

Equities

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Eastern Japan Earthquake: Strategy

Construction and real estate to outperform near-term

■ Equities

- **Potential market reaction** — The earthquake that struck Japan's eastern seaboard last Friday recorded 9.0 in magnitude and was also the most powerful felt in Tokyo in decades. This was followed by a devastating tsunami that hit the east coast of Japan around Sendai. Whilst it is still impossible to come to terms with the scale of destruction and tragic loss of life, this note attempts to look at the likely economic impact and reaction of the stock market in part based on an analysis of the events that followed the Great Hanshin earthquake of 1995. Although there are key differences, which we discuss inside, we believe that investors are likely to take a risk-averse stance, especially in light of the worrying secondary effect and developments at TEPCO's Fukushima nuclear power plant.
- **Difference between this and the Great Hanshin earthquake** — The potential impact from the situation at TEPCO's nuclear power plant is the biggest difference between this earthquake and the Great Hanshin earthquake. There is a chance that a meltdown will occur at the plant in Fukushima. A reduction in power supply would of course severely impact Japan's economic activity. There is also the likelihood that concerns over the safety of nuclear power will cause global construction of nuclear plants to decline. Inevitably this will impact companies that were expecting earnings from nuclear power-related businesses.
- **Large negative economic impact over the near-term** — We believe the earthquake will push down March/April IP by 1-2% and thus the near-term negative impact on economic activity will be great. We estimate total damages to structures at ¥5-10trn, close to that caused by the Great Hanshin earthquake. The disruption in power will be a drag on economic activity and may have more lasting impact on production than in 1995. However, reconstruction demand should materialize in H2 2011, pushing up GDP. As a result, we estimate the net impact on GDP growth in 2011 at +0.2%-0.3% points.
- **Construction and real estate should outperform** — By sector, construction continued to outperform TOPIX through the entire year following the Great Hanshin earthquake. We believe this was due to expectations for demand for the rebuilding of infrastructure damaged by the earthquake. Also, demand-related stocks and defensive stocks outperformed high-tech and cyclical stocks during this period, and we expect this pattern to repeat this time as well.

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Lessons from the Great Hanshin earthquake

Differences but the outcome may be the same

While there are key differences between the Eastern Japan earthquake and the Great Hanshin earthquake of 1995, notably the chance of a nuclear reactor meltdown and potential for a medium-term reduction in power supply, we think it would be beneficial to review how the market reacted in the aftermath of the Great Hanshin earthquake.

We draw three conclusions from the Great Hanshin earthquake.

1. A short-term drop in Japanese equity prices is unavoidable. Depending on the actual damage from the earthquake and level of government support, investors should avoid risk assets in this period of great uncertainty.
2. We believe the construction sector will perform well on expectations of demand for infrastructure reconstruction, and that the insurance sector will underperform on concerns that insurance payouts will cause earnings to deteriorate. Depending on the JPY/USD rate, we think it is likely that high-tech and cyclical stocks will underperform domestic demand-related stocks.
3. From a style perspective, we believe investing in 'Value' stocks is an effective strategy.

Market trends following the Great Hanshin earthquake

Investors went risk-averse in 1995

TOPIX trended lower after Great Hanshin earthquake struck on January 17, 1995, and we believe this was due to the expected negative impact on the real economy as well as investors losing their appetite for risk. As we will discuss later, the shares of high-risk (beta, volatility) companies performed poorly immediately following the earthquake (see figure 5)

Scale of the decline in 1995

From January 16, 1995, the day before the earthquake struck, to June 13, roughly five months after the earthquake, TOPIX fell by 21%. The market bounced back from there, and returned to its previous level on December 7, roughly 11 months later.

Construction performed well...but mainly in first month

Looking at performance by sector, the construction sector continued to outperform TOPIX for the entire year following the Great Hanshin earthquake (see figure 2). We believe this was due to expectations for demand for the rebuilding of infrastructure that was damaged by the earthquake (see figure 3). The level of outperformance peaked in the one month following the earthquake, and narrowed after that.

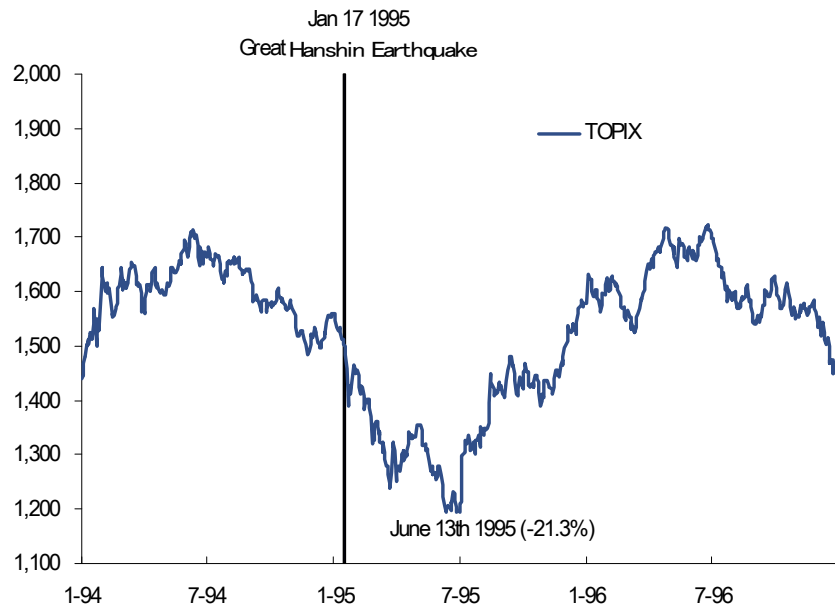
Domestic demand-related and defensive sectors also did well; insurance did badly

In the first month following the Great Hanshin earthquake, domestic demand-related and defensive sectors, driven by the construction, real estate, and medical product industries, outperformed high-tech and cyclical sectors. We think this move was partly due to higher yen following the earthquake (see figure 4). Concerns about the impact of insurance payouts due to the earthquake also caused the insurance sector to underperform TOPIX over the short term.

'Value' acted defensively

Of the six equity investment styles in our Quantitative Style Indices for Japanese Equities (Size, Value, Growth, Risk, Momentum and Quality), Value was the style that consistently had the highest relative performance in the one-year period following the earthquake. For more details on our Quantitative Style Indices for Japanese Equities, please see our September 10 report ([Introducing Quantitative Style Indices for Japanese Equities](#)). We believe investing in Value stocks is a particularly effective strategy in times of high uncertainty.

Figure 1. Great Hanshin Earthquake and Topix



Source: Bloomberg, Citi Investment Research and Analysis

Construction sector outperform TOPIX
immediately after earthquake, insurance
underperform

Domestic demand-related and defensive
sectors outperformed high-tech and
cyclical sectors.

Figure 2. Sector performance after Great Hanshin Earthquake

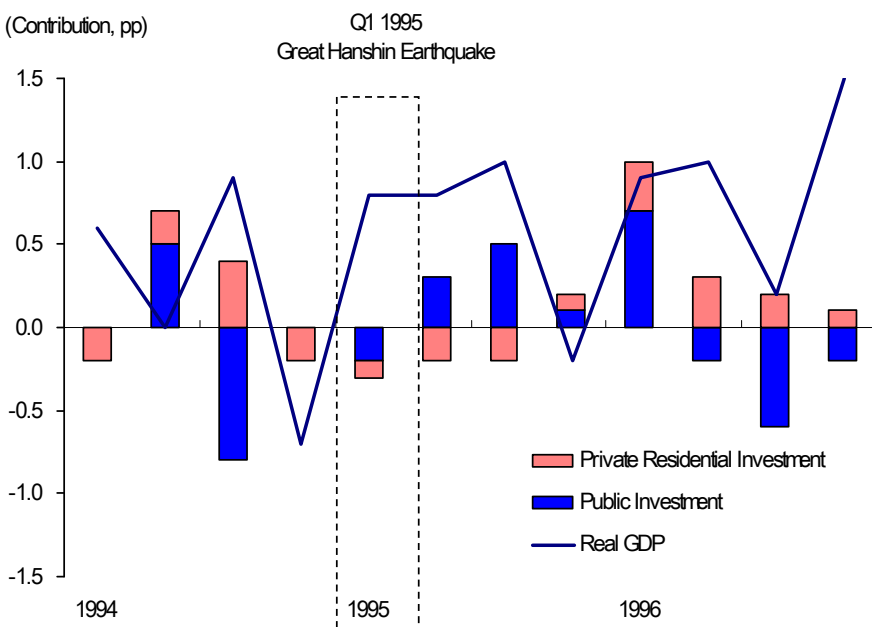
		Jan 17 1995	1wk Jan 23 1995	1 mo Feb 17 1995	3mo Apr 17 1995	6mo Jul 17 1995	12m Jan 17 1996
	TOPIX	-0.6	-8.0	-7.4	-13.8	-11.6	6.2
H i g h	Electric Appliances	-0.3	-1.7	-5.7	-2.0	3.5	2.4
	Transportation Equipment	0.2	-0.4	-5.1	-5.2	-3.8	1.0
	Information & Communication	0.1	-2.3	-8.1	1.2	0.8	-10.0
	Machinery	0.0	-0.7	-3.5	-7.0	-7.0	-2.2
	Precision Instruments	-0.5	0.4	-2.7	-2.7	5.4	17.0
C y c l i c	Chemicals	-0.2	0.2	-1.3	0.3	-2.2	1.7
	Wholesale Trade	0.2	-1.0	-6.3	-4.2	-4.7	-1.6
	Iron & Steel	-0.6	0.1	0.1	2.0	-6.6	-5.0
	Nonferrous Metals	-0.8	-0.2	-3.2	-5.4	-7.9	-6.5
	Glass & Ceramics Products	1.2	4.8	3.5	0.9	-2.8	-4.0
s a l e	Textiles & Apparels	-0.2	-1.3	-0.3	-2.1	-6.2	-5.2
	Oil & Coal Products	0.4	1.1	2.7	1.9	-1.2	-12.2
	Rubber Products	0.0	-3.8	-5.3	-1.7	-3.4	-3.2
	Marine Transportation	-0.0	-2.4	-2.9	-6.3	-11.4	-13.1
	Pulp & Paper	0.4	0.3	-4.6	-1.7	-3.5	-6.5
D o m e s t i c	Mining	-0.8	-1.3	3.0	1.6	-4.0	-5.9
	Retail Trade	-0.3	0.2	-6.1	-7.1	-6.9	-0.6
	Land Transportation	-0.0	2.5	1.6	2.5	5.0	3.0
	Real Estate	1.1	0.6	4.3	3.5	8.1	14.2
	Construction	2.7	10.1	14.9	10.4	9.5	6.5
s e r v i c e	Other Products	-0.2	2.1	-0.0	-0.8	-2.4	6.6
	Services	0.5	0.9	-2.5	-3.7	-5.4	2.3
	Metal Products	0.7	4.2	7.9	5.3	1.4	-1.9
	Air Transportation	0.8	4.6	1.4	1.4	1.5	-3.5
	Warehousing & Harbor Transportation Services	-0.0	-1.0	-1.4	-2.6	-5.1	-4.1
f i n a n c i a l	Banks	-0.0	-1.4	3.6	1.7	2.3	-1.0
	Other Financing Business	-0.0	-1.4	-2.3	-5.4	-7.3	-2.1
	Securities	-1.4	-2.6	0.2	-3.0	-3.2	13.6
	Insurance	-2.8	-1.7	-1.5	-2.1	-1.5	2.7
	Pharmaceutical	0.2	3.2	2.9	3.0	0.5	0.8
D e f e n s i v e	Electric Power & Gas	-0.1	-1.0	4.5	11.9	8.0	-3.8
	Foods	0.1	1.1	1.9	-0.7	-2.1	-3.7
	Fishery, Agriculture & Forestry	-0.1	0.0	0.1	0.7	-4.2	-8.3

Note : Numbers are relative performance vs TOPIX from January 13, 1995. Top 5 sectors are in Bold and bottom 5 sectors are in Italics.

Source: Citi Investment Research and Analysis

After the earthquake, public investment increased as expected

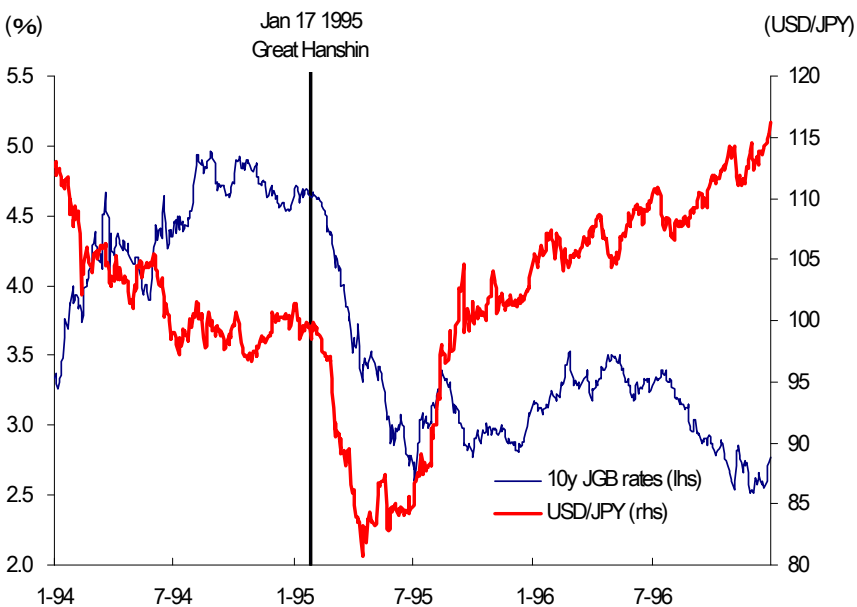
Figure 3. Contribution from Public Investment after Great Hanshin Earthquake



Source: Citi Investment Research and Analysis

After the earthquake, long term interest rate declined and yen appreciated against USD

Figure 4. Long term interest rates and USD/JPY



Source: Bloomberg, Citi Investment Research and Analysis

Value outperformed one year after the earthquake

Figure 5. Style Performance

	Jan 17 1995	1wk Jan 23 1995	1 mo Feb 17 1995	3mo Apr 17 1995	6mo Jul 17 1995	12m Jan 17 1996
Size	-0.1	-0.6	-0.9	1.5	-0.5	-1.6
Value	0.2	0.5	2.1	3.6	7.5	7.5
Growth	-0.1	0.3	-0.5	-0.3	3.5	1.8
Risk	0.0	-0.9	0.7	-1.0	2.0	2.7
Momentum	0.1	-0.5	-1.4	-1.4	-0.2	-1.5

Note: Best performance in Bold, and worst performance in Italic

Source: Citi Investment Research and Analysis

Three key differences between then and now

Safety issues could put back plans for nuclear plants

Other defensives, apart from EPCOs may perform well

Foreign investors may take profits.

Investment strategy following the Eastern Japan earthquake

The key differences between the Eastern Japan earthquake and Great Hanshin earthquake are (1) the potential for a meltdown of the reactor core at a nuclear facility and for a medium-term reduction in power supply; (2) the assumption that the damage will be more wide-spread, due to the devastating combination of earthquake and tsunami, and (3) Japanese stocks were rising at the time of this disaster (the market had been falling in the six months before the Great Hanshin earthquake). Despite these key differences, we think investors can benefit from looking back at how the market reacted after the Great Hanshin earthquake.

Possible meltdown of the Fukushima nuclear reactor

There is a chance that a meltdown will occur at TEPCO's nuclear power plant in Fukushima. There is a concern that, as a result, power supply will be disrupted over the long-term. These events would of course impact Japan's economic activity.

Moreover, concern over the safety of nuclear power would likely weigh on construction of nuclear power plants in Japan and overseas. In its basic energy plan announced last year, the government set a goal of adding nine nuclear power plants by 2020. However, it seems inevitable that they will have to reconsider these plans. We fear that this will impact companies that were counting on earnings from nuclear power-related businesses.

Figure 6. Companies with Nuclear Power related businesses

7011	MITSUBISHI HEAVY INDUSTRIES	Plan and construction of nuclear power plants
6501	HITACHI	Plan and construction of nuclear power plants
6502	TOSHIBA	Plan and construction of nuclear power plants
5406	KOBE STEEL	casks for transport and storage
5631	JAPAN STEEL WORKS	atomic reactor etc
6361	EBARA	Pump
6492	Okano Valve	Valve

Source: Citi Investment Research and Analysis

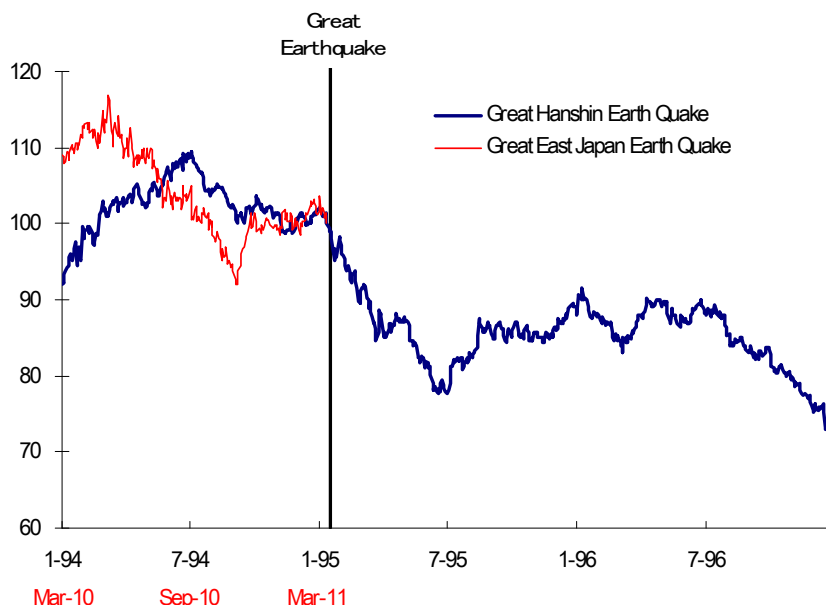
Although the power companies outperformed TOPIX following the Great Hanshin Earthquake, we cannot expect history to repeat itself because of TEPCO's problems. If investor and consumer confidence does take a hit, we believe interest in defensive sectors will inevitably rise. Similarly, there should be potential for stock-picking among the defensive sectors, such as gas or pharmaceutical companies.

Foreign investor trends

At the time of the Great Hanshin earthquake, the Japanese stock market had been underperforming markets overseas. Also, based on investor trading activity announced by the Tokyo Stock Exchange, foreign investors had been veering between selling and buying until the earthquake struck. However, foreign investors turned net buyers following the earthquake, and these statistics show that foreign investors remained net buyers for some time after.

In the run up to the Eastern Japan earthquake, foreign investors have been net buyers of Japanese equities for 18 consecutive weeks through the week ending March 4. Moreover, the Japanese market has outperformed the global markets since November 2010 (Figure 7). Overseas investors that have been buying up Japanese equities may also view the earthquake as a chance to take profits.

Figure 7. Topix vs overseas markets before earthquake



Note : Indexed 100 at the time of earthquake

Source: Citi Investment Research and Analysis

Industries in which there is a strong correlation between the value of net buying by overseas investors for the 17 weeks between November 1, 2010 and March 4, 2011 and share prices are insurance, other financials, and securities and commodity futures. For industries with a strong correlation, investment by foreigners has likely been great (Figure 8). As such, these are the sectors that may see some profit-taking.

Figure 8. Correlation between Foreign net buying and share price performance

	Correlation		Correlation
1 Insurance	0.57	18 Glass & Ceramics Products	-0.16
2 Other Financing Business	0.55	19 Fishery, Agriculture & Forestry	-0.16
3 Securities	0.44	20 Air Transportation	-0.17
4 Marine Transportation	0.43	21 Rubber Products	-0.17
5 Banks	0.29	22 Textiles & Apparels	-0.18
6 Real Estate	0.25	23 Oil & Coal Products	-0.26
7 Transportation Equipment	0.20	24 Precision Instruments	-0.27
8 Nonferrous Metals	0.20	25 Electric Power & Gas	-0.32
9 Mining	0.17	26 Pulp & Paper	-0.36
10 Wholesale Trade	0.10	27 Retail Trade	-0.36
11 Iron & Steel	0.02	28 Land Transportation	-0.37
12 Metal Products	-0.04	29 Warehousing & Harbor Transportation Services	-0.42
13 Machinery	-0.05	30 Pharmaceutical	-0.42
14 Other Products	-0.06	31 Foods	-0.53
15 Electric Appliances	-0.11	32 Construction	-0.55
16 Chemicals	-0.12	33 Services	-0.56
17 Information & Communication	-0.14		

Source: TSE, Citi Investment Research and Analysis

Political situation

Prime Minister Kan was already in a dire political situation before the earthquake hit. There was little hope of passing budget-related bills and it was revealed that he had received illegal donations from a noncitizen. There was fear that the government could shut down if a special bill to issue deficit-covering government bonds did not pass.

Chance for PM Kan to show leadership

That said, we do not think the opposition parties would try to create political strife in the aftermath of such a great disaster. If PM Kan can show strong leadership and Japan can overcome this national crisis, then PM Kan should be able to overcome his own political crisis. If this crisis helps the Japanese people regain faith in their government, this would also be positive for the Japanese equity market.

Japan's resilience

In the aftermath of the Great Hanshin earthquake, the Japanese people received praise from other countries for the orderly way they were able to distribute food and necessities, resist outbreaks of violence, and work together to overcome the crisis. We hope that the Japanese people will again show the same spirit in overcoming the current crisis, and may help to revive the Japanese stock market.

Appendix A-1

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