

## Future Prospects for Public Works

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### Outlook for Public Works in Japan

#### (1) Current state of public works

Japan's social overhead capital (SOP) has steadily grown after the war. To date, ¥70 trillion is invested annually by the public and private sectors in construction projects (civil engineering and building). Of this amount, public sector investments exceed ¥50 trillion (doubling over the past decade from ¥25 trillion in 1985).

This is a higher level of investment than is found in the advanced countries of the West (Figs. 1-3).

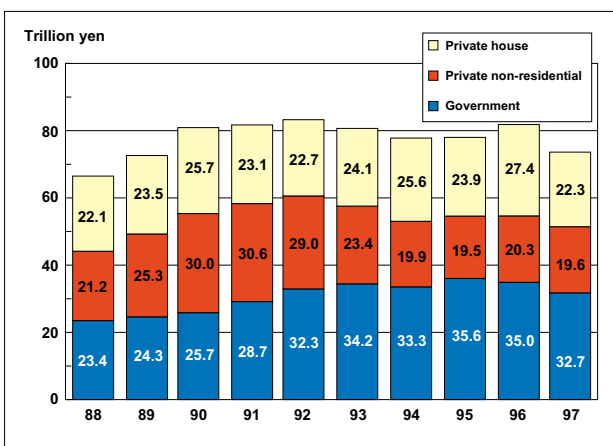


Fig. 1 Trends in investment in construction projects (civil engineering and building)

#### (2) Forecast for 2010

Japan has a considerable appetite for SOP and still needs further improvements in its infrastructure. Therefore it is essential to continue to press ahead with infrastructure development until a given level has been reached.

To this end, the government has established a public investment master plan (to be revised after financial structural reform is implemented), which states that public investment will continue at an annual level of ¥48 trillion until 2007.

From this, it can be predicted that public investment will continue to be carried out at an annual level of ¥50 trillion, as it is at present, until 2010.

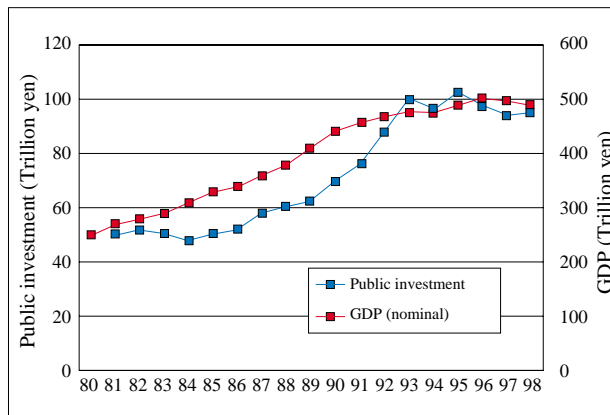


Fig. 2 Trends in public investment and GDP

#### (3) Forecast between 2010 and 2020

a) The government's goals for financial structural reform are:

- the ratio of the budget deficit to GDP will be 3% and there will be no issues of deficit-covering bonds; and
- the budget for public investment will be reduced by 7% each year.

Assuming that the budget declines by 7%, the amount of investment in 2010 is expected to be half the current figure, or ¥25 trillion, and then one-fourth of that, or ¥13 trillion, in 2020. With this budget, even the growing cost of maintaining and renovating the infrastructure will not be covered.

At present, the financial structural reform bill is on the shelf as priority is being placed on economic recovery.

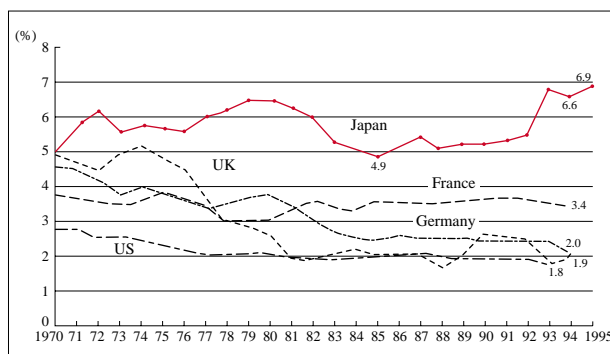


Fig. 3 Ratio of government's fixed capital formation (Ig) to GDP

b) Japan will face a major demographic change in the near future. The total population is expected to reach a peak in 2007 before entering into a long-term decline. Accordingly, the population of working citizens will suffer a rapid fall, from nearly 90,000,000 at present, down to 60,000,000 in 2050. At the same time, the population of the elderly is expected to rise to 32% of the total population in 2050 (Fig. 4). Naturally, an increase in social security expenditures will be inevitable in the future.

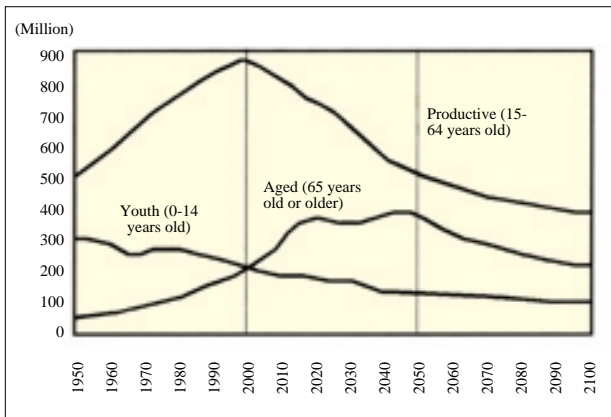


Fig. 4 Trends in population; three age groups

c) Considering the situation described above, basic infrastructure development should continue at as high a level as possible until the early 21st century, while the budget can still absorb relatively generous public works spending. In the near future, however, the government must adopt a more quality-oriented approach to public works investment.

#### (4) 2020 onwards

Maintenance and renovation costs for infrastructure were over ¥3 trillion in FY1980 and over ¥4 trillion in FY1990. It is expected to exceed ¥20 trillion in 2010, which means that there will be little money to spare for new investment in public works.

From the forecasts above, prospects for public works can be boldly presented as follows (Fig. 5).

##### a) Public investment at present

Investment amount: over ¥50 trillion

##### b) Up to 2010

Given that the current level of investment is likely to continue, investment is estimated to be ¥500-600 trillion = ¥50 trillion odd x 10 years odd.

Rationale:

- 1) Japan will still need more SOP.
- 2) Infrastructure development for the coming aged

society is urgent need.

- 3) Radical changes in government policy are not likely.

##### c) 2010-2020

It is inevitable that investment will show a downward trend. Around ¥30 trillion x 10 years = around ¥300 trillion.

Rationale:

- 1) Financial difficulties will worsen.
- 2) Further increases in the elderly population will boost costs for social security.
- 3) A comparative study was made of advanced countries in the West.

##### d) 2020 onwards

Little money will be available for new investment.

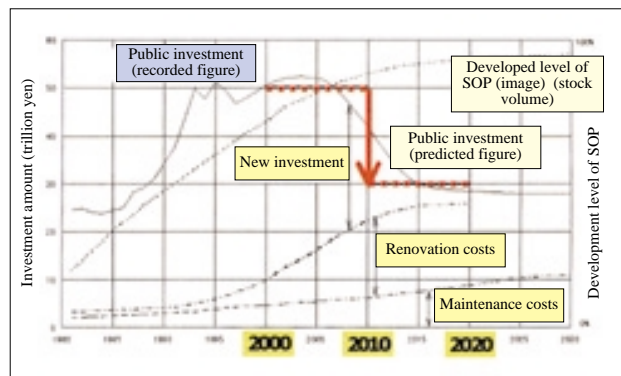


Fig. 5 Long-term forecast for public investment

## Outlook for Overseas Projects

Allied to domestic public works, the situation for overseas construction projects is described below:

- a) Japan launched construction projects overseas in 1954 as part of its war reparations. Works began on a commercial level in late 1950's and it boosted the number of overseas projects. Investment totaled over ¥1 trillion in FY1983. After that, investment declined due to the appreciation of yen and the collapse of Japan's "bubble" economy, but bounced back to hit a record high of ¥1.6 trillion in FY1996. However, affected by the Asian economic crisis, it was down 20% from the previous year, to ¥1.3 trillion in FY1997.
- b) Major local markets for investment were: the Middle East in the late 1970's (oil plants and expressways); North America, Europe, and the Pacific region in FY1983-FY1990 (hotels, office buildings, and resort projects, against the backdrop of the "bubble" economy); and Asia in and after FY1988 (private buildings and infrastructure development) (Fig. 6).

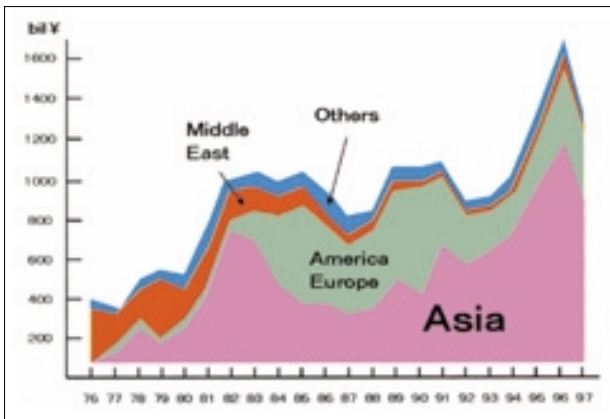


Fig. 6 Records of orders received for overseas construction projects

c) However, the ratio of Japanese overseas projects to the total orders received is very small compared with the total received by Western contractors.

d) In the meantime, the Japanese government has contributed a great amount of international aid.

With bilateral ODA (grant aid, technical cooperation, government loans, and grants) totaling \$9.4 billion (0.2% of GDP), Japan is the greatest donor in the world. Aids for economic infrastructure development is particularly high (Fig. 7).

e) As globalization and world population growth are likely to continue, countries have placed their hopes in infrastructure development - both facilities and services - in order to facilitate international exchanges, as well as to help stabilize the lives of their citizens. Thus, both donor and recipient countries need aid for residential and industrial infrastructure. It is therefore desirable for Japan, as a member of the international community, to continue offering considerable sums of assistance in selected fields even though she is likely to suffer greater financial difficulties as a result.

f) Japan's overseas construction business is unique in that most of it relies on government-funded ODA or is related to sectors in which other Japanese industries are involved. This should be noted.

From the above, the situation regarding overseas operations can be summarized as follows:

a) The construction industry has enjoyed growth in the number of orders received for overseas projects although it has been affected by the yen exchange rate. However, the ratio of the amount for overseas projects

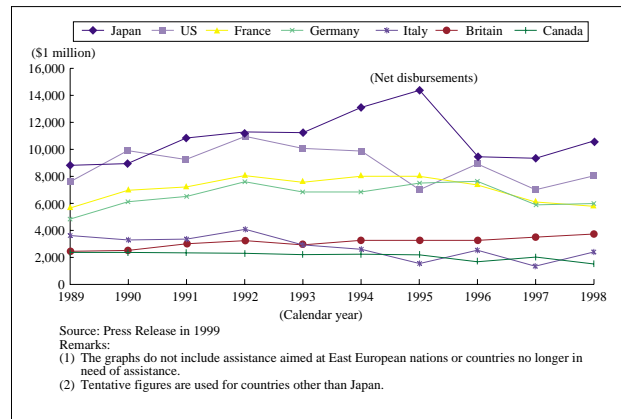


Fig. 7 ODA by major DAC countries

to the total amount of orders is considerably lower than that of Western contractors.

b) In contrast, Japan is the No. 1 provider of bilateral ODA, which totals 0.2% of the GNP. It is predicted that Japan will continue to offer large-scale aid in response to further globalization and as one of its contributions to the international community.

c) Japan's overseas construction business is unique in that most of it relies on government-funded ODA or is related to the sectors in which other Japanese industries are involved. Due to this, an increase in orders may be likely in the Asian region for which considerable growth in investment in construction projects is expected.

### Postscript:

Oowadanotomari is a port that was restored by the ancient samurai general, Tairano Kiyomori through an offering of human sacrifices to the gods. Today, the port is survived as present Kobe Port. On the contrary, only a shadow of the past is Wagaejima. It was established on the coast at Yuigahama by the medieval Shogun, Minamoto Yoritomo who expelled Kiyomori.

“Social overhead capital” is a necessity of any era and will continue to be necessary for as long as there are people, and it may be meaningless to evaluate “public investment” by the “monetary value” of the time. This paper does not discuss concrete approaches that must be taken in order to establish new ports in the new century. However, it should be kept in mind that we civil engineers are involved in the future of this country. Taking an optimistic view must be avoided.