

Construction Economy Report

No. 46

The Japanese Economy and Public Investment

Reevaluating Public Investment and
New Developments in the Construction Industry

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Chapter 1 Macroeconomics and Construction Investment

1.1 Trends in the Economy and Construction Investment

- It is expected that through FY2005 and FY2006 the Japanese economy will pull away from stagnation and steadily grow, led by private-sector demand. Investment in plant and equipment is increasing, due to recovering profits in the business sector. Businesses are less inclined to feel that there is an overinvestment in plant and equipment. Private consumption is gradually increasing due to greater employment. We should, however, keep an eye on trends in the price of crude oil and the state of the global economy. We should be aware of drags on the economy (e.g., a greater burden on households due to reductions in proportional tax cuts).
- The rate of decline in construction investment has decreased due to a supplementary budget for disaster recovery. Construction investment posted the first year-on-year increase in nine years in FY2005; however, investment in FY2006 will once again be smaller than in the previous year. Private-sector non-housing construction investment is likely to increase — reflecting the economic recovery — while public-sector construction investment is likely to continue to shrink. Private-sector housing investment is likely to level off.

Trends in construction investment (Nominal, FY)

Actual ← | → Tentative | → Forecast

FY	1990	1995	2000	2001	2002	2003	2004	2005	2006
Nominal CI	81,440	79,017	66,195	61,288	56,840	53,940	52,770	52,810	51,670
(Increase rate)	11.4%	0.3%	-3.4%	-7.4%	-7.3%	-5.1%	-2.2%	0.1%	-2.2%
Nominal government CI	25,748	35,199	29,960	28,193	25,917	23,720	21,080	19,850	18,320
(Increase rate)	6.0%	5.8%	-6.2%	-5.9%	-8.1%	-8.5%	-11.1%	-5.8%	-7.7%
(Contribution rate)	2.0	2.5	-2.9	-2.7	-3.7	-3.9	-4.9	-2.3	-2.9
Nominal private CI	25,722	24,313	20,276	18,575	17,951	17,880	18,270	18,670	18,620
(Increase rate)	9.3%	-5.2%	-2.2%	-8.4%	-3.4%	-0.4%	2.2%	2.2%	-0.3%
(Contribution rate)	3.0	-1.7	-0.7	-2.6	-1.0	-0.1	0.7	0.8	-0.1
Nominal private NH CI	29,970	19,505	15,959	14,519	12,972	12,340	13,420	14,290	14,730
(Increase rate)	18.4%	-1.8%	0.7%	-9.0%	-10.7%	-4.9%	8.8%	6.5%	3.1%
(Contribution rate)	6.4	-0.4	0.2	-2.2	-2.5	-1.1	2.0	1.6	0.8
Real CI	85,442	79,020	67,365	62,929	58,639	55,170	53,390	53,020	51,440
(Increase rate)	7.7%	0.2%	-3.6%	-6.6%	-6.8%	-5.9%	-3.2%	-0.7%	-3.0%

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

Notes:

- CI: construction investment NH: non-housing
- Private NH CI = private non-housing construction investment + private civil engineering investment.
- Data from the "FY2005 Construction Investment Outlook" by MLIT up to FY2004

1.2 Public investment's role in sustaining the economy after the collapse of the economic bubble

- **Bad debts owned by financial institutions:** From the mid-1980s onwards, Japanese financial institutions aggressively lent to SMEs and real estate projects. With the collapse of the economic bubble in the late 80s, banks' holdings of non-performing debts surged due to worsening corporate profits and a decline in asset values. Financial institutions, while clearing away their bad loans, were extremely reluctant to make new loans. The entire Japanese banking system failed to function as an intermediary.
- **Negative wealth effect:** The decline in land prices after the collapse of the bubble greatly restrained private-sector economic activities — particularly corporate investment in plant and equipment. One think tank estimated that in 2000 the reduction in wealth had a negative effect of 3.2 trillion yen. Lower land prices burdened corporations carrying excessive debt, forcing them to reduce their investments.
- **Hollowing out of Japanese industry:** Along with the globalization of economies, the hollowing out of industry was another factor behind the long-term stagnation of the Japanese economy in the 1990s. Although globalization has positive aspects, such as the promotion of industries and the more efficient international allocation of resources, the rapid relocation of Japanese plants overseas led to a fall in domestic capital investment and employment opportunities.
- **Simulated outcomes:** A simulation was conducted on the assumption that the amount of public investment between FY1991 and FY2001 would remain unchanged from FY1991 (approx. 31.7 trillion yen). Annual GDP was 9.6 trillion lower (0.1% in terms of growth rate). If the GDP gap between FY1995 and FY2004 (accumulated total of about 135 trillion yen) had to be filled solely by public investment, the actual amount would have to be increased by about 99 trillion yen.

● The amount of bad debts

The estimated total of bad debts as of the first quarter of 2000 (announced by the Financial Services Agency in April 2001) was 150 trillion yen. This was 70 trillion yen more than the amount previously announced due to financial institutions tightening asset assessments and reclassifying prime guaranteed loans as problematic loans.

● The “routes” of the negative wealth effect

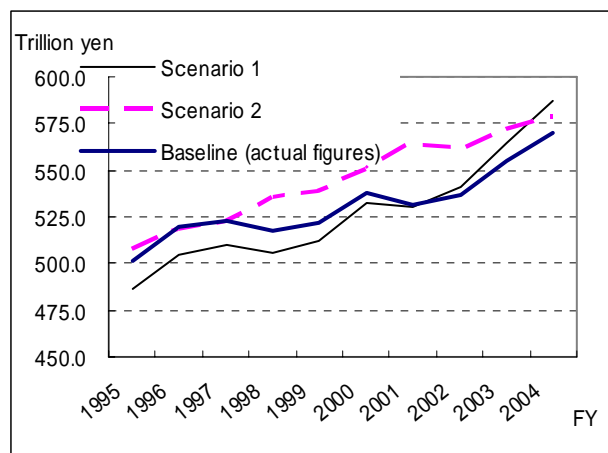
There are two types of “routes” through which the decline in asset values (wealth effects) impact the private-sector economic activities: the consumption route and the investment route. The latter is further divided into the plant investment route and the housing investment route. Consumers try to limit their spending when the price of the

real estate they own falls (consumption route). Businesses reduce their investment in plant and equipment (plant investment route). The effect of the land price decline on housing investment should be examined by classifying the type of investment (e.g., owner-occupied houses, houses for rent, first-time purchases, or repurchases).

- **The hollowing out of industry**

The influences of manufacturing industries transferring their production plants overseas in the 1990s were classified into those affecting domestic plant and equipment investment, and domestic employment. Estimates of job losses (1.96 million in the manufacturing sector) led to loss in income (9.6 trillion yen) between 1985 and 2000, suggesting that the transfer of manufacturing out of Japan had a significant impact on the domestic economy.

Scenario simulations



Scenario 1 : When the amount of public investment is held at the FY1991 level (approx. 31.7 trillion yen)

Scenario 2 : When the GDP gap (accumulated total of about 135 trillion yen) between FY1995 and FY2004 is filled solely by public investment

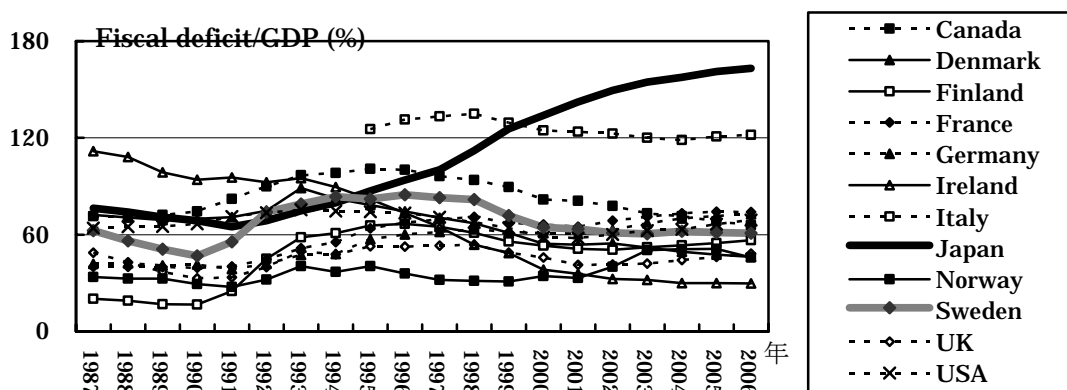
1.3 A discussion of non-Keynesian effects

- The financial conditions of Japanese central and local governments are worsening. Concerns have been expressed about fiscal sustainability. It is hoped that conditions can be improved.
- It was generally believed that a tax increase or a cut in fiscal spending would reduce aggregate demand and thus have a negative impact (a Keynesian effect) on GDP and private consumption. However, some OECD member countries facing a fiscal crisis in the 1980s and 1990s managed to achieve both fiscal reform (through expenditure cuts) and economic recovery. This phenomenon is called the “non-Keynesian effect.” “Annual Report on the Japanese Economy and Public Finance 2005” announced by the cabinet office explains that this effect can be expected in Japan.
- On the other hand, whether the phenomenon observed in those countries was really the “non-Keynesian effect” is not clear. Some argue that lower interest rates during the process of budget deficit reduction boosted the economy.
- In spite of these contradictory analyses on the “non-Keynesian effect” the way of thinking mentioned here is rational and acceptable, that is, both households and businesses determines consumption and investment activities based not only on the current condition but also on the forecast.
- Under the generally agreed upon tough fiscal condition, demand stimulation is difficult. The government should be more committed to fiscal discipline.

* <http://www5.cao.go.jp/keizai3/2005/0715wp-keizai/summary.html>

● Japan’s fiscal situation

The country’s fiscal deficit is expanding and its accumulated balance of outstanding public bonds is exceptionally higher than any other OECD countries.



Note: Data from the OECD (“General Government Accounts”).

- The government should be resolute

Japan has so far been fortunate not to have an external current-account deficit, although the country experienced both a fiscal and financial crisis, it did not experience a currency crisis as seen in many countries. Sweden and other advanced nations have weathered currency crises. If a country cannot escape a currency crisis on its own, it has to rely upon the support of international organizations. The options available to citizens of that country become radically limited. When Sweden found itself in a currency crisis, the government declared its commitment to overcome the problem before the situation became worse. This helped to gain public trust. The government and its people could share the sense of crisis and maintain Sweden's welfare-oriented state.

Japan can learn a lesson from this experience. Efforts to increase the efficiency of the public sector are helpful for the country to gain the trust of the market.

Japan's fiscal balance (FY2003, in trillion yen)

Assets	696	Debts	941
		Capitals	- 245

Data from the Ministry of Finance (September 2005)

Chapter 2 Bidding and Contracting Systems and the Construction Industry

2.1 Reforming bidding and contracting systems

- The WTO Government Procurement Agreement came into force on January 1, 1996. It was a great step forward in the history of public procurement in that it brought international rules of public procurement to the Japanese construction market. The Agreement brought about a “period of stability” in the internationalization of the construction market.
- This report reviews the history of Japan’s bidding and contracting systems in two major phases: a) prior to the Agreement (1. Attempts of reform during the days of the designated competitive bidding system, 2. Partial introduction of the general competitive bidding system); and, b) after the Agreement came into force (1. Various bidding systems and their backgrounds, 2. Beyond WTO). The background and context of the changes are reviewed by referring to global trends. Recent reforms are then explained and future challenges are examined.

● Postwar trends in bidding and contracting system reforms

1. The construction market grows with the postwar expansion of the Japanese economy: Systems based on designated competitive bidding.

↓

2. The market stagnates after the oil crisis in the early 1970s and bid-rigging and other forms of collusion occurred: Reforms focused on information disclosure to increase transparency.

↓

3. More scandals and a greater need for international harmonization: Radical reform of bidding and contracting systems including a partial introduction of general competitive bidding.

↓

4-1 The bubble economy collapses and structural reform of the construction market becomes a pressing issue: Trials of various types of bidding and contracting methods to ensure transparent and fair competition.

4-2 A shift from bidding based solely on the price, to more comprehensive contracting based on “price and quality”; enactment of the Housing Quality Assurance Act; and full-scale introduction of more comprehensive evaluation methods based on the principle of encouraging the growth of companies that excel in both technology and

management.



5. More bid-rigging: Expansion of general competitive bidding.

● **Future challenges**

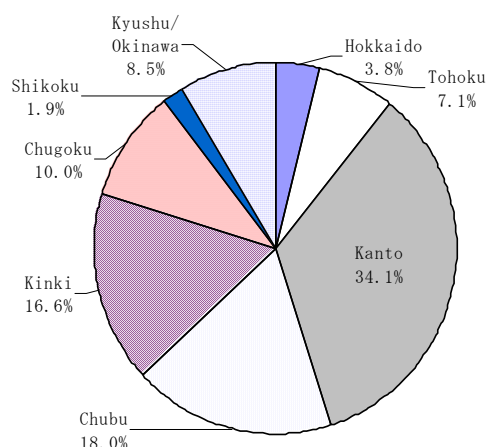
- 1) **Improve the monitoring of bidding systems and increase transparency through better information disclosure.**
- 2) **Continue to ensure that unethical and unqualified contractors are eliminated. Increase competition through measures to prevent unfair competition (Unfair competition includes dumping and the willful acceptance of money-losing contracts).**
- 3) **Ensure the proper operation of diverse bidding and contracting systems to utilize private-sector technology, expertise and quality assurance through better inspection during and upon completion of projects.**

2.2 Further use and development of PFI

- More than six years have passed since the enactment of the PFI (Private Finance Initiative) Act in Japan. As of September 2005, 212 projects to be implemented through the PFI Act had been announced. The total amount of private-sector spending exceeded 1.4 trillion yen.
- A questionnaire survey conducted by RICE indicates that many local governments are aware of the advantages of PFI. Many local governments who have conducted PFI projects are either those in the three metropolitan regions or those with large budgets.
- Major construction companies are contractors of many PFI projects.
- Local governments in general are aware that one advantage of PFI is that it can control fiscal expenditure. However, taxes and interest payments burden the contractors when the BTO (Build Transfer Operate) system is used. This is an issue to be solved to increase value for money (VFM).
- PFI methods require private-sector companies to procure a large sums of money, thus financing options open to them should be diversified (e.g., trust beneficiary rights).

● PFI projects by region

The number of PFI projects conducted in Japan is steadily increasing. Many of them, however, are in the three metropolitan regions or have been undertaken by wealthier local governments. Nine prefectures have yet to conduct PFIs, including Aomori, Tokushima and Okinawa.



Note: RICE classified by region a total of 212 PFI projects whose implementation was announced by the end of September 2005.

- **PFI projects by contractor**

Major and second-tier construction companies are often the main contractors of PFI projects. There are few cases where small companies or local companies have won PFI projects.

	No. of cases	Ratio (Total = 166)
Main contractor is either one of the five major construction companies or the nine second-tier companies.	59	35.5%
Main contractor is one of the major 42 construction companies other than those above.	10	6.0%
Main contractor is not a construction company listed above.	14	8.4%
Main contractor is not a construction company (e.g., a trading company, etc).	83	50.0%

Note: Classification by RICE of 212 cases announced.

- **DBO (Design-Build-Operate) method**

The DBO method is a promising one that would reduce the tax and interest burden on private companies and enable the application of PFI to more projects. Taking these advantages into account, we need to consider the introduction of DBO method.

	DBO method
Advantages	<ul style="list-style-type: none"> • Can reduce interest payments and obtain value for money. • Can control the whole life cost from design, to build, on to management, and can reduce fiscal spending.
Disadvantages	<ul style="list-style-type: none"> • Cannot even out fiscal spending.

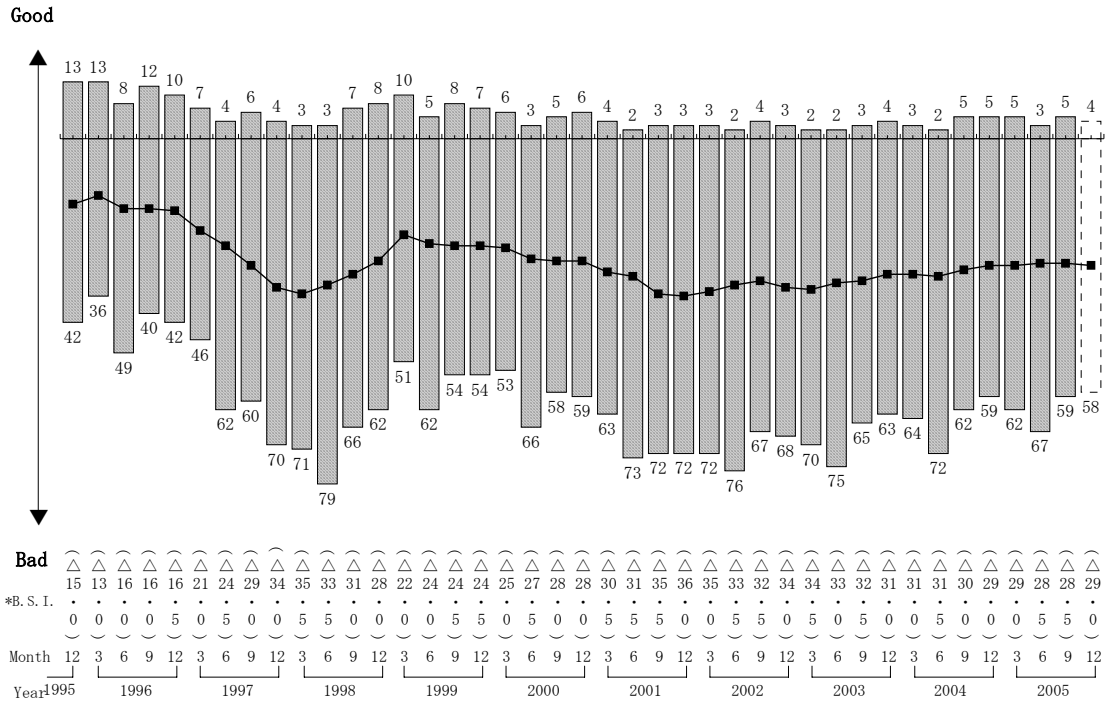
2.3 Challenges and perspectives of the local construction industry

- While investment in construction is shrinking, the number of construction companies is not; they are in oversupply. They need strategies for survival, such as business improvement of development in new fields.
- In the tough business environment, local construction companies are endeavoring to reform their businesses by merging or forming cooperative unions, or by advancing into new fields through partnerships or alliances.
- Some local governments give favorable treatment to these merged companies to correct the problems of construction company oversupply. However mergers should not be used as a means to receive favorable treatment; long-term vision is essential.
- Among the new fields that local construction companies are advancing into are remodeling and renewal (related to their main business) and environmental businesses. Agriculture is attracting attention as well.
- The Ministry of Land, Infrastructure and Transport (MLIT) began the “One-Stop Service Center” project in July 2005 in cooperation with related ministries and agencies. The project provides comprehensive call-in centers to provide information on management, technology, finance, new fields or available subsidies, and is expected to significantly help local construction companies reform their businesses.

- **The local construction companies continue to suffer from the business downturn.**

Trends in BSI (Business Survey Index) of local construction markets

(Bar graphs show the proportion of companies responding either “good” or “bad.” The line shows seasonally adjusted BSI.)



Notes:

1. Data from three construction surety companies (Hokkaido, East Japan and West Japan).
2. BSI = Percentage of companies responding “good” - Percentage of companies responding “bad.”

2.4 More efficient procurement by construction companies

- Materials and labor procurement by construction companies should be more efficient within the supply chain, from manufacturing of materials, onto on-site construction, to increase productivity and reduce costs.
- “Concentrated procurement” by major and second-tier general contractors is an attempt to make the procurement process more efficient. Some such efforts fail due to inadequate process planning and management. Increasing the efficiency of procurement is a major issue for smaller construction companies.
- “Synchronized information,” i.e., when essential information is provided to general contractors, subcontractors and material suppliers on a timely basis, is indispensable for more efficient procurement. Greater interaction between the procurers, designers and architects is vital.

● **Construction production and the procurement process**

- Materials and labor procurement are major components of any construction project. (A survey of 40 major companies revealed that procurement on average accounts for 80% of the construction cost.) More efficient procurement requires a more efficient ordering process, from initial inquiry onto eventual order placement.
- “Concentrated procurement” by the headquarters of major and second-tier general contractors is an attempt to achieve more efficient procurement.

● **Materials and labor procurement Issues and challenges**

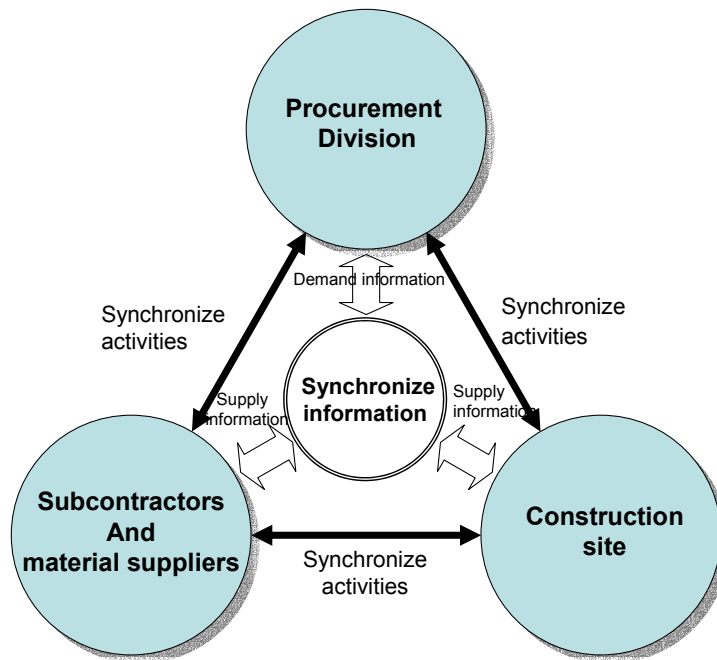
RICE conducted a questionnaire survey of procurement divisions and on-site divisions of major and second-tier general contractors and subcontractors. Issues raised included: a) delays in finalizing designs and specifications and unclear work construction conditions, b) inadequate process planning and management, c) delays in placing orders, d) insufficient coordination and cooperation among those involved in the construction project, and e) limited subcontractor resources.

● **For more efficient procurement**

- Procurers and architects should play a greater role to make procurement more efficient. A system should be created to make the knowledge and expertise of the contractors and subcontractors in the “lower stream” of the construction supply chain available to procurers, designers and architects in the “upper stream.”
- The activities of the entire supply chain should be synchronized. Information

should also be synchronized, or shared simultaneously, so that necessary procurement information can be supplied when necessary.

- “Synchronized information” requires: a) selection of designs and specifications at an early stage, b) better procurement business process, c) adequate process planning and management, d) standardization of construction methods and materials, e) establishment of partnerships, and f) leveling of the amount of construction work procured.



2.5 Global warming, environmental business and construction companies

- Hard work will be needed to achieve the goals set by the Kyoto Protocol that came into force in February 2005. In the meantime, citizens have become more environmentally conscious. The government and the construction industry are stepping up measures for environmental protection.
- The European Committee compiled a report entitled “Sustainable Construction.” The report states that increased emphasis should be placed on “life cycle costs of construction.”
- Environmental business is expected to be a growing market in the construction field. The cleaning up of polluted land is a major field at present. Japan should be more committed to CO₂ emission reduction. Future business opportunities lie in energy saving and other businesses related to reducing the burden on the environment.

● **Environmental trends at home and abroad**

- The target set by the Kyoto Protocol for Japan is to reduce its GHG emissions to 6% below 1990 levels. This goal is far from being attained.
- Japanese citizens are becoming more environmentally conscious. Japanese companies are more committed to CSR (Corporate Social Responsibility) activities.
- The MLIT announced its action plan for the environment to encourage recycling-oriented, nature-friendly and sustainable social systems. Three construction trade organizations have formulated their own voluntary action plans for the environment. Their commitment to protect the environment and stop global warming is evident in the goals set in the action plan.

● **Sustainability and life cycle costs**

- The European Union has a long history of dealing with environment issues. The European Committee is promoting “sustainable construction” recognizing the important social role of the construction industry.
- The “life cycle cost of construction” is a crucial issue for “sustainable construction.” Business operation costs should be considered in future bidding in addition to actual construction costs. The ratio of construction costs to building maintenance costs to business operation costs is said to be 1:5:200.

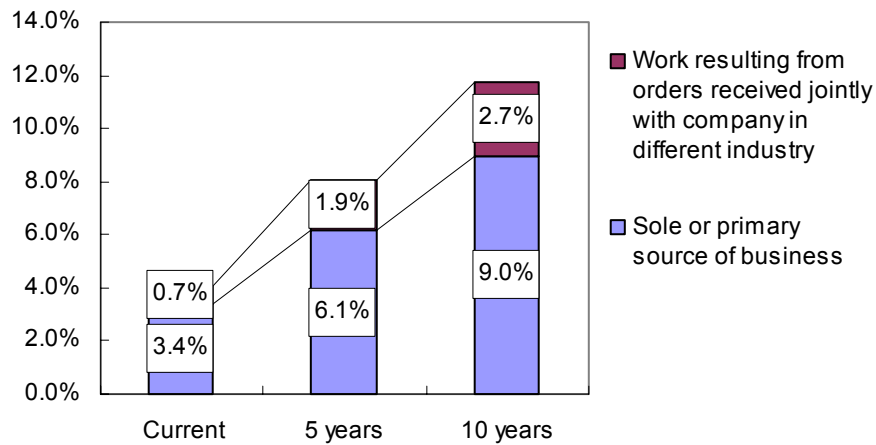
● **Environmental business trends**

- Environmental business markets, both at home and abroad, are promising fields for construction companies. It is expected that the share of environmental

business in the total workload of major construction companies will continue to grow (Graph).

- The ESCO (Energy Service Company) project that offers comprehensive energy-saving services and tools such as CASBEE (Comprehensive Assessment System for Building Environmental Efficiency) are examples of businesses and systems to reduce the environmental burden. They may become more popular and offer new business opportunities as society becomes more aware of the need to increase energy efficiency throughout the life of the building and decrease the amount of emissions and waste.

Market size forecast for the environment business according to construction companies

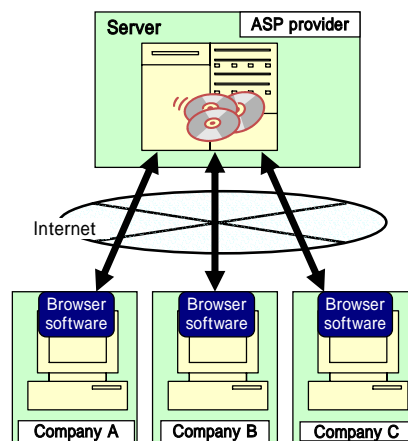


2.6 ASP for the construction industry Now and in the future

- The ASP (Application Service Provider) offers various computer-based services over the Internet. It has benefits for both the users and the providers. The users can reduce time and money spent on system management. ASPs can save application development and operating costs.
- The first ASP “boom” around 2000 quickly ended. Recent improvements in information, infrastructure, however, may revive ASP.
- Groupware that helps information sharing by users involved in single project, and ASPs supporting e-commerce are becoming popular.
- The diffusion of ASPs in the construction industry will depend on ASPs being “quick and easy to use” and “inexpensive.” Third-party providers should develop improved applications.

● Outline of ASP

- The ASP (Application Service Provider) offers computer-based services to users over the Internet.
- ASPs speed up the process of application introduction and reduce time and money needed manage the system. ASP providers can save development and operating costs of the application.
- The ASP business started in the United States around 2000. The initial boom could not attract customers and quickly ended because the software was not sufficiently developed to utilize the power of the web and line-use charges were still very high. Because of the rapid improvement in information infrastructure in recent years, ASP is again drawing attention.



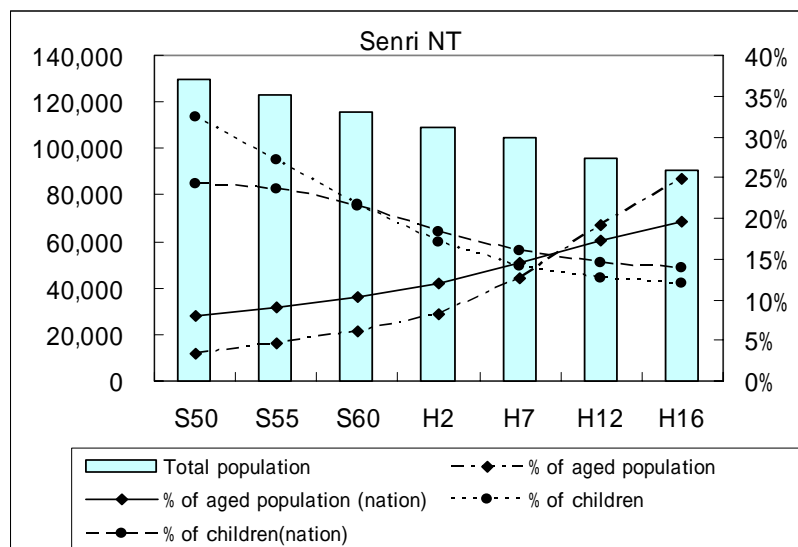
- **Use of ASPs by construction businesses**
 - ASPs support information sharing and collaboration. The use of groupware developed specifically for the construction business is not expanding along with shrinking public works spending. More generic, basic and inexpensive groupware is becoming popular.
 - ASPs supporting e-commerce are rapidly gaining support among major general contractors. Services linking different ASPs have begun.
 - ASPs providing technical software enable users to share and use expensive software. At present the “rental method” is widely used where only user accreditation is carried out on the Internet.
- **ASPs in the construction industry—Present and future**
 - The construction industry has become more comfortable using ASPs as the IT literacy of society has increased. User-friendly, easy-and-quick-to-operate, and inexpensive services are required.
 - ASPs can play an important role by acting as third parties among contractors and subcontractors involved in the construction project. The applications that they develop should be of better quality, security and reliability.
 - Some promising ASP services for the construction industry are e-commerce and collaboration. Evolution of ASP businesses is expected to make ASPs more multi-functional and integrated.

Chapter 3 Cities, Houses and Disaster Preparedness

3.1 “New town” regeneration – Issues and prospects

- The “new towns,” built all over Japan during the period of high economic growth thirty to forty years ago to alleviate crowded urban housing conditions, are facing a new reality. Japan has changed. Birthrates have plummeted while the proportion of elderly in the population has shot upwards. The original “new town” houses and their accompanying infrastructure are aging and become obsolete, leading to numerous problems. In fact, some writers have unkindly renamed these housing projects of yesteryear the “old towns.”
- The current issue of the Report points out issues related to new towns, and examines ways to effectively utilize and regenerate this older housing stock so that it will not become a burden left over from the past.

- **The background to the construction of the new towns of Japan**
 - The postwar period of rapid economic growth encouraged large numbers of workers to move to the metropolitan regions of Japan, leading to overcrowding in the cities and tremendous difficulty in obtaining housing. To overcome these problems, local governments and public agencies organized the construction of large-scale housing developments in various parts of the country to provide additional housing to meet the needs of the rapidly growing populations of urban workers.
- **New towns in today’s world**
 - Thirty to forty years have passed since most of the new towns were constructed. The houses and their communal facilities have aged and are becoming run-down. Some new towns are experiencing a rising number of vacant houses. The time for renewal has come. The fact that so many families of a similar demographic moved into the new towns en masse when they were first built has meant that the new town populations now have a high proportion of senior citizens and very few children. In Senri New Town, the elderly accounted for over 25% of the population in 2005. The average age of the residents is rapidly increasing. A similar pattern is expected to occur in other new towns across Japan.



- **Regenerating Senri New Town**
 - **Senri, Japan’s first “new town,” was developed by the Osaka Prefecture back in 1962 to overcome the housing shortage in metropolitan Osaka. Over the years, the fall in birthrate coupled with a rise in the proportion of elderly led to a decline in Senri New Town’s population. At the same time, the buildings and communal facilities have grown old and outmoded, creating a serious gap between what the new town has to offer and the needs of the residents.**

- **Examples of housing development regeneration around the world**
 - **Examples of community regeneration in other countries cannot really be applied to new towns in Japan on account of the differences in terms of society, economic circumstances and personal values. These, however, are excellent examples of attempts to regenerate the community, region or the entire city. In each country they are evaluated as projects successful in bringing out both economic effects and social improvement effects.**

- **Proposals for new town regeneration**
 - **The Report examines the orientation of our new town regeneration focused on “mixed community” and “mixed use.” We propose that in order to promote mixed communities, we need to convert the new towns from “bed towns” where workers came home to sleep, to towns that have multiple functions involving employment, living, and recreation; in other words “universal-design towns” that offer a wide range of functions and services to their residents.**

3.2 Cooperation in coping with regional disasters – Issues and challenges

- In the aftermath of the Niigata Prefecture Chuetsu Earthquake it was clear that disaster countermeasures developed in the wake of the Great Hanshin-Awaji Earthquake brought benefits. On the other hand, the Niigata earthquake highlighted a number of shortcomings and issues surrounding disaster plans that had, until that time, focused on urban regions.
- In addition to the severe financial limitations of both the national government and local governments, the decline in population causing the thinning out of communities, the aging of populations and the fall in the birthrate are sapping the provincial regions of Japan of their vitality. It seems likely that in future it will become more important than ever before for local communities to both help themselves and cooperate with other local communities to deal with regional disasters.
- In this Report we introduce examples of the steps that local governments, businesses and communities have taken to prevent disasters in the years since the great Hanshin-Awaji Earthquake. We discuss the current level of cooperation to cope with the issues and challenges relating to regional disasters.

- **Disasters highlight a number of problems**

Conventionally, public capital has been put in place in Japan for the prosperity of the nation and to increase the ease of conducting social and economic activities. This public capital is also useful from the perspective of disaster prevention. The redundancy built into the national network of highways meant that immediately after the Niigata Prefecture Chuetsu Earthquake struck, rescue services were able to use the transportation networks.

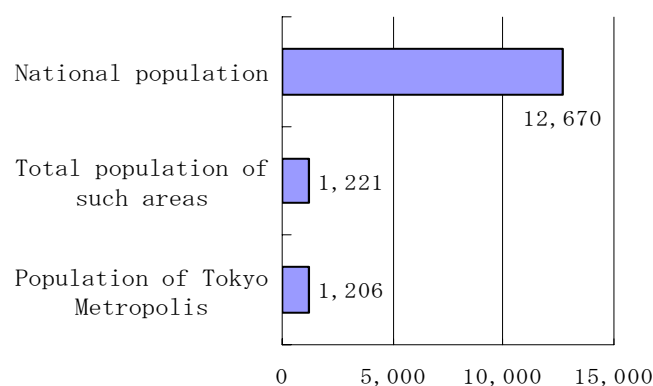
On the other hand, due to funding shortfalls, governments are being forced to reconsider the extent to which they can invest in public capital. Governments now have to look far more closely at the cost/benefit ratio before they make such investments. Roads and other public capital that has a role to play in preparing for disasters will not be excluded from this scrutiny.

Gaps among regions in Japan have become more pronounced in recent years due to the change in economic and industrial structure. People have flocked to Tokyo and other metropolitan centers, resulting in overcrowding. On the other hand, there has been a marked depopulation in provincial cities, mountain villages and fishing villages throughout Japan. This trend has been spurred on by the demographic changes brought about by the falling birthrate and the aging of the population. The number of people

living in communities that could become cut off from the rest of Japan in the event of a natural disaster is greater than the population of Tokyo. Considering that an earthquake or other natural disaster could occur anywhere in Japan, careful consideration to disaster preparedness as well as to the cost/benefit ratio must be made when weighing up public capital investment choices for highways and roads. In future, local communities will have to shoulder a greater responsibility in local disaster preparedness.

**Estimate population of communities in hilly and mountainous areas
in danger of becoming isolated**

(Unit: 10thousand)



- **Examples of efforts by local communities in disaster prevention**

The Great Hanshin-Awaji Earthquake prompted local governments, local communities and businesses across Japan to work on their own programs for disaster prevention. This Report introduces the efforts by Shizuoka Prefecture (a local government), local citizens (Kushimoto Town in Wakayama Prefecture), and some construction companies (four construction groups in Hiratsuka City). It also introduces a new data-sharing project, using GIS and initiated by citizen volunteers, in the wake of the Niigata Prefecture Chuetsu Earthquake.

Chapter 4 Overseas Trends

4.1 Trends in overseas construction markets

- Compared with construction investment in Japan (= 100), the figures in overseas markets are: 211 for the United States, 152 for Western Europe, 8 for Eastern Europe, and 154 for Asia.
- The proportion of GDP spent on construction investment is 10.4% in Japan and 17.7% for the rest of Asia, 8.8% in the United States, 6.1% in Western Europe, and 8.3% in Central and Eastern Europe.
- The United States is expected to spend the largest total amount (1,163.4 billion dollars) on construction investment in 2006, the largest sum in history. US public investment will record a double-digit increase over the corresponding figure of the previous year. Private-sector housing and non-housing investments in the US are also bullish.

Construction markets by country and by region in 2003 (nominal values, converted to trillions of yen)

	Japan ¹ FY2004	United States 2004	Western Europe ² 2004	Eastern Europe ³ 2004	Asia ⁴ 2004
GDP	505.5 (100)	1,269.6 (251.1)	1315.5 (260.2)	53.2 (10.5)	460.4 (91.1)
Construction market	65.0 (100)	—	154.0 (236.9)	5.7 (8.7)	—
Proportion to GDP (%)	12.9	—	11.7	10.6	—
Construction Investment	52.8 (100)	111.2 (210.7)	80.1 (151.8)	4.4 (8.4)	81.4 (154.2)
Proportion to GDP (%)	10.4	8.8	6.1	8.3	17.7

(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 China is as of 2003, and for The Philippines, Taiwan and Thailand is as of 2000, and for Vietnam are as of 1998. The amount of orders received for construction work is used instead of construction investment amount for Malaysia.

● Trends in the US economy

Fourth quarter GDP growth in 2005 was 1.6% up on the previous quarter. Personal consumption, responsible for approximately 70% of the GDP figure, grew by 1.2%. Consumer durables plummeted by 16.6%, reversing the 4.1% increase seen in the previous quarter. Although facility investment showed a general bullish tone, housing investment registered a 2.6% increase that was significantly lower than the 7.3% growth of the previous quarter. On the other hand, the forecast for 2006 construction investment in the United States is 1,163.4 billion dollars, the largest amount in history. Public investment rose by 11.3% over the same period of a year earlier due to an increase in civil engineering works. In the housing sector, the number of housing starts in 2005 broke through the two million mark for the first time in 27 years. This figure should be tempered by the slight downward trend in the number of newly constructed or second-hand houses sold in recent months. The 30-year residential mortgages rate stood at 6.25%, and has repeatedly showed slight rises and falls over the last four months. The US unemployment rate is 4.7%, the lowest level in four and a half years. The number of people employed in the construction sector is growing, buoyed by housing construction and reconstruction in the wake of recent hurricanes.

Trends in US construction Investment

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

	1995	2000	2001r	2002	2003	2004	2005r	2006p	Composition ratio
New investment total	557,818	835,279	868,310	876,802	925,069	1,027,738	1,119,764	1,163,427	100.0
	3.5	8.6	4.0	1.0	5.5	11.1	9.0	7.4	
Private-sector	427,885	649,750	662,247	659,651	701,601	798,489	873,068	906,925	78.0
	2.1	8.3	1.9	-0.4	6.4	13.8	9.3	6.3	
Housing	247,351	374,457	388,324	421,912	475,941	563,378	626,219	649,918	55.9
	-4.3	6.8	3.7	8.6	12.8	18.4	11.2	6.5	
Non-housing, etc	180,534	275,293	273,922	237,739	225,660	235,110	246,849	257,007	22.1
	12.5	10.5	-0.5	-13.2	-5.1	4.2	5.0	5.6	
Public works	129,933	185,529	206,063	217,150	223,468	229,250	246,697	256,501	22.0
	8.1	9.3	11.1	5.4	2.9	2.6	7.6	11.3	
Building	N/A	N/A	N/A	129,719	134,022	137,733	144,614	148,959	12.8
	N/A	N/A	N/A	N/A	3.3	2.8	5.0	7.7	
Civil engineering, etc	N/A	N/A	N/A	87,431	89,446	91,517	102,083	107,542	9.2
	N/A	N/A	N/A	N/A	2.3	2.3	11.5	16.7	

Notes:

1. Compiled based on data from the Department of Commerce.
2. (r): revised, (p): preliminary
3. Figures for 2006 are seasonally adjusted figures as of January converted to annual figures.

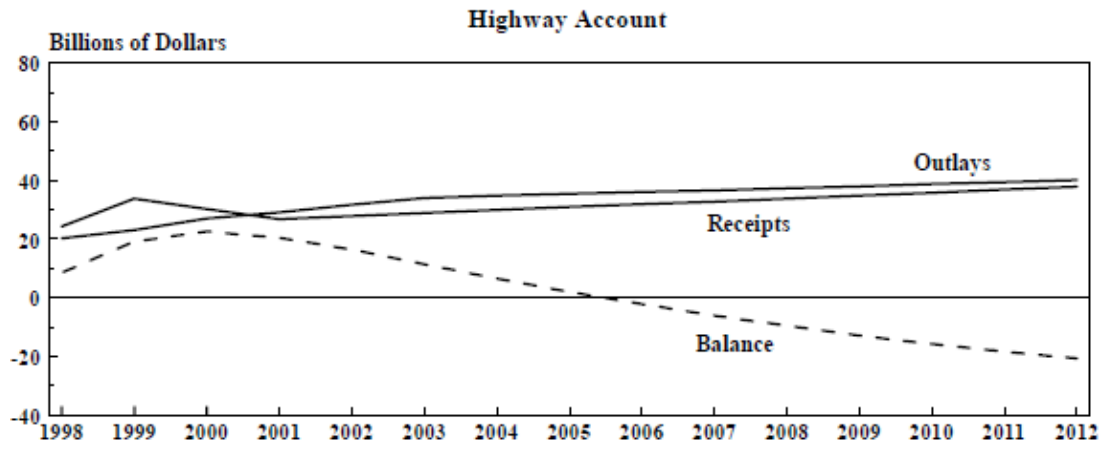
4.2 An example of urban development in London (the London Stock Exchange)

- The City district in London, known to have the highest office rents out of all the world's great cities, has a long history as a financial center. The surge in office rents that began in London in 1994 peaked in 2001 and then began to decline; nevertheless, they took off again in 2004, prompting the redevelopment of the City district. This Report introduces the redevelopment of Paternoster Square, in which the London Stock Exchange is a tenant.

4.3 The passage of the six-year transportation funding bill (SAFETEA-LU)

- After an interval of two years following the expiration of TEA-21 at the end of September 2003, a new 6-year transportation funding bill totaling 286.4 billion dollars (a 31.4% increase over the previous bill) was passed.
- An increase in taxation, which the Bush Administration had warned it would veto, was avoided. On the other hand, the expenditure of the Highway Trust Fund continued to exceed income in order to fund ever-increasing highway project costs. As a result, the Fund is expected to fall into the red in one or two years' time.
- Capital investment for highway expansion and the construction of bypasses is actively underway, to offset the worsening congestion on America's high-speed roads, particularly the interstate highways.
- It is inevitable that the issue of how to secure financial resources for these highway projects be seriously discussed in Congress and within government departments in the near future.
- Highway projects have been made a high political priority, in the election of congressional representatives, governors and other officials. Highways, together with airports, will continue to attract greater portions of budgets compared with other public works including flood control and water resource development.

Estimated income and expenditure of the Highway Trust Fund Highway Account

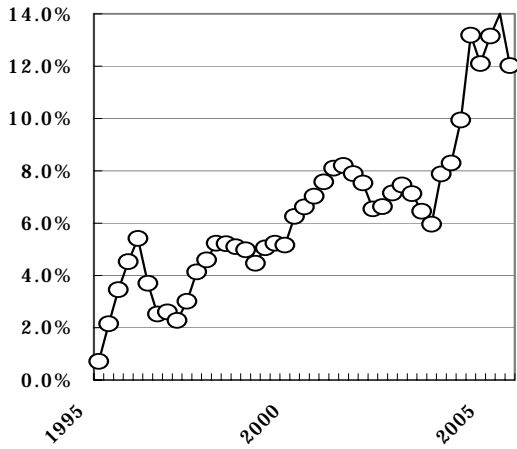


Data from the Congressional Budget Office

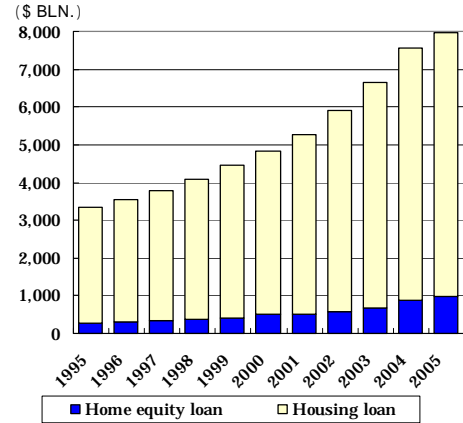
4.4 The US housing bubble and excessive liquidity

- House prices in the United States have risen by 55.3% in the last five years, creating an unprecedented housing boom.
- In the past decade, the total value of housing resources that make up household wealth has risen from 8.8 trillion dollars to 20 trillion dollars, and has increased as a percentage of total household wealth from 26.8% to 32.9%. Total debts have leapt from 5 trillion dollars to 11 trillion dollars, and the total of outstanding housing loans has swollen from 3.3 trillion dollars to 8 trillion dollars. When private-sector housing construction investment is included, we can see that an enormous amount of funds has been invested in the US housing market.
- Behind this tremendous amount of excessive liquidity in the US housing market is an enormous current balance deficit due to an imbalance in the United States between savings and investment (excessive savings in the private sector; insufficient savings in the government and household sectors). Mr. Ben S. Bernanke, the newly appointed Chairman of the Federal Reserve Bank, has stated that the deteriorating imbalance between savings and investment within the United States is due not only to domestic factors, but also to excessive levels of savings worldwide, which is causing a tidal wave of funds to flow into the US economy.
- Foreign nations hold 2.0348 trillion dollars in US debt. Of this, Japan holds 33.6%, China 11.9% and the UK 7.9%. The UK has recently purchased a large amount of US treasury bonds, of which over half has been so-called “oil money” from the Middle East – derived from the sudden surge in crude oil prices.
- This liquidity (money surplus) accompanying the expansion in purchases of US bonds is expanding. The money supply divided by GDP (the Marshall K value) has rapidly risen since 2000, and is linked to the rise in US house prices.
- A river of money, flooding into the United States due to several factors including: a) excessive levels of saving throughout the world; b) stable, low-level long-term interest rates; and c) rapidly rising crude oil prices, has swelled household consumption and created a housing market bubble. On the other hand, when we look at estimated future demand for funds in the business, government and household sectors, we see that the housing market alone will not cause excess liquidity – as has been the case up until now.
- From 2006 onwards, demand for funding in both the public and private sectors is expected to greatly increase for a variety of reasons. These include demand for funding for recovery from hurricane damage, a gradual increase in facility investment, an increase in public infrastructure investment (chiefly the six-year transportation funding bill) and measures to bolster social security. On the other hand, personal consumption in the household sector will stall, slowing the growth in funding demand; moreover, concern over rising interest rates will cause the flow of surplus funds that has hitherto been directed towards housing to be gradually redirected towards other sectors of the economy. The housing boom, which many have regarded as an aberration, is predicted to be nearing its end.

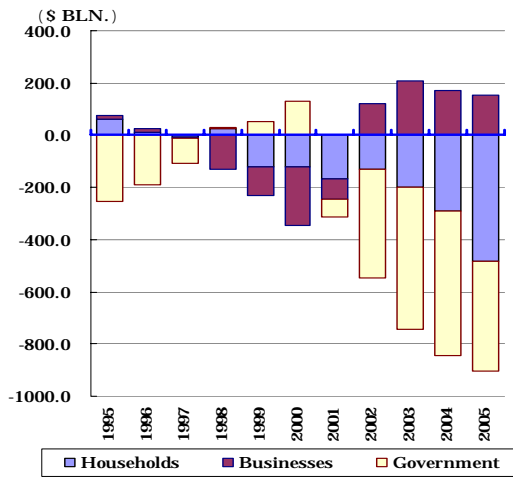
Housing price increase rate



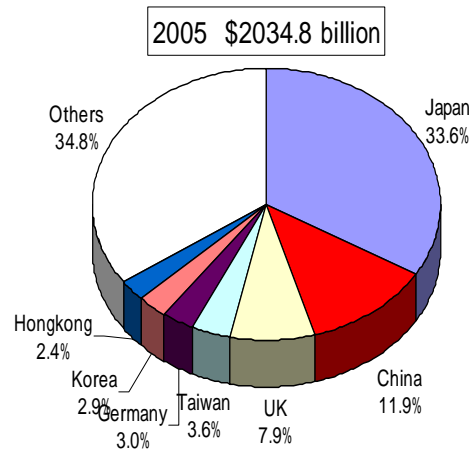
Balance of housing loans



Saving/investment balance by sector



Balance of US treasury notes held



Marshall's K and housing price

