STA
	Japan Information Center of Science and Technology	STA
	Institute of Physical and Chemical Research	STA
	Pollution-Related Health Damage Compensation Association	EA, MITI
	Amami Gunto Promotion and Development Credit Fund	NLA, MOF
	Japan Foundation	MFA
	Japan Scholarship Society	MOE
	Private School Personnel Mutual Aid Association	MOE

Classification	Name	Supervisory Ministry of Agency
	Japan School-Lunch Society	MOE
	National Stadium	MOE
	Japan School Safety Association	MOE
	National Education Center	MOE
	Olympic Memorial Youth Center	MOE
	National Theater	MOE
	Japan Society for the Promotion of Science	MOE
	Japan Private School Promotion Foundation	MOE
	Social Insurance Medical Fee Payment Fund	MHW
	Foundation for Promotion of Social Welfare Agencies, Inc.	MHW
	Social Development Research Institute	MHW
	Association of Children's Land	MHW
	Association for Welfare of the Mentally and Physically Handicapped	MHW
	Japan Racing Association	MAFF
	Agriculture, Forestry and Fishery Organization Employees Mutual Aid Association	MAFF
	Japan Local Racing Association	MAFF
	Institute of Agricultural Machinery	MAFF
	Forestry Credit Fund	MAFF
	Fisheries Mutual Aid Fund	MAFF
	Farmer Pension Fund	MAFF, MHW
	Japan Bicycle Racing Association	MITI
	Japan External Trade Organization	MITI
	Institute of Developing Economies	MITI
	Japan Auto Racing Association	MITI
	Institution for Safety of High Pressure	MITI

Classification	Name	Supervisory Ministry of Agency
	Gas Engineering	
	Japan Electric Meter Inspection Corp.	MITI
	Japan National Tourist Organization	MOT
	Japan Shipbuilding Industry Foundation	MOT
	Nippon Hosokai	MPT
	Japan Institute of Labour	MOL
	Construction Retirement Allowance Mutual Aid Association	MOL
	Sake Brewery Retirement Allowance Mutual Aid Association	MOL
	Japan Worker's Housing Association	MOL
	Mutual Aid Fund of Compensation for Accident on Duty of Fireman and Others	MHA
	Japan Fire Equipment Inspection Council	MHA
	Mutual Aid Association for Personnel of Organizations	MHA

Total 111

Note:

- PMO — Prime Minister's Office
- HDA — Hokkaido Development Agency
- EPA — Economic Planning Agency
- STA — Science and Technology Agency
- EA — Environment Agency
- ODA — Okinawa Development Agency
- NLA — National Land Agency
- MFA — Ministry of Foreign Affairs
- MOF — Ministry of Finance
- MOE — Ministry of Education
- MHW — Ministry of Health and Welfare
- MAFF — Ministry of Agriculture, Forestry and Fisheries

MITI	–	Ministry of International Trade and Industry
MOT	–	Ministry of Transport
MPT	–	Ministry of Posts and Telecommunications
MOL	–	Ministry of Labour
MOC	–	Ministry of Construction
MHA	–	Ministry of Home Affairs

(3) Evaluation of Administrative Efficiency – especially related to JNR
(Japan National Railways)

Professor Herbert A. Simon, Nobel Prize Winner of Organization Science, Professor of Carnegie-Mellon University said about efficiency of organization and management that it is generally used terminology of Input-Output, but if accurately speaking, maximum result with given opportunity cost, or given level result with minimum opportunity cost will lead to efficiency criteria.¹¹⁾

He illustrated this definition by an example of water supply-clean water plant. According to this definition, if the city council is considering three alternative plans with each one million dollars, the most efficient choice be a plant plan which will produce best quality of water. Or if there are three plants which produce equal quality of water, the cheapest cost plant will be the most efficient.

Finally, I would like to explain about the case example of Japan National Railways (JNR) which will show a typical pattern and problems of public employment productivity in Japan.¹²⁾ Of course, JNR is a Public Corporation, and not public employment of government in general. Therefore, the case of JNR will be typical, but will be specified type of works of Transportation.

Any way, according to the explanation and information materials of JNR, efficiency of transportation works employment should be promoted, but it is relatively difficult how to measure and to compare with other transportation works of Japan as well as other countries.

Related to productivity of JNR, it is said that productivity of labour has been used as the following table, because transportation works are

labour-oriented industry.

(a) Comprehensive unit indicator

Comprehensive unit indicator is shown as Car Kilometer, which is indicated with job volume of Car services. However, production volume will be the same with selling volume, because of characteristics of transportation service.

Therefore, production volume = selling volume = transportation Person, Ton & Kilometer (This indicator is commonly used in main countries.)

(b) Individual unit indicator

Transportation works are as a whole total system of many business sections. Therefore, it is necessary for full understanding of productivity of JNR to combine with productivity of each section as well as of whole organization. Productivity indicator of each section will be shown as operation volume or equipment scale.

The following table will be criteria of productivity indicators of each section as well as whole organization of JNR.¹⁴

Table 2. Productivity Indications of JNR

Section Division		Whole Organization	Stations		Maintenance		
			Traffic	Operation	Engineering	Electricity	Vehicles
O U T P U T	Production Volume	Person, Ton & Kilometer	Person, Ton & Kilometer	—	—	—	—
	Operation Volume or Equip- ment scale	Car Kilometer 1)	Passengers on & off or Arrival & Departure Tons 2)	Train Kilometer	Rail Kilometer	Electric- equipment Fixed Assets	Car Kilometer 1)
Volume of Labour		All Employee	Station Employee	Trainmen 3)	Roadway maintenance Employee	Electric- maintenance Employee	Car-main- tenance Employee
			Traffic & Operation Employee		Maintenance Employee		

1) Car Kilometer is multiplied Kilometer distance with 10 ton weight per car which has been standardized from various type of vehicles and structures.

2) Productivity of Station Employee is shown as Person, Ton & Kilo-

meter, because of the reason that it is difficult for Station Employee to divide between passengers and freight.

3) Trainmen include car operator and conductor, etc.

(c) Evaluation of productivity

It is said that comparative evaluation of productivity will be difficult, if considering the nature of transportation. And this evaluation is often being held as the comparison of productivity by time period basis, company, of which there will be a limitation, because of the differences of transit situation and data & so on. Therefore, especially the comparison between JNR and private transportation company will be effective, if picking up similar section conditions of location and scale.

Finally, from the stand point of users and customers about transportation services, it would be necessary to consider the social productivity or social benefit comparing with cost of transportation, which has not been analysed until now at JNR as the productivity from social viewpoint.

Therefore, it would be an important theme how to measure or evaluate social benefit as well as business productivity, comparing with service cost theoretically and practically for public employment in general.¹⁵

(4) Comment for Public Employment Productivity in General

In our country, we have no experiences except only one tentative survey by the research committee of Administrative Management Agency in 1972.¹⁶ I think the reasons why the measurement of public employment productivity has not been tied so much.

(a) There were very few analytical data in general government administration of Japan.

(b) There are no theoretical and empirical quantitative analysis experiences in general government activities.

(c) There are very few research fund for the establishment of reasonable measurement scale for general government productivity.

(d) There are some opposite political pressure for such establish-

ment of general government productivity by the main Trade Unions.

(e) Only one tentative survey by the Administrative Management Agency was one step for the future development of public employment productivity in general.

(i) Cost Consciousness for general government administration

(ii) Research criteria for public employment quota

Anyway, it will be difficult to set up general index for government, comparing with profit of business enterprise. Therefore, we have to find individual criteria for each activity of general government function, tax, police, fireprotection, socialwelfare, education, etc., which will include economic and social-non economic effectiveness as well as man-power organization productivity.¹⁷

The following tables are additional materials for this Article related to comparative viewpoint among Japanese Public Corporations (JNR and NTT) and Western countries.

Table 3. System of Output, Unit Index (Passenger)

Relations between Output and Operation of Employee will be shown as follows.

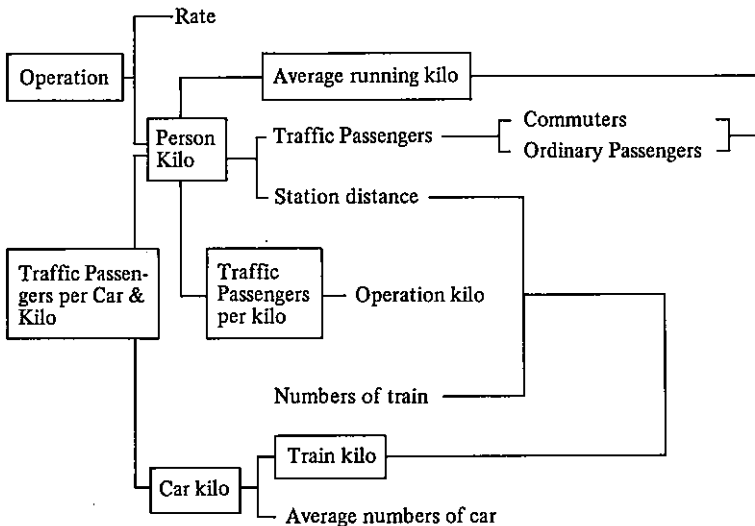


Table 4. Person, Ton, Kilo/per one (1974)

	Person, Ton, Kilo (Milli Kilo)	Total Employee (Person)	Person, Ton, Kilo per one (Thous. Kilo)
JNR	271,606	430,269	631
Bundes Bahn	122,153	405,713	301
France	126,333	284,394	444

UIC Statistics of World Railway 1974

Table 5. Person, Ton, Kilo/per Operating Kilometer (1974)

	Passengers (Million Persons Kilo)	Goods (Million Ton Kilo)
JNR	10,375	2,551
Bundes Bahn	1,606	2,483
France	1,927	2,284

UIC Statistics of World Railway 1974

Table 6. Employee/per Operation Kilometer (1974)

	Railway Employee (person)	Operation Kilometer (Km)	Employee per Kilo (person)
JNR	390,363	21,130	18
Bundes Bahn	393,346	28,926	14
France	269,609	36,382	7

UIC Statistics of World Railway 1974

Table 7. Car Kilometer per one Employee (1974)

	Car Kilometer (Million Kilo)	Railway Employee (Person)	Car Kilometer/Em- ployee (Thous. Kilo)
JNR	8,611	390,363	22.1
Bundes Bahn	9,243	393,346	22.5
France	7,861	269,609	29.6

UIC Statistics of World Railway 1974

Table 8. Productivity Indices of NTT, 1979

Year	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Numbers of Tele- phone per Employee ①	74	83	93	105	117	127	136	144	149	156
Revolving Ratio of Tangible Fixed Assets ②	0.39	0.40	0.40	0.40	0.40	0.38	0.38	0.41	0.51	0.50
Operating Re- venue per Employee ③	3,484 (Thou. Yen)	3,925	4,314	4,904	5,581	6,006	6,596	7,735	10,383	10,922
Added Value Amount per Employee ④	2,751 (Thou. Yen)	3,112	3,417	3,903	4,526	4,814	5,275	6,343	8,762	9,119
Labour Equip- ment Ratio ⑤	8,396 (Thou. Yen)	9,281	10,277	11,516	12,977	14,619	16,419	17,850	19,142	20,648

Note: ① Numbers of Telephone per Employee = Total Numbers of Telephone + Average Numbers of Employee of the beginning & the end of the Year

② Revolving Ratio of Tangible Fixed Assets Operating Revenue + Average Tangible Fixed Assets of the beginning & the end of the Year

③ Operating Revenue per Employee = Operating Revenue + Average Numbers of Employee of the beginning & the end of the Year

④ Added Value Amount per Employee = Added Value Amount + Average Numbers of Employee of the beginning & the end of

the Year.

- ⑤ Labour Equipment Ratio = Average Tangible Fixed Assets + Average Numbers of the Employee of the beginning & the end of the Year

Table 9. Comparison of Telephone Industry
Among Japan and Western Countries (1979)

Year	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978
Numbers of Telephone per Employee										
NTT	74	83	93	105	117	127	136	144	149	156
Bell (USA)	126	125	129	135	138	144	154	162	167	166
Britain	60	63	67	72	77	81	87	94	102	107
West Germany	80	85	88	90	94	99	106	119	129	135
France	69	78	85	91	100	97	108	117	124	127
Sales per Employee										
NTT (1,000 yen)	3.484	3.925	4.314	4.904	5.581	6.006	6.596	7.735	10.383	10.922
Bell (USA) (\$)	7.981 (22.169)	8.091 (22.474)	8.348 (23.800)	8.283 (26.892)	8.123 (29.842)	9.584 (32.877)	10.992 (37.036)	12.717 (42.884)	12.810 (47.707)	10.980 (52.170)
Britain (£)	2.475 (2.865)	2.889 (3.344)	3.163 (3.773)	3.129 (4.217)	3.186 (4.806)	3.920 (5.676)	5.650 (8.895)	5.758 (11.355)	5.852 (12.681)	5.478 (14.008)
West Germany (Mark)	5.042 (55.236)	5.975 (60.750)	6.650 (66.184)	7.152 (74.048)	8.301 (81.498)	10.266 (91.282)	12.763 (105.799)	13.475 (114.421)	14.334 (123.944)	13.597 (129.908)
France (F)	3.862 (55.727)	4.336 (66.894)	4.646 (73.403)	5.048 (82.678)	6.073 (99.373)	7.063 (116.525)	9.500 (137.200)	9.465 (152.562)	9.687 (177.260)	9.454 (202.700)

Notes

- (1) Dr. Tomoji Ichinose is Professor of Public Administration and Public Enterprise, International Christian University, Tokyo, Japan. And this Article was read on the 36 Congress of International Institute of Public Finance at Israel, August 1980.
- (2) Mr. Masayoshi Ohira was Prime Minister of Japanese Government since December 1978, until he died in June 1980.
- (3) Prime Minister of Great Britain is Mrs. Margaret Thatcher since 1979.
- (4) Government & Public Sector in Future and Administrative Reform of Japanese Government, Report of Committee on Basic Problems of Administrative Management, July 1979.
- (5) One Problem of Public Employment is to be said that general government type and business-type should be divided, because of the financial background differences-taxes and service charge & fees.

- (6) The List will be shown on the List of Public Corporations III (2) (c). This numbers will be expected to be 95 by the decision of Administrative Reform of 1980 in future.
- (7) This table will show the numbers of budget regular staff, including Five Gengyō and three Public Corporations.
- (8) This explanation has been noted from materials of Administrative Management Agency of Japan, 1980.
- (9) General Douglas MacArthur was a historical important person of the Second World War II for Japan.
- (10) The laws governing the labour-management relations of private enterprise is to be applied to all other public corporations.
- (11) H. A. Simon, Public Administration, Chapter 19.
- (12) Materials and Information of JNR, Management Planning Office, 1980.
- (13) The table of productivity indication of JNR was made at Management Planning Office JNR, 1980.
- (14) This table of productivity indicators will show main three sections-whole Organization, Stations and Maintenance.
- (15) Tentative analysis of cost-social benefit as well as cost-business productivity of organization has been held by National Forestry Agency. And we have to try to find the methodology of cost-social productivity more in general. Not monetary term, but physical terms have been used from the micro viewpoint.
- (16) The Second Temporary Research Council on Public Administration had started from April 1981, in order to make whole review on Japanese Government Organization and Finance.
- (17) Management Approach, especially policy, plan-making approach, for Government and Public Sector will be very useful and its tendency has been gradually understood in Japan also. However, this kind of approach will still take a time, because of the traditional value of legal mind.

政府・公共部門の生産性

——とくに公企業をめぐる——

〈要 約〉

一 瀬 智 司

政府・公共部門の役割増大が指摘されるようになった1930年代以降、中央、地方を通じ、その組織規模においても、財政予算規模においても、一般に拡大の一途をたどり今日に至っている。他方、政府・公共部門の効率、生産性が高く主張されながら、理論的にも実証的にも中々成果が見られない。小さな政府・効率のよい政府が主張される所以である。

そこでわが国の政府・公共部門のうち、公企業（特殊法人）の分野をとってその全領域の概要を紹介するとともに、とくに国鉄(JNR)と電電(NTT)をとり上げてその生産性測定に関する指標の現況を説明し、これらの指標を欧米先進諸国の国鉄および電気通信事業と比較して、その問題点を指摘した。さらに理論的な点として公企業の目的に鑑み、公益評価と企業効率を同時に生かす社会的生産性 (social productivity) が必要であるので、コスト・ベネフィット分析を公企業にも適用することを提案した。

さらに政府・公共部門の中、一般行政における生産性の面になるとわが国では、その経験に乏しく、行政管理庁において1972年一度テスト的に試みたものがあるにすぎない。かくして、理論的にも実証的にもこの面の調査研究の発展が望まれるといえよう。