

# NOMURA

## Impact of Tohoku Pacific Offshore Earthquake

March 14, 2011

### **1 . Impact on the real economy**

Although it is difficult to quantify the aggregate damage to the economy at this stage, it is likely to exceed the figure of JPY5 to 10 trillion estimated at the time of the Great Hanshin-Awaji Earthquake (commonly known as the “Kobe earthquake”, Kobe is located in Hyogo prefecture of western Japan) on January 17<sup>th</sup>, 1995.

Social capital stock, i.e. transport, power and other infrastructure, within the three worst affected prefectures of the Tohoku region (Iwate, Miyagi and Fukushima) was estimated to be JPY29 trillion as of 1998, according to Professor Doi of Keio University. Taking into account the upgrading and completion of additional infrastructure since then, the social capital stock is estimated to be valued at more than JPY30 trillion before the latest earthquake and tsunami.

Private capital stock, held by the private sector, i.e. housing, commercial property, offices and factories, in these three prefectures has an estimated value of approximately JPY40 trillion, according to the NLI Research Institute. As such, capital stock of both the public (social) and private sectors combined is estimated to be as much as JPY70 trillion.

At the time of the Kobe earthquake, the proportion of damage relative to the capital stock of Hyogo prefecture was approximately 10%. This time, assuming the proportional damage reaches 20% to 30% relative to the capital stock, the estimated economic damage amounts to somewhere between JPY14 and 21 trillion(USD 180 to 260 billion), which is around 4% of Japan’s annual gross domestic product (GDP).

Damage to capital stock will affect fiscal spending for reconstruction, and fiscal spending to cover these damages will be necessary over a number of years. Overall damage to capital stock is expected to exceed that of the 1995 Kobe earthquake.

(Chart-1)

**The Tohoku District 3 Prefectures Nominal GDP, Populations, Employees, and Social Capital Stock (Estimated)**

FY2007	Nominal GDP of Prefecture		Total Population		Employees		Social Capital Stock (1998)	
	(Billion yen)	(Proportion)	(-1,000)	(Proportion)	(-1,000)	(Proportion)	(Billion yen)	(Proportion)
TOTAL	20,713	4.0%	5,778	4.5%	2,889	4.6%	29,147	5.7%
Iwate	4,544	0.9%	1,364	1.1%	737	1.2%	8,817	1.7%
Miyagi	8,286	1.6%	2,347	1.8%	1,135	1.8%	10,700	2.1%
Fukushima	7,883	1.5%	2,067	1.6%	1,017	1.6%	9,630	1.9%
Reference Sendai	4,278	0.8%	1,029	0.8%	513	0.8%		

× Social capital stock are estimated base, price of 1990.

(Source) Cabinet Office, Government of Japan, The Mitsubishi Economic Research Institute.

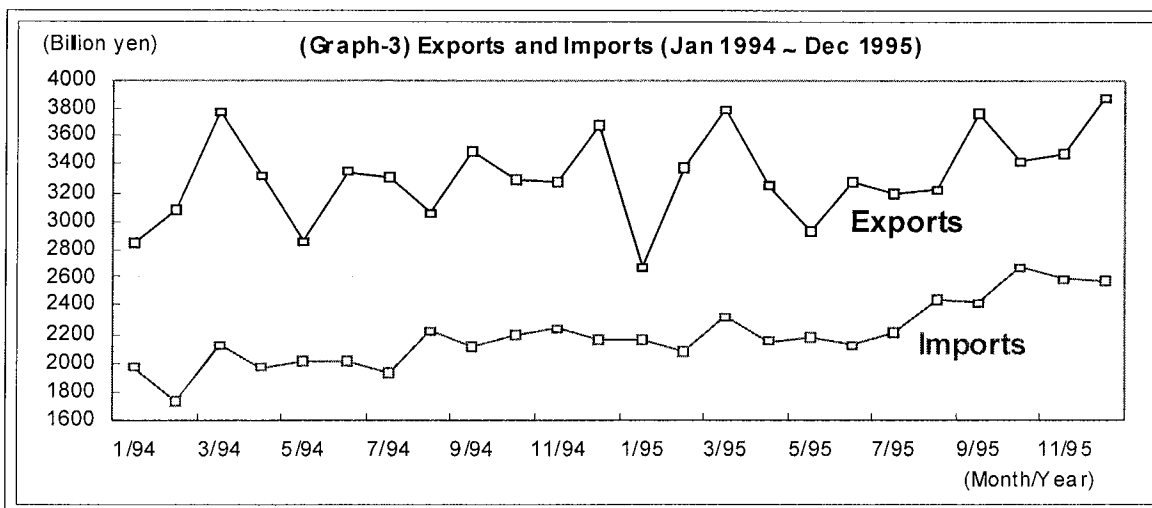
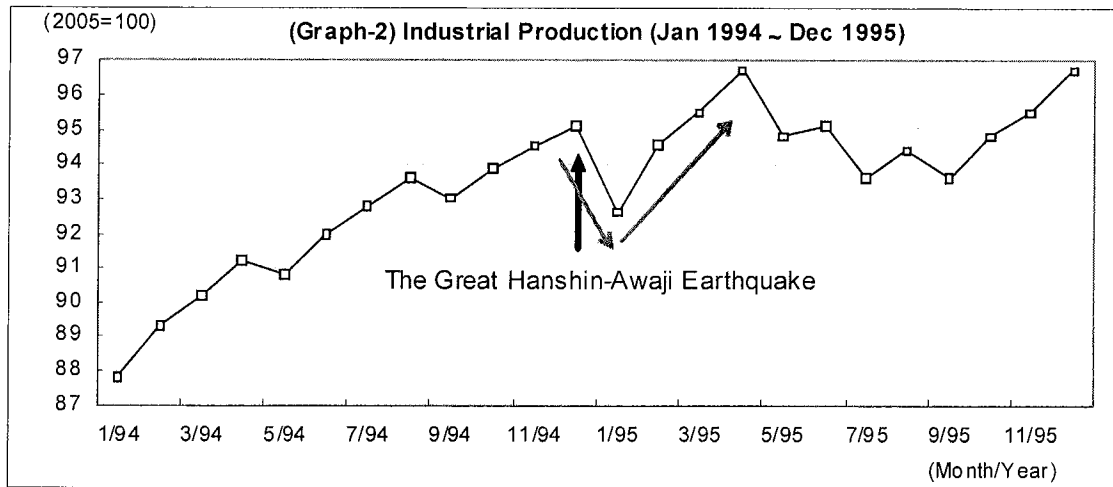
Prepared by Nomura Asset Management Co., Ltd.

The damage to ongoing economic activity such as production is another concern. However, the share of the three prefectures combined relative to the entire GDP of Japan is 3.98%, which is smaller than the 4.18% of Hyogo prefecture (where Kobe is located) and 8.28% of Osaka in fiscal year (FY)1993. The combined share of economic activity for Osaka and Hyogo prefecture declined to 12.05% in FY1994 (ending March 1995) from FY1993. The decline in FY1994 was attributed to the Kobe earthquake, but the regional share of GDP then recovered to 12.23% during the following fiscal year, FY1995.

In January 1995 (when the Kobe earthquake occurred), industrial production declined by 2.6% compared with the previous month. However, it rose by 2.2% in the following February (refer to Graph-2). In January 1995, exports declined by 27.4%, followed by a sharp rebound of 26.7% in February (refer to Graph-3). Since Kobe is a prominent port city, the impact on exports was significant, but the decline in export activity was not prolonged.

On this occasion, the decline in gross production of each of the three prefectures (Iwate, Miyagi and Fukushima) is expected to be significant. However, the aggregate production output of the three prefectures does not account for a large portion of Japan's GDP. In addition, there are no prominent ports located there such as Kobe. Therefore, the impact on nationwide production, logistics, and transportation systems is unlikely to exceed that of the Kobe earthquake. Nevertheless, damage to capital stock will be greater and subsequent reconstruction demand is likely to exceed that seen in the aftermath of the Kobe earthquake.

We still need to monitor closely the economic impact of a drop in electric power output. The economic impact will depend on how long it takes for electricity supplies to recover and how measures such as energy-saving and a shift in production to the western part of Japan will be able to support economic activity.



Source: Nomura Asset Management Co., Ltd.

## 2 . Impact on stock market and currency

As the earthquake occurred just a few minutes before the close of the Tokyo Stock Exchange on March 11<sup>th</sup>; the closing price on Friday does not seem to fully reflect the impact of the earthquake. Although there was a sharp decline in the Nikkei 225 futures after the close of the Japanese stock market, the impact on global equity markets seems to have been limited, as the European markets declined slightly and US markets appreciated on March 11<sup>th</sup>.

In the foreign exchange market, the Japanese yen appreciated against the U.S. Dollar to 83JPY soon after the earthquake on March 11<sup>th</sup>. The yen appreciated further to 81JPY against the U.S. Dollar on the view that Japanese investors will repatriate funds to Japan. The Bank of Japan has assured an ample supply of liquidity and this will help to restrain the appreciation of the yen.

## NOMURA

Japanese stock prices experienced an extended downturn towards June 1995, but this was primarily due to the sharp appreciation of the yen against the U.S. Dollar to a record high of around 80JPY, rather than the impact of The Great Hanshin-Awaji Earthquake. The yen's

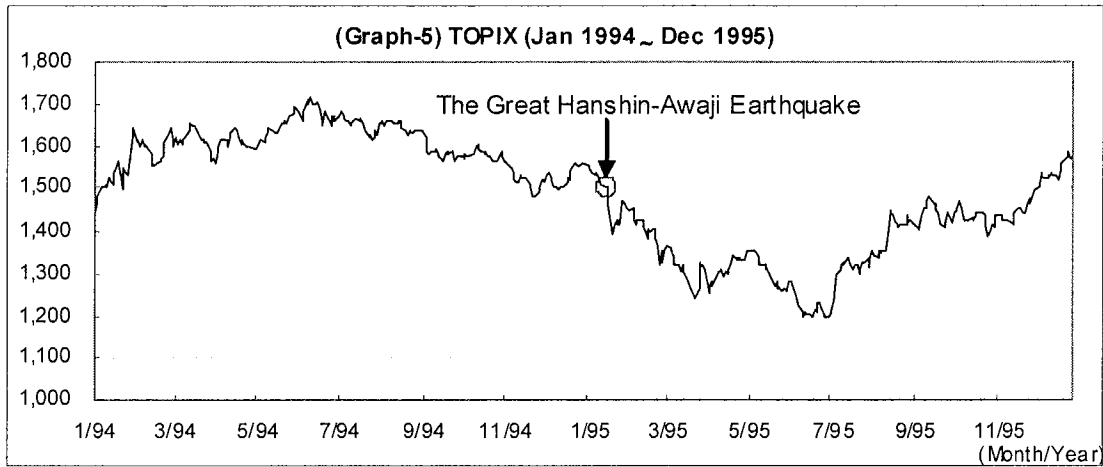
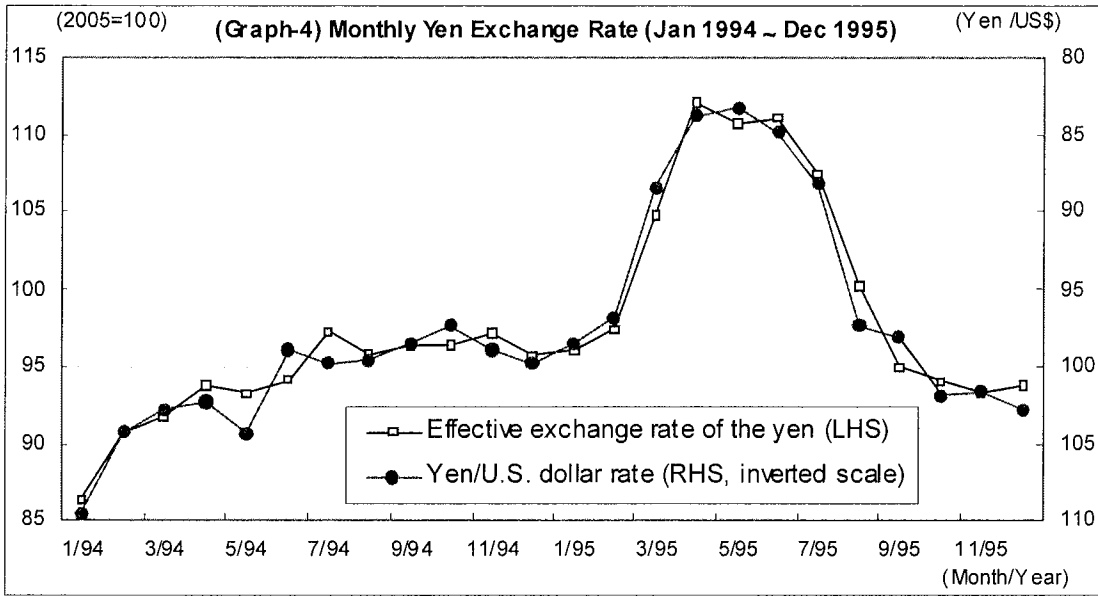
appreciation began in 1994 and the market had begun its downward trend in June 1994 (refer to Graph-4 and 5).

The impact on the Japanese stock market is expected to be limited this time, unless there is a sharp appreciation of the yen. Compared with the situation in 1995, valuations of Japanese companies are much more attractive. Free Cash Flow of Japanese companies, while negative in 1995, is currently not only positive but is at an historical high. These factors should provide some support for the Japanese equity market.

In the fixed income markets, government bond issuance is likely to rise as public spending is boosted for the reconstruction effort. For the private sector, companies will increase capital expenditure and housing construction is expected to increase. The effect on interest rate levels will be watched closely.

If the overall damage is close to the estimated figure of JPY20 trillion (USD 250 billion), additional capital demand is likely to be less than JPY 10 trillion per year. As stated earlier, the Bank of Japan has assured the markets of ample liquidity and therefore a sharp rise in interest rates is likely to be avoided.

In 1995, the markets were temporarily oversold due to the shocking images from the media and reports of the expanding impact of the earthquake. However, this time, the transportation networks in the metropolitan area have mostly been restored and the financial markets are functioning as normal on Monday, March 14<sup>th</sup>. We hope investors can remain calm and not be swayed too much by the limited information.



Source: Nomura Asset Management Co., Ltd.

Past performance is not indicative of future results.

## Disclosures

Nomura Asset Management U.S.A. Inc. is a wholly owned subsidiary of Nomura Asset Management Co., Ltd. Nomura Asset Management Co., Ltd. and its investment advisory subsidiaries are referred to collectively as Nomura Asset Management or the NAM Companies. Nomura Asset Management provides asset management services in jurisdictions around the world. The services of a particular NAM Company may not be available to investors in certain jurisdictions.

This material is not intended to be, nor should it be relied upon as, investment advice. Information used to compile this report has been obtained by sources deemed to be reliable, but its accuracy and completeness are not guaranteed. Any information contained herein for which a source other than a NAM Company is cited is not warranted by Nomura Asset Management to be accurate. Portfolio holdings, country weightings and sector allocations may not be representative of an account's current or future investments and are subject to change at any time due to the ongoing management of an account. Any securities, industries or sectors discussed should not be perceived as investment recommendations.

It should not be assumed that any securities transactions discussed was or will be prove to be profitable, or that any investment made by Nomura Asset Management in the future will prove to be profitable or will equal the investment performance of any security transaction discussed herein.

The views and estimates expressed in this material represent the opinions of Nomura Asset Management and are subject to change without notice and are not intended as a forecast or guarantee of future results. Such opinions are statements of financial market trends based on current market conditions. The views and strategies described may not be suitable for all investors. This material has been prepared for informational purposes only, and is not intended to provided, and should not be relied upon as legal or tax advice.

Foreign investments involve special risks including economic, political and currency fluctuation risks, which may be greater in emerging markets. International markets may be less liquid and can be more volatile than US markets. Small and mid-cap stocks are subject to greater volatility and may be less liquid than stocks of larger, more established companies. Healthcare companies may be significantly affected by government regulations and government approvals of products and services, legislation or regulatory changes. Technology stocks may be more volatile than the overall stock market.

## **NOMURA**

The historical performance of each index cited herein is provided to illustrate market trends. It is not possible to invest directly in an index.

This document may not be reproduced or distributed without the prior authorization of Nomura Asset Management U.S.A. Inc. Any reproduction or distribution of its contents may constitute a violation of United States Federal and State securities laws.

The Tokyo Stock Exchange Price Index (TOPIX) is an unmanaged capitalization weighted measure of all shares listed on the first section of the Tokyo Stock Exchange.

One cannot invest directly in an index.

NOMURA