

Construction Economy Report

No. 43

The Japanese Economy and Public Investment

**Forecast for Construction Investment and
New Challenges for the Construction Industry**

September 2004

Research Institute of Construction and Economy

(RICE)

Tokyo, JAPAN

**This is an English translation of a summarized report
in Japanese, announced in August 2004**

CONTENTS

Chapter 1	Macroeconomics and Construction Investment	1
		[Original Japanese Version: p.1–16]
1.1	The Japanese Economy and Construction Investment	
1.2	Fiscal and Monetary Policies	
Chapter 2	Future Trends in Construction Investment	3
		[p.17–52]
2.1	Methods and Frameworks for Forecasting	
2.2	Government Construction Investment	
2.3	Private-sector Housing Construction Investment	
2.4	Private-sector Non-housing Construction Investment	
2.5	Maintenance and Repair	
Chapter 3	Trends in the Bidding and Contracting System and the Construction Industry	5
		[p.53–124]
3.1	Negotiation in the Bidding Process	
3.2	The Toyota Production System and More Efficient Construction Production	
3.3	Trends in the Construction Industry	
3.4	More Efficient Management and Use of Information Technology (IT)	
Chapter 4	City and Housing	15
		[p.125–149]
4.1	The Challenge of Beautifying Landscapes	
4.2	Making Houses Earthquake-resistant	
Chapter 5	Overseas Trends	18
		[p.151–191]
5.1	Trends in Overseas Construction Markets	
5.2	Number of Bankruptcies in the U.S. Construction Industry and Revitalization of the Industry	

For further information please contact: Hajime Suzuki (Executive Director) Atsushi Suzuki (Research Director) Eiji Aoki (Senior Researcher) e-mail: info@rice.or.jp
--

1.1 The Japanese Economy and Construction Investment

- The Japanese economy is now on a fully fledged recovery. There are, however, risk factors in need of attention, including: a) rising oil prices, b) rising long-term interest rates, and c) the influence of limiting factors in the heated Chinese economy.
- Construction investment in FY2004 is expected to reach 51.94 trillion yen, down 3.5% from the previous fiscal year. Government construction investment is expected to decline by 11.3% from the previous year, recording its sixth consecutive decrease: Investment in both construction and civil engineering is expected to decrease by more than 10% from the previous year. Private-sector housing investment is expected to remain active, and is expected to increase slightly, by 0.4%. Private-sector non-housing investment is expected to increase by 4.7%, recording an increase for the first time in four years. This is due to a strong 8.5% increase expected in the private-sector non-housing construction investment, though civil engineering will likely decrease by 1.0%. Total construction investment of FY2005 is expected to reach 50.8 trillion yen, down 2.2% from the previous year, to record its ninth consecutive decrease.

Trends in construction investment (FY)

FY	Actual				Forecast			
	1990	1995	2000	2001	2002	2003	2004	
Nominal CI (Increase rate)	81,440 11.4%	79,017 0.3%	66,195 -3.4%	61,288 -7.4%	56,300 -8.1%	53,850 -4.4%	51,940 -3.5%	50,800 -2.2%
Nominal government CI (Increase rate) (Contribution rate)	25,748 6.0% 2.0	35,199 5.8% 2.5	29,960 -6.2% -2.9	28,193 -5.9% -3.3	25,370 -10.0% -4.6	22,970 -9.5% -4.3	20,380 -11.3% -4.8	19,520 -4.2% -1.7
Nominal private CI (Increase rate) (Contribution rate)	25,722 9.3% 3.0	24,313 -5.2% -1.7	20,276 -2.2% -0.7	18,575 -8.4% -2.6	17,920 -3.5% -1.1	17,880 -0.2% -0.1	17,950 0.4% 0.1	17,650 -1.7% -0.6
Nominal private NH CI (Increase rate) (Contribution rate)	29,970 18.4% 6.4	19,505 -1.8% -0.4	15,959 0.7% 0.2	14,519 -9.0% -2.2	13,020 -10.3% -2.4	13,000 -0.2% -0.0	13,610 4.7% 1.1	13,630 0.1% 0.0
Real CI (Increase rate)	85,442 7.7%	79,020 0.2%	67,365 -3.6%	63,007 -6.5%	58,060 -7.9%	55,170 -5.0%	52,970 -4.0%	51,850 -2.1%

(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 Fiscal and Monetary Policies

- Current government policy, having the “built-in stabilizer” effect of finance in mind, aims to limit the ratio of government expenditure (general) to GDP to a level no higher than in FY2002. In the long run, current expenditure and investment expenditure should be more clearly distinguished, and their breakdown examined in more detail.
- In doing so, we should focus on the quantitative impact of public investment, which argues that social infrastructure improvement through public investment will increase the country’s productivity and will maintain and enhance the competitiveness of Japanese industries in the midst of intense international competition. A comparison among the different policy fields of this cost-benefit analysis is believed to demonstrate the advantages of prioritized and efficient investment expenditure. The validity of such an analysis should be examined more in detail.
- The Bank of Japan should stand firm to its zero-interest-rate policy through the expansion of the money supply until deflation ends.

Issues in fiscal management

Government expenditure should be examined from both the demand side (determining the GDP level) and the supply side (determining the level of social infrastructure improvement which will ensure a stable and safe life for the Japanese people and will ensure a stable level of economic productivity).

For example, Professor David Aschauer’s quantitative approach, arguing that social infrastructure improvement through public investment will increase the marginal productivity of the private sector, should be further developed.

On the other hand, some experts argue that cost-benefit analyses among different project sectors should be compared to achieve more efficient public works. The scope of the cost-benefit analyses could be broadened, from a comparison of project fields to policy fields, to demonstrate the advantages of prioritized and efficient investment expenditure.

The Public Finance Law of Japan and the Golden Rule for British fiscal policy (the government will only borrow to invest and not to fund current expenditure) are both based on the idea that focused and efficient spending for investment will improve the infrastructure and bring about long-term utility. If a method to obtain quantitative estimates as benefits can be established, it may be an excellent tool for cost-benefit comparison and may help reaffirm the significance of spending for investment. The first step required in this study will be to review the disadvantages of the PPBS (Planning, Programming and Budgeting System).

Issues in monetary policy

The consumer price index, an official index of the Bank of Japan, continues its year-on-year decline, and deflation has not ended. The Bank of Japan should recognize the current situation and firmly adhere to its policies of zero interest rates and quantitative monetary expansion.

Chapter 2 Future Trends in Construction Investment

2.1 Methods and Frameworks for Forecasting

- The Research Institute of Construction and Economy (RICE) conducted a forecast study for the period between FY2004 and FY2020, based on a quantitative forecast of construction investment (by sector), and repair and maintenance expenditure that the Institute announced in 2001. In the forecast, it was assumed that the economic growth rate would be 1.5% between FY2006 and FY2010. After FY2010 the forecast was made based on four hypothetical cases (growth rates between 1.0% and 2.5%).
- Construction investment in FY2003 is expected to be 55.2 trillion yen (based on 1995 prices; the same applies for the other years). This forecast has been made based on expected investment amounts ranging from 46.3 to 51.0 trillion yen for FY2010, and 40.9 to 51.8 trillion yen for FY2020.

2.2 Government Construction Investment

- The four hypothetical scenarios assume that the decline of both the national and local government budgets will continue to decrease between FY2006 and FY2010.
- We assumed that government investment in construction will stop declining and level off after 2010 as the government, despite financial difficulties, will halt the downward trend at some point to sustain the economy.
- The expected amount of government construction investment in FY2003 is 23.5 trillion yen, and the forecasted amount for FY2010 and FY2020 is between 15.3 and 18.5 trillion yen. This is about the half the amount of that in the peak year of 1995 (approx. 35.2 trillion yen).

2.3 Private-sector Housing Construction Investment

- The estimate was made based on trends in the number of households, vacant houses, and number of houses to be rebuilt.
- Even though floor space per housing unit and construction cost per square meter will continue to increase, total investment is expected to decrease due to a sharp decline in the number of housing starts and the accompanying decrease in remodeling and expansion projects.
- The expected amount of private-sector construction investment in FY2003 is 18.4 trillion yen. The forecast for FY2010 is 17.4 trillion yen and from 14.3 to 14.8 trillion yen for FY2020.

2.4 Private-sector Non-housing Construction Investment

- Future stock floor area was estimated according to use (office, store, factory, warehouse, accommodation, school, hospital, other). The floor area to be constructed was calculated from the estimate, and converted to the investment amount.
- Private-sector non-housing construction investment is a component of private capital investment. If the latter recovers strongly, the former is also expected to increase.
- We cannot find any factors that will stimulate the future growth of private-sector civil engineering investment; its declining trend is likely to continue.
- The expected amount of private-sector civil engineering investment in FY2003 is 13.3 trillion yen. The forecast amount for FY2010 is from 13.6 to 15.1 trillion yen and from 11.3 to 18.4 trillion yen for FY2020.

2.5 Maintenance and Repair

- The forecast announced in 2001 was based on the assumption that the scale of maintenance and repair expenditure would depend on the amount of stock. As the social infrastructure and private buildings constructed on a massive scale during the high-growth period begin to deteriorate, the amount of maintenance and repair work will increase.
- The expected amount of maintenance and repair expenditure for FY2003 is 22.4 trillion yen. The forecast amount for FY2010 is from 23.8 to 24.2 trillion yen, and 26.1 to 27.9 trillion yen for FY2020.

Table 1. Overall Forecast Results

	(Reference) FY2003 (nominal)	Case 1		Case 2		Case 3		Case 4		
		FY2004-2010	FY2011-2020	FY2004-2010	FY2011-2020	FY2004-2010	FY2011-2020	FY2004-2010	FY2011-2020	
		GDP; +1.5%	GDP;+2.5%	GDP; +1.5%	GDP;+2.0%	GDP; +1.5%	GDP; +1.5%	GDP; +1.5%	GDP;+1.0%	
		FY2010	FY2020	FY2010	FY2020	FY2010	FY2020	FY2010	FY2020	
Construction investment	55.2	53.9	47.8 ~ 51.0	48.6 ~ 51.8	47.1 ~ 50.2	45.7 ~ 48.9	46.8 ~ 49.9	43.5 ~ 46.6	46.3 ~ 49.5	40.9 ~ 44.1
Government	23.5	23.0	15.3 ~ 18.5	15.3 ~ 18.5	15.3 ~ 18.5	15.3 ~ 18.5	15.3 ~ 18.5	15.3 ~ 18.5	15.3 ~ 18.5	15.3 ~ 18.5
Private sector	31.7	30.9	32.3	33.5	31.6	30.5	31.3	28.2	30.9	25.5
Housing	18.4	17.9	17.4	14.8	17.4	14.6	17.4	14.4	17.4	14.3
Non-housing (building)	8.0	7.8	9.5	12.7	9.1	10.6	8.9	9.0	8.6	7.2
Non-housing (civil engineering) (Four Highway Corporations)	5.3	5.2	5.5	5.7	5.3	5.1	5.2	4.7	5.0	4.0
	—	—	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

	(Reference) FY2003	Case 1		Case 2		Case 3		Case 4	
		FY2004-2010	FY2011-2020	FY2004-2010	FY2011-2020	FY2004-2010	FY2011-2020	FY2004-2010	FY2011-2020
		GDP; +1.5%	GDP;+2.5%	GDP; +1.5%	GDP;+2.0%	GDP; +1.5%	GDP; +1.5%	GDP; +1.5%	GDP;+1.0%
		FY2010	FY2020	FY2010	FY2020	FY2010	FY2020	FY2010	FY2020
Maintenance & repairs	22.4	24.0 ~ 24.2	27.5 ~ 27.9	24.0 ~ 24.2	27.4 ~ 27.7	23.8 ~ 24.0	26.6 ~ 26.9	23.8 ~ 23.9	26.1 ~ 26.5
Government	6.3	5.8 ~ 6.0	5.7 ~ 6.0	5.8 ~ 6.0	5.7 ~ 6.0	5.8 ~ 6.0	5.7 ~ 6.0	5.8 ~ 6.0	5.7 ~ 6.0
Civil engineering	5.4	5.1 ~ 5.2	4.9 ~ 5.1	5.1 ~ 5.2	4.9 ~ 5.1	5.1 ~ 5.2	4.9 ~ 5.1	5.1 ~ 5.2	4.9 ~ 5.1
Housing	0.3	0.2 ~ 0.2	0.2 ~ 0.3	0.2 ~ 0.2	0.2 ~ 0.3	0.2 ~ 0.2	0.2 ~ 0.3	0.2 ~ 0.2	0.2 ~ 0.3
Non-housing	0.6	0.5 ~ 0.6	0.6 ~ 0.7	0.5 ~ 0.6	0.6 ~ 0.7	0.5 ~ 0.6	0.6 ~ 0.7	0.5 ~ 0.6	0.6 ~ 0.7
Private sector	16.2	18.2	21.8	18.2	21.7	18.0	20.9	17.9	20.4
Housing	7.2	7.9	8.8	7.9	8.8	7.9	8.8	7.9	8.8
Non-housing (building)	6.9	7.6	9.1	7.6	9.0	7.6	8.9	7.6	8.9
Non-housing (civil engineering) (Four Highway Corporations)	2.1	2.7	3.9	2.7	3.9	2.5	3.2	2.5	2.7
	—	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3

Notes:

1. Figures are all real based on FY1995 prices, unless otherwise stated.
2. GDP growth rates for FY2004 and FY2005 are based on the forecast made by RICE in "Forecast of construction investment based on the construction economy model."
3. Construction investment for FY2003 is from "FY2004 construction investment outlook (June 2004)" by the Ministry of Land, Infrastructure and Transport.
4. The forecast of the size of government construction investment based on demand is not necessarily accurate as it is largely determined by the policy makers. Several different rates, therefore, were used in the forecast.
5. Figures for maintenance and repairs are based on estimates by RICE.
6. Due to a conventional method of classification, the maintenance and repair of the government civil engineering sector is included both in "Construction investment" and "Maintenance & repairs" in the forecast.
7. Figures have been rounded off, and the totals may not match.
8. Four highway corporations are removed from the government and included in the private sector from 2006 (the year when they are scheduled to be privatized).

Chapter 3 Trends in the Bidding and Contracting System and the Construction Industry

3.1 Negotiation in the Bidding Process

- “Competitive negotiation” has been introduced to bidding systems in Europe and North America, accounting for over half of all orders placed by the U.S. Federal Government. Competitive negotiation is a process in which multiple candidates simultaneously negotiate throughout the bidding process, from bidding onto contractor selection, to determine the best value and the best proposal. Under the Japanese Public Accounting Law, neither national nor local governments permit such negotiation.
- RICE proposes to introduce competitive negotiation into negotiations for large and complicated projects by revising the law, empowering the public procurers, and improving the appeal system.

● Comparison of bidding systems

			WTO	U.S.	EU Public Procurement Directive (Revised 2004)	U.K.	France (Revised 2004)	Japan
Open bidding		Price standard	Open bidding	Price-based general competitive bidding (sealed Bidding)	General competitive bidding	General competitive bidding (Provision on negotiation after bidding *4)	Abolished (March 2001)	Open competitive bidding (in principle)
		Overall evaluation					General competitive bidding	Open competitive bidding
Limited competitive bidding	Open-to-public	Price standard	Selective bidding	Two-stage competitive bidding	Selective competitive bidding	Selective competitive bidding (Provision on negotiation after bidding *4)	* Abolished (March 2001)	(in case of contracting based on overall evaluation)
		Overall evaluation		Combined bidding method			Proposal-based limited bidding	Open-to-public designated competitive bidding (in case of contracting based on overall evaluation)
	Selected by procurer	Price standard	/	Full and open competition after exclusion of sources*2	/	/	/	Designated competitive bidding
		Overall evaluation						Designated competitive bidding (in case of contracting based on overall evaluation)
Negotiation method			Possible *1	Competitive negotiation method	Competitive negotiation method	/	Competitive negotiation method	/
Voluntary method	Competitive		Limited bidding	Full and open competition not applicable	Voluntary method	Voluntary method	Voluntary method (need to negotiate with more than three companies, in principle)	(Exceptional) Voluntary contract
	Non-competitive			Voluntary procurement				(General) Voluntary contract

*1) Negotiation permitted from the beginning of the bidding onto the selection of the contractor (or until before the final bidding) based on Article 14 of the WHO Government Procurement Agreement.

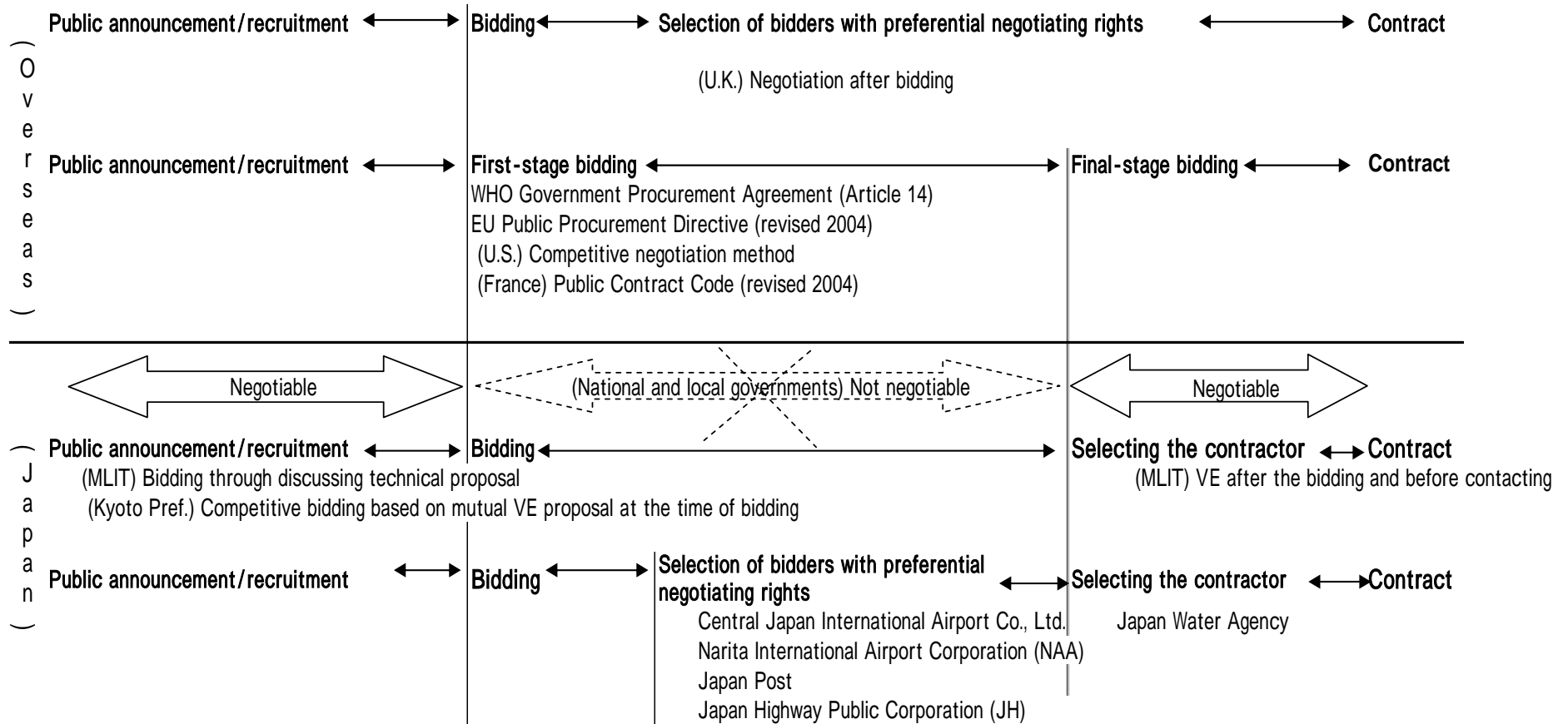
*2) This is a method to protect small businesses and companies employing women and minorities based on Article 8(a) of the Small Business Act.

*3) Make a short list and offer chances to participate in bidding to a limited number of companies.

*4) Seldom used, as it is not permitted by the EU Court of Justice.

*5) The use of the “competitive negotiation method” by EU member countries is likely to increase as they have to reflect the revised EU Public Procurement Directive in their national laws. Under the new Public Procurement Code (revised in 2004) the method is applicable to projects with a budget of 5.9 million euros or less (projects not covered by the EU Public Procurement Directive).

International comparison of negotiation processes



3.2 The Toyota Production System and More Efficient Construction Production

- There is a move to apply Toyota's "lean manufacturing" to construction production. In the U.K. "partnering" is increasingly being used.
- A middle-sized Japanese construction company has introduced the Toyota system. A major general contractor is focusing on partnering with affiliated companies.
- "Competition" in addition to "partnering" is essential to make construction production more efficient. It is expected that this will lead to more sophisticated production plans, performance-based information, and product databases.

The Toyota Production System and the "lean manufacturing" model

- Toyota's world-renowned production system has achieved cost reductions through "the absolute elimination of waste." While implementing continuous improvement (*kaizen*) with affiliated companies to make their business stronger, Toyota is emphasizing competition among affiliated companies.
- Lean construction means to apply Toyota's "lean manufacturing" to construction production. The concept of lean construction is spreading internationally.
- "Lean manufacturing" is being used in the U.K. to innovate the entire construction production process. Various approaches with an emphasis on "partnering" are achieving significant outcomes.

Major achievements of M4I (The Movement for Innovation) in comparison with the construction industry as a whole (2001)

Major performance indices	Construction industry as a whole vs. M4I
Profitability (average of sale/profit)	5.6% vs. 7.6% (+2%)
Productivity (average value added per employee)	£28,000 vs. £34,000 (+21%)
Cost (% change from the previous year)	+2% vs. -2% (+4%)
Work period (% change from the previous year)	+4% vs. -8% (+12%)

Trends in Japan

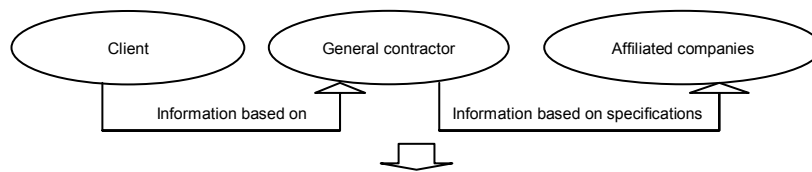
- A Japanese medium-sized construction company has introduced the Toyota Production System and has successfully reduced work periods and consequently, cost. A major general contractor is using both "partnering" and "competition" approaches to its affiliated companies to establish a relationship of trust, to utilize their knowledge and expertise, and to improve quality and reduce costs.

More efficient construction production

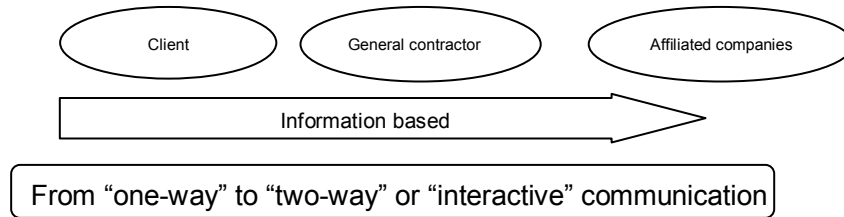
- Mutual trust among the parties involved is essential to fully utilize technical expertise. Mutual transparency and openness are prerequisites for mutual trust. At the same time, a competitive environment should be maintained.

- Construction production, characterized by “on-site” and “one-off” production, is different from the manufacturing of automobiles (“at-factory” and by “mass production”). The “lean” system therefore should be adapted to suit the nature of construction production.
- Sharing of information should be changed from “one-way and specification-based” to “interactive and performance-based” to utilize the expertise of affiliated companies and subcontractors from an early stage in the construction process.

(Conventional approach)



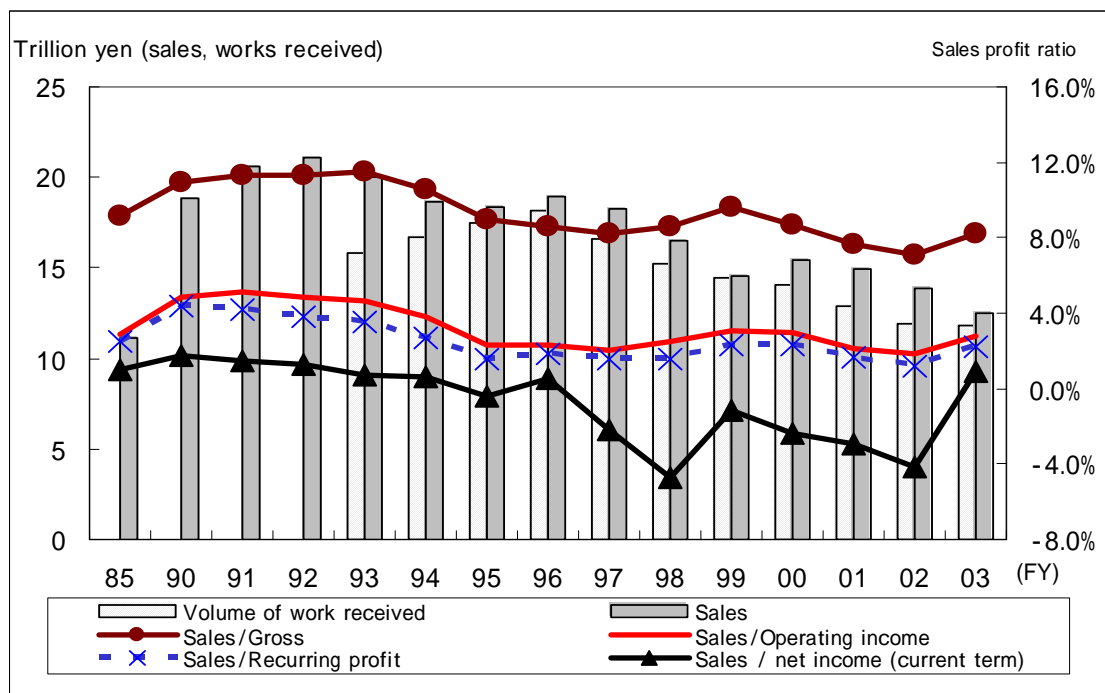
(New approach)



3.3 Trends in the Construction Industry (Major contractors)

- The construction market shrank after the Japanese economic bubble burst. Since then, the earning power of construction companies has remained sluggish.
- The financial standings of a) the leading general contractors that launching aggressive development projects and b) second-tier general contractors that downsized, are rapidly improving. The second-tier companies are becoming polarized into profitable and unprofitable ones.
- The restructuring of the industry has accelerated since the “Basic Guideline on of the Revival of the Construction Industry” was announced in 2002. Main banks have played a major role in all forms of restructuring.
- Although the pace of settlement of the bubble economy and the restructuring of the construction industry is accelerating, much work remains to be done. The paradigm within the industry is shifting from scale-oriented to efficiency-oriented. Competition for survival is likely to intensify.

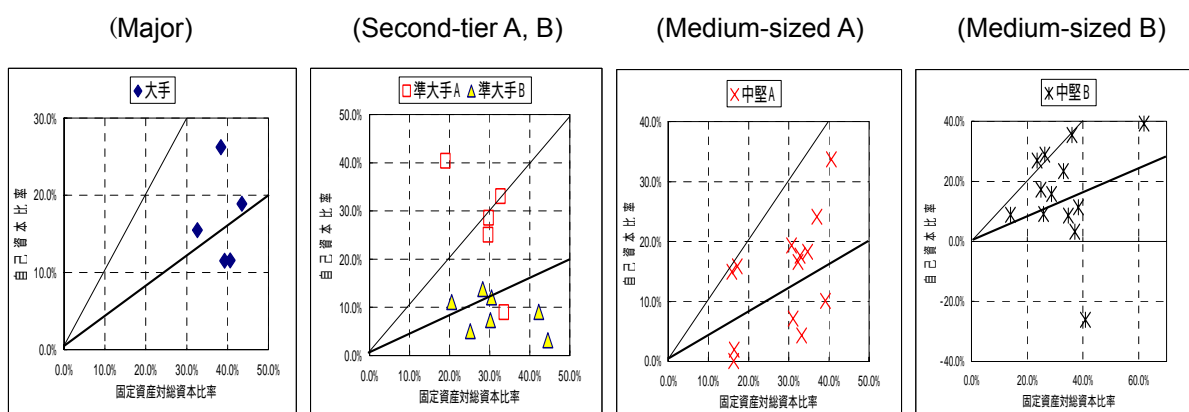
Trends in profit and loss, and the volume of work received (43 major construction companies, non-consolidated)



Notes:

1. Based on data from “Settlement of accounts analysis of major construction companies; first term 2004” by RICE. Data on the amount of orders received is from FY1993.
2. Forty-three companies are shown below.

Trends in equity capital and fixed assets ((43 major construction companies))



(Y axis: Capital-to-asset ratio, X axis : Fixed asset / Gross capital)

Notes:

1. The fixed ratio of 100% is indicated by diagonal lines; and 250% by lines in bold.
2. Forty-three companies are classified as follows based on the non-consolidated average sales of the past four years (FY2000 to 2003).

Major companies: Average sales of over 900 billion yen (Kajima, Obayashi, Taisei, Shimizu and Takenaka)

Second-tier Group A: Average sales of over 250 billion yen (Toda, Nishimatsu, Goyo, Maeda and Okumura)

Second-tier Group B: Average sales of over 250 billion yen and requesting financial support (Kumagaya, Hazama Mitsui-Sumitomo, Tokyu, Haseko, Tobishima and Fujita)

Medium-sized Group A: Average sales of over 100 billion yen (Toa, Zenitaka, Tekken, Ando, Asanuma, Toyo, Fudo, Ohira, Matsumura, Daiho, Arai, Fukuda and Wakatsuki)

Medium-sized Group B: Average sales of less than 100 billion yen (Daisue, Magara, Yahagi, Odakyu, Matsui, Kitano, Totestu, Nakano, Saeki, Sata, Asunaro, Katsumura and Ueki)

3.3 Trends in the Construction Industry (Local medium-sized companies)

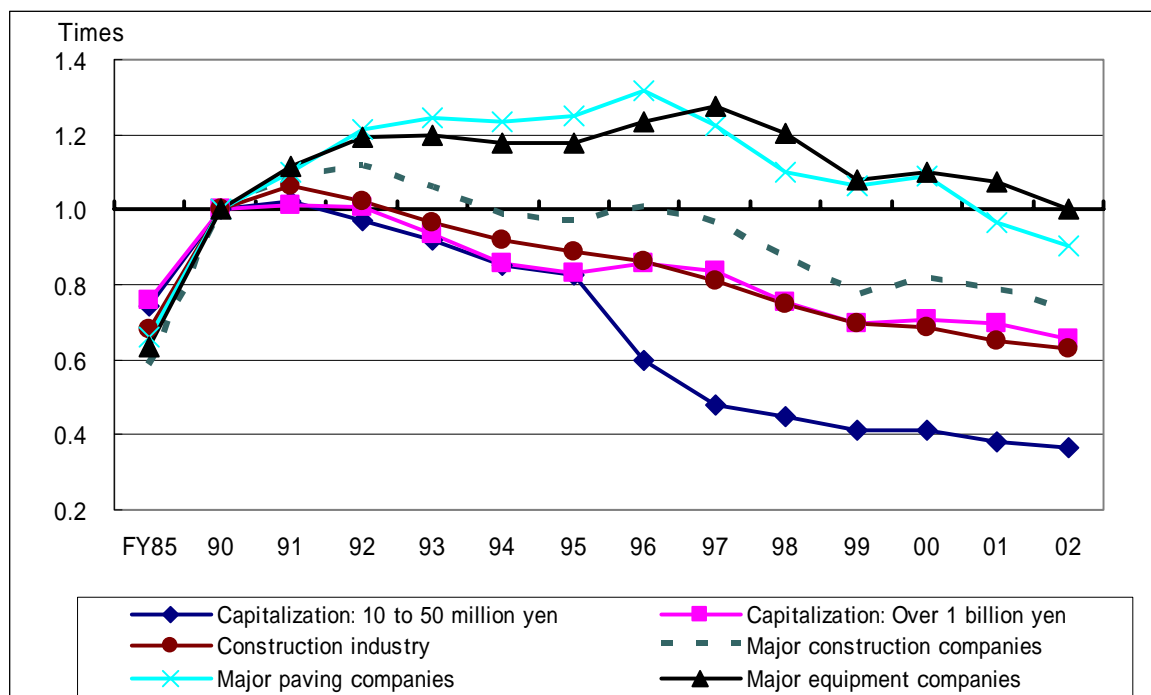
- The number of construction company failures peaked in 2000 at 6,214 cases, then dropped significantly to 5,113 cases in 2003, but is still at a high level. An increase is noted, particularly among local medium-sized companies with a capital size of 10 to 50 million yen.
- These local companies, relying heavily on shrinking public works spending, are facing extremely difficult times. Public procurers are supporting those companies who are advancing into new business fields. Some construction companies are maintaining and expanding sales in their main construction business through differentiation strategies.
- Examples of differentiation strategies are the development of new construction methods, the obtaining of patents and domination of a specific field, or making unique and innovative proposals to receive orders. Some companies seek to establish a “construction service industry” and are offering a comprehensive range of services covering all aspects, from the purchasing of land, the processing of administrative and other procedures necessary to open stores, and the recruiting of employees to win the contract.

Trends in construction company bankruptcies in relation to capitalization

	'94	'95	'96	'97	'98	'99	'00	'01	'02	'03
Private company	585	685	637	751	923	716	946	765	700	667
Less than 10 million yen	1,901	2,183	1,710	1,737	1,918	1,673	2,202	2,080	1,990	1,660
10-50 million yen	839	1,064	1,664	2,496	2,688	2,146	2,925	3,103	3,083	2,584
50-100 million yen	42	37	42	86	98	86	126	171	163	160
Over 100 million yen	11	13	12	26	41	29	15	35	40	42
Total	3,378	3,982	4,065	5,096	5,668	4,650	6,214	6,154	5,976	5,113

Note: Compiled based on data from Tokyo Shoko Research.

Trends in sales per company (FY1990 = 1)



3.4 More Efficient Management and Use of Information Technology (IT)

- IT is an effective tool to increase management efficiency. Though small- and medium-sized companies are making significant progress in the introduction of IT compared with last year, they still lag behind the major companies.
- This is largely due to a lack of good cost management schemes and stultified working budget systems. IT can improve cost management.
- IT systems that can be improved and updated on a continuous basis should be established. Systems should be introduced in a step-by-step fashion, while setting goals to improve company operations.

IT for more efficient management

- Though small- and medium-sized enterprises (SMEs) still lag behind major companies, they are making significant progress in the introduction of IT compared with last year.

(%)

Items	Large companies	SMEs
1. PC diffusion rate (offices where over 70% of employees are equipped with PCs only)	83.9 (81.6)	65.9 (56.2)
2. Rate of in-house information system establishment (% of companies with a system)	84.9 (81.7)	64.7 (42.9)
3. Percentage of companies using information systems for cost management	74.9	41.8
4. Percentage of companies using information systems for working budget management	62.0	42.0

Note: Figures in parenthesis are survey results from FY2003.

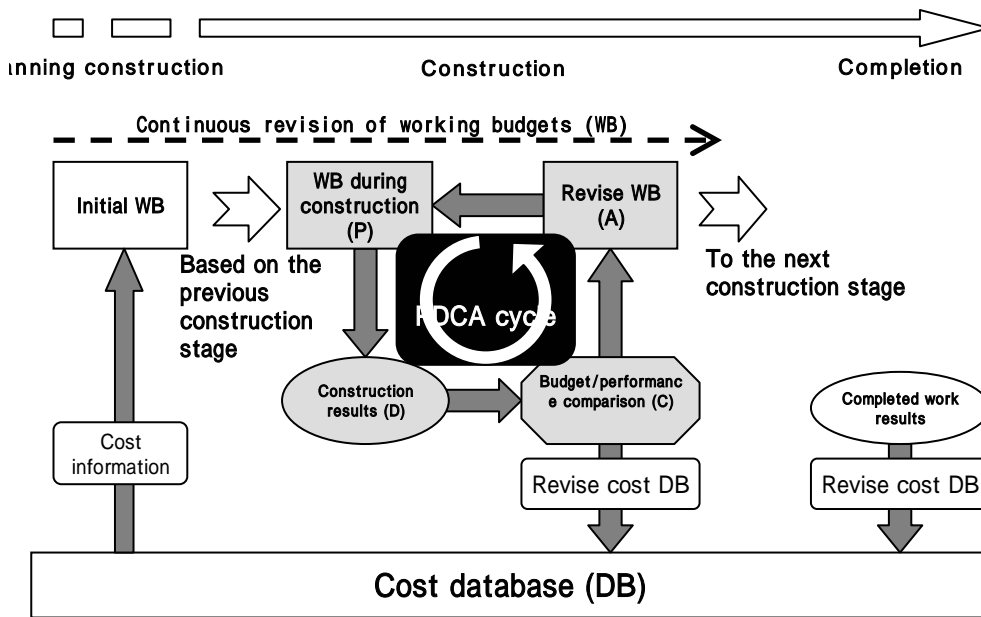
- The sectors of IT emphasized by construction companies are electronic bidding, electronic delivery, and more efficient on-site work. SMEs are less eager than large companies in networking construction sites with company headquarters and branches.
- The results of Items 1 and 2 indicate that the higher the level of IT introduction, the higher the operating margins.

Management of construction companies: Issues and challenges

- It is difficult to obtain details of the costs of work subcontracted, which account for a large share in construction work. Over 50% of SMEs cannot effectively utilize working budgets. Cost management remains unclear in the construction industry.
- The lack of systems for cost management is a serious issue to be addressed by the introduction of IT tools.

Information systems for more efficient management

- The PDCA cycle (Plan-Do-Check-Act) to improve business processes on a continuous basis should be pushed faster and more accurately to improve cost management. Cost management systems and working budget systems utilizing IT are effective tools. A mechanism to constantly refine these systems should be established.
- The step by step introduction and upgrading of IT should be implemented along with the improvement of business practices and performance.



4.1 The Challenge of Beautifying Landscapes

- Modernization and economic development after the Meiji Restoration to a large extent destroyed Japan's diverse and abundant natural and historical landscapes. Due to a shift in values, there are new moves to restore these.
- In this report we examined the historical changes and challenges of "landscape culture" in Japan until the recent enactment of the Landscape Act. Some innovative approaches taken by the cities of Usukine, Kashiwa and Kawagoe are introduced.
- Future challenges of landscape control include:
 - a) Integrating government agencies in charge of landscape control and establishing strong leadership;
 - b) Establishing public-private partnerships to encourage landscape control;
 - c) Examining landscape values and promoting the message that good-quality landscapes can vitalize local regions;
 - d) Conducting simulations and creating databases utilizing computer graphics; and
 - e) Training experts and teaching people about landscapes.

Background to revaluing landscapes

People are beginning to reflect on the importance of landscapes as a result of a shift in their values, from believing that the "future is important" to realizing that "life now is important." Other forces driving this attitudinal change are encounters with beautiful landscapes abroad, and a greater need to seek individual identity amidst globalization.

The enactment of the Landscape Act and its significance

The newly enacted Landscape Act stipulates that local governments must take the initiative in landscape control. The Act grants them authority to control landscape development. The Act will pose a new challenge for local governments in developing and implementing new policies.

Initiatives by the cities of Usukine and Kashiwa

Usukine in Oita Prefecture, based its program on its historical assets (the samurai residences of the Edo Period), removed shopping arcades in the central city, buried power lines, and paved roads with cobblestones. In addition to the improvement of these physical aspects of landscape, the city publicized a local festival and a movie (*Nagoriyuki*) filmed in the city. Thanks to these efforts, the number of tourists to the city increased significantly.

Kashiwa in Chiba Prefecture near Tokyo has no significant historical assets. The city made a low-key effort to find local landscape resources, and formulated landscape guidelines for each part of the city. Kashiwa's approach will appeal to many cities that lack specific landscape assets.

The future of landscape control

We would particularly like to emphasize the following two issues.

- a) Landscapes, which used to be discussed from the aesthetic point of view, are beginning to take on economic value. Landscapes have created “brand value” for regions, and have a positive impact on land prices. One good example is the city of Kawagoe in Saitama Prefecture, which attracts visitors who come to see its historic warehouse-style buildings. More detailed studies on the regional value of landscapes should be conducted, and the values that are identified should be utilized as promotional tools of the region.
- b) Experts who can take the initiative in consensus-building among citizens should be trained, both in the public and private sectors; Programs for landscape architects in US universities for example. Under these programs, practitioners, scholars and students interact and cooperate on landscape projects. The introduction of landscape education for elementary school pupils (utilizing periods set aside for integrated studies) should be considered.

4.2 Making Houses Earthquake-resistant

- Earthquakes may strike the Tokyo and the Tokai Regions at any time. Though both national and local governments are working harder than ever before to make houses more resistant to earthquakes, progress to seismic preparation is slow.
- By making houses earthquake-resistant you can better protect life and property.
- If all houses vulnerable to earthquakes were to be repaired, the potential market size would be as much as 21 trillion yen.
- Citizens should realize the potential danger and have the seismic capacity of their houses checked. Government should expand its support systems. The housing industry should improve seismic retrofitting technology.

Imminent threat of major earthquakes

Probability of occurrence of each of the four major regional earthquakes

	Tokai	Tonankai	Nankai	Miyagi offshore
Within 10 yrs	Anytime: There are no known cases of the Tokai Earthquake occurred independently. Therefore the probability cannot be estimated. The government has no official estimated figures, as is the case for other earthquakes,	10%	10%	26%
Within 20 yrs.		30%	20%	81%
Within 30 yrs.		50%	40%	98%

Note: Estimates as of January 1st, 2001 (excluding the Tokai Earthquake).

- The three earthquakes mentioned in the table above are those whose probability of occurrence within the next 30 years has been officially announced. Though no estimates in the list have been made for the Tokai Earthquake, this earthquake, together with the Tokyo Inland Earthquake that may strike the capital, may occur any time. We need to speed up the process of preparedness.

Estimates of the size of seismic retrofitting market

- Because of Japan's geological structure, earthquakes may occur anywhere in the country. We have estimated how much it will cost to improve the earthquake resistance of housing.
- If all houses that might be completely destroyed by a major earthquake were retrofitted, it would cost about 21 trillion yen.
- Of these, less than 1% has been retrofitted so far. We should promote retrofitting measures.

Chapter 5 Overseas Trends

5.1 Trends in Overseas Construction Markets

- If construction investment in Japan is equated to 100, then the corresponding figures are 192 for the United States, 115 for Western Europe, 6 for Eastern Europe, and 129 for Asia.
- The proportion of construction investment out of total GDP is 11.3% for Japan and 17.8% for Asia. This figure is lower in the United States (8.2%), Western Europe (5.8%) and Eastern Europe (7.7%).
- As domestic construction investment is shrinking, Japanese construction companies in general are aggressively advancing overseas. If Japan concludes a Free Trade Agreement (FTA) with Thailand, the Philippines and Malaysia, it will increase business opportunities for Japanese construction companies. Japan however, is likely to face fierce procurement competition with China, who has a competitive edge in prices and has strong networks among Chinese people, both in mainland China and in those countries.

Construction markets by country and by region in 2002 (nominal values, converted to trillions of yen)

	Japan ¹	United States	Western Europe ²	Eastern Europe ³	Asia ⁴
GDP	497.6 (100)	1,309.8 (263.2)	1119.1 (224.9)	43.7 (8.8)	407.7 (81.9)
Construction market	67.4 (100)	-	110.8 (172.0)	4.6 (6.9)	-
Proportion to GDP (%)	13.5	-	10.4	10.6	-
Construction Investment	56.3 (100)	104.7 (191.7)	61.9 (115.2)	3.3 (5.9)	72.5 (128.8)
Proportion to GDP (%)	11.3	8.2	5.8	8.3	17.8

(Japan = 100)

Notes

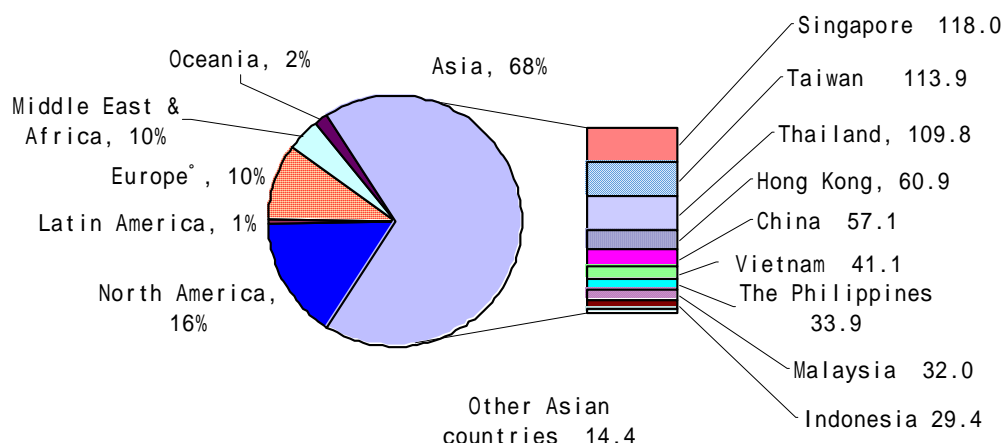
1. Data for Japan is fiscal year (FY)-based. The amount of construction investment is an outlook (by the Ministry of Land, Infrastructure and Transport).
2. "Western Europe" consists of 15 countries: Austria, Belgium, Denmark, Finland, France, Germany, Iceland Ireland, Italy, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and UK.
3. "Eastern Europe" consists of 4 countries: Czech Republic, Hungary, Poland and Slovakia.
4. "Asia" includes 12 countries and territories: China, Hong Kong, Taiwan, India, Indonesia, Korea, Malaysia, The Philippines, Singapore, Sri Lanka, Vietnam and Thailand. Construction investment data for The Philippines, Taiwan and Thailand is as of 2000, 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.

Overseas activities by Japanese construction companies are chiefly in Asia, accounting for nearly 70% of their revenues. If restrictions imposed on foreign companies by Asian countries are removed by concluding FTAs, business opportunities are likely to increase.

Market entry restrictions on foreign companies imposed by Asian countries negotiating FTAs with Japan

Thailand	Companies with a foreign capital ratio of 50% cannot apply for projects procured by the government or private-sector companies based on The Foreign Business Act. To enter the Thai market, they have to set up a local company with a foreign capital ratio of less than 50%.
Malaysia	Companies with a foreign equity ratio of more than 30% are considered “foreign” based in the guideline of the Foreign Investment Committee (FIC), and cannot obtain the PKK license (Pusat Khidmat Kontraktor or Contractor Service Center), thus they cannot apply for projects procured by the government.
The Philippines	Local companies with a foreign capital ratio of 40% or less should be established, as the Construction Business Authorization Committee grants business licenses only to these companies.

Orders for construction works received abroad by Japanese construction companies (FY2003 by country).



U.S. construction investment is strong, recording an 11.3% increase over the previous year. Though housing investment remains strong, mortgage interest rates are rising. The duration of this “boom” will depend on how long consumers’ incentives to buy houses continue. Public investment is recording positive growth, supported by educational facilities, roads and highways, together accounting for 60% of total investment. Negative growth of private-sector non-housing investment has turned slightly positive. The future of construction investment depends on future GDP growth.

Trends in U.S. construction Investment

(Upper column: volume in \$1m, Lower column: increase rate over the previous year in %)

	1998	1999	2000	2001	2002	2003r	2004p	Composition ratio
New investment total	705,685 8.0	766,062 8.6	828,768 8.2	852,553 2.9	860,923 1.0	898,295 4.3	970,385 8.0	100.0
Private-sector	551,383 9.7	596,331 8.2	642,633 7.8	652,496 1.5	650,495 -0.3	682,969 5.0	739,919 8.3	76.3
Housing	314,607 8.9	350,562 11.4	374,457 6.8	388,324 3.7	421,521 8.5	471,789 11.9	520,727 10.4	53.7
Non-housing, etc.	236,776 10.8	245,769 3.8	268,176 9.1	264,172 -1.5	228,974 -13.3	211,180 -7.8	219,192 3.8	22.6
Public works	154,302 2.4	169,732 10.0	186,135 9.7	200,057 7.5	210,428 5.2	215,326 2.3	230,466 7.0	23.7
Building	N/A N/A	N/A N/A	N/A N/A	N/A N/A	124,651 N/A	127,289 2.1	131,919 3.6	13.6
Civil engineering, etc.	N/A N/A	N/A N/A	N/A N/A	N/A N/A	85,777 N/A	88,037 2.6	98,547 11.9	10.2

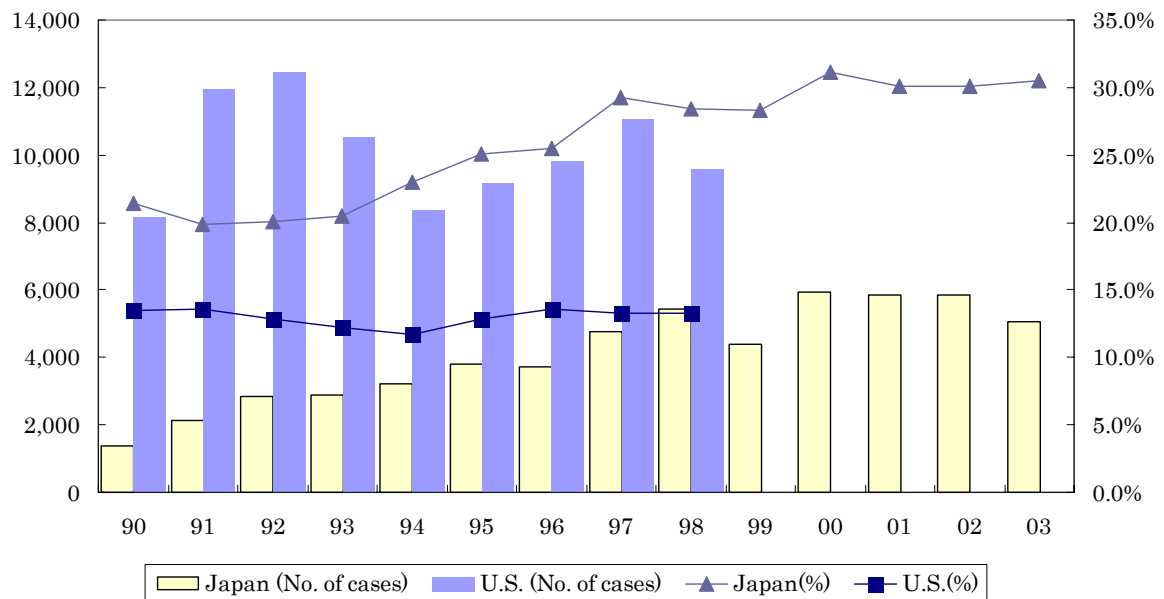
Notes:

1. Compiled based on data from the Department of Commerce.
2. (r): revised, (p): preliminary
3. Figures for 2004 are seasonally adjusted figures as of April converted to annual figures.

5.2 Number of Bankruptcies in the U.S. Construction Industry and Revitalization of the Industry

- The number of bankruptcies in the U.S. construction market ranges from 8,000 to 12,000 cases annually, equivalent to 10 to 15% of the entire industry. Though the number of cases far exceeds that of Japan, the proportion in the industry as a whole is low compared with that in Japan (over 30%).
- The number of bankruptcies filed under Chapter 11 (Reorganization) and Chapter 13 (Adjustment of debts of an individual with regular income) of the Federal Bankruptcy Code, or those involving the rehabilitation of the debtor, account for about 40% of business bankruptcies (5.4% in Japan). The negative image of “going bankrupt” is far greater in Japan. The time required, from the filing of bankruptcy until getting permission to reorganize the company, is short. Speedy rehabilitation is possible. “Turnaround management” is a method to restore the value of companies on the verge of bankruptcy. Lawyers, accountants, bankers and management consultants undertake the task of corporate renewal. Corporate renewal is a mature market in the U.S., and the turnaround business targeted at the construction industry is increasing.
- In Japan many financial institutions have entered the corporate renewal business in the past few years, helped by deregulatory measures and tax incentives offered by the government. The construction industry should study the U.S.-style corporate renewal business (which is speedy, integrated and flexible).

Trends in the number of construction companies going bankrupt (U.S. and Japan)



Note: Data from the Teikoku Data Bank (Japan) and the Statistical Abstract (U.S.).

Number of legal applications filed by the type of bankruptcy (businesses only, 2003)

Type of bankruptcy		No. of cases	Ratio (%)
Liquidation	Chapter 7	20,631	58.9%
Reorganization	Chapter 11	8,474	40.9%
	Chapter 12	712	
	Chapter 13	5,138	
Others		82	0.2%
Total		35,037	100.0%

Data from the Statistical Abstract of the United States, U.S. Court "Bankruptcy Statistics."

Comparison of U.S. and Japanese law on bankruptcy (reorganization)

	U.S.	Japan
Law	Federal Bankruptcy Code Chapter 11 ("Reorganization" Chapter).	Corporate Rehabilitation Law (large companies) and Civil Rehabilitation Law (SMEs).
Court	Federal Court of Bankruptcy (one for each in 94 jurisdictions. State courts are not authorized to process bankruptcy proceedings).	Local courts in each prefecture.
Application requirements	None	When settlement of obligation is difficult or the company is at risk of bankruptcy.
Chief executive after application	In principle, debtor manages business as DIP (Debtor in Possession). Trustees are seldom assigned.	The court selects a trustee who has the authority to manage the business (Corporate Rehabilitation Law). DIP rehabilitation is possible under the Civil Rehabilitation Law.
Protection of assets	"Automatic stay" goes into effect when a bankruptcy petition is filed. Assets are automatically protected.	The court can order the protection of assets. There is no "automatic stay."
Financial procurement after applying (DIP finance)	Super Priority	Common debt (priority lower than labor or tax debt).
Rehabilitation plan	Formulated by the debtor for 120 days after filing. If not submitted during this period creditor can form the plan.	Formulated by the trustee. Within a year after initiating the procedure (Corporate Rehabilitation Law).
Time required until the rehabilitation plan is approved	Several months and up to 2 years.	Several years

Outline of revival strategies in Turnaround Management

Seven components	Outline of strategies
1. Stabilized management crisis	Take control of management, cash management, asset reduction, get short-term funds, cut costs where cost-cutting is easy.
2. Leadership	Replace the CEO and other management positions.
3. Support from stakeholders	Communication
4. Strategic focusing	Redefine core business, withdrawal and asset reduction, reexamine product and market focus, downsize, outsource, invest.
5. Organizational reform	Change organizational structure, relocate, improve communications, commitment and empowerment, change employment conditions.
6. Improvement of core process	Improve sales and marketing, make cost reductions, improve quality, strengthen organizational power, improve information and management systems.
7. Financial restructuring	Refinancing, asset reduction

Note: Data from Slatter & Lovett, "Corporate Turnaround."