

**Whither Japan: Will Its *Annus Horribilis* Be Coming to An End Soon?:  
Post-quake Corporate Japan Needs Approaches to Revitalize Its Global Competitiveness**

**Abstract**

Japan's economy is still in a dire state even after eight months have already passed since the dreadful March 11 Great East Japan Earthquake took place. In addition to historic damage caused by the Earthquake, the economy is facing five grave challenges—(1) electricity shortage, (2) a higher yen, (3) another natural disaster, i.e., historic floods in Thailand where an important node on Japan's production networks is located, (4) as-yet-unsettled global economic institutional arrangements, and (5) feeble demand both at home and abroad. This essay tries to capture a bird's eye view of post-quake Japan by examining the current economic condition and discussing the aforementioned five challenges which, with more robust and resilient supply chains, Corporate Japan is about to meet amidst relentless globalization. Under the current circumstances where Japan's *annus horribilis* is unlikely to come to an end shortly, Japanese firms are expected to be more innovative to survive intensified global competition.

**1. Introduction: The Current Condition of Post-quake Japan**

There has been a large amount of descriptions and analyses regarding the Earthquake in the English language.<sup>2</sup> Here, the author tries to adopt a new way to shed light on the current condition of post-quake Japan by referring to materials most of which are not translated into English, and English materials to which only experts in specific fields have referred, as well as oft-quoted information in other studies.

**1-1. Japan: A Country Where Foreigners Hesitate to Go**

The Great East Japan Earthquake drastically changed the attitude of foreign travelers who had planned to visit Japan. According to the Japan National Tourism Organization (JNTO), the number of foreigners who visited Japan in April showed a astounding 62.5% decline compared to the previous year (see Table 1). Especially, the number of foreign sightseers declined by a staggering 81.9% when Japan was filled with beautiful cherry blossoms. During the high season for "hanami (cherry blossom viewing)," i.e., between mid-March and mid-April, foreign travelers from Asia, especially those from South Korea, China, Taiwan, and Hong Kong, hesitated to visit Japan. For example, this year's cumulative number of visitors from South Korea has shrunk by 32.3% (see Table 2). This precipitous decline in foreign travelers with a pile of cancellation notices is causing substantial damage to Japan's tourism industry.

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<sup>2</sup> See, for example, Japanese Government, "Road to Recovery," October 25, 2011, <http://www.kantei.go.jp/foreign/index-e.html>. See also Dick K. Nanto *et al.*, "Japan's 2011 Earthquake and Tsunami: Economic Effects and Implications for the United States," R41702, Washington, D.C.: Congressional Research Service (CRS), April 6, 2011, and Jeffrey B. Sacknowitz, "Japan after the Quake," Boston: Patnam Retail Management, April 11, 2011.

**Table 1. Foreign Visitors to Japan and Japanese Traveling Abroad**

	Numbers (1,000 persons)				Change (Y-o-Y, %)				
	Foreign Visitors to Japan			Japanese Traveling Abroad	Foreign Visitors to Japan			Japanese Traveling Abroad	
	Total	Purpose of Visit			Total	Purpose of Visit			
	Sightseeing	Business <sup>(1)</sup>			Sightseeing	Business <sup>(1)</sup>			
2010	8,611	6,362	2,249		16,637	26.8	33.7	10.8	7.7
2011									
January	714	506	209		1,282	11.5	15.5	2.9	1.4
February	679	506	173		1,391	2.2	-1.5	14.6	7.9
March	353	191	162		1,421	<b>-50.3</b>	<b>-60.6</b>	<b>-28.1</b>	<b>-9.1</b>
April	296	109	187		1,115	<b>-62.5</b>	<b>-81.9</b>	0.4	-8.1
May	358	184	174		1,152	<b>-50.4</b>	<b>-65.8</b>	-5.7	-8.7
June	433	282	151		1,267	<b>-36.1</b>	<b>-44.8</b>	-9.2	-3.5
July	561	397	165		1,465	<b>-36.1</b>	<b>-44.5</b>	0.5	4.3
August <sup>(2)</sup>	547	n.a.	n.a.		1,792	<b>-31.9</b>	n.a.	n.a.	9.1
September <sup>(2)</sup>	539	n.a.	n.a.		1,645	<b>-24.9</b>	n.a.	n.a.	9.7

Note (1): Includes those who visit Japan with purposes of study and training at Japanese organizations and of government activities.

Note (2): Early estimates.

Source: Japan National Tourism Organization (JNTO) (日本政府観光局).

**Table 2. Foreign Visitors by Major Countries (2011, Cumulative Numbers until Sept. (1,000 persons) and Change (Y-o-Y, %))**

Countries	Numbers	%	Countries	Numbers	%	Countries	Numbers	%	Countries	Numbers	%
Total	4,480	<b>-32.1</b>	3. Taiwan	722	-27.2	6. Australia	117	-30.7	9. Canada	70	-40.1
1. South Korea	1,250	<b>-32.3</b>	4. U.S.A.	403	-26.5	7. U.K.	98	-28.8	10. Singapore	67	-37.2
2. China	766	-35.0	5. Hong Kong	251	-38.5	8. Thailand	95	-36.0	11. France	67	-40.9

Source: Japan National Tourism Organization (JNTO) (日本政府観光局).

As Table 1 shows, foreign business travelers and foreign students who will study at Japanese academic institutions have not severely affected by the impact of the 3/11 Disaster. Although the number of business visitors and foreign students and trainees declined by 28.1% on a year-on-year basis in March, it has shown a moderate decline or remained at the almost same level of the previous year in the following months. Immediately after the earthquake, Japanese, like foreign travelers, had an abstemious attitude and refrained from travelling both at home and abroad. However a recent higher yen has brought about recovery in an inherent appetite for overseas tourism.

## 1-2. Japan's Trade: Reduced Exports and Swelling Fuel Imports Caused by the Nuclear Power Plant Accidents

The 3/11 Great East Japan Earthquake and accompanying nuclear power plant accidents in Fukushima Prefecture caused a disastrous disruption to production and distribution networks not only within Japan but also around the globe.<sup>3</sup> Especially, Japan's export-oriented sector including the automobile and electronics industries were forced to reduce the level of operation, partly because of serious damage to their production facilities, and partly because of rolling blackouts and restriction of electricity use in the eastern part of Japan. For example, Renesas Electronics, a global leading manufacturer that has an about 40% world market share of sophisticated microcontrollers (MCUs) for automobiles, was forced to reduce substantially its production because of the Earthquake and the ensuing rolling blackouts. Renesas' production halt brought about a chain reaction to force automobile manufacturers around the globe to reduce or halt their production.<sup>4</sup> Accordingly, Japan's export quantity index recorded a dramatic decline in April and

<sup>3</sup> See, for example, *Economist*, "Japan and the Global Supply Chain: Broken Links," March 31, 2011, <http://www.economist.com/node/18486015>.

<sup>4</sup> See, for example, Bill Canis, "The Motor Vehicle Supply Chain: Effects of the Japanese Earthquake and Tsunami," R41831, Washington, D.C.: Congressional Research Service (CRS), May 23, 2011. See also Andrew Pollack and Steve Lohr, "A Japanese Plant Struggles to Produce a Critical Auto Part," *New York Times*, April 27, <http://www.nytimes.com/2011/04/28/business/global/28chip.html?pagewanted=all>.

May (11.6% and 10.8% on a year-on-year basis respectively, see Table 3). Yet, it should be noted that the exports returned to the previous year's level within a half year, and that this recovery can be ascribed to the impressive efforts made by Japan's manufacturing and distribution industries to restore their production networks.

**Table 3. Japan's Merchandise Trade (Change (%), Y-o-Y)**

	Exports			Imports		
	Value (Yen base)	Quantity	Price (Yen base)	Value (Yen base)	Quantity	Price (Yen base)
2010	24.4	24.2	0.2	18.0	13.9	3.6
2011						
January	1.4	2.3	-0.9	12.2	11.2	0.9
February	9.0	9.2	-0.2	10.0	4.9	4.9
March	-2.3	<b>-3.3</b>	1.0	12.0	5.5	6.2
April	-12.4	<b>-11.6</b>	-0.9	9.0	1.3	7.6
May	-10.3	<b>-10.8</b>	0.5	12.4	5.5	6.5
June	-1.6	<b>-2.7</b>	1.1	9.8	1.7	8.0
July	-3.4	<b>-5.3</b>	2.0	9.9	-2.6	12.9
August*	2.8	<b>0.9</b>	1.9	19.2	6.0	12.4
September*	2.4	<b>1.7</b>	0.7	12.1	0.9	11.1

Note \*: Export figure for September and Imports figures for August and September are early estimates.

Source: Ministry of Finance (MOF) (財務省).

Amidst mounting uncertainties lying ahead for the world economy, Japan's exports are very difficult to foresee. However, the 3/11 Disaster has undoubtedly caused a downward pressure on Japan's manufacturing sector, though buoyant growth in Asia is the only silver lining. The combined three sectors of semiconductors, motor vehicles, and parts of motor vehicles account for 21.8% of Japan's total exports (see Table 4). While this year's cumulative value of total exports increased by 9.1% in terms of U.S. dollars since January 2011, the combined contribution of the aforementioned three industries to this increase was "negative" (minus 0.5%). In the meantime, immediately after the nuclear power plant accidents, it was reported anecdotally that Japan's food industry suffered severe damage because of denials at foreign customs and cancellation requests from foreign customers. During the months of April and May, it proved to be the case where Japan's foodstuff exports suffered a double-digit decline on a year-on-year basis. But, as Table 4 shows, the cumulative value of the foodstuff exports in U.S. dollar terms has recovered and remains the same level of the previous year as of September 2011.

**Table 4. Japan's Merchandise Trade by Major Products (2011, Cumulative values until September)**

	Exports			Imports			
	Values US\$ bn	Shares %	C.* %	Values US\$ bn	Shares %	C.* %	
Total	609.4	100.0	9.1	Total	625.5	100.0	24.3
Foodstuff	3.2	<b>0.5</b>	<b>0.0</b>	Foodstuff	53.5	8.6	2.0
Chemicals	64.5	10.6	1.2	Raw Materials	49.8	8.0	2.3
Iron and Steel Products	35.2	5.8	0.8	Mineral Fuels	199.0	<b>31.8</b>	<b>10.8</b>
Nonferrous Metals	12.3	2.0	0.2	Chemicals	56.8	9.1	2.3
Power Generating Machine	21.4	3.5	0.4	Computers and Units	14.9	2.4	0.4
Semiconductors	33.9	<b>5.6</b>	<b>-0.2</b>	Semiconductors	16.3	<b>2.6</b>	<b>-0.3</b>
Motor Vehicles	71.8	<b>11.8</b>	<b>-0.6</b>	Parts of Motor Vehicles	4.1	0.7	0.0
Parts of Motor Vehicles	27.1	<b>4.4</b>	<b>0.3</b>	Scientific and Optical Instrument	11.8	1.9	0.2
Scientific and Optical Instrument	19.4	3.2	0.5	Clothing and Accessories	24.0	3.8	1.0

Note\*: Contribution to the change of the total value of exports or imports.

Source: Author's calculation based on the statistics compiled by the Japan External Trade Organization (JETRO) (日本貿易振興機構).

The accidents at Fukushima Daiichi forced Japan to rely more on fossil fuel imports. Accordingly, its imports have changed their trends. Prior to the accidents, Japan's imports increased in quantity thanks to steady recovery from the 2008 global economic crisis. However, Japan's post-quake imports increased in price partly because of a drastic change in the composition of imported goods; a substantial increase in mineral fuels and a decrease in manufactured goods such as semiconductors as Table 4 shows. As for the statistics regarding Japan's major trading partners, China continues to be the dominant and leading country and imports from oil producing countries are increasing (see Table 5).

**Table 5. Japan's Merchandise Trade by Major Countries (2011, Cumulative values until September)**

(a) Exports by Major Countries (US\$ billions, Y-o-Y, %)

Countries	Values	Shares	C.*	Countries	Values	Shares	C.*	Countries	Values	Shares	C.*	Countries	Values	Shares	C.*
Total	609	100.0	<b>9.1</b>	3. South Korea	50	8.2	0.7	6. Thailand	29	4.7	<b>0.7</b>	9. Malaysia	14	2.3	0.2
1. China	121	19.8	<b>2.6</b>	4. Taiwan	39	6.4	0.0	7. Singapore	21	3.4	0.4	10. Netherlands	13	2.2	0.3
2. U.S.A.	90	14.7	0.8	5. Hong Kong	32	5.2	0.2	8. Germany	17	2.9	0.5	11. Indonesia	13	2.1	0.1

(b) Imports by Major Countries (US\$ billions, Y-o-Y, %)

Countries	Values	Shares	C.*	Countries	Values	Shares	C.*	Countries	Values	Shares	C.*	Countries	Values	Shares	C.*
Total	625	100.0	<b>24.4</b>	3. Australia	41	6.6	1.8	6. South Korea	29	4.6	1.7	9. Qatar	21	3.4	<b>1.0</b>
1. China	133	21.2	<b>4.6</b>	4. Saudi Arabia	37	5.9	<b>2.1</b>	7. Indonesia	26	4.1	<b>1.0</b>	10. Thailand	19	3.0	0.7
2. U.S.A.	55	8.8	1.0	5. U.A.E.	32	5.1	<b>2.1</b>	8. Malaysia	22	3.5	1.1	11. Taiwan	17	2.8	0.0

Note\*: Contribution to the change of the total value of exports or imports.

Source: Author's calculation based on the statistics compiled by the Japan External Trade Organization (JETRO) (日本貿易振興機構).

### 1-3. Earthquake, Tsunami, Nuclear Power Plant Accidents, and Harsh Restraints on Electricity Use

Photos and videos describing the 3/11 Disaster, and the stoic, unselfish and orderly attitude of Japanese people in the aftermath of the tragedies touched the heartstrings of people around the globe. Although people on the globe understood clearly the scenes of the Earthquake and tsunami, and shared the feelings and fears of the victims in Japan, the sheer size of the tragedies has made anybody in the world unable to assess accurately the damages Japanese society suffered. Nonetheless, doubtlessly, this endless series of tragedies is the largest crisis facing Japan since the end of World War II as former Prime Minister Naoto Kan said.<sup>5</sup>

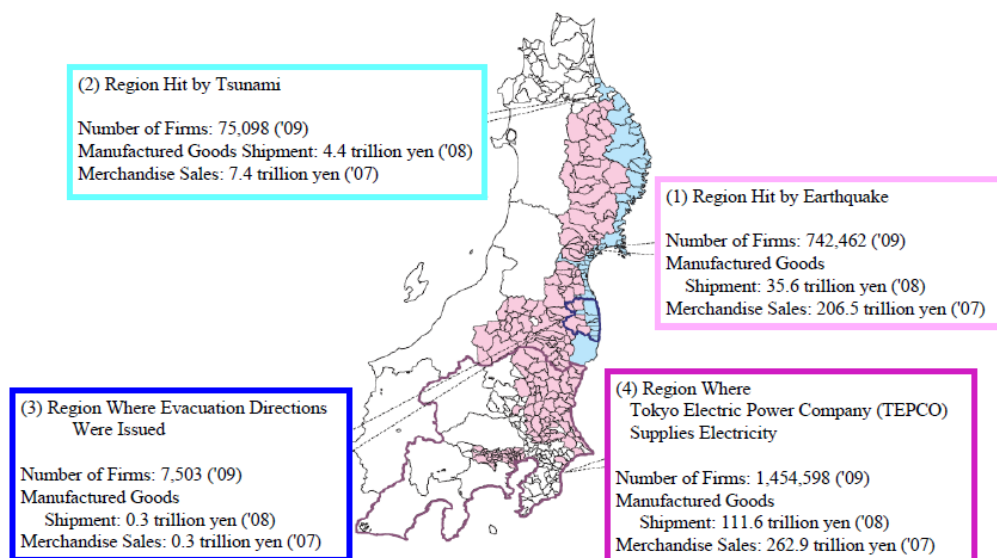
Given the complexity of the tragedies and the fact that the nuclear power plant crises and electricity power shortage have not come to an end, it is still difficult to gauge exactly the economic impact of the 3/11 Disaster. In the meantime, the Ministry of Economy, Trade and Industry (METI) tries to assess regional economic impacts by dividing four types of disaster—(1) earthquake, (2) tsunami, (3) nuclear power plant accidents, and (4) electricity shortage and rolling blackouts in the electricity supply area of Tokyo Electric Power Company (TEPCO), though even this classification cannot provide completely exclusive separation of the impacts (see Figure 1).<sup>6</sup> First, the region which was hit by the earthquake (colored in pink on the map of Figure 1) has 742,462 firms (41.1% of entire Japan), manufactured goods shipment with a size of 35.6 trillion yen in 2008 (11.7% of entire Japan), and merchandise sales of 206.5 trillion yen in 2007 (37.7% of entire Japan). Second, the region which was hit by the tsunami (colored in sky blue

<sup>5</sup> See, for example, Tania Branigan *et al.*, "Tsunami, Earthquake, Nuclear Crisis – Now Japan Faces Power Cuts: Prime Minister Warns of Biggest Crisis since 1945 with Rolling Cuts Aimed at Averting Total Blackout," *Guardian*, March 13, 2011, <http://www.guardian.co.uk/world/2011/mar/13/japan-tsunami-earthquake-power-cut>. See also, Christopher Anstey, "Japan Plans Spending Package as Quake Slams World's Most Indebted Economy," *Bloomberg*, March 13, 2011, <http://www.bloomberg.com/news/2011-03-12/japan-faces-another-leg-down-in-its-fiscal-health-after-quake.html>.

<sup>6</sup> Ministry of Economy, Trade and Industry (METI) (経済産業省), *Chusho Kigyō Hakusho* [White Paper on Small and Medium Enterprises in Japan/『中小企業白書』], July 2011, Part I, Chapter 2.

on the map) has 75,098 firms (4.2%), 4.4-trillion-yen manufactured goods shipment (1.4%), and 7.4-trillion-yen sales (1.3%). Third, the region which evacuation directions in fear of contamination (within the blue line on the map) were issued has 7,503 firms (0.4%), 0.3-trillion-yen manufacturing shipment (0.1%), and 0.3-trillion-yen merchandise sales (0.1%). Finally, the region where TEPCO supplies electricity (within the light purple line on the map) has 1,454,598 firms (80.6%), 111.5-trillion-yen manufacturing shipment (36.5%), and 262.9-trillion-yen merchandise sales (48.0%).

**Figure 1. The 3/11 Great East Japan Earthquake's Impacts on Regional Economies**



Source: Ministry of Economy, Trade and Industry (METI) (経済産業省), *Chusho Kigyo Hakusho* [White Paper on Small and Medium Enterprises in Japan/『中小企業白書』], July 2011, Figure 1-2-1 No.1 (p. 27).

With the benefit of hindsight, Japan's economy could have put the 3/11 Crisis under control to some extent. Unfortunately, however, overwhelmingly pervasive paralysis in economic activity emerged because there were (1) the nuclear power plant accidents, (2) ensuing commotions and rumors regarding radioactive contamination that were being accentuated by untimely, inadequate, and incomplete provision of information in layman's language at the very moment when people need it,<sup>7</sup> and (3) disorderly and confusing rolling blackouts and harsh restrictions of electricity use in the TEPCO business areas. At the same time, it should be noted that the third region, directly affected by the accidents at Fukushima Daiichi Nuclear Power Plant, has suffered and is still continue to suffer intolerably painful and overwhelmingly devastating damage, even though it might be miniscule in the size of economic activity from the viewpoint of the entire Japanese economy. In addition, a wide variety of agricultural and fishery production in the regions suffered destructive damages because of the Earthquake and tsunami, and ensuing misinformation and harmful rumors regarding radioactive contamination in the market.<sup>8</sup>

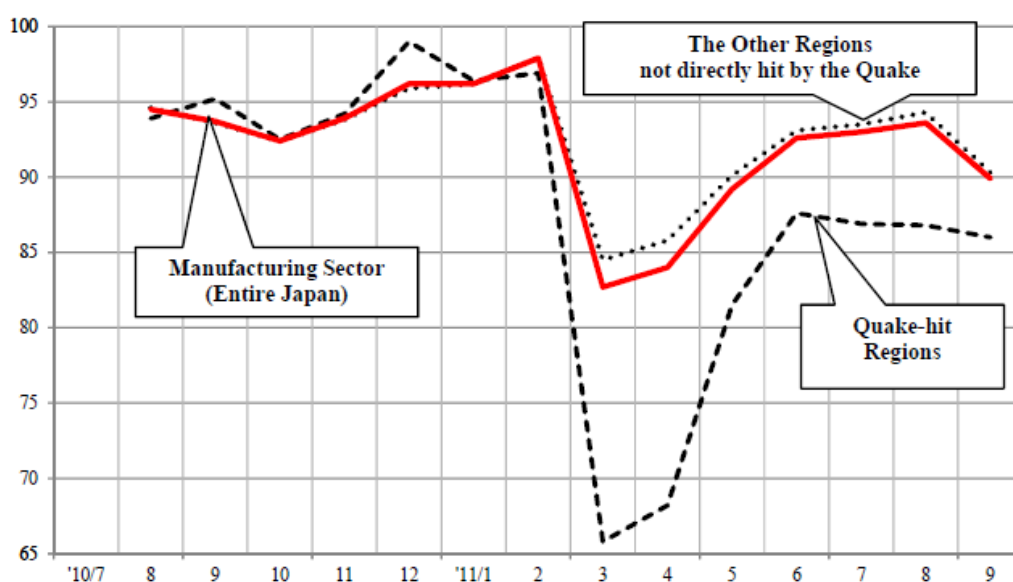
<sup>7</sup> To commemorate the 150th anniversary of the Japan-German diplomatic relationship, the Bavarian State Opera (die Bayerische Staatsoper) had been scheduled to visit Japan this fall. However, a large number of Japanese were disappointed to learn that many musicians decided not to visit Japan because of unreliable information about Fukushima Daiichi. See, for example, Deutsche Welle (DW), "Opera Musicians May Boycott Japan Tour over Radiation Fears," June 18, 2011; Josef Joffe, "Nach Fukushima 'German angst' II: Warum deutsche Musiker nicht in Tokyo auftreten wollen," *Die Zeit*, July 2, 2011; *Telegraph*, "German Opera Singers Cancel Japan Tour over Radiation Fears," September 16, 2011.

<sup>8</sup> In *Chusho Kigyo Hakusho*, METI describes the damages in this sector in Part I, Chapter 2. As for the damages the primary industry suffered, see the information issued from the Ministry of Agriculture, Forestry and Fisheries (MAFF) (農林水産省), "Higashi Nihon Daishinsai no Norinsuisangyo

#### 1-4. Japan's Production Activity: A Quick Recovery but Looming Uncertainties Ahead

Most observers are surprised at swift recovery in production in post-quake Japan (see Figure 2). For example, the miraculous recovery within three months of Renesas Electronics' eight factories which halted their production just after the Earthquake was closely monitored and recorded with kudos by experts at home and abroad.<sup>9</sup> Nissan's factory in Iwaki City, Fukushima Prefecture that is located in the vicinity of the epicenter suffered devastating damage. The damage was so serious that Nissan's production halted around the globe because the factory was one of the company's two engine factories in Japan. However, the Herculean efforts made by Iwaki Factory's people resulted in a resumption of partial production on April 20, and of full production on May 17.<sup>10</sup>

**Figure 2. Indexes of Japan's Manufacturing Activity** (Index, 2005=100, Seasonal Adjusted Figures)



Source: Ministry of Economy, Trade and Industry (METI) (経済産業省).

Although Japan's manufacturers have demonstrated their resilience after the 3/11 Great East Japan Earthquake, they are still suffering serious damages caused by other factors—(1) electricity shortage, (2) a higher yen, and most recently, (3) a natural disaster overseas, i.e., historic floods in Thailand where a Japanese industrial cluster exists. To make matters worse, additional factors—(4) the global economic institutional framework (a proliferation of Free Trade Areas (FTAs) of Japan's trading partners and the negotiations of the Trans-Pacific Partnership (TPP)), and (5) feeble demand both at home and abroad—have become a head wind blowing against Japan's manufacturing sector.

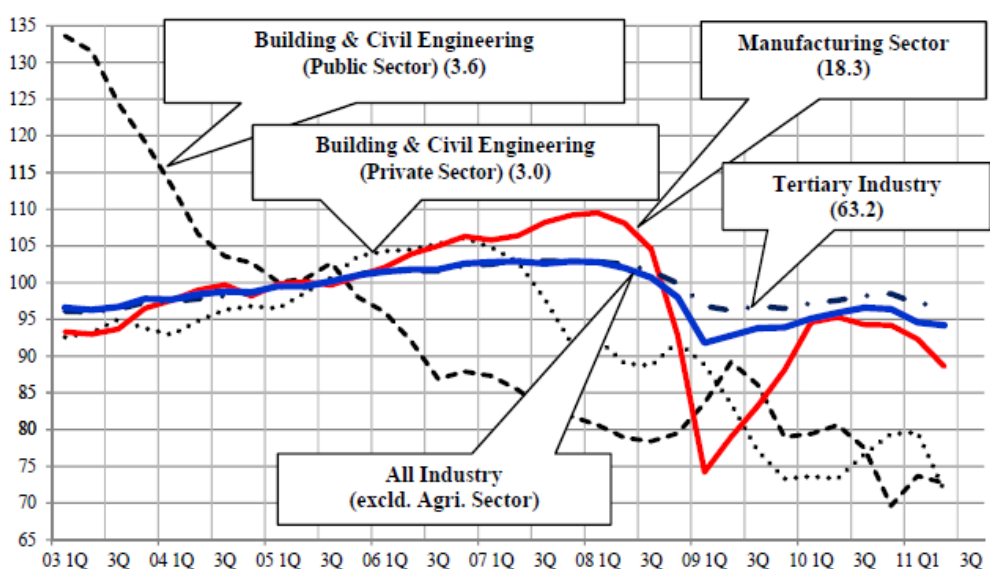
Kiso-tokei Dehta (Zusetsu) no Kohyo ni Tsuite [Regarding the Publication of 'Illustrated Data Sheets Regarding the Damages that the Primary Industry Suffered in the Aftermath of the Great East Japan Earthquake' / 「東日本大震災と農林水産業基礎統計データ (図説)」の公表について], October 21, 2011, <http://www.maff.go.jp/j/press/tokei/kikaku/111021.html>.

<sup>9</sup> See, for example, Renesas Electronics America, "Renesas: Earthquake Recovery Timeline," Santa Clara, CA: Renesas Electronics America, August 2011, <http://am.renesas.com/press/bcp/index.html>.

<sup>10</sup> See, for example, Nissan, "Iwaki Factory Back on Line," April 20, 2011, <http://www.nissan-global.com/EN/REPORTS/2011/04/110420.html> and Nissan, "Nissan Recovery Stories -Iwaki Factory-," June 29, 2011, <http://www.nissan-global.com/EN/REPORTS/2011/06/110629c.html>.

Among the aforementioned factors, the overwhelming one is undeniably feeble domestic demand. Prior to the 3/11 Disaster, Japan's manufacturing sector had experienced stable recovery from the 2008 global economic crisis since the second quarter of 2009 (see Figure 3). After the 3/11 Disaster, again, as discussed above, it recovered quickly. Yet, the manufacturing sector alone cannot sustain Japan's growth. It accounts only for 18.3% of Japan's entire activity. This sector needs stronger and sustainable demand from other sectors, i.e., the building and civil engineering sector (the combined private and public sectors account for 6.6% of Japan's entire activity), and the tertiary industry that accounts for 65.3% of Japan's entire economic activity as well as demand from abroad.

**Figure 3. Indexes of Japan's Industrial Activity (Index, 2005=100, Seasonal Adjusted Figures)**



Note: Figures in the parentheses are the share of each industry in the base year (2005).

Source: Ministry of Economy, Trade and Industry (METI) (経済産業省).

On June 24, 2011, the Basic Act on Reconstruction from the Great East Japan Earthquake (「東日本大震災復興基本法」) went into effect. It is based on the advice from the Reconstruction Design Council in response to the Great East Japan Earthquake (東日本大震災復興構想会議) with its June 25 final report titled “Towards Reconstruction ‘Hope beyond the Disaster’ [「復興への提言 ~悲惨のなかの希望~].” The Headquarters for the Reconstruction from the Great East Japan Earthquake (東日本大震災復興対策本部) was established based on the Act to administer comprehensively the implementation process of reconstruction policies swiftly and coherently by avoiding turf struggles among individual government agencies and their silo mentality both at the central and local levels.<sup>11</sup> The Act

<sup>11</sup> The Basic Act itself stipulates abstract and conceptual principles for reconstruction from the Earthquake. Therefore the Act requires further legislation to develop concrete policy measures and facilitate negotiations among government agencies regarding the handling of revenue distribution, tax relief arrangements, and so on. In this connection, some experts are concerned about further delays of concrete policy implementations. The new organization, the Headquarters for the Reconstruction, also faces a challenge that it might lapse into a mere existence of “Hotchikisu Kancho/ホチキス官庁 (‘stapler’ agency)” whose functions are only collecting of documents issued from individual government agencies without coordinating and negotiating with agencies prior to the completion of their documents. See, for example, Tadashi Iwasaki (岩崎忠), “Higashi Nihon Daishinsai Fukko Kihonho no Seitei-Katei [A Study on the Eactment Process of the Basic Act on Great East Japan Earthquake Reconstruction/「東日本大震災復興基本法の制定過程」],” *Jichi Soken* [Local Government Research Institute/『自治総研』], No. 394 (August 2011), Tokyo: Japan Research Institute for Local Government (地方自治総合研究所), pp. 48-62.

also states the establishment of special zones to accelerate reconstruction to accommodate the local specific condition of each area. Concrete measures, however, have not yet been fully discussed. Given such delay on the government side, the private sector hesitates to lay out its long-term business plans involving huge investment. Protracted processes of TEPCO's compensations for the victims, and insufficient reconstruction budget disbursed by the central and local governments have been criticized by experts as well as residents and victims in the quake-hit regions.<sup>12</sup>

Regarding the services sector, the government published an interesting analysis on September 29, 2011 (see Table 6).<sup>13</sup> The government tries to draw a picture concerning how post-quake Japan's services industry is recovering. Table 6 offers following three observations to the reader. First, the economy has recovered from the Earthquake both in eastern and western Japan, though their pace of recovery is extremely unsatisfactory. Second, as discussed previously, Japan's tourism industry suffered serious impacts; while the industry in eastern Japan is still experiencing a period of stagnation, in western Japan, there seems to be a clear sign of recovery. Third, delayed or ineffective implementation of concrete government measures and the abovementioned protracted compensations are still casting a dark cloud over consumer confidence and leading to weakening activity of the household-related services sector. Accordingly, the current condition of post-quake Japan suggests that its *annus horribilis* is unlikely to come to an end shortly.

**Table 6. Recent Developments of Japan's Services Industry (2011, Sales Figures, Y-o-Y, %)**

		March	April	May	June	July
Entire Services Industry	Entire Japan	-8.7	-7.3	-5.5	-4.4	-4.6
	Eastern Japan	-10.1	-8.5	-6.5	-4.2	-5.4
	Western Japan	-6.9	-5.8	-4.1	-4.6	-3.5
A Special Analysis to Gauge the Pace of Recovery from the Earthquake: The following figures are (Each month's Y-o-Y change) - (Y-o-Y change for February, 2011)						
Entire Services Industry	Eastern Japan	<b>-5.6</b>	<b>-4.0</b>	<b>-2.0</b>	<b>0.3</b>	<b>-0.9</b>
	Western Japan	<b>-3.1</b>	<b>-2.0</b>	<b>-0.3</b>	<b>-0.8</b>	<b>0.3</b>
Information Services	Eastern Japan	-0.7	-1.1	-0.9	4.3	1.5
	Western Japan	-6.4	3.5	-1.3	4.8	5.9
Transportation and Postal Services	Eastern Japan	-4.8	-6.0	-2.2	0.3	-1.1
	Western Japan	-5.7	-2.6	-4.8	-3.8	-11.3
Real Estate and Leasing Services	Eastern Japan	-0.8	0.5	1.1	3.2	2.4
	Western Japan	2.2	-7.8	-4.6	-2.4	0.9
Professional Research Services	Eastern Japan	-1.0	1.6	5.3	4.4	5.9
	Western Japan	-0.1	-9.5	2.0	6.5	6.8
Restaurant and Tourism Services	Eastern Japan	<b>-13.8</b>	<b>-7.3</b>	<b>-7.5</b>	<b>-3.2</b>	<b>-1.1</b>
	Western Japan	<b>-3.7</b>	<b>0.8</b>	<b>4.8</b>	<b>3.9</b>	<b>6.1</b>
Household-related Services	Eastern Japan	<b>-19.8</b>	<b>-11.5</b>	<b>-10.2</b>	<b>-6.5</b>	<b>-11.1</b>
	Western Japan	<b>-11.4</b>	<b>-1.4</b>	<b>0.7</b>	<b>-7.2</b>	<b>3.6</b>
Medical Services	Eastern Japan	-3.7	-5.7	-1.2	-1.8	-4.4
	Western Japan	-0.7	1.7	0.2	-2.2	-0.7

Note\*: Eastern Japan designates Japan's eastern part with its western borders of Niigata, Nagano, and Shizuoka Prefectures.

Source: Author's rearrangement based on the statistics compiled by the Ministry of Internal Affairs and Communications, Statistics Bureau (総務省統計局).

<sup>12</sup> However, it should be noted that some of the regions hit hard by the 3/11 Disaster have experienced recovery in the building and civil engineering sector. For example, Miyagi Prefecture has recorded an increase on a year-on-year basis in the public sector's building and civil engineering activity since April and a marked increase since May. In Fukushima Prefecture, the same sector started an increase since August. For more information, see Miyagi Prefectural Government (宮城県), *Miyagi Keizai Geppo* [Miyagi Economic Statistics Monthly/「みやぎ経済月報」], October 31, 2011, <http://www.pref.miyagi.jp/toukei/toukeidata/bunseki/keiki/keiki.htm>, and Fukushima Prefectural Government (福島県), *Saikin no Ken-Keizai Doko* [Fukushima Economic Performance Monthly/「最近の県経済動向」], October 24, 2011, [http://www.cms.pref.fukushima.jp/pcp\\_portal/PortalServlet?DISPLAY\\_ID=DIRECT&NEXT\\_DISPLAY\\_ID=U000004&CONTENTS\\_ID=15910](http://www.cms.pref.fukushima.jp/pcp_portal/PortalServlet?DISPLAY_ID=DIRECT&NEXT_DISPLAY_ID=U000004&CONTENTS_ID=15910).

<sup>13</sup> Ministry of Internal Affairs and Communications, Statistics Bureau (総務省統計局), "Sahbisu-Sangyo Doko-Chosa: Higshi-Nihon Dai-shinsai ga Ataeta Eikyo, Higashi-Nippon, Nishi-Nippon-betsu Sahbisu Sangyo no Gekkan Uriage-daka [The Current Survey of the Services Industry: The Great East Japan Earthquake's Impacts, Monthly Sales Figures for the Services Industry in eastern and western Japan/サービス産業動向調査: 東日本大震災が与えた影響、東日本・西日本別サービス産業の月間売上高]," September 29, 2011, <http://www.stat.go.jp/info/shinsai/>.



## **2. Post-quake Japan: How Can Corporate Japan Survive Intensified Global Competition?**

### **2.1. Five Ordeals Facing Corporate Japan Concurrently Developing More Robust Supply Chains**

The previous section has examined the post-quake domestic economic environment where Corporate Japan is placed. Since we come to understand the business climate surrounding Corporate Japan, the time has come to elaborate future approaches and take concrete actions, though these actions should be further sophisticated through an inevitable and sometimes painful try-and-error process by continual applications of the approaches.

Therefore, the second half of this essay tries to explore approaches that Corporate Japan can take especially with respect to developing more robust and resilient global supply chains amidst relentless globalization. It starts with reviewing responses adopted by Japanese companies to strengthen their supply chains, and then, discusses the aforementioned five challenges—(1) electricity shortage, (2) feeble demand both at home and abroad, (3) a higher yen, (4) historic floods in Thailand, and (5) as-yet-unsettled global economic institutional constellation including the TPP—with future strategies Corporate Japan is about to take to meet.

### **2.2. Post-quake Corporate Japan: In Search of More Robust Supply Chains**

Under the current circumstances, making global supply chains more robust sometimes raises an additional challenge facing Japanese companies; developing disaster-proof supply chains might force them to burden additionally cumbersome costs.<sup>14</sup>

Takahiro Fujimoto, a prominent expert in the field of Japan's managerial science, suggests an approach, in his paper titled "Supply Chain Competitiveness and Robustness: A Lesson from the 2011 Tohoku Earthquake and Supply Chain 'Virtual Dualization,'" to make supply chains more robust with additional costs as less as possible in the intensified global competitive climate.<sup>15</sup> By examining several approaches to make supply chains more robust, Fujimoto warns that "pursuit of robustness without the perspective of strengthening competitiveness is not advantageous in the long run."<sup>16</sup> To be sure, a disaster takes place but no one knows when and where it does, while global competition takes place everyday and everyone acknowledges it. Therefore Fujimoto warns Japanese companies not to put "disaster mentality" in the priority list higher than "competition logic."<sup>17</sup> After making detailed observations, Fujimoto concludes that this year's pervasive paralysis of global supply chains can be ascribed to serious damages to

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<sup>14</sup> There is a sea of anecdotes covered by both Japanese and English media as well as research institutes in Japan. Now, the author finds extremely informative a recently published book titled *Daishinsai no Toki! Kigyo no Chotatsu-, Kobai-bumon wa Kou Ugoita* [The Great Earthquake! How Companies' Procurement and Purchase Departments Responded to It/『大震災のとき! 企業の調達・購買部門はこう動いた』], edited by Takanori Sakaguchi (坂口孝則) and Naoya Makino (牧野直哉), Tokyo: Nikkan Kogyo Shimbunsha (日刊工業新聞社), September 2011.

<sup>15</sup> Takahiro Fujimoto (藤本隆宏), "Supply Chain Competitiveness and Robustness: A Lesson from the 2011 Tohoku Earthquake and Supply Chain 'Virtual Dualization,'" Discussion Paper No. 362, Tokyo: Manufacturing Management Research Center (MMRC), University of Tokyo (東京大学ものづくり経営研究センター), September 2011. Its original paper written in Japanese is "Sapurai Che'en no Kyosoryoku to Gankensei: Higashi Nihon Daishinsai no Kyokun to Kyokyu no 'Baacharu Dyuaru-ka' [サプライチェーンの競争力と頑健性—東日本大震災の教訓と供給の「バーチャル・デュアル化」—]," Discussion Paper No. 354, Tokyo: MMRC, University of Tokyo, May 2011.

<sup>16</sup> Fujimoto, "Supply Chain Competitiveness and Robustness," p. 44.

<sup>17</sup> *Ibid.*, p. 2.

the following three types of companies.<sup>18</sup>

First, the most referred examples amidst the 3/11 Disaster are companies that produce “supplier-process-specific” products.<sup>19</sup> This type of product is non-substitutable with other products, and its product design information is non-portable. Accordingly, this type of product can hardly be manufactured by other suppliers. A representative factory that falls into this type is Renesas Electronics’ Naka Factory in Naka City, Ibaragi Prefecture that produces high-end MCUs. Because of non-substitutability, the damages to the factory had a huge ripple effect around the globe. For the very reason, the factory gained massive and enthusiastic support from a large number of customers with over 2,000 personnel, and achieved swift recovery far much earlier than expected.

A second type comprises Gullivairan oligopolistic companies that customers regard as indispensable suppliers that can be hardly replaced by alternative suppliers. This second category suppliers includes Ouchi Shinko Chemical Industrial’s Haramachi Factory in Minami-Soma City, Fukushima Prefecture that produces organic rubber chemicals for tires and automobile rubber parts, and Merck Japan’s Onahama Factory in Iwaki City, Fukushima Prefecture that produces paint pigments.

Finally, a third category is comprised of third-tier suppliers that produce microscopic or consumable products and are placed in the almost far end of supply chains. Accordingly, large manufacturers such as Toyota did not notice even the name or location of these third-tier suppliers before the Earthquake. Toyota, though it had sufficient capability and enthusiastic intention to help such suppliers restore operation, could not detect accurately even the name or location of their third-tier and somewhat obscure suppliers within one month of the disaster. Here a lack of supply chain visibility was a decisive factor for the speed at which supply chains recovered.

Based upon his close observations of the responses adopted by Japanese firms just after the Earthquake, Fujimoto stresses the importance of balancing between competitiveness and robustness of their supply chains.<sup>20</sup> He also warns against public discussions on measures of strengthening supply chains, i.e., (1) increasing the inventory level sufficient enough to buffer against disasters or accidents, (2) adopting standardized parts rather than “process-specific” parts, (3) enhancing substitutability of production facilities by “dualizing” production lines, production equipment, suppliers without any competitive calculations or outlook for sales expansion, and (3) relocating production centers from eastern Japan to the western part of Japan or overseas. Rather than adopting these publicly discussed measures without rational economic calculations, Fujimoto suggests that Japanese companies avoid excessive preoccupation with unforecastable disasters or accidents, and enhance awareness of disaster prevention to adopt “virtually dualization” of supply chains by identifying “weak links” within supply chains and reducing the invisibility of supply chains in order to develop emergency preparedness and facilitate emergency responses.

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<sup>18</sup> *Ibid.*, pp. 8-14.

<sup>19</sup> *Ibid.*, p. 10.

<sup>20</sup> *Ibid.*, p. 33.

### 2.3. Post-quake Business Continuity Plan (BCP): The Case of Renesas Electronics

Here, the author tries to evaluate Fujimoto's arguments by taking a closer look at the revised business continuity plan (BCP) of Renesas Electronics as a representative case.<sup>21</sup> Prior to the 3/11 Disaster, Renesas Electronics had its BCP in which the company looked to (1) sophistication of inventory management as a damage prevention/control measure, (2) elaboration of alternative production measures at the time of risk management, and (3) enhancement of seismic resistance of facilities in order to secure the conditions of supplying its products to customers at the time of emergency.

According to the synopsis of its post-quake BCP unveiled in October 2011, Renesas Electronics tries to add the following measures to its pre-quake BCP. First, the firm develops its communication capability for the time of emergency by enhancing its visibility of risk at each level of production and distribution networks, and shares with its customers such information on the situation and countermeasures. Second, the firm reinforces its alternative production capability by accelerating its "multifab" strategy, i.e., pluralizing production facilities (multi-fabrication) in preparation for disasters and accidents. Third, the firm tries to strengthen further seismic resistant structure and develop its restoration capability.<sup>22</sup> By adding the three measures, Renesas Electronics wants to achieve its goals to reduce the turnaround time (TAT) within the company and between Renesas and its customers, share with its customer information on the company's condition, and develop alternative action measures in close consultation with its customers.

Renesas Electronics' response is well received by experts on the grounds that the company found it important to share information and communicate with its customers, and identify the "weak links" of its supply chains by enhancing their visibility. At the same time, observers look to the company's balancing behavior by shifting its priority within its BCP from inventory management to risk preparedness by identifying its lack of supply chain visibility. As for its "multifab" strategy, experts agree that there remains to be seen. Renesas' strategy is being developed at the enthusiastic request of its customers.<sup>23</sup> Immediately after the Earthquake, Renesas transferred the operation of its Naka Factory to several factories both at home and abroad. Within Japan, as substitute production sites, Renesas Electronics look to its factories including Saijo Factory in Saijo City, Ehime Prefecture that is located in western Japan, and Tsugaru Factory in Goshogawara City, Aomori Prefecture, Tsuruoka Factory in Tsuruoka City, Yamagata Prefecture, both of which are all located in the quake-hit Tohoku region (see Figure 4).

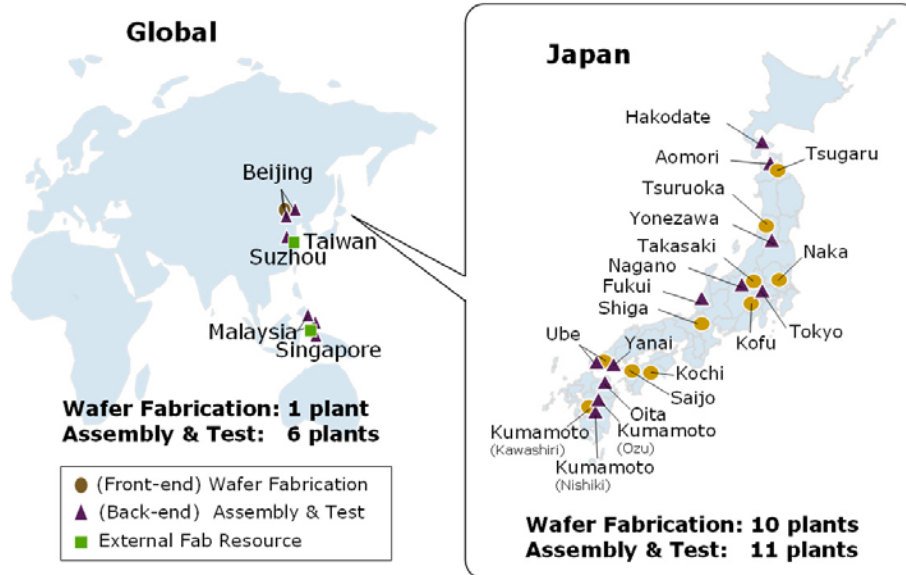
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<sup>21</sup> Daniel Mahoney, "Renesas Electronics Business Continuity Plan," Santa Clara, CA: Resesas Electronics America. October 2011, <http://am.renesas.com/press/bcp/index.html>.

<sup>22</sup> According to Fujimoto, Renesas Electronics' Naka Factory received serious damage because its factory structure was very old and vulnerable against earthquakes though production equipment within the structure was markedly state-of-the-art in the world. See, Fujimoto, *op. cit.*, p. 11, and Fujimoto, "Sapurai Che'en no Kyosoryoku to Gankensei," p. 7. See also Mitsuhiro Seki (関満博), a professor at Meisei University and professor emeritus of Hitotsubashi, says that Ibaragi Prefecture, one of the regions hit hard by the Earthquake, has a large number of Hitachi-related factories whose structure is antiquated without being refurbished or reinforced for a long years as a result of a cost-cutting measure in the middle of economic austerity and intensified global competition. For this reason, the damage turn out to be worse than expected. See Mitsuhiro Seki, "Shinsai Fukko ni Mukau Hitachi-, Hitachinaka-chiku no Chusho Kigyo [Small-and-Medium-sized Enterprises in the Cities of Hitachi and Hitachinaka: Facing the Challenge of Reconstruction from the Earthquake/「震災復興に向かう日立・ひたちなか地区の中小企業」], ARC, Mito City, Ibaragi Prefecture: Joyo Chiiki Kenkyu Sentah (Joyo Area Research Center/常陽地域研究センター), June 2011, p. 32. Finally, it should be noted that Renesas Electronics is the product of merges involving the semiconductor divisions of three Japanese electronics companies, Hitachi, Mitsubishi Electric, and NEC, and that Renesas' Electronics' Kana Factory is a former Hitachi factory.

<sup>23</sup> Daniel Mahoney, *op. cit.*, p. 6.

**Figure 4. Global Production Network of Renesas Electronics  
Manufacturing Capabilities**



Source: Renesas Electronics America, <http://am.renesas.com/index.jsp>.

At the same time, Renesas Electronics transferred Naka Factory’s production to foreign foundries including the world’s largest foundry, i.e., Taiwan Semiconductor Manufacturing Company (TSMC) (臺灣積體電路製造), and the world’s second largest and California-based Globalfoundries as substitute producers.<sup>24</sup> But this strategy, as Fujimoto points out, might raise the overall cost for Renesas, lose its capability to compete with its competitors, and squander its financial resources which should be set aside to invest in R&D.

In addition, the Earthquake and the ensuing disruption of Renesas’ supply chains have raised a problem of standardization of automobile microcontrollers. Renesas has enjoyed its preponderant position in the market for a long time. This monopolistic situation has been achieved by product characteristics that the automobile microcontroller is produced for the customer with “supplier-process-specific” production technologies which are “non-substitutable” and “non-portable.” Unlike the personal computer market which has a Microsoft-led dominant industry-wide technology standard, the automobile microcontroller market does not possess any industry-wide standards regarding software. Software is embedded into automobile chips with which individual automobile makers enhance their own competitive edge. Accordingly, software technology for automobile microcontrollers has been “non-portable,” and microcontrollers for individual automobile makers, and sometimes for each individual model of the same makers are almost incompatible between them. For these incompatibility and non-substitutability reasons, two business groups, AUTOSAR (*AUTomotive Open System ARchitecture*) and the GENIVI Alliance, have been working on developing open and standardized automobile software architecture. Some experts regard the 3/11 Disaster will be a catalyst for the acceleration of these standardization efforts.

<sup>24</sup> *Ibid.*, p. 12. On March 30, 2011, Renesas announced that it will sell its production facility to the German Telefunken Semiconductors and regard it as substitute producer in time of emergency. See, for example, <http://www.am.renesas.com/press/news/2011/news20110330.jsp>.

Besides change in technological progress, a global market transition has raised another challenge for Renesas Electronics. Undeniably the most promising market for automobile and MCUs for automobile is China.<sup>25</sup> In China, Renesas is now facing intensified competition with its foreign rivals including Freescale Semiconductor, and Europe's largest and Geneva-based STMicroelectronics as well as other Japanese firms including Toshiba and Fujitsu. Freescale Semiconductor, for its part, has already established alliances with several largest Chinese automobile makes including Chery Automobile (Qirui Qichē/奇瑞汽车) and Beiqi Foton Motor (Běiqi Fútián Qichē/北汽福田汽车). Accordingly, in a not-so-distant future, Renesas' main competitors including Freescale Semiconductor and STMicroelectronics might raise a competitive challenge in this rapidly expanding Chinese market.

#### 2.4. Five Ordeals Facing Post-quake Corporate Japan

As the Renesas case shows, post-quake Corporate Japan is now under mounting pressure to redesign its supply chain management structure. Furthermore it should do such redesigning to meet a wide variety of challenges—(1) electricity shortage, (2) a higher yen, (3) historic floods in Thailand, (4) as-yet-unsettled global economic institutional constellation including the TPP, and (5) feeble demand both at home and abroad. Since the essay has already discussed feeble domestic demand, the following part examines the remainder of the challenges.

##### (1) Electric shortage

The March 11 Earthquake inflicted huge damages not only on nuclear power plants of electricity companies but also on their other facilities including thermal and hydroelectric power stations, and power transmission facilities, which led to a pervasive blackout in their business areas. The numbers of offices and household that suffered the blackout were 4.4 million in the Tohoku Electric's business area, and 4.1 million in the TEPCO business area. It should be noted that in the middle of the historic natural disaster, the electric power companies tried hard to restore electricity supply in a short time. Electricity supply in the Tokyo Metropolitan Area was completely restored on March 12 at 4:00 a.m. Although electricity supply in the quake-hit Tohoku regions was not fully recovered for a while, most regions in the areas that the two electric power companies provide with electricity have recovered from blackouts in a couple of days. After overcoming the massive blackout, next challenges that the two companies faced were disaster recovery operations at power stations and a staggering electricity shortage (see Table 7).

**Table 7. Electricity Consumption: Large Electricity Customers**

(Cumulative Figures between April and September, Million kWh (Figures in the Parentheses), Y-o-Y, %)

	Japan		Eastern Japan		Western Japan			
			Tokyo	Tohoku	Chubu	Kansai	Chugoku	Kyushu
Total	(137.0) Million kWh ↓	Million kWh → <b>-4.7</b>	(38.6) <b>-9.8</b>	(11.7) <b>-16.1</b>	(25.6) <b>-1.4</b>	(24.1) <b>-0.0</b>	(11.7) <b>-2.6</b>	(12.3) <b>2.3</b>
Manufacturing Sector	(114.3)	-4.1	-8.4	-16.4	-1.4	0.4	-2.4	2.5
Machinery	(35.9)	-6.7	<b>-13.2</b>	<b>-10.7</b>	-5.0	-3.3	5.3	-1.7
Steel	(17.8)	-0.6	2.6	-37.5	4.0	-0.9	1.7	13.6
Non-manufacturing	(22.7)	-8.0	<b>-14.4</b>	<b>-14.3</b>	-1.3	-2.0	-4.3	0.7

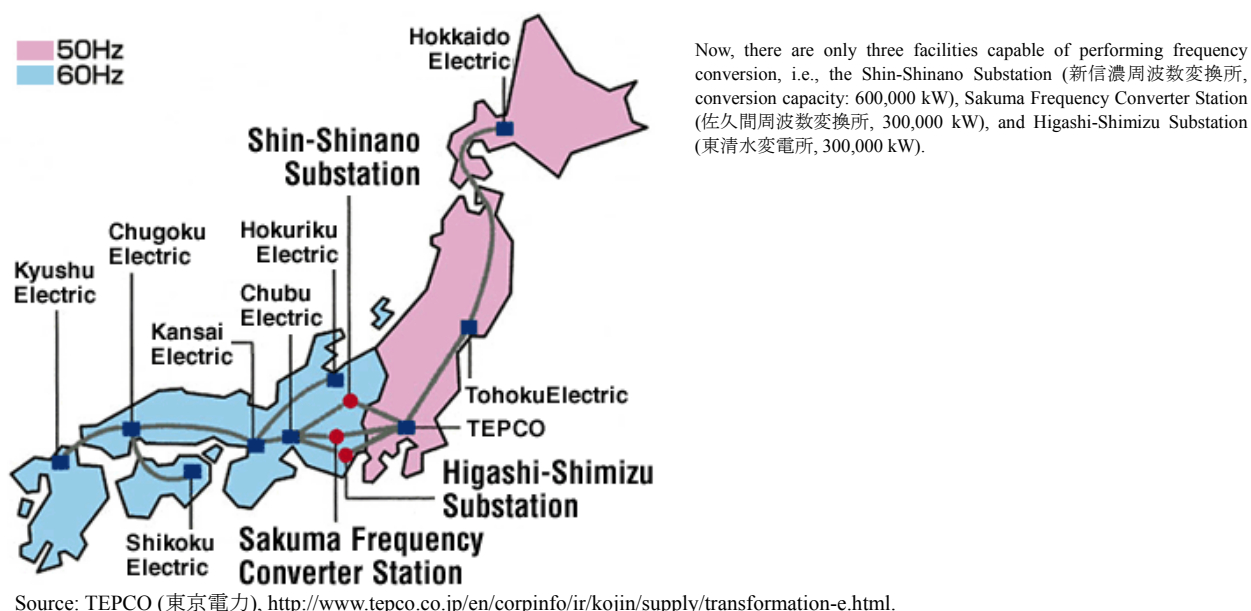
Note: This Table does not show the figures for several electricity companies (Hokkaido, Hokuriku, Shikoku and Okinawa).

Source: Federation of Electric Power Companies of Japan (FEPC) (電気事業連合会).

<sup>25</sup> See, for example, Alex Liu, "Chinese Microcontroller Market to Expand by Two Thirds by 2015," IHS iSuppli, March 30, 2011, <http://www.isuppli.com/China-Electronics-Supply-Chain/News/Pages/Chinese-Microcontroller-Market-to-Expand-by-Two-Thirds-by-2015.aspx>.

Table 7 shows electricity consumption of large institutional customers in Japan for the first half fiscal year of 2011 (between April and September). Because of the 3/11 Disaster, the ensuing rolling blackouts though for a short period, and a strict use restriction, electricity consumption in eastern Japan plunged drastically. In the TEPCO business area, electricity consumption for the first half fiscal year of 2011 declined by 9.8% compared to the previous year to 38.6 million kWh.<sup>26</sup> The Tohoku region also suffered a sharp decline of 16.1%. The electricity-consuming industrial sector, especially the machinery industry, suffered severely as Table 7 shows. Electricity consumption of the non-manufacturing sector was equally reduced by the restriction and voluntary conservation.<sup>27</sup> While eastern Japan suffered an overwhelming electricity shortage, western Japan suffered electricity shortage to a lesser extent. The slight decline in electricity consumption in western Japan can be partly attributed to stagnant economic activity. In this connection, everyone might ask a possibility of transfer from electricity rich regions (western Japan) to electricity poor regions (eastern Japan). As a matter of fact, Japan is a country that has two electric power frequencies—50 Hz in eastern Japan, and 60 Hz in western Japan. This difference in frequency makes it difficult to transfer electricity without special frequency converting facilities between areas adopting different frequencies (see Figure 5).

**Figure 5. Japan’s Electricity Divide: A Country That Has Two-Frequency Electricity**



This odd feature of Japan’s infrastructure has its century-old history. At the end of the 19th century when Japan launched its western modernization, a Tokyo-based electricity company imported 50 Hz generators made by the German Allgemeine Elektrizitats Gesellschaft (AEG), while an Osaka-based company, 60 Hz generators made by the American General Electric (GE). This difference in frequency, without integration, has lasted for over one century.<sup>28</sup>

<sup>26</sup> See, for example, Ministry of Economy, Trade and Industry (METI) (経済産業省), “Regarding Putting into Effect the Restriction of Electricity Use Based on Article 27 of the Electricity Business Act,” May 25, 2011, <http://www.meti.go.jp/english/earthquake/electricity/restriction.html>.

<sup>27</sup> Some organizations changed their source of electricity consumption from electric power companies to in-house generation.

<sup>28</sup> As for detailed information, see, for example, *Denki Shimbum* [Electricity News/ 『電気新聞』], “Difference in Power Frequency between Western and

Thus, the current electricity shortage is not a short-term problem but a long-term one. Electricity firms have already warned a looming shortage next summer as well as soon-to-come winter. Furthermore, since Japan's long-term energy policy is still in the middle of reconsideration, its private sector is now forced to devise mid- and long-term strategies by itself to survive a combined hardship of electricity shortage, feeble domestic demand, and intensified global competition. Under these circumstances, Japanese firms have been, and are still forced to face several alternatives—(1) stopping business operation and ceasing electricity consumption, (2) finding alternative electricity supply such as in-house power generation, (3) finding electricity conserving approaches including adjustment of luminous intensity and air conditioner's temperature, and encouraging employees to work at home, (4) making operation hours flexible or shifting working days toward weekends when firms are unlikely to encounter the risk of electricity shortage, and (5) moving facilities toward places where there is no fear of electricity shortage—western Japan or overseas. In response to this electricity shortage, Nippon Keidanren (Japan Business Federation) recently conducted a questionnaire survey on countermeasures adopted during the summer.<sup>29</sup> According to the survey, 83% of respondent companies reduced electricity use by adjusting luminous intensity and air conditioner's temperature; 41% of the companies utilized in-house power generation or batteries; 40% of them shifted working days toward weekends; 28% of them adopted flexible working hours; 5% of them reduced the level of operation; 3% of them decided to relocate operation facilities toward regions where there is no electricity shortage.

As for this inter-regional relocation of operation, a mid-May survey conducted by Teikoku Data Bank (TDB), a research firm, reported that 5.4% or 599 firms out of its 11,111 surveyed firms planned inter-regional relocation of operation, and that 23.4% or 140 of the 599 respondent firms planned to move toward the Kansai region that was followed in the ranking as an alternative operation site by the southern Kanto (Tokyo-Kanagawa) region (15.2%), overseas (14.0%), and Kyushu (12.9%). In the meantime, on May 26, Kansai Electric Power Company (KEPCO) announced that it would be forced to ask its customers to reduce electricity consumption because of scheduled inspections of its nuclear power plants. Actually it was the very moment when a growing number of companies were trying to transfer their operations toward Kansai with its business center located in the Osaka-Kobe-Kyoto (Keihanshin) area. After this KEPCO announcement, however, a large number of Japanese firms changed their relocation destination from Kansai toward overseas. According to a July survey conducted by TDB, 35.2% or 3,878 firms of its 11,006 respondent firms planned to relocate their facilities toward overseas, while 35.1% or 3,860 firms plan to relocate within Japan.<sup>30</sup> Out of the 3,860 respondent firms, 12.6% or 485 firms still look to Kansai as their first inter-regional relocation destination within Japan. But, compared to the figure in the above May survey (23.4%), Kansai's relative attractiveness has been substantially reduced in fear of stable electricity supply. In addition to this unstable electricity supply, a higher yen poses another challenge to manufacturing production on Japanese soil.

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Eastern Japan," <http://www.shimbun.denki.or.jp/en/knowledge/index.html>.

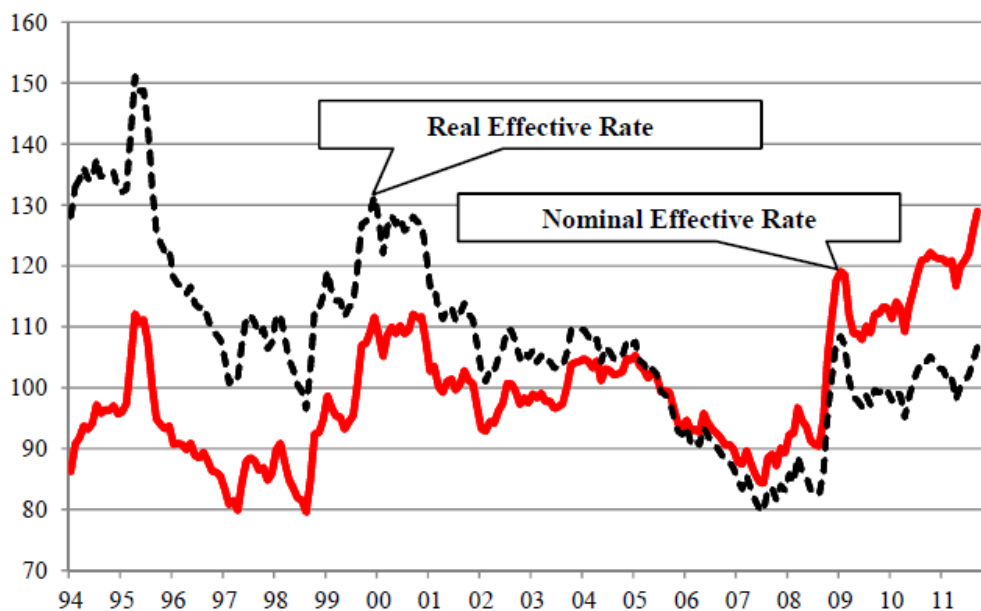
<sup>29</sup> Nippon Keidanren (Japan Business Federation) (日本経団連), "Konka no Denryoku Jukyu-taisaku ni Kansuru Anketo Kekka ni Tsuite [Questionnaire Survey Result Regarding Electricity Conservation Measures Adopted This Summer/「今夏の電力需給対策に関するアンケート結果について」]," October 21, 2011. <http://www.keidanren.or.jp/indexj.html>, and Teikoku Data Bank (TDB) (帝国データバンク), "Kaki no Kigyo Katsudo ni Kansuru Ishiki Chosa [A Report on Companies' Attitude toward Activity during the Coming Summer/「夏季の企業活動に関する意識調査」]," June 3, 2011, Tokyo: TDB.

<sup>30</sup> Teikoku Data Bank (TDB) (帝国データバンク), "Sangyo no Kudoka ni Taisuru Kigyo no Ishiki Chosa [A Report on Companies' Attitude toward Industrial Hollowing Out/「産業の空洞化に対する企業の意識調査」]," August 3, 2011, Tokyo: TDB.

## (2) High Yen

Uncertainties hanging over the U.S. and European economies have pushed dramatically up the value of the yen, regardless of Japan's macroeconomic fundamentals (see Figure 6). This continued high yen is now siphoning off Corporate Japan's profits. According to the estimates of the Japan Research Institute (JRI) published on October 5, 2011, given the current levels of exchange rate (assuming that the U.S. dollar is 75 yen and the euro is 100 yen), Japan's manufacturing sector will suffer a massive loss of about 40 billion yen.<sup>31</sup>

Figure 6. Japan's Effective Exchange Rate Indexes (2005=100)



Source: Bank for International Settlements (BIS).

The high yen and intensified global competition are changing corporate executives' mindset. According to a questionnaire survey conducted by METI in late-August, 23% of the surveyed large manufacturing companies and 20% of the surveyed small-and-medium-sized enterprises (SMEs) are planning to move their production and R&D facilities out of Japan.<sup>32</sup> At the same time, the survey has found an ominous sign that the continued high yen will urge Corporate Japan more forcefully to leave Japanese soil—46% of large manufacturers and 28% of SMEs will try to set up their facilities outside Japan, if the high yen continues. To be sure, the fact that Japanese firms are aggressively going out of Japan is not necessarily an unpropitious thing in the age of globalization—if foreign firms come to Japan aggressively.

<sup>31</sup> Japan Research Institute (JRI) (日本総合研究所), "Endaka ga Seizogyo no Kigyo-shueki ni Ateru Eikyo [The High Yen's Impacts on the Manufacturing Sector's Profits/「円高が製造業の企業収益に与える影響」],” *Nihon Soken Risahchi Ai* [『日本総研リサーチ・アイ』], No. 2011-079, Tokyo: JRI, October 5, 2011. Generally speaking, the high yen's impacts should be examined by reviewing which contract currency Japanese companies use for their transaction. According to the Ministry of Finance (MOF) (財務省), for example, during the first half year of 2011, the shares of major contract currencies—yen, U.S. dollar, and euro—for Japan's exports are 42.2%, 47.4%, and 6.6% respectively. Those for Japan's imports are 23.2%, 72.1%, and 3.2%. In addition, it should be noted that these shares vary substantially according to trading partners. For example, those of Japan's exports to the U.S.A. are 16.8%, 83.1%, and 0.1%, while those of Japan's exports to the EU are 31.7%, 15.2%, and 49.3%.

<sup>32</sup> Ministry of Economy, Trade and Industry (METI) (経済産業省), "Genka no Endaka ga Sangyo ni Ateru Eikyo ni Kansuru Chosa [A Survey on the Current High Yen's Impacts on Industry/「現下の円高が産業に与える影響に関する調査」],” 'Daikigyo Seizogyo-hen [Survey Results: Large Manufacturing Companies/大企業・製造業編],’ p. 6, and 'Chusho Kigyo-hen [Survey Results: Small-and-medium-sized Enterprises/中小企業編],’ p. 6, September 1, 2011, Tokyo: METI.



**(3) Another Natural Disaster: Floods in Thailand**

This year, Japanese firms, especially their supply chains, appear to be cursed by Mother Nature. This time, however, not in Japan but in Thailand.<sup>33</sup> On October 4, Saha Rattana Nakorn Industrial Estate in Ayutthaya Province, an industrial park 92 km north of Bangkok where 35 Japanese firms have their offices and factories, was inundated with floodwaters. The historic floods became uncontrollable and attacked other Ayutthaya's industrial parks one by one—Rojana (on October 9), High-Tech Industrial Estate (October 13), Bang-Pa-In (October 14), and Factoryland (October 16). Then the floods spread to reach Pathumthani Province and attacked Navanakorn (October 17), Bankadi (October 20), and finally one of Bangkok's industrial park (November 6). Although seven industrial parks have suffered the flood damages to date, there are several industrial parks that are at the risk of flood attacks (See Table 8).

**Table 8. Thai Industrial Parks, Inundated or on the Verge of Flooding (As of November 10, 2011)**

Flooding Date	Industrial Parks	Number of Firms		Flooding Date	Industrial Parks	Number of Firms	
		Total	Japanese			Total	Japanese
Oct. 4	Saha Rattana Nakorn, Ayutthaya, Province	42	35	Nov. 6	Bangchan, Bangkok	83	20
Oct. 9	Rojana, Ayutthaya Province	*218	*147	Not yet	Lat Krabang, Bangkok	283	49
Oct. 13	High-Tech, Ayutthaya Province	143	*99	Not yet	Wellgrow, Bangkok	*	*
Oct. 14	Bang-Pa-In, Ayutthaya Province	84	30	Not yet	Bangplee, Samut Prakan Province	120	48
Oct. 16	Factoryland, Ayutthaya Province	14	5	Not yet	Kaengkhoi, Saraburi Province	1	0
Oct. 17	Navanakorn, Pathumthani Province	190	104	Not yet	Gemopolis, Bangkok	130	6
Oct. 20	Bankadi, Pathumthani Province	34	28	Not yet	Bangpoo, Samutprakarn Province	*287	*72

Note\*: Figures have not yet been confirmed.

Source: Japan External Trade Organization (JETRO) (日本貿易振興機構).

Thailand is a special country for Japan's manufacturing sector—one of the most important nodes on Japan's production networks. Although Thailand is the second largest country behind China for Japanese firms in terms of the outstanding value of foreign direct investment (FDI) (Japan's outstanding value of FDI in China for 2010 is US\$66.5 billion, while in Thailand, US\$27.8 billion), the number of Japanese firms operating businesses in Thailand exceeds that in China (see Table 9). As a result, Thailand is Japan's 6th largest export destination as seen in Table 5, and the largest among the ASEAN countries. This industrial agglomeration poses a devastating risk at the time of disasters and accidents, though it perfectly agrees with economic calculations in an ordinary and uneventful time. With no prospect of flood subsiding, figures for damages to Japan's business operations are difficult to estimate and remain mostly in the realm of guesswork. But, doubtlessly, this disaster in Thailand has a critical impact on Japan's economy.

**Table 9. Number of Japanese Firms Developing Businesses in the Asia-Oceania Region (2011)**

ASEAN		Northeast Asia		Southwest Asia		Oceania	
Total	4,748	Total	2,008	Total	963	Total	317
Thailand	2,000	China	1,445	India	801	Australia	328
Malaysia	914	Taiwan	247	Sri Lanka	72	New Zealand	120
Singapore	789	Hong Kong & Macau	209	Bangladesh	60		
Indonesia	447	South Korea	101	Pakistan	30		

Note: ASEAN's total figure includes the figures for, Vietnam (292), Philippines (230), Cambodia (49), Myanmar (20), and Laos (7).

Source: Japan External Trade Organization (JETRO) (日本貿易振興機構), "Zai Ajia-Oseania Nikkei Kigyo Katsudo Jittai Chosa [A Survey of Japanese Firms' Activity in the Asia-Oceania Region/「在アジア・オセアニア日系企業活動実態調査」]," October 2011, p. 3.

<sup>33</sup> See, for example, Reuters, "Thai Floods Crimp Global Supply Chains," October 28, 2011, <http://www.reuters.com/article/2011/10/28/thailand-floods-supply-chain-idUSSGE79R00E20111028>.

#### **(4) & (5) A General Economic Climate: Global Economic Institutions and Demand both at Home and Abroad**

Finally, by simultaneously touching on the issues of (4) as-yet-unsettled global economic institutional constellation including the TPP and (5) feeble demand both at home and abroad, this essay briefly examines a general economic climate which can serve as a platform for Japanese companies in the global economy.

Amidst relentless globalization, the landscape of the world trading system is rapidly changing from multilateralism to regionalism—a diminishing hope of a successful Doha Development Round (DDR) and an unstoppable proliferation of regional trade agreements (RTAs) including free trade agreements (FTAs) and the TPP.<sup>34</sup> To be sure, “Doha may be dead,” as lamented Susan C. Schwab who served as United States Trade Representative between 2006 and 2009 in her article in this year’s *Foreign Affairs*.<sup>35</sup> In the meantime, Pascal Lamy, Director-General of the World Trade Organization (WTO), addressed a Genevan audience at the Conference on “Multilateralizing Regionalism” on September 10, 2007, by stating that the point is not “whether regionalism is a good or a bad thing,” but “the need to reflect on whether regionalism is causing harm to multilaterally-based trading relationships.”<sup>36</sup> Lamy’s remarks echo the teachings of the prominent economist Jagdish N. Bhagwati—RTAs can become either “building blocks” or “stumbling blocks” for a future free trading system.<sup>37</sup> Thus, our present task is to make the current RTAs serve as “building blocks” as much as possible. However, the world political leadership at the Paris G20 Summit failed to reduce lingering uncertainties by developing practicable approaches to make great strides toward a freer multilateral trade regime and to diffuse the European debt crisis.<sup>38</sup>

Neither can current turbulence in Japan’s politics allow the country to play a larger role in forming mutually beneficial “building blocks” for a freer and more buoyant global economy.<sup>39</sup> To make matters worse, a debt-stricken and rapidly aging Japan is expected to experience frustratingly slower economic growth accompanied by a shrinking trade surplus and dissipation of precious financial assets. Accordingly, Corporate Japan is expected to make self-help efforts to survive intensified global competition while it should raise voices toward a freer global economic system.<sup>40</sup>

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<sup>34</sup> World Trade Organization (WTO) (世界貿易機関) provides the latest situation regarding regional trade agreements (RTAs). See [http://www.wto.org/english/tratop\\_e/region\\_e/region\\_e.htm](http://www.wto.org/english/tratop_e/region_e/region_e.htm).

<sup>35</sup> Susan C. Schwab, “After Doha: Why the Negotiations Are Doomed and What We Should Do about It,” *Foreign Affairs*, Vol. 90, No. 3 (May/June 2011), p. 117.

<sup>36</sup> Pascal Lamy, “Proliferation of Regional Trade Agreements ‘Breeding Concern,’” September 7, 2011, World Trade Organization (WTO), [http://www.wto.org/english/news\\_e/sppl\\_e/sppl67\\_e.htm](http://www.wto.org/english/news_e/sppl_e/sppl67_e.htm).

<sup>37</sup> See, for example, a book and an article of Jagdish N. Bhagwati, i.e., *The World Trading System at Risk*, Princeton, NJ: Princeton University Press, 1991, and “Regionalism and Multilateralism: An Overview,” in *New Dimensions in Regional Integration*, edited by Jamie de Melo and Arvind Panagariya, Cambridge: Cambridge University Press, pp. 22-51. See also Richard E. Baldwin and Elena Seghezza, “Are Trade Blocs Building or Stumbling Blocks? New Evidence,” *Journal of Economic Integration*, Vol. 25, No. 2 (June 2010), pp 276-297.

<sup>38</sup> As for the Cannes G20 Summit Final Communiqué, November 4, 2011, see [http://www.g20.org/pub\\_communiques.aspx](http://www.g20.org/pub_communiques.aspx).

<sup>39</sup> As for domestic confusions regarding the global trading system, see, for example, Kazuhito Yamashita (山下一仁), “TPP no Ronten: TPP Kenkyukai Saishu Hokokusho [The Gist of the TPP Dispute: Final Report of the CIGS TPP Study Group/「TPPの論点」(TPP研究会最終報告書)], Tokyo: Canon Institute for Global Studies (CIGS) (キャノングローバル戦略研究所), October 26, 2011, [http://www.canon-igs.org/research\\_papers/macroeconomics/20111026\\_1137.html](http://www.canon-igs.org/research_papers/macroeconomics/20111026_1137.html), and *Yomiuri Shimbun*, “JA at Crossroads; TPP, Agriculture Can Coexist; But Reform of Huge Farming Federation is Unavoidable,” January 18, 2011, <http://www.yomiuri.co.jp/dy/business/T110117003777.htm>.

<sup>40</sup> As for information regarding opinions published from a viewpoint of Japan’s business community, see for example, Nippon Keidanren (Japan Business Federation) (日本経団連), “Proposals for Japan’s Trade Strategy,” April 11, 2011, <http://www.keidanren.or.jp/english/policy/2011/030/proposal.html#part1>, and “Keidanren Seicho Senryaku 2011—Minkan Katsuryoku no Hakki ni yoru Seicho Kasoku ni Tsuite [Keidanren Growth Strategy 2011: Accelerating Growth through Private-Sector Dynamism/「経団連成長戦略2011」—民間活力の発揮による成長加速に向けて—],” September 16, 2011, <http://www>.

### 3. Conclusions

This essay has tried to capture a bird's eye view of post-quake Japan by examining the current economic condition and discussing approaches that Corporate Japan can adopt. In addition to the 3/11 Disaster, Japan's economy is facing five grave challenges—(1) electricity shortage, (2) a higher yen, (3) another natural disaster attacking one of Japan's overseas industrial agglomeration, (4) as-yet-unsettled global economic institutional arrangements, and (5) feeble demand both at home and abroad. Under these circumstances where Japan's *annus horribilis* is unlikely to come to an end shortly, Corporate Japan is expected to be more innovative to survive intensified global competition.

While Corporate Japan is struggling with the post-quake disaster, its global competitors are doubling their efforts to enhance their competitive capabilities.<sup>41</sup> In order to survive cut-throat competition, Japanese firms have to take advantage of comparative advantage to the greatest extent, and therefore, relocate their production and R&D facilities around the globe. Thus, Japanese firms are facing historically the fourth challenge of “hollowing-out” after experiencing its first in the mid-1980s after the Plaza Accord, second one amidst proliferation of production networks in South East Asia during the late-1990s, and third one during the China boom in the early 21st century.<sup>42</sup> In the middle of relocation, they are experiencing a diminishing gap between Japan and the rest of the world in process technologies at factories, which could lead to a substantial decrease in Japan's exports of intermediate goods that have been representative goods “Made in Japan.”<sup>43</sup> In other words, Corporate Japan will have to rebalance further between exporting goods (through domestic production) and exporting ideas (through innovation) in the age of globalization.

Today's Japan has to restart its nation-building as it did just after the devastating defeat with atomic bombings in 1945. According to Tatsuhiko Kodama, a professor at the University of Tokyo, the amount of radioactive materials spewed by Fukushima Daiichi was about 30 times the amount emitted by the Hiroshima atomic bomb.<sup>44</sup> Therefore, Corporate Japan has to take the lead in exploration of new possibilities to resuscitate the country. As Joseph A. Schumpeter predicts that “the specific problem of leadership arises and the leader type appears only where new possibilities present themselves,”<sup>45</sup> Japan's new corporate leadership is about to emerge and the author tries to describe and evaluate it in a lively fashion in his future essays.

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keidanren.or.jp/japanese/policy/2011/089/index.html. Its summary is available in English, <http://www.keidanren.or.jp/english/policy/2011/089.html>.

<sup>41</sup> As one of representative media stories regarding challenges facing Japanese firms amidst intensified global competition, see Makiko Kitamura and Masatsugu Horie, “Toyota Raises Profit Outlook on Quake Recovery as Hyundai Gains,” *Bloomberg*, August 2, 2011, <http://www.businessweek.com/news/2011-08-02/toyota-raises-profit-outlook-on-quake-recovery-as-hyundai-gains.html>.

<sup>42</sup> Prime Minister Yoshihiko Noda acknowledges the significance of this fourth challenge of “hollowing-out.” He referred to the challenge at the time of his first address as prime minister at the Diet (Japan's National Parliament). See Yoshihiko Noda (野田佳彦), “Policy Speech to the 178th Session of the Diet,” September 13, 2011, [http://www.kantei.go.jp/foreign/noda/statement/201109/13syosin\\_e.html](http://www.kantei.go.jp/foreign/noda/statement/201109/13syosin_e.html).

<sup>43</sup> Ministry of Economy, Trade and Industry (METI), Industrial Structure Council, Trade Policy Committee (経済産業省産業構造審議会通商政策部会), “Shinsai ga Kokunai Koyo and Sangyo no Kudoka Kenen ni Oyobosu Eikyo [The 3/11 Earthquake's Impacts on the Fear against Hollowing-out of Domestic Employment and Industrial Production/「震災が国内雇用・産業の空洞化懸念に及ぼす影響」,” June 9, 2011, p. 4.

<sup>44</sup> Jun Hongo, “Fukushima Fallout Said 30 times Hiroshima's,” *Japan Times*, August 24, 2011, <http://www.japantimes.co.jp/text/nn20110824f2.html>. For more information, see Tatsuhiko Kodama (児玉龍彦), “Josen-seyo, Ikkoku mo Hayaku [Decontamination! The Clock is Ticking/「除染せよ、一刻も早く」],” *Bunkei Shinju* (『文藝春秋』), Vol. 89, No. 12 (October 2011), pp. 94-105. See also *Asahi Shimbun*, “Fukushima Accident Released Far More Cesium than Hiroshima Bombing,” August 27, 2011, <http://ajw.asahi.com/article/0311disaster/fukushima/AJ201108278044>.

<sup>45</sup> Joseph A. Schumpeter, *The Theory of Economic Development*, Second edition, New Brunswick, NJ: Transaction Publishers, 1983, p. 88 (Original German version: *Theorie der wirtschaftlichen Entwicklung*, 2. Auflage, München: Duncker & Humblot, 1926, S. 128).