Construction Economy Report

No. 38

The Japanese Economy and Public Investment

Public Investment Reform and Urban Renewal to Revitalize the Nation

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Research Institute of Construction and Economy
(RICE)
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This is an English translation of a summarized report
in Japanese, announced in February 2002

Chapter 1 Macroeconomics and Construction Investment

1.1 Trends in the Economy and Construction Investment

- The economic growth rate in real terms decreased by 0.9% in FY2001, and 0.2% in FY2002 over the previous year. Full-scale recovery is not yet expected.
- The nominal construction investment forecast dropped by 6.0% in FY2001. A further decrease of 6.1% is expected in FY2002.
- In steering the economy, care should be taken to adequately and flexibly implement fiscal management, while carefully monitoring the economic situation.

Table 1. Macroeconomic trends (FY)

Real ←|→ Forecast

FY	1990	1995	1997	1998	1999	2000	2001	2002
Real GDP	468,771	502,794	521,315	517,204	526,950	535,690	530,694	529.453
(%increase over previous year; increase rate)	5.5%	2.5%	0.2%	-0.8%	1.9%	1.7%	-0.9%	-0.2%
Real public fix capital formation	29,671	43,553	39,989	40,742	40,449	37,456	37,361	34,496
(Increase rate)	4.9%	7.8%	-6.3%	1.9%	-0.7%	-7.4%	-0.3%	-7.7%
(Contribution rate)	0.3	0.6	-0.5	0.1	-0.1	-0.6	0.0	-0.5
Real private-sector capital investment	90,711	73,152	86,429	81,987	81,706	89,300	87,929	84,620
(Increase rate)	11.3%	3.6%	8.9%	-5.1%	-0.3%	9.3%	-1.5%	-3.8%
(Contribution rate)	2.1	0.5	1.4	-0.9	-0.1	1.4	-0.3	-0.6
Real private-sector housing investment	26,930	24,239	21,791	19,517	20,539	20,232	19,036	18,435
(Increase rate)	5.2%	-6.5%	-20.9%	-10.4%	5.2%	-1.5%	-5.9%	-3.2%
(Contribution rate)	0.3	-0.3	-1.1	-0.1	0.2	-0.1	-0.2	-0.1
Real private-sector housing investment	248,840	277,907	281,394	284,377	290,386	290,139	288,310	288,757
(Increase rate)	4.2%	2.0%	-1.2%	1.1%	2.1%	-0.1%	-0.6%	0.2%
(Contribution rate)	2.3	1.1	-0.6	0.6	1.2	0.0	-0.3	0.1
Real net export	6,949	5,976	10,490	11,397	11,706	12,729	9,420	10,231
(Increase rate)	16.3%	-34.3%	93.6%	8.6%	2.7%	8.7%	-26.1%	8.7%
(Contribution rate)	0.2	-0.6	1.0	0.2	0.1	0.2	-0.6	0.2
Nominal GDP	450,532	501,960	520,177	513,245	514,349	513,060	501,572	494,819
(Increase rate)	8.1%	2.0%	1.0%	-1.3%	0.2%	-0.3%	-2.2%	-1.3%

(Units: billion yen. Real figures are based on 1995 prices.)

Table 2. Trends in construction investment (FY)

Accomplished ←|→ Forecast

FY	1990	1995	1997	1998	1999	2000	2001	2002
Nominal CI	81,440	79,517	75,191	70,760	70,290	70,360	66,153	62,142
(Increase rate)	114%	0.3%	-9.%	-5.9%	-0.7%	1.7%	-0.9%	-0.2%
Nominal government CI	25,748	35,199	32,964	33,430	31,790	31,200	20,261	26,558
(Increase rate)	6.0%	5.8%	-4.7%	1.4%	-4.9%	-1.9%	-6.2%	-9.2%
(Contribution rate)	2.0	2.5	-1.9	0.6	-2.3	-0.8	-2.8	-4.1
Nominal private CI	25,722	24,313	22,487	19,660	20,580	20,300	19,604	18,915
(Increase rate)	9.3%	-5.2%	-19.5%	-12.6%	4.7%	-1.0%	-3.8%	-3.58%
(Contribution rate)	3.0	-1.7	-6.6	-3.8	1.3	-0.3	-1.1	-1.0
Nominal private NH CI	29,970	19,505	19,739	17,670	17,910	18,780	17,288	16,669
(Increase rate)	18.4%	-1.8%	-2.8%	-10.5%	1.4%	4.9%	-7.9%	-3.6%
(Contribution rate)	6.3	-0.4	-0.7	-2.8	0.3	1.2	-2.1	-0.9
Real CI	85,442	79,020	74,469	71,450	71,700	71,590	67,923	64,352
(Increase rate)	7.7%	0.2%	-9.9%	-4.1%	0.3%	-0.2%	-5.1%	-5.3%

(Units: billion yen. Real figures are based on 1995 prices.)

Notes:

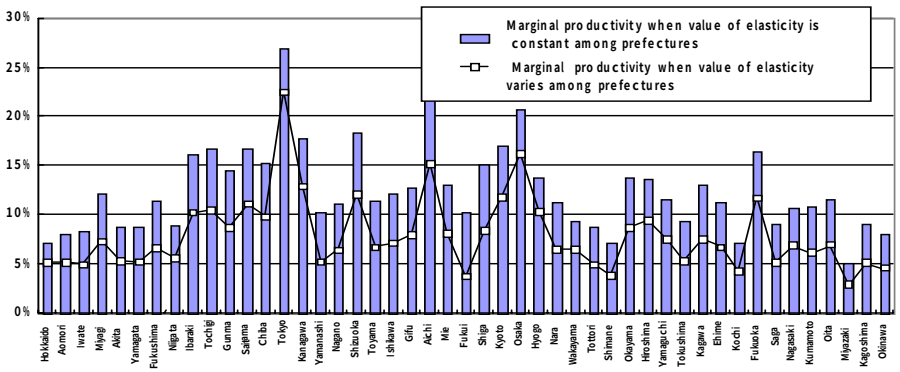
1. CI: construction investment NH: non-housing
2. Private NH CI = private non-housing construction investment + private civil engineering investment

1.2 Trends in Public Investment and Challenges

- The Japanese government maintained a high level of public investment for 50 years after WWII, reflecting the needs of the times. Economic and fiscal constraints, however, eventually forced a slowdown in Japan's public investment. Public investment should be focused in areas that will promote efficiency and the creation and stimulation of private demand.
- For public investment to play a role in creating and stimulating private demand that will trigger private consumption and investment, priorities should be placed on: a) target projects; b) target areas; c) investment purposes; d) investment methods; and e) target generation.
- In discussing municipality mergers, authorities must consider the economy of scale, the expansion of local revenue sources, and the review of systems of local allocation tax and local bonds so that local governments can take the initiative in investment.

A comparison of marginal productivity of social capital stock by prefecture shows that it is higher in metropolitan regions than in rural regions. Although efficiency is not the sole guiding principle of public investment, the trend of the past, where prefectures with low per capita income tended to rely heavily on public investment, is problematic.

Graph 1. Marginal productivity of social capital stock by prefecture (FY1995)



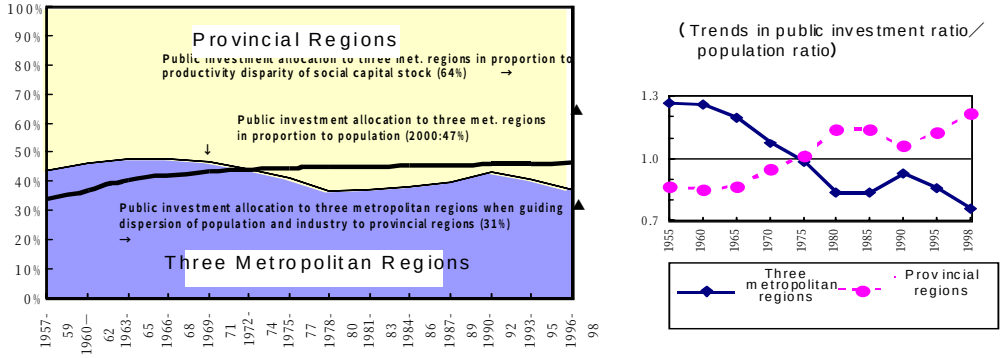
Note: Prefectures are listed from north (left) to south (right).

More focused target projects

- Improvement of international transport infrastructure and measures to expand infrastructure use
  - Improve railways and roads for better access to international airports, and reduce tolls
  - Improve deep-water berths at international ports, reduce time for unloading and increase utilization
  - Improve loop roads in metropolitan regions
- Telecommunication infrastructure improvement to create on-line networks that will be both speedy and inexpensive by international standards

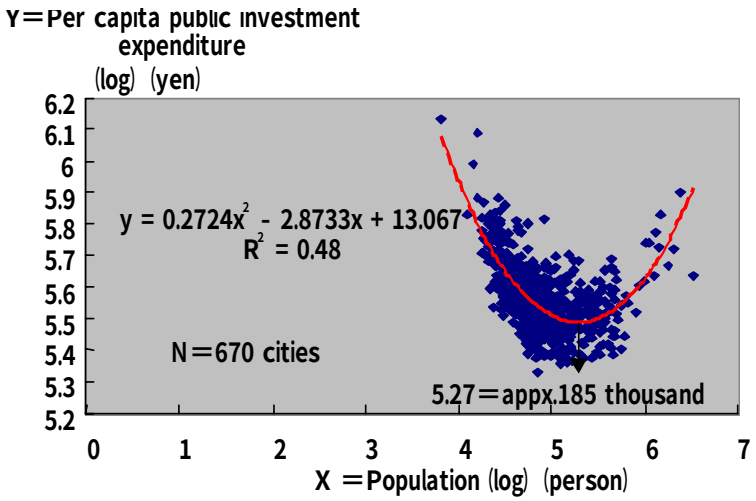
At present, with social infrastructure improvement achieving a certain level, the ability to trigger private investment and consumption should be an important consideration for public investment. For the time being, population will serve as an indicator for public investment allocation.

Graph 2. Trends in public investment allocation ratio by region and standard of allocation



Per capita public investment expenditure is the lowest in cities with populations of about 200 thousand.

Graph 3. Per capita public investment expenditure and size of municipality



Chapter 2 Trends in Bidding and Contracting Systems for Construction Projects

◆ To ensure transparency and competitiveness, more local governments are now announcing scheduled price in advance of bidding, and are expanding the scope of general competitive bidding application.

Five recommendations for local governments' bidding and contracting systems:

1. When announcing scheduled prices in advance of bidding, require bidders to submit statements of items and select the winner after screening;
2. Strengthen systems to check managerial skills and performance ability of construction companies (utilize third-party organizations);
3. Shift from a direct exclusion system to indirect preferential system for regional requirements;
4. One mid-term goal is to change from a price-only bidding system to a system based on the principle of maximizing V/M; and
5. Another mid-term goal is to review the scheduled price system and ranking system of construction companies.

Table 3. Announcement of scheduled prices—the number of local governments making announcement, before and/or after bidding is increasing (including trials)

	Prefectures		Major cities*		Total	
	FY01	FY00	FY01	FY00	FY01	FY00
Pre-announcement	7		1		8	
Pre- and post-announcemnt	19	20	9	9	28	29
Post-announcement	21	27	5	3	23	30
Total	47	47	12	12	59	59

Table 4. Threshold for general competitive bidding—the application to projects with budgets less than 1 billion yen is gradually expanding

	Prefectures			Major cities*			Total		
	FY01	FY00	FY99	FY01	FY00	FY99	FY01	FY00	FY99
Over 2.5 billion yen	20	20	23	7	7	8	27	27	31
1 billion to 2.5 billion	8	9	12	0	1	1	8	10	13
Less than 1 billion	18	18	12	5	3	3	23	21	15
Other	1	0	0	0	1	0	1	1	0
Total	47	47	47	12	12	12	59	59	59

Note: "Major cities" refer to 12 government-decreed cities

Of all the drawbacks to general competitive bidding, the final problem to be overcome is the issue of inferior and unqualified companies.

Table 5. Advantages and disadvantages of general competitive bidding

Advantages	Disadvantages
1. Wider opportunity of entry 2. Transparent and fair process of bidder selection 3. More competitive, enabling placement of orders at more economical prices 4. Can exclude orderers exercising discretion 5. Can expect a certain effect in preventing bid rigging	1. Difficult to exclude inferior and/or dishonest companies 2. May lower quality through excessive competition and dumping 3. May involve massive administrative work related to bid screening and work supervision 4. May result in imbalanced orders

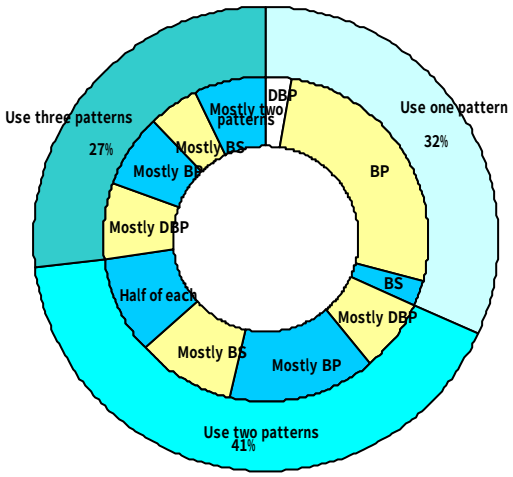
Disadvantage No. 3 will be resolved through the diffusion of on-line bidding. Disadvantage No. 4 is not necessarily a disadvantage—if bidding is based on the prerequisite of encouraging companies who have superior management and technical abilities. The remaining problems are Nos.1 and 2, i.e., inferior and unqualified companies.

Table 6. Regional requirements—set by 70% of local governments, depending on the type of project

		Prefectures		Major cities		Total	
1	Participants are required to have their head office in the prefecture or other limited area for all construction projects	0	0.0%	2	16.7%	2	3.4%
2	Participants are required to have either their head office or a branch office in the prefecture or other limited area for all construction projects	7	14.9%	1	8.3%	8	13.6%
3	Requirements are set by the content of the construction work (e.g., degree of difficulty, area)	35	74.5%	8	66.7%	43	72.9%
4	Requirements are set by the amount of works (e.g., scheduled price)	1	2.1%	0	0.0%	1	1.7%
5	Other	3	6.4%	1	8.3%	4	6.8%
N/A		1	2.1%	0	0.0%	1	1.7%
Total		47	100.0%	12	100.0%	59	100.0%

Graph 4. Private-sector orderers（based on replies from 44 major companies）

— Types of order placing are diversifying; 70% use multiple patterns

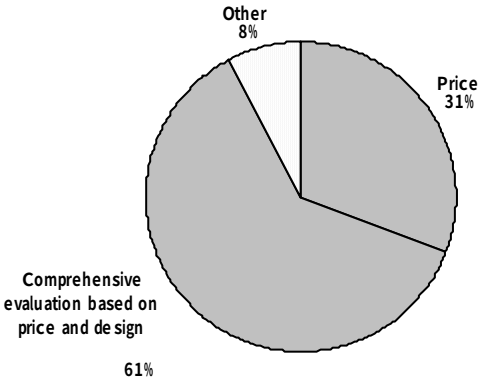


Order patterns are classified into the following three:

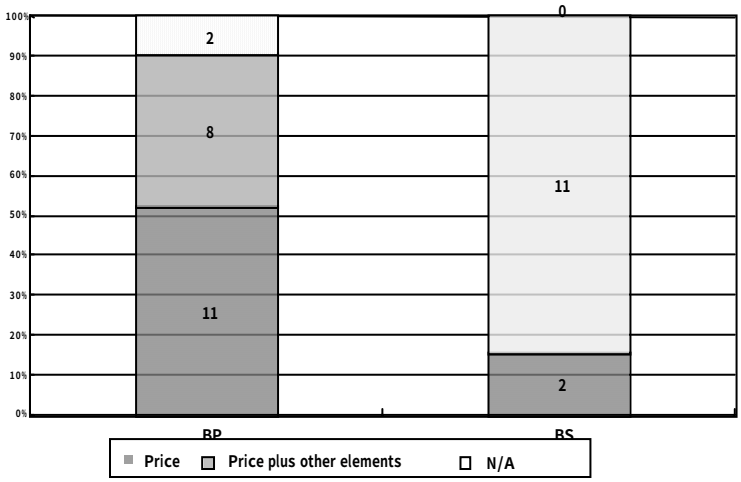
1. Design-build Package (DBP)
   (Order "design" and "build" as a package)
2. Build Package (BP)
   (Order only "build" as a package)
3. Build Separate (BS)
   ("Build" divided into several parts depending on the type of work and ordered to several contractors)

Graph 5. Selection standards—many companies use standards other than price in selecting contractors

Design-Build Package



Build Package　　Build Separate



Chapter 3 Construction Industry Trends

3.1 Trends of restructuring, conditional changes of construction companies, factors behind these changes

- Both the number and rate of construction companies going bankrupt are increasing; about 6,000 cases or 1% in 2000. This trend is likely to continue as the construction market shrinks.
- Reasons for general contractors to merge, sell or acquire others are sometimes strategic and self-chosen, and sometimes precipitated by outside factors.
- The probability of foreign construction companies acquiring major Japanese general contractors will remain low for the time being. Foreign companies are expected to focus on CM/PM services and PFI, where domestic general contractors lack experience.

Table 7. Trends in the number of authorized construction companies and traders and those going bankrupt

FY	Authorized companies/ dealers	No. going bankrupt (right scale)	Rate of bankruptcy (%)	Total debt amount (million yen)
90	515,440	1,470	0.29%	428,771
91	522,450	2,351	0.45%	657,659
92	530,665	2,873	0.54%	741,599
93	543,033	2,962	0.55%	1,440,414
94	551,661	3,350	0.61%	698,786
95	557,175	3,769	0.68%	758,439
96	564,849	3,891	0.69%	974,114
97	568,548	5,137	0.90%	2,441,946
98	586,045	4,894	0.84%	1,951,736
99	600,980	4,898	0.82%	1,310,454
2000	585,959	5,854	1.00%	1,459,350

Future prospect of restructuring, by type of construction company, are as follows:

Local construction companies

1. Merger for the purpose of synergy in the type of work and business area.
2. Joint purchase of materials, sharing of heavy machinery, resources and technology, and tie-ups for the purpose of exchanges among engineers.

General contractors operating nationwide

Even though these companies seek alliance and cooperation, restructuring through merger, sales and acquisition may arise due to the following factors:

1. Self-initiated

   a Upper-tier general contractors attempt to strengthen specific areas as they review their group structures

   b Middle- and lower-tier general contractors aim to maintain or expand their

business nationwide

2. Triggered by outside factors

These accompany legal liquidation and other measures taken by companies in difficulty due to the introduction of impairment accounting for tangible fixed assets and land.

3.2 Over-employment in the construction industry

- ◆ The mismatch in employment is expanding in the current labor market. Prolonged periods of unemployment and employment adjustment are trends in the construction industry.
- ◆ Due to cutbacks in public works, the number of construction workers is expected to decrease to less than 6 million in FY2003. New employment should be created. Systems to meet the changing employment patterns should be improved.

Graph 6. Percentage of companies implementing employment adjustment

- Higher in construction industry than in other industries (Based on a survey of companies having 30 and more employees)

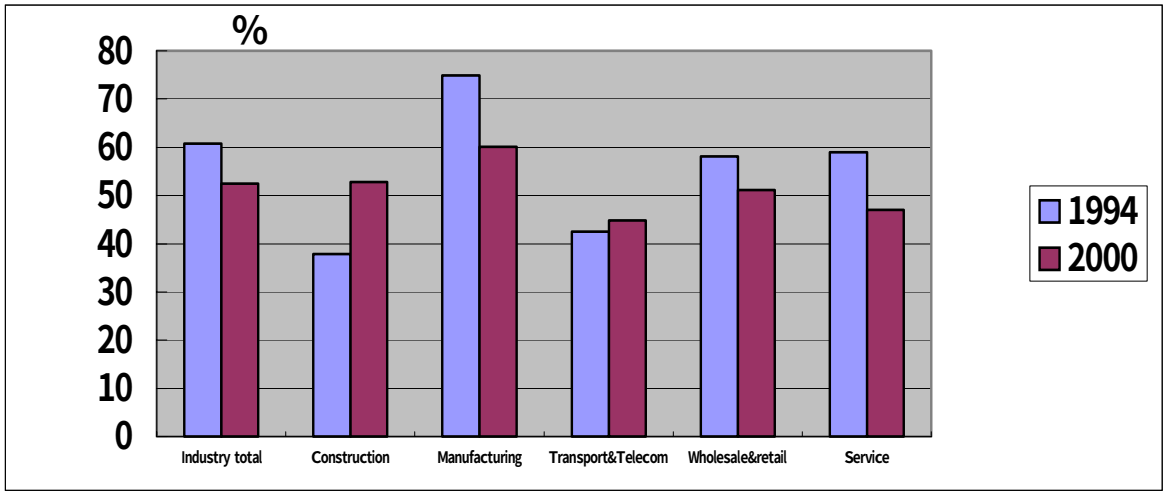


Table 8. Trends in the number of construction workers

- Due to cutbacks in public works the number of construction workers is expected to decrease to less than 6 million in FY2003.

FY	Figure for this term			Average of two previous terms			Estimated number of construction workers (thousands)
	Construction investment amount (billion yen)	Government construction investment amount rate (billion yen)	Government construction investment amount rate (%)	Construction investment amount (billion yen)	Government construction investment amount (billion yen))	Government construction investment amount rate (%)	
1999	71,700	32,410	45.2	(72,959.7)	(33,206.4)	(45.5)	(6570)
2000	71,590	31,700	44.3	(71,575.0)	(33,070.0)	(46.2)	(6530)
2001	67,923	30,135.2	44.4	71,645.0	32,055.0	44.7	(6320)
2002	64,352	2,683.2	43.0	69,756.5	30,917.6	44.3	6220
2003				66,137.5	28,909.2	43.7	5970

3.3 General contractors and technical expertise

- ◆ Technical expertise required by construction companies has changed over time through the division of labor and mechanization on site. Both headquarters and branch offices are strengthening their R&D divisions and on-site support divisions.
- ◆ General contractors now emphasize technical expertise in construction management. The underlying important challenge here is quick and timely problem-solving by the organization as a whole.
- ◆ As the first step in building "organizational problem-solving ability," each company should assess its corporate ability and its accumulation of knowledge. Continuous improvement can be achieved by introducing and utilizing benchmarks.
- ◆ KPIs (Key Performance Indicators) may be of reference to Japanese general contractors. KPIs is a part of the construction industry policy of the U.K. government, providing a benchmark against which a project or a company performance can be measured

Technological changes and general contractors

- Wider use of machinery, including new tunnel construction methods and the introduction of concrete pumps in construction.
- Division of labor on site

(The ratio of works carried out by subcontractors to those by original contractors changed from approximately 20% in 1960 to about 70% in 1999.)

- Qualitative change of on site management (Problem-solving ability of construction projects in general. In addition to increasing administrative work related to safety and quality control, managers must deal with problems the construction project causes in the neighborhood arising in areas around the site and review the construction methods.)
- More technical support divisions at headquarters and branch offices

Example of a construction division of a major company X (Ratio of staff at headquarters and branch offices／total technical staff increased from 32% in

1970 to 48% at present.)

Technical ability most emphasized by general contractors

- The major issue is "construction management ability" （The finding of a questionnaire survey conducted in September 1997）
- Opinions obtained by an interview survey conducted among five major general contractors:
  1) Produce results quickly and inexpensively, by meeting customer needs.
  2) The "ability to tackle issues as an organization," to meet diversifying needs of customers.

"Ability to tackle issues as an organization" and its continuous improvement

- "Organizational ability" means the ability of an organization to consistently execute tasks or activities better than other organizations.
- The necessary "abilities" include the "ability to forecast the process to achieve the goal" and the "ability to swiftly cope with changes and uncertainties."
- A company must be able to access its organizational ability, accumulate data, make comparisons with benchmarks and other indicators, to achieve continuous improvement.

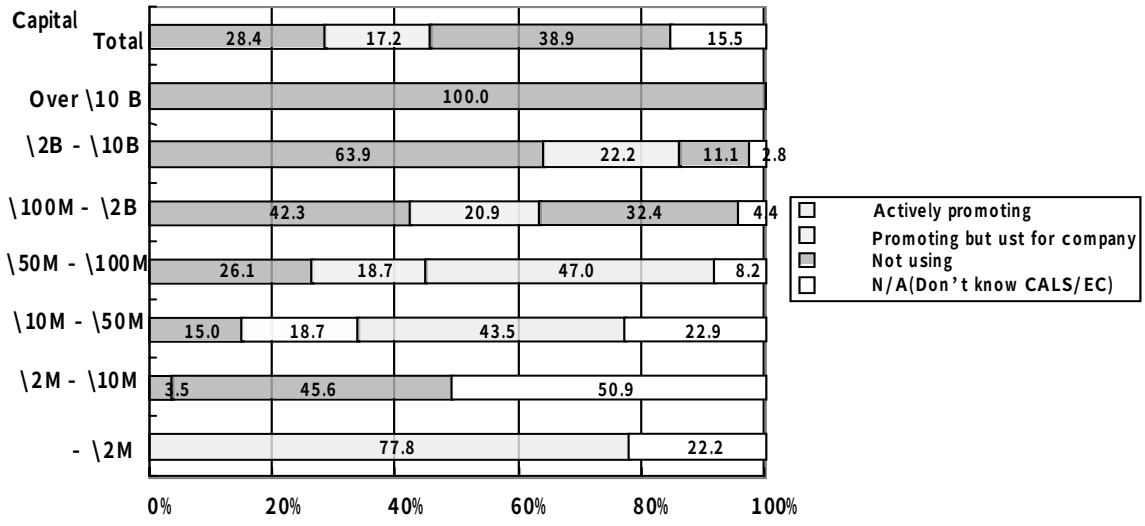
KPIs（Key Performance Indicators）in the United Kingdom

- Proposed by "Rethinking Construction" (A report submitted at the request of the U.K.'s deputy prime minister and construction minister) and developed.
- Assess and diagnose the company's performance. Related to problem-solving ability.
- "Predictability of work time" and "predictability of cost" are among ten major indicators.
- Established KPIZone.com through Construction Best Practice Programme （CBPP and promoted KPI as a part of policies to improve the construction industry.

3.4 Information Technology (IT) and the construction industry

- The national government's promotion of e-Government, based on the "e-Japan Strategy," is likely to make rapid progress. At present, smaller municipalities and construction companies lag behind in the introduction of CALS/EC (Continuous Acquisition and Life-cycle Support/electric commerce.)
- IT has enabled the division and recombination of the corporate functions of construction companies. Examples of this new business model are the Kagoshima Construction Market and B-NET. Features common to these models are: a) tasks are clustered and concentrated in specialized sectors within the network to increase work efficiency, and b) "transparency" and "flat/equal relationships" are ensured within the network. Smaller construction companies, in particular, can learn from these models.

Graph 7. Smaller companies have less access to CALS/EC



New businesses

1. IT itself is a business, e.g: the supply of websites related to ASP and EC
2. New businesses utilizing IT, e.g: the supply and selling of proprietary technology via corporate homepages

3. Establish new business models utilizing IT

Example 1: ***Kagoshima Kenchiku Ichiba*** (Kagoshima Construction Market)

- About 150 local construction companies are members
- Quality is ensured through "working and creating together" (to meet the requirements of the Quality Assurance Law)and reducing costs（average 400 thousand yen per unit space reduced to 320 thousand yen）
- CAD center, Precut center, The Onsite Supervisor Web, Procurement/Distribution Center,

Example 2: **B-NET**

- Split functions including sales & design, construction, bookkeeping & accounting and compensation:

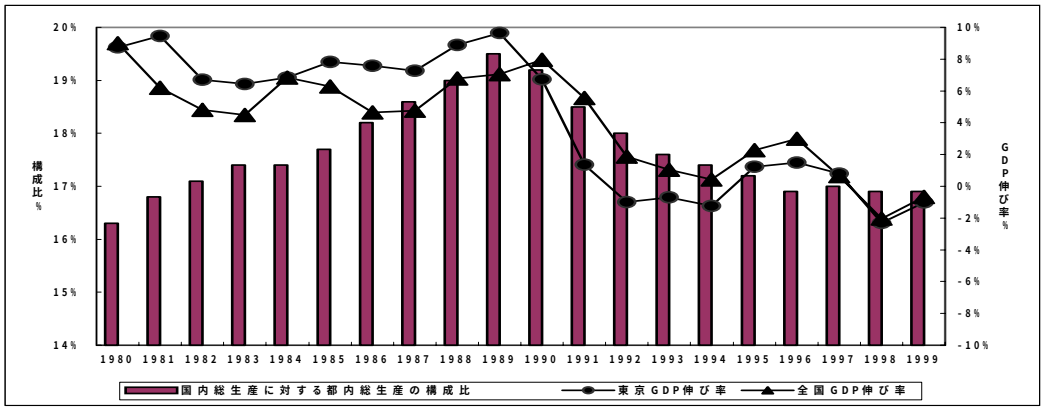
  Sales Net、Construction Net、Outsourcing of works(bookkeeping & accounting and compensation)
- Allocation of works, contract amount, allocation of profit are all made open to parties concerned including specialized contractors

Chapter 4 Urban Renewal

- ◆ Urban renewal is an important issue to face in the revitalization of Japan in the 21st century ("the Century of the City").
- ◆ Tokyo, a long-time engine of the Japanese economy, is now suffering from decreased economic vitality, and is lagging behind other major cities.
- ◆ For Tokyo to restore its vitality and maintain its position as an international business center, airports and other business infrastructure and the environment that supports both the work and life of foreign businesspeople should be improved.

Graph 8. Tokyo's economy

- The economy of Tokyo has been sluggish in recent years



＜上のグラフに英文字を入れようとしましたが、図が縮小表示されてしまい作業できませんでした。以下を張りこんでいただけますか　　左目盛　% ratio　　右目盛　GDP increase rate

バー　% ratio of Tokyo GDP to national GDP

● Tokyo GDP increase rate　　▲ National GDP increase rate ＞

Table 9. Tokyo's airport - Lags behind those in other Asian cities in terms of capacity and convenience

		Area (ha) At present Overall plan	Runway (No.) At present Overall plan	Air traffic capacity (thousand times) At present Overall plan	Distance from downtown (km) At present
China	Hong Kong	1,248 1,248	1 2	154 376	28 (From Kowloon)
	Shanghai	1,252 3,200	1 4	126 320	30 (From Shanghai)
Korea	Incheon	1,174 4,744	2 4	170 530	52 (From Seoul)
Tokyo	Narita	1,065	1	127 ('99 actual number)	66

Table 10. Job/housing ratio in Tokyo

- Although central Tokyo is gaining population, there is still an imbalance between jobs and housing.

	Tokyo		New York		London		Paris	
	Decade ago	Present	Decade ago	Present	Decade ago	Present	Decade ago	Present
Central+ Surrounding Areas	2.28	2.36	1.78	1.41	1.48	1.38	0.84	0.76

Table 11. Per capita office floor area

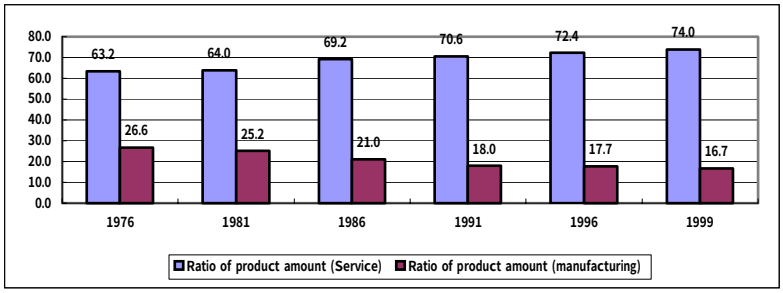
- Tokyo has not yet achieved an international standard.

Sweden	**Germany** Frankfurt	**UK** London	**France** Paris	US New York	Tokyo 23 wards
38.5 m^2	38.5 m^2	27.7 m^2	33.8 m^2	39.3 m^2	23.0 m^2

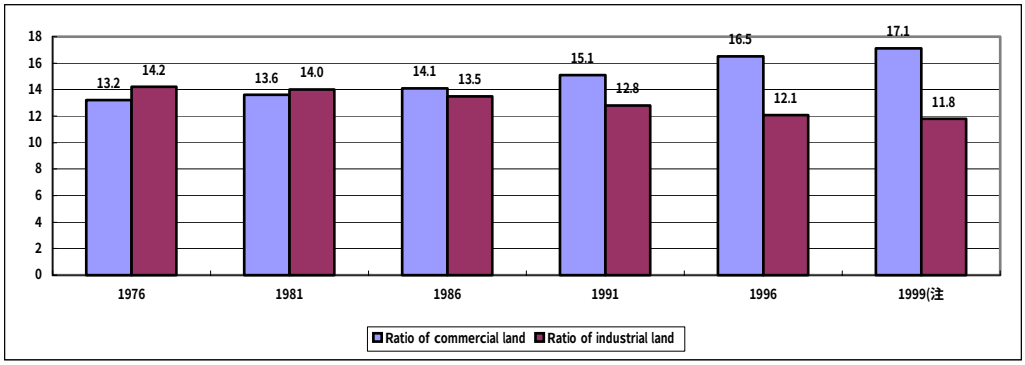
- One of the reasons for the sluggish Tokyo economy is the slow progress in land use conversion accompanying structural changes in industry. The result: a large amount of idle and underutilized land.
- Apart from during the economic bubble, the subdivision of land has continued, degrading the urban environment and hampering the efficient conversion of land use.
- The supply of large-scale buildings continues to meet demand for offices. On the other hand, many existing buildings are unprepared for earthquakes or information technology (IT).

Tokyo's industry has shifted from manufacturing-oriented to service-oriented. Land use conversion, however, has not progressed in line with this trend.

Graph 9: Composition ratio of manufacturing and services in Tokyo

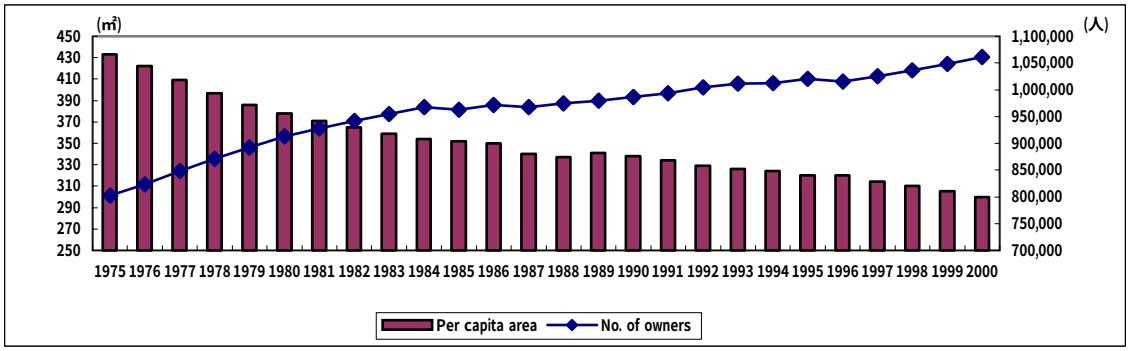


Graph 10: Composition ratio of commercial and industrial land in the Tokyo Ward Area



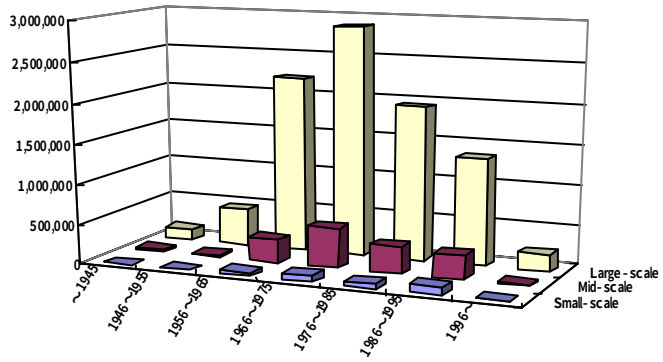
Graph 11. Trends in the number of private land lot owners and average area owned in the Tokyo ward area

- Subdivision of land lots continues in the ward area.



Many of the buildings in central Tokyo were built before the introduction of the new seismic standards.

Graph 12. Buildings in the five central wards, by size and age



Large-scale : Total floor area of 3000 *tsubo* and over

Mid-scale : Total floor area of 1000-3000 *tsubo*

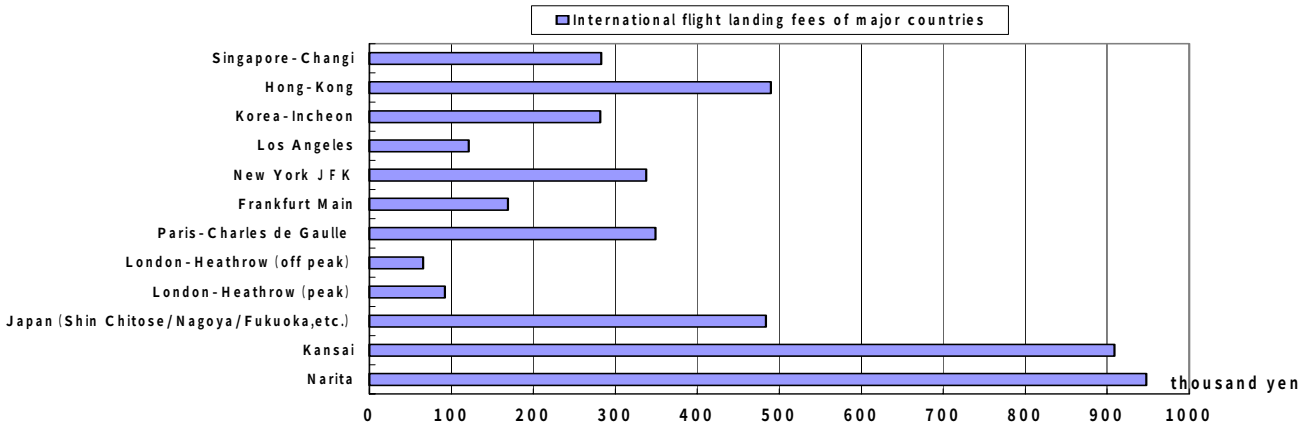
Small-scale : Total floor area of less than 1000 *tsubo*

Note: 1 *tsubo* = 3.3 ㎡

- ◆ Given the fierce competition between Tokyo and other Asian cities, Tokyo should speed up projects to expand Haneda Airport, improve roads to the airport, and lower the landing fees at the government's expense. Port services should be improved by running the ports 24 hours a day and adopting a "one-stop" procedure.
- ◆ Tokyo should establish a new city planning system in which proposals from local people and project initiators are adopted, to adequately guide private-sector vitality and promote urban renewal. Tokyo should introduce a Business Improvement District (BID) to create an attractive urban environment.
- ◆ Tokyo should establish an Urban Renewal Fund to supply funding from public sources to promote private-sector urban development projects.

Japan's airport landing fee is twice the international standard

Graph 13. Landing fees of major airports



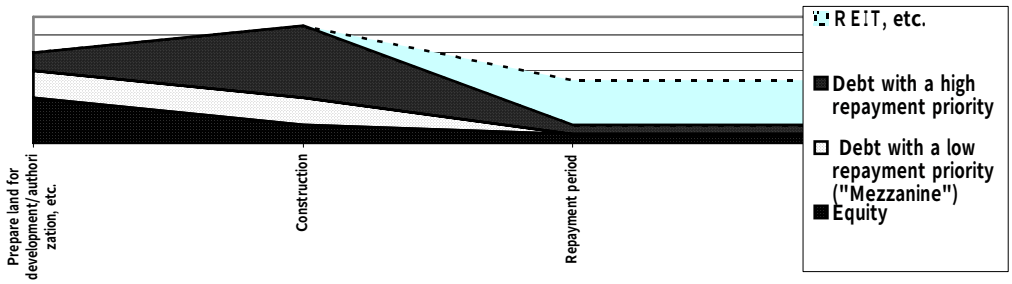
BID（Business Improvement District）

Tokyo should raise property taxes within designated areas. The funds generated could be reimbursed to an organization of taxpayers within the area responsible for community planning. The money would be used for environmental improvement, street-scaping, security and other public services. The organization would be in the form of NPO established by residents and companies within the area

Venture capital funding procurement at the initial stage of real estate development is one of the major hurdles in capital procurement

Graph 14. Schematic illustration of financing real estate development

(from the viewpoint of the originators)



（Early stage → Latter stage ）

Chapter 5 Overseas Trends

- GDP by nation and by region in 2000 was 207.4 for the U.S., 170.3 for Western Europe, 5.7 for Eastern Europe and 59.0 for Asia (Japan = 100). Ratios of construction investment to GDP were 13.7% for Japan and 16.5% for Asia, while 8.3% for the US, 5.7% for Western Europe and 7.8% for Eastern Europe.
- The size of construction investment was 124.9 for the US, 70.9 for Western Europe, 3.3 for Eastern Europe and 71.0 for Asia (Japan = 100).
- In October 2001, George Mason University announced a comparative report on public works spending in Japan and the U.S. The report focused on the relationship between public investment and economic productivity growth, and pointed out that public works spending should be directed to more productive sectors to contribute to economic growth. The paper also pointed out that public works should be prioritized through accurate project/performance evaluation.

Table 12. Construction markets, by country and by region

(Nominal figures converted to trillion yen)

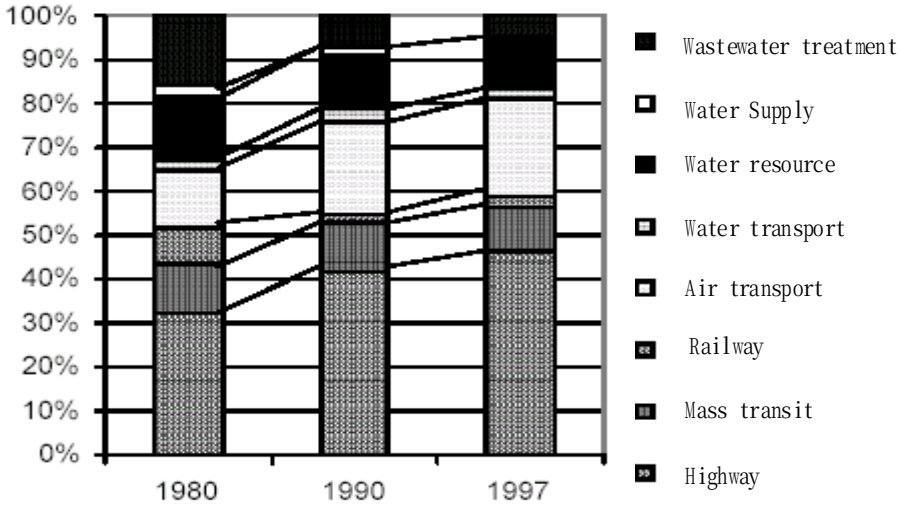
	Japan[1] FY 2000	US 2000	Western Europe[2] 2000	Eastern Europe[3] 2000	Asia[4] 2000
GDP	513.0 (100)	1064.0 (207.4)	873.4 (170.3)	29.1 (5.7)	302.5 (59.0)
Construction Market	82.9 (100)	—	86.9 (104.8)	3.1 (3.7)	—
Ratio to GDP (%)	16.2	—	9.9	10.6	—
Construction Investment	70.4 (100)	87.9 (124.9)	49.9 (70.9)	2.3 (3.3)	50.0 (71.0)
Ratio to GDP (%)	13.7	8.3	5.7	7.8	16.5

Notes

1. Data for Japan is fiscal year (FY)-based. GDP is a forecast figure, and the amount of construction investment is an outlook.
2. "Western Europe" consists of fifteen countries: Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Italy, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and UK.
3. "Eastern Europe" consists of four countries: Czech Republic, Hungary, Poland and Slovakia.
4. "Asia" includes 11 countries and one region: China, Hong Kong, Taiwan, India, Indonesia, Korea, Malaysia, The Philippines, Singapore, Sri Lanka, Vietnam and Thailand. Construction investment data for China is as of 1999 and for Indonesia and Vietnam are as of 1998. The amount of orders received for construction work is used instead of construction investment amount for Malaysia.

Policy of the US Federal Government to shift infrastructure expenditures to the transport sectors, seen as a productive sector, has led to increased economic productivity.

Graph 15. US Federal Government expenditure on infrastructure by sector



Source : US Congressional Budget Office (1999)