

Construction Economy Report

No. 39

The Japanese Economy and Public Investment

**A Shrinking Construction Market and
New Opportunities for the Construction Industry**

September 2002

**Research Institute of Construction and Economy
(RICE)
Tokyo, JAPAN**

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in Japanese, announced in August 2002**

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1.1 Trends in the Japanese Economy and Construction Investment

- ◆ RICE expects overall construction investment in FY2002 to fall significantly by 6.0% in nominal terms over FY2001, to 56.8 trillion yen a decline to below the 60-trillion-yen level for the first time in 16 years. The decrease is expected in all sectors of government construction investment, private housing investment, and private non-residential construction investment.
- ◆ A further decline to 54.4 trillion yen is expected for FY2003, assuming that government construction investment remain stagnant, no additional public works reserve fund is provided, the preliminary budget remains the same, and no additional investment through supplementary budget is made.
- ◆ The amount of public capital formation (general government) continued to decrease, reaching the level of the early 1990s. The ratio of public capital formation to GDP is now lower than the figures for the early 1990s.
- ◆ Although the Japanese economy has been showing signs of bottoming out, the recovery is weak. It is possible that the economy may once again decline before assuming a full-scale recovery.
- ◆ The prospects for the American economy are unclear. To foster the possibility of the private sector leading the recovery, public investment should be focused in areas that will promote efficiency and should not act as a drag on economic growth.

Macroeconomic trends (FY)

	Real					Forecast		
FY	1990	1995	1998	1999	2000	2001	2002	2003
Real GDP (%increase over previous year; increase rate)	469,781 5.5%	502,794 2.5%	517,204 -0.8%	526,950 1.9%	535,690 1.7%	528,929 -1.3%	530,700 0.3%	537,268 1.2%
Real public fix capital formation (Increase rate) (Contribution rate)	29,671 4.9% 0.3	43,553 7.8% 0.6	40,742 1.9% 0.1	40,449 -0.7% -0.1	37,456 -7.4% -0.6	35,301 -5.8% -0.4	32,497 -7.9% -0.5	30,661 -5.6% -0.3
Real private-sector capital investment (Increase rate) (Contribution rate)	90,711 11.3% 2.1	73,152 3.6% 0.5	81,987 -5.1% -0.9	81,706 -0.3% -0.1	89,300 9.3% 1.4	85,972 -3.7% -0.6	81,213 -5.5% -0.9	85,213 4.9% 0.8
Real private-sector housing investment (Increase rate) (Contribution rate)	26,930 5.2% 0.3	24,239 -6.5% -0.3	19,517 -10.4% -0.1	20,539 5.2% 0.2	20,232 -1.5% -0.1	18,511 -8.5% -0.3	17,979 -2.9% -0.1	17,497 -2.7% -0.1
Real private-sector housing investment (Increase rate) (Contribution rate)	248,840 4.2% 2.3	277,907 2.0% 1.1	284,377 1.1% 0.6	290,386 2.1% 1.2	290,139 -0.1% 0.0	291,104 0.3% 0.2	294,633 1.2% 0.7	296,610 0.7% 0.4
Real net export (Increase rate) (Contribution rate)	6,949 16.3% 0.2	5,976 -34.3% -0.6	11,397 8.6% 0.2	11,706 2.7% 0.1	12,729 8.7% 0.2	10,184 -20.0% -0.5	12,745 25.2% 0.5	12,157 -4.6% -0.1
Nominal GDP (Increase rate)	450,532 8.1%	501,960 2.0%	513,245 -1.3%	514,349 0.2%	513,060 -0.3%	500,217 -2.5%	497,780 -0.5%	499,738 0.4%

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

Trends in construction investment (FY)

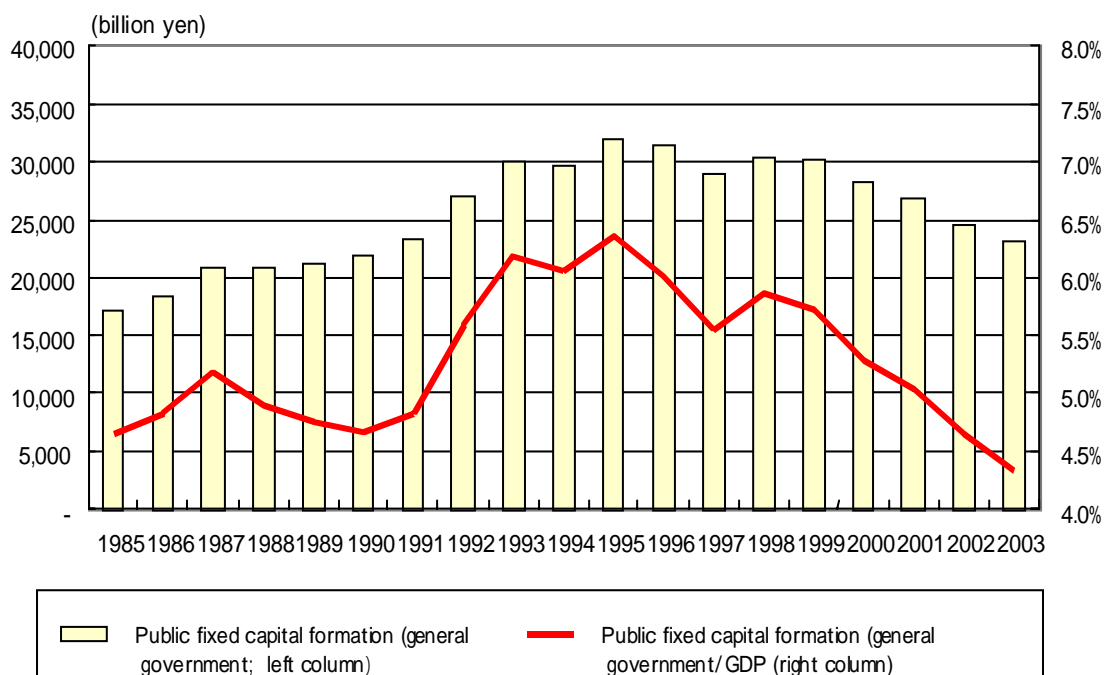
FY	Accomplished						Forecast	
	1990	1995	1998	1999	2000	2001	2002	2003
Nominal CI	81,440	79,017	71,427	68,504	66,500	60,410	56,807	54,425
(Increase rate)	11.4%	0.3%	-5.0%	-4.1%	-2.9%	-9.2%	-6.0%	-4.2%
Nominal government CI	25,748	35,199	33,993	31,938	30,440	27,550	25,000	23,237
(Increase rate)	6.0%	5.8%	3.1%	-6.0%	-4.7%	-9.5%	-9.4%	-6.9%
(Contribution rate)	2.0	2.5	1.4	-2.9	-2.2	-4.3	-4.3	-3.0
Nominal private CI	25,722	24,313	19,762	20,724	20,150	18,370	17,623	17,128
(Increase rate)	9.3%	-5.2%	-12.1%	4.9%	-2.8%	-8.8%	-4.1%	-2.7%
(Contribution rate)	3.0	-1.7	-3.6	1.3	-0.8	-2.7	-1.3	-0.9
Nominal private NH CI	29,970	19,505	17,672	15,842	15,900	14,500	14,234	14,060
(Increase rate)	18.4%	-1.8%	-10.5%	-10.4%	0.4%	-8.8%	-1.8%	-1.2%
(Contribution rate)	6.3	-0.4	-2.7	-2.6	0.1	-2.1	-0.4	-0.3
Real CI	85,442	79,020	72,128	69,874	67,680	62,090	58,748	56,276
(Increase rate)	7.7%	0.2%	-3.1%	-3.1%	-3.1%	-8.3%	-5.4%	-4.2%

(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

Trends of public fixed capital formation (general government) and its ratio to GDP (in real terms)



The role of the government (Reforming government expenditure)

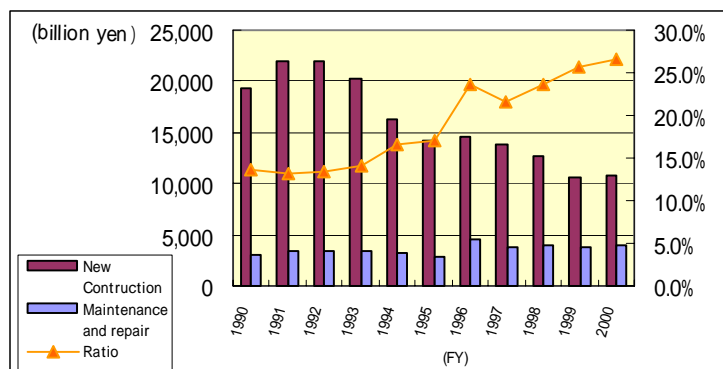
Quote from "Mid-term Prospect of Structural Reform, Economy and Finance" ("Reform and Prospect") decided at a Cabinet meeting on January 25, 2002):

"During the period of 'Reform and Prospect' (Note: Until FY2006) more focused and efficient public investment by the national government will be promoted with due consideration of the economic trend. The amount of investment will be lowered to the level before massive additional investment was made to pump the economy was made. Public investment by local governments should be reviewed in line with the trends of the national government. The level of government service should be maintained through a focused allocation of public investment, cost reductions, PFI and other measures.

1.2 The Future Construction Market Renewal Project Market

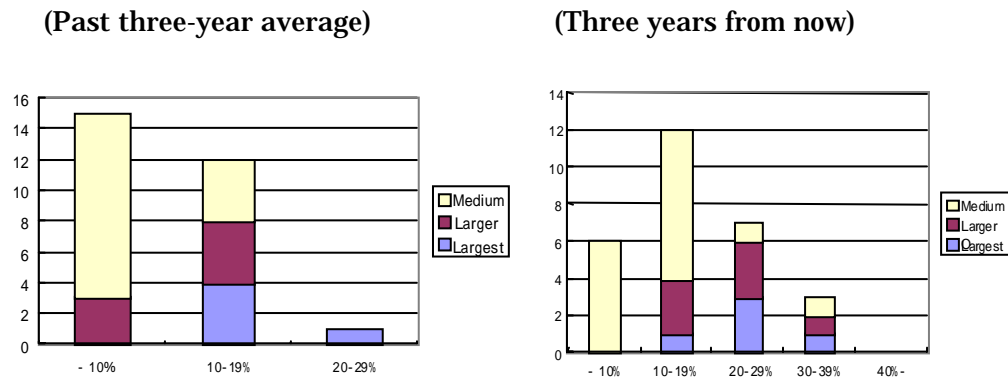
- ◆ While the construction market continues to shrink maintenance and repair works are steadily increasing. The most promising sector is the office building renewal market as the office building stock has increased by 2.6 times in the past 20 years.
- ◆ General contractors are seeking business chances in the renewal market. They are increasing staff number in their renewal divisions or creating new renewal-related divisions and affiliated companies.
- ◆ Competition in the office building market is intensifying. Clients seek lower costs, and more technical expertise and ability to make proposals of the contractors. General contractors should utilize their technical and managerial expertise to meet clients' requests, work to lower lifecycle cost (LCC) and enter the sectors of facility management (FM) and project management (PM.)

The maintenance and repair market increased by 1.3 times in the period from FY1990 to FY2000: from 8.8 trillion yen to 11.8 trillion yen. The ratio of maintenance and repair to the total amount of completed projects also increased: from 12.9% to 18.8%. The increase was particularly significant in the private non-housing sector, where it doubled, from 13% to 27%.



Questionnaire survey of general contractors

Renewal projects account for 10 to 19% of average construction sales in the case of general contractors, but less than 10% in the case of smaller companies. Most companies expect these figures to increase three years from now. Most companies estimated the increase to be 10%; large companies expected the rise to be over 20%.



(From a survey conducted on 28 general contractors)

Seventy percent of companies have already increased staffing levels and have created or expanded corporate divisions to meet the increasing demand for renewal projects. Their goals in this field include: strengthening their ability to make proposals to clients; making proposals from the perspective of FM; and strengthening ties with individual clients (medium-sized companies in particular).

Chapter 2

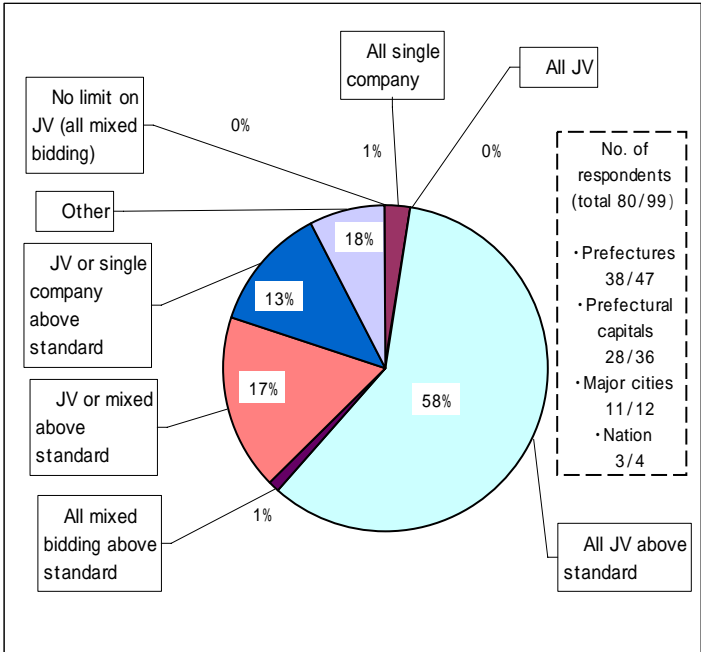
Trends in Bidding and Contracting Systems for Construction Projects

2.1.1 Evaluation of the JV System

- ◆ Ninety percent of public works project procurement organizations (governments of various levels) use special-purpose joint ventures ("JVs") for works above certain levels (i.e., volume, degree of difficulty, etc.).
- ◆ These organizations are lowering the minimum qualification of projects that can be contracted to JVs. Nearly half of the organizations set the cutoff at 500 million yen a level recommended by the Ministry of Land, Infrastructure and Transport.
- ◆ About 80% of procurement organizations that responded to the survey said that they place area restrictions to those who can participate in the bidding. From the perspective of efficiency, the purposes of using JVs should be restricted (as stated in the abovementioned ministry's guidance). Mixed bidding (where applicants choose to either form a JV or participate in bidding as a single company) should be promoted. In JV-only bidding, the standard project volume should be raised to the level suited to the JVs.

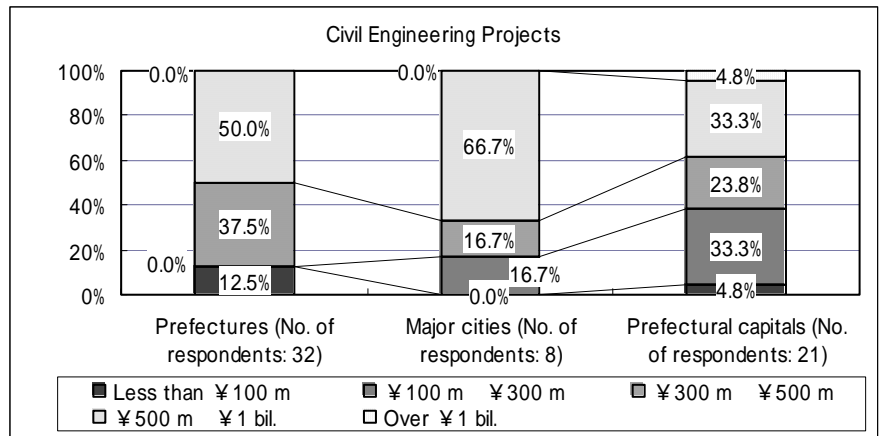
Qualifications of participants in bidding for public works projects smaller in scale than those to which the WTO Government Procurement Agreement applies

Questionnaires were sent to 99 governments and public corporations of various levels. A total of 80 replied (38 out of 47 prefectures, 28 prefectural capitals out of 36, 11 major cities out of 12, and 3 out of 4 national government and public corporations.) About 60% of these procurers of public works projects order the entire project to JVs if it is above the standard they set (Choice 4 in the graph.) No procurers use JV/single-company mixed bidding. Twenty percent of procurers use this system for some of their projects (Choices 5 & 6.)



Standard amount applied to JV bidding

Respondents were classified by the standard amount set for JV bidding. The Ministry of Land, Infrastructure and Transport was excluded, as they place orders to single companies for projects smaller in scale than those to which WTO standard is applied. Nearly half of the respondents (28 out of 58) set the cutoff below 500 million yen for civil engineering projects.



2.1.2 More Emphasis on Contractors' Financial Strength - Evaluation of the Bond System -

- ◆ The frequency of construction company bankruptcies remains at a high level. Public procurement organizations, on the other hand, should adopt bidding systems that are both transparent and competitive. To achieve these two major goals, mechanisms should be put in place; firstly, to stop contractors participating in bidding for projects beyond their financial capacity; and secondly, to protect subcontractors.
- ◆ Other countries are addressing these issues through various means. The most effective is the bond system of the United States. The early introduction of the bond system to Japan; however, may be difficult due to the shrinking international reinsurance market and the scarcity of funds. In addition, the social infrastructure that supports the bond system is underdeveloped. Japanese surety companies lack proper screening systems, and many have yet to adopt financial statements that meet international accounting standards.
- ◆ There are several preliminary measures that should be taken prior to the introduction of the bond system. First of all is the establishment of a third-party financial information supply system that will be used to calculate the maximum amount a contractor can contract (in lieu of a bond company) and offer that information to procurers. Secondly, public procurers should check the ability of contractors. This is specified as one of their responsibilities in the Act for Promoting Proper Tendering and Contracting for Public Works. Public procurers should guide the early conclusion of contract with the subcontractors and sub-subcontractors.

Methods taken in selected countries to protect subcontractors and evaluate contractors' financial strength

	Japan	US	UK	France	Germany
Screening financial strength	Screening of management check items (Some point out disadvantages of this system: e.g. most recent changes in corporate finance are not considered, accounting standards are not unified, and the reliability of reports from the applicants is not guaranteed)	Bid bond (Calculate the appropriate amount of order a contractor can accept, based on its own capital and working capital, to exclude under-qualified contractors from the bidding)	Pre-qualification screening (Screening based on maximum amount set by the <i>Constructionline</i>)	Financial statements submitted	Financial statements submitted
Protection of subcontractors	No methods that aim primarily to protect subcontractors	Payment bond	Orderer notifies subcontractors when they pay contractors	Direct payment to subcontractors	Order separately to special works

The US Bond System

Public purchasers require bidders to submit a bid bond issued by a bond company. The maximum amount to be guaranteed is set based on financial statements audited by certified public accountants, and interviews. Those applying for projects above this amount cannot participate in bidding. Successful bidders are required to submit a performance bond (guaranteeing the completion of the project) and a payment bond (guaranteeing payments to subcontractors.)

U.K. *Constructionline*

Constructionline is a nationally unified scheme for the pre-qualification of construction contractors. It has been managed by a private company since 1998, based on an agreement with the national government (the Department of Industry), and is financed by registration fees paid by construction companies. Although it is not mandatory for procurers to use *Constructionline*, its use is expanding due to the availability of information of contractors, including the amount of work they can take on and their performance. About 1,400 procurers are using *Constructionline*.

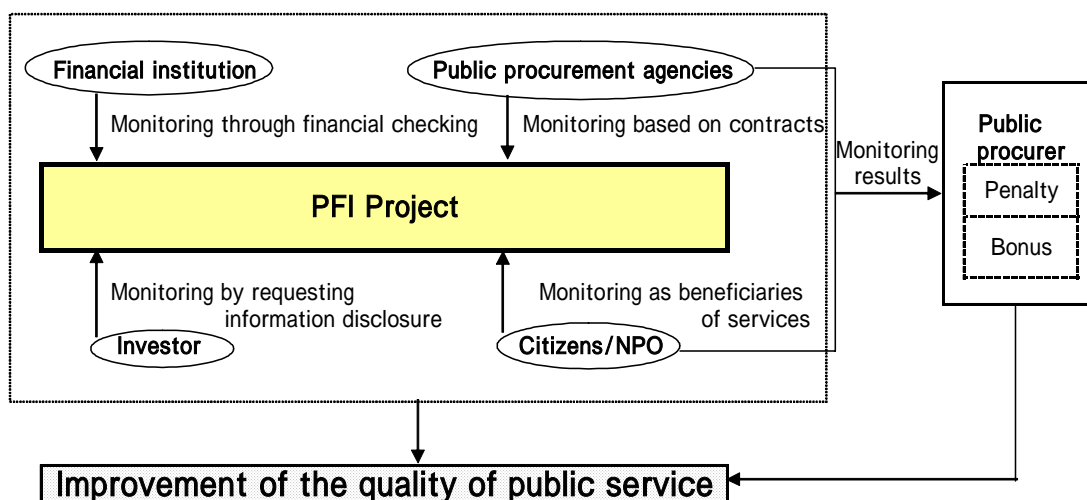
2.2 Issues and Challenges of the Private Finance Initiative (PFI)

- ◆ Though the Private Finance Initiative (PFI) has only recently been introduced to Japan, there are already some innovative approaches to this scheme in public works projects.
- ◆ This section illustrates: a) some issues and challenges found when PFI was applied to public works projects, b) more general concerns, and c) possible solutions.
- ◆ PFI is important, not only in terms of economic performance and efficiency, but also in terms of supplying good-quality public services. An "incentive system" for private businesses and a "monitoring system" of the service by various parties are ways to ensure the quality of services.

The diffusion of PFI throughout Japan requires public procurers to use it from the perspective of improving the quality of public services, in addition to its financial advantages.

Both an "incentive system" for private businesses and "various checking functions (a monitoring system)" during the project are essential. The "incentive system" is a method to maximize the ability of private contractors by paying an additional bonus if the contractor's services are better than those specified in the initial contract. "Various checking functions" include the direct monitoring of private contractors by public procurement agencies, "monitoring by citizens" who are beneficiaries of public services, the "monitoring by financial institutions" demanded by public procurers, and the "monitoring by investors" that supplement the monitoring by financial institutions.

Effect of multi-party monitoring



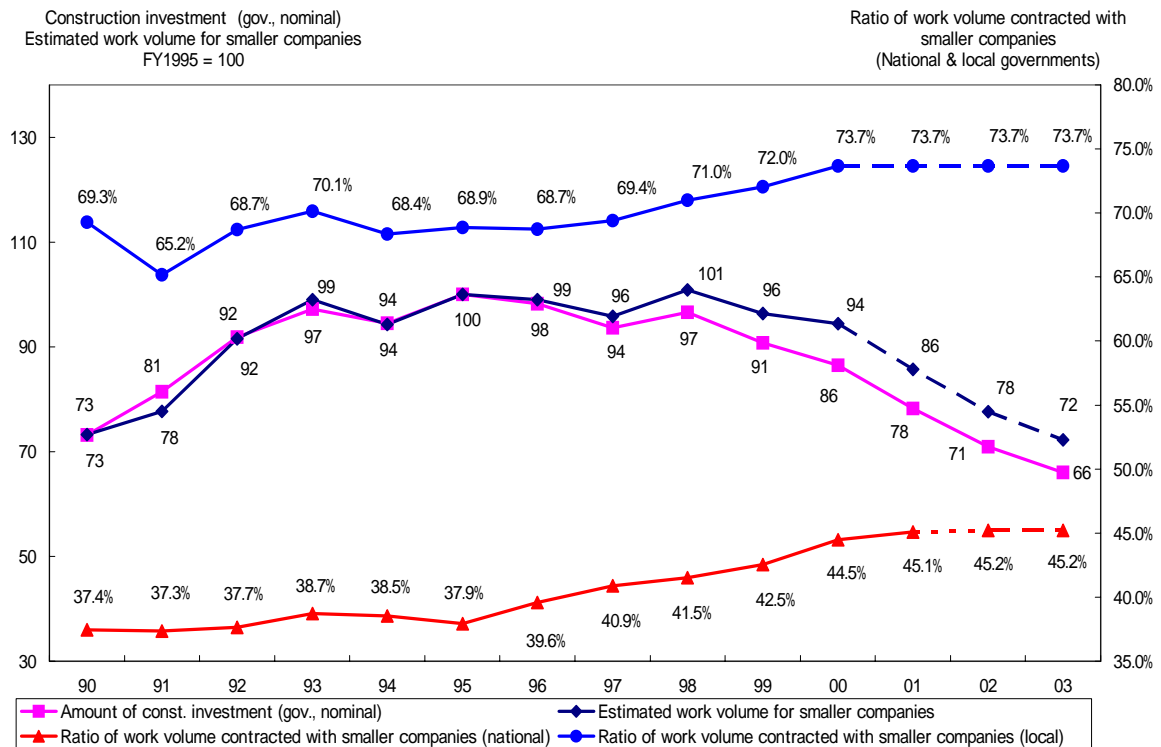
Chapter 3 Construction Industry Trends

3.1 Trends in the Local Construction Industry

- ◆ Local smaller construction companies relying on public works for survival are facing tough times. Many local governments are hard-pressed to address fiscal reform, and are cutting back on public works expenditure.
- ◆ Many companies have a sense of crisis, but have not taken specific measures. Some, however, have taken a step forward, including restructuring and advancement into new business sectors.
- ◆ The number of construction workers is expected to decrease to 5.6 million by 2003. The government should support the industry through the promotion of corporate evaluation in public procurement and restructuring initiatives to enable the market principle to function properly. Unqualified contractors should be eliminated, as a matter of first priority.

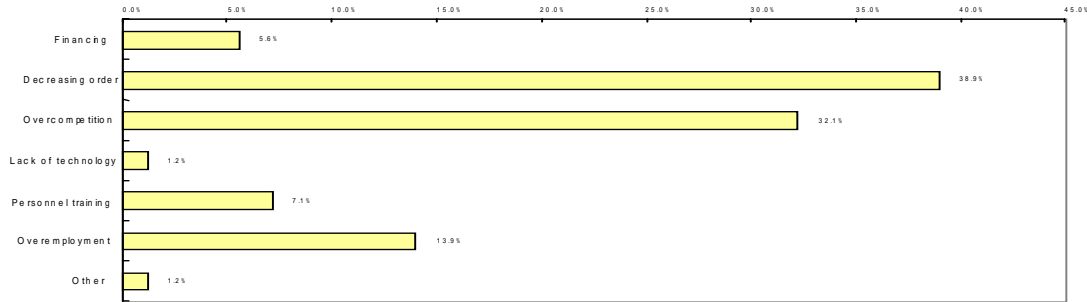
Decreasing orders to medium-size and small construction companies

Central and local governments have raised the ratio of smaller companies to larger companies in construction investment; therefore, the total value of work orders to smaller companies had been maintained from FY1996 to FY2000. Since the total amount of government construction investment (work volume) is expected to decrease, the work volume placed with smaller companies is also expected to decrease by 20%, from FY2000 to FY2003 even assuming that the placement ratio remains the same.



Managerial challenges faced by local construction companies

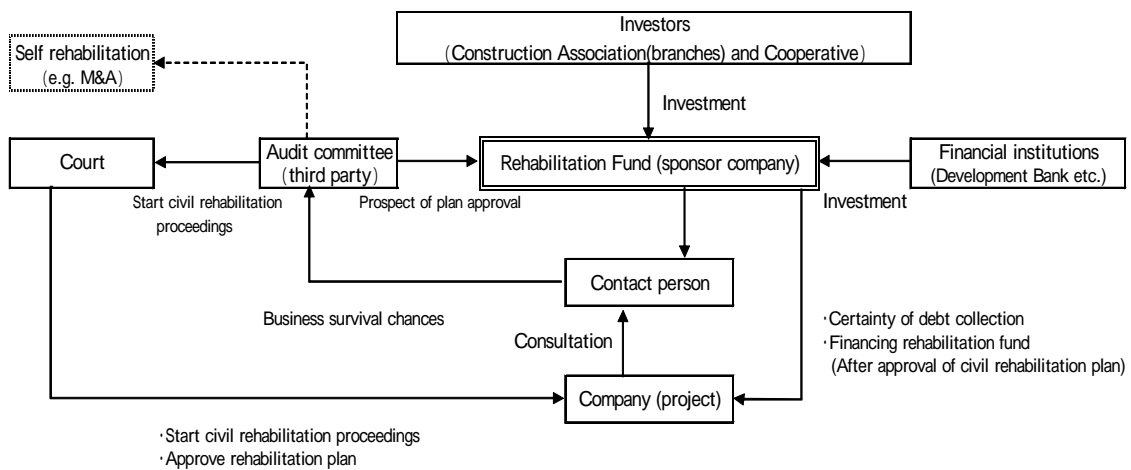
In a survey conducted on local construction companies "fewer orders" was the most frequently chosen managerial challenges at present (38.9% of respondents); "over-competition" was chosen by 32.1%, and "over-employment" by 13.9%.



New initiatives taken by local construction industry

The Fukushima Contractors Association's industrial restructuring plan utilizes a corporate rehabilitation fund scheme designed to smooth the restructuring process while preventing job loss to the maximum possible extent.

Outline of Rehabilitation Fund Scheme



Future issues and suggestions

- The government has strengthened and clarified the supervision and penalty standards set in the Construction Contractors Law. These standards should be strictly applied to encourage a fair market environment.
- Contractor performance (smaller construction projects included) should be compiled into a database. Companies should be evaluated based on their performance to ensure proper corporate evaluation in public procurement.

- A decrease in the volume of construction investment is inevitable. The industry should be restructured: firstly, by the government offering incentives, including higher evaluation scores to merging companies; and secondly, the industry taking bold initiatives, including the corporate rehabilitation scheme described above.

3.2 General Contractors and Strengthening Technical Expertise

- ◆ Maintenance and improvement of technical expertise is essential for general contractors. OJT, however, is not an effective way to convey technical expertise.
- ◆ A more systematic approach the continuous improvement of ISO9000 certification, for example, should be utilized. Technical review cycles should be established to encourage the conversion of as much tacit knowledge into explicit knowledge as possible.
- ◆ Management strategies for technology are more important than ever. The systemization of technology should be clearly positioned in those strategies.

Technical issues for general contractors

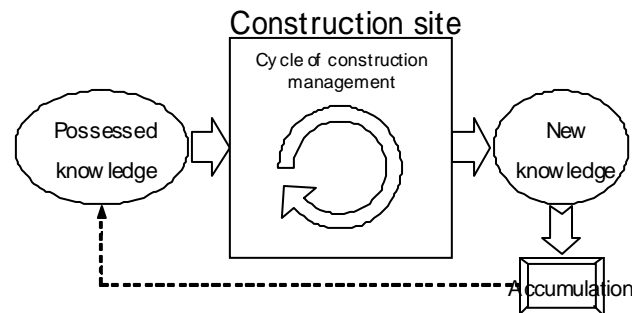
(Results of a questionnaire survey conducted in December 2001)

- When questioned about technical expertise, respondents placed emphasis on "abilities to make plans and proposals to the client" and replied that they expected engineers to have construction management abilities, including "cost management" and "quality management."
- Maintenance and improvement of technical expertise is essential for general contractors, due to the diversification of engineering tasks on site, and the transfer of construction management expertise to subcontractors.
- The maintenance and improvement of technical expertise is mainly through on-the-job training (OJT), yet this is not an effective method, since only the people present at the site can receive training.

Increasing technical expertise through continuous improvement

- The number of ISO9000-accredited construction companies is increasing. "Continuous process improvement" specified in their Year 2000 Revision is closely related to increasing technical expertise.
- On-site construction management has a cycle of technical review. New knowledge acquired should be turned to "explicit knowledge" and accumulated to increase technical expertise.
- Three major challenges for technical improvement are:
 - a) Establishment of a system for technical review cycles;
 - b) Conversion of "tacit knowledge" to "explicit knowledge" utilizing systems; and

- c) Accumulation of "tacit knowledge" that cannot easily be converted to "explicit knowledge."



Technical management strategy to be applied by general contractors

- Technical management strategy, that positions technology in the context of corporate management, is more important today for survival amid tough competition. As an example, from 2000 onwards, major construction companies began to list technological and managerial issues, as well as ways to achieve the technological and managerial goals set forth in their financial reports.
- A clear understanding of the company's core competence, establishment of a system for technological improvement, future-oriented strategic R&D and company-wide commitment are all important in the development of technical management strategy.

3.3 Information Technology (IT) and the Construction Industry

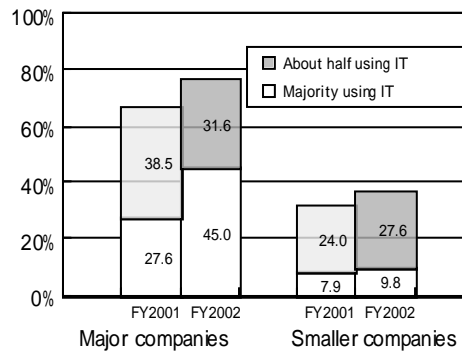
- ◆ Small and medium-sized companies are slower to adopt IT. The government should standardize order specifications.
- ◆ Major construction companies are integrating construction production by utilizing IT. Their future challenges include standardization and the more sophisticated use of knowledge and expertise.
- ◆ Major construction companies are sharing information and utilizing knowledge through groupware and online Q&A systems. Mindsets and corporate culture need to adapt.

Small and medium-sized companies still lag behind in the use of IT

- Small and medium-sized companies lag behind in the use of e-mail and other information technologies.
- While larger companies are utilizing IT, smaller companies are still in the

introductory stage.

- The advantages of IT are that employees can share information and increase work efficiency. Its drawbacks are its high cost, lack of user technical knowledge, and the shortage of personnel with the skills to introduce and utilize information technology.
- The government should standardize order specifications and abolish overlapping use of electronic and paper formats for wider use of CALS/EC.



Integration of construction production utilizing IT

(More productive construction through the integration of design and building)

- Integration of construction production, combining design and building for example, is necessary to increase efficiency.
- Major construction companies have initiated on organizational reform to this effect.

(For a further increase in efficiency)

- Methods of information exchange should be standardized at an early stage.
- More advanced use of knowledge and know how should be implemented.

Information sharing and knowledge use by major construction companies

- Major companies are introducing groupware and online FAQ systems to share and utilize information, knowledge and expertise.
- Future challenges include reform of mindsets and corporate (organizational) culture, to enable a better understanding of the importance of sharing/utilizing information, knowledge and expertise.

Chapter 4 Overseas Trends

4.1 Trends in Overseas Construction Markets

- ◆ GDPs for the year 2001 by country and by region (Japan = 100) are as follows: 247.3 for the United States, 175.1 for Western Europe, 5.9 for Eastern Europe and 60.3 for Asia (figures for Western Europe, Eastern Europe and Asia are those of 2000).
- ◆ The size of construction investment, (Japan = 100) are 173.3 for the United States, 83.6 for Western Europe, 3.9 for Eastern Europe and 82.8 for Asia.
- ◆ The proportion of construction investment in total GDP was 12% for Japan, 16.5% for Asia. This figure was lower in the United States (8.4%), Western Europe (5.7%) and Eastern Europe (8.1%).

Construction Markets by Country and by Region

(Nominal value, converted to trillions of yen)

	Japan ¹ FY2001	United States 2001	Western Europe ² 2000	Eastern Europe ³ 2000	Asia ⁴ 2000
GDP	501.6 (100)	1,240.6 (247.3)	878.1 (175.1)	29.4 (5.9)	302.5 (60.3)
Construction Market	71.1 (100)	-	87.4 (122.9)	3.4 (4.8)	-
Proportion to GDP (%)	14.2	-	10.0	11.7	-
Construction Investment	60.4 (100)	104.6 (173.3)	50.5 (83.6)	2.4 (3.9)	50.0 (82.8)
Proportion to GDP (%)	12.0	8.4	5.7	8.1	16.6

Japan = 100

Notes

- 1 . Data for Japan is fiscal year (FY)-based. GDP is a forecast figure (by RICE), and the amount of construction investment is an outlook (by the Ministry of Land, Infrastructure and Transport).
- 2 . "Western Europe" consists of 15 countries: Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Italy, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and UK.
- 3 . "Eastern Europe" consists of 4 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.

The overall increase in the volume of US. construction investment in 2001 was supported by public works projects for the construction of buildings and highways.

Trends in US construction investment

(Upper column: volume Lower column: increase rate over the previous year)

(units: \$1m, %)

	1996	1997	1998	1999(r)	2000(r)	2001(r)	2002(p)	Composition ratio
New investment total	615,797	632,680	664,244	692,281	706,899	723,199	719,378	100.0
	8.0	2.7	5.0	4.2	2.1	2.3	-0.5	
Private-sector	476,650	487,197	519,859	540,159	555,089	558,850	548,737	77.3
	9.1	2.2	6.7	3.9	2.8	0.7	-1.8	
Housing	281,207	280,720	297,960	317,232	323,708	329,710	348,808	45.6
	11.6	-0.2	6.1	6.5	2.0	1.9	5.8	
Non-housing, etc.	195,443	206,477	221,899	222,927	231,381	229,140	199,929	31.7
	5.8	5.6	7.5	0.5	3.8	-1.0	-12.7	
Public works	139,147	145,483	144,385	152,121	151,810	164,349	170,641	22.7
	4.3	4.6	-0.8	5.4	-0.2	8.3	3.8	
Building	63,446	67,400	66,920	68,474	70,390	77,630	84,843	10.7
	7.4	6.2	-0.7	2.3	2.8	10.3	9.3	
Civil engineering, etc.	75,701	78,083	77,465	83,647	81,420	86,719	85,798	12.0
	1.8	3.1	-0.8	8.0	-2.7	6.5	-1.1	

Notes:

1. Amounts are of 1996 price.
2. (r); Revised, (p) Preliminary
3. Figures for 2002 are seasonally adjusted figures as of April converted to annual figures.

4.2 Trends in US Construction Industry Focusing on Productivity

- ◆ The productivity of the US construction industry has gradually declined over the past 40 years.
- ◆ The decline during the 1970s and 1980s is considered to be due to wage increases as a result of union activities. The decline since the 1990s is said to be due to a lack of IT investment, and inefficient investment.
- ◆ Smooth IT investment is hampered by both segmented work processes and segmentation characteristic of the construction industry. Client organizations (both in the public and private sectors) are studying methods to achieve efficient IT investment through integration of segmented processes.

Major US. systems related to wages and employment

Current wage-related laws

	Federal	State and local
Purpose	<ul style="list-style-type: none"> ● The laws stipulate that the employees are obliged to ensure regional standard wages to workers. ● Target workers are not necessarily construction workers. 	
Content	Davis Bacon Act (DB Act): Enacted in 1931 <ul style="list-style-type: none"> ● Wages to be paid to workers engaged in public works financed by the federal government should not be lower than the wages paid to construction workers in the region. ● Apprentices should not be hired. (40 U.S.C. section 276a, etc.) 	Prevailing Wage Law <ul style="list-style-type: none"> ● State law equivalent to DB Act now employed by 33 states. ● Standard wages are computed by each state.
Union	<ul style="list-style-type: none"> ● Standard wages are often those negotiated with the union and thus contractors tend to use union workers for safety. There are fewer advantages of using union workers these days. 	
Reference	<ul style="list-style-type: none"> ● Nine states, including Alabama, Colorado and Kansas, abolished state wage law from the 1970s to 1980s. 	

Project Labor Agreement (PLA)

	Federal, State and local
Purpose	<ul style="list-style-type: none"> ● Project-based labor-management agreements concluded before hiring workers. The PLA was concluded for smooth implementation of projects at a time when unions had power. ● The PLA concluded by governments is called the GMLA (Government Mandated Labor Agreement).
Content	<ul style="list-style-type: none"> ● Contractors should hire union workers. Union should not disrupt work for strikes or other reasons. ● Contractors can be either union members or non-members, but hired workers should be union members. ● If the contractor is a union non-member it should adopt labor agreements and wage standards specified by the union.
Content	<ul style="list-style-type: none"> ● "Open shop," or joining the union during the work period by paying initial fees, dues, insurance, etc., can be adopted.
Relation with Union	<ul style="list-style-type: none"> ● Unions support the PLA because it mandates the hiring of union members. ● As the number of union members is decreasing, unions expect to increase the number of union members engaging in public works projects and the number of union members through PLA projects.

4.3 Policy and Performance Evaluation Systems (relation with legislators) and Public Works in the United States

- ◆ A comparative study of public works in Japan and the US reported by a George Mason University group in October 2001 referred to changing views of infrastructure and economic growth in the US. A vigorous debate over these views led to policies to reform public works, with federal spending focusing more on transportation sectors with high economic efficiency.
- ◆ Based on this report we have closely examined various evaluation and reform efforts, including Government Performance and Results Act (GPRA). US attempts to reform public works systems provide us with many valuable lessons, although it seems that their applications are still in the trial-and-error stage and they have yet to achieve a drastic reform of the system. The transportation sector now occupies a larger share of federal spending because of political (congressional debate) and other reasons, rather than the successful implementation of GPRA and other policy/performance measurement schemes.
- ◆ It should be noted that there has been active debate over the relation between public works and economic growth in the United States. We hope that the enactment of Policy Evaluation Law in this country will stimulate similar constructive discussions over policy/performance measurement.

The outline of "Public Works Policy and Outcomes in Japan and the U.S.A." announced in October last year by a George Mason University group (co-authored by Professor Kenneth Button, Associate Professor Jonathan Gifford and Professor John Peterson) is as follows:

(Text of the report available at <http://policy.gmu.edu/paper/p-works.pdf>

Also referred to in "Japanese Economy and Public Investment No.38 (p.198-)" at http://www.rice.or.jp/e-home/CONSTRUCTION_ECONOMY_REPORT/38-1eng.pdf)

1. Of the two broad philosophies regarding public works policies, Japan is taking the "Continental Philosophy" approach that is based on the notion that public investment should seek to meet a range of diverse social and political objectives. The US on the other hand, is mainly taking the "New Growth Policy" approach that argues that if the output elasticity of investing in public works exceeds that in the private sector, then public works will boost economic growth. This policy, which has changed the way many economists view the role of public works in economic growth, is coupled with an "Anglo-Saxon Approach" emphasizing economic performance of public works. In this approach efficiency of public works is treated more as an objective and expenditures are expected to meet economic efficiency criteria.

Government Performance and Results Act (GPRA) and other attempts of policy/performance measurement are influenced by this approach.

2. Due to differences in approaches, the distribution of public works investment by sector in Japan has remained virtually unchanged, not geared to high-productivity sectors, and has thus yielded relatively little in growth of GDP over the past two decades. Public works reforms of the US, on the other hand, have brought about an efficient economic structure that has contributed to the economic growth of the 1990s. The highly productive transportation sector has come to occupy 80% (highway alone occupies 54%) of federal expenditure. Other socially oriented sectors have been delegated to local governments and the private sector. In this way, public works expenditure as a whole is declining.

We have examined the issues raised in the report and presented counter-arguments in the current issue of "Japanese Economy and Public Investment" (p.202) by:

- a) Examining the history of the "Anglo-Saxon Approach" to public works centering on the federal government and conducted an empirical study on how the outcome of policy/performance measurement has come to be reflected in the federal expenditure system; and
- b) Examining in detail the reason why transportation sector has come to occupy a larger share in the federal expenditure, within the context of the overall federal spending.

The findings are as follows:

- a) US attempts to reform public works systems offer valuable lessons. Yet it seems that their applications are still at a trial-and-error stage and have not resulted in a drastic reform of the system.
- b) The transportation sector now occupies a larger proportion of federal spending, more because of political (congressional debate) and other reasons, rather than successful implementation of GPRA and other policy/performance measurement schemes.

It should be noted that the George Mason report tells us that there has been active debates over the relation between public works and economic growth in the United States. We hope that the enactment of the Policy Evaluation Law in April 2002 will be a starting point for the stimulation of similar constructive discussions over better systems and workings of public works in Japan.