Economic Impact of the Great East Japan Earthquake

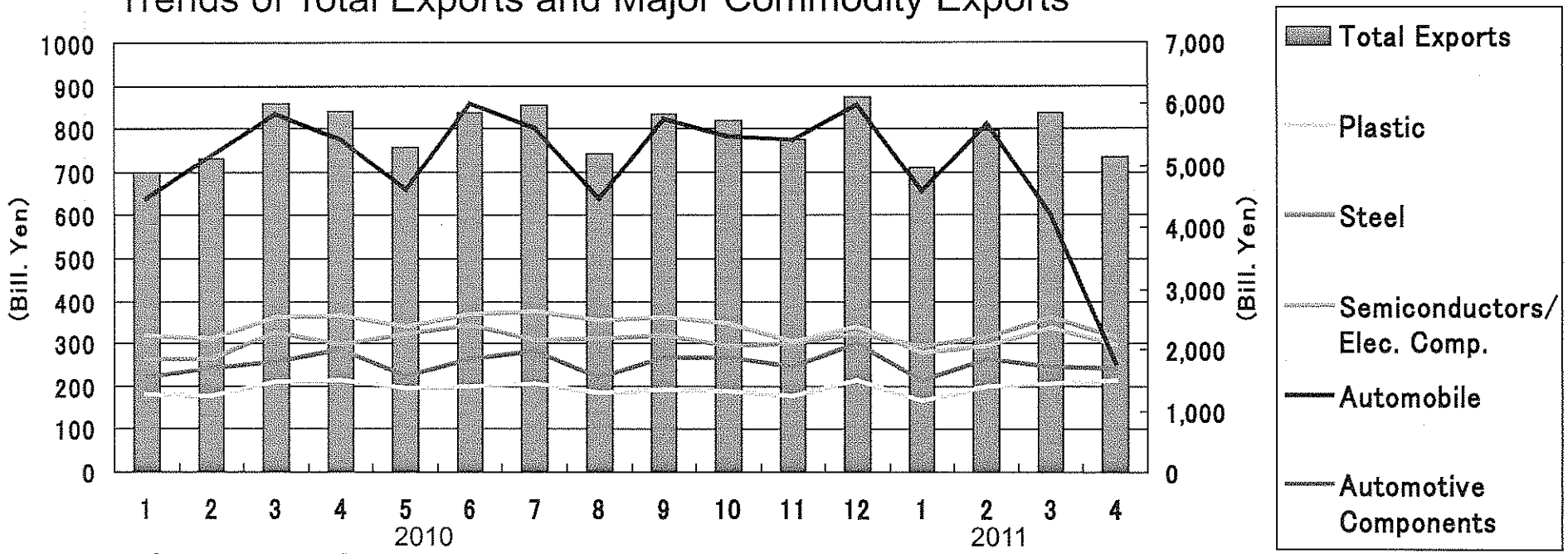
June 7, 2011

Consulate-General of Japan in Munich

1. Economic Impact

1-1. Effects on Export

Trends of Total Exports and Major Commodity Exports



Changes of Export Values in March and April (y/y % chg.)

	March	April
Total Exports	-2.3%	-12.4%
Plastic	-1.4%	0.5%
Steel	10.7%	6.0%
Semiconductors / Electronic Components	-6.9%	-18.8%
Automobile	-27.7%	-67.1%
Automotive Components	-5.0%	-15.0%

Source: Trade Statistics , Ministry of Finance

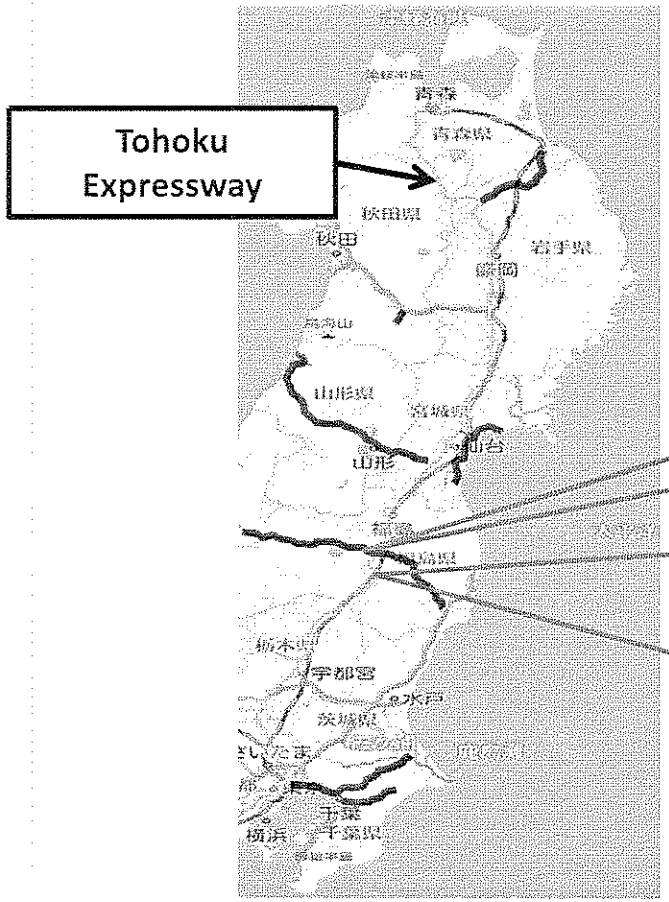
1-2. The Status of Recovery : Auto/Electronics Industries

- Several weeks after the earthquake, certain major factories producing core parts and materials temporally ceased operation, but gradually resumed . For factories that need more time to recover, companies are seeking substitute production from other factories.
- Most of the motor production companies have restarted production, depending on the supply level of core parts and materials.

Toyota Motor	All factories resumed production on April 18th.
Nissan	All factories, including a seismic-damaged engine factory in Iwaki-city, resumed production on April 18th.
Honda	After production resumed of finished automobiles at the Saitama factory and Suzuka factory, all factories resumed production on April 11th.
Hitachi Automotive Systems	Sawa and Fukushima Auto-parts manufacturing factories damaged in the earthquake partially resumed production on March 25th. Manufacturing facilities have been almost completely repaired.
Hitachi Vehicle Energy	Headquarter factory damaged in the earthquake at Hitachinaka-city resumed production of Lithium-ion batteries from March 28th.
Hitachi ltd.	Factory damaged in the earthquake partially resumed manufacturing of turbines for electricity power plants on March 29th. 90% production level has recovered.
Renesas Electronics	6 of 7 factories damaged in the earthquake have already resumed production. The NAKA Factory damaged by the earthquake is scheduled to resume production by June 1st. Original schedule was "before July".
Shinetsu Chemicals	Shirakawa Factory damaged in the earthquake partially resumed production on April 20th. Right now, carrying out the restoration work with the aim of returning the production capacity at the plant to the level prior to the earthquake by the end of June of this year.
IHI	Soma Factory damaged in the earthquake which produces engines and gas turbines, resumed operation on March 29th.

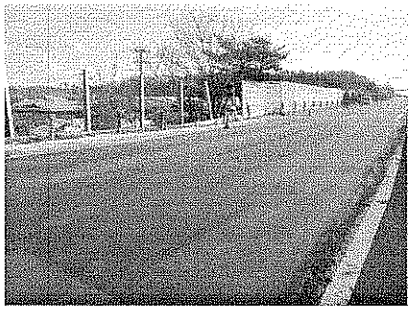
1-3. Reconstruction and recovery (Tohoku Expressway)

- The Tohoku Expressway is a transport and commercial artery which connects Tohoku and Kanto regions. Numerous factories are located along the route.
- 347 km out of 675 km of the expressway was destroyed in the earthquake on March 11, but traffic restriction was lifted on March 24th, following the completion of emergency restoration measures.



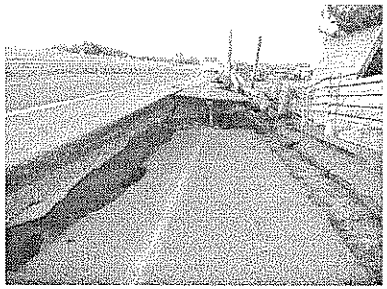
NEXCO East

Mar 12th



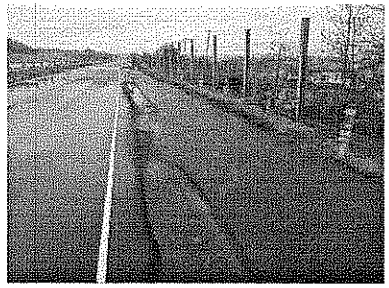
NEXCO East

Mar 17th



NEXCO East

Mar 12th



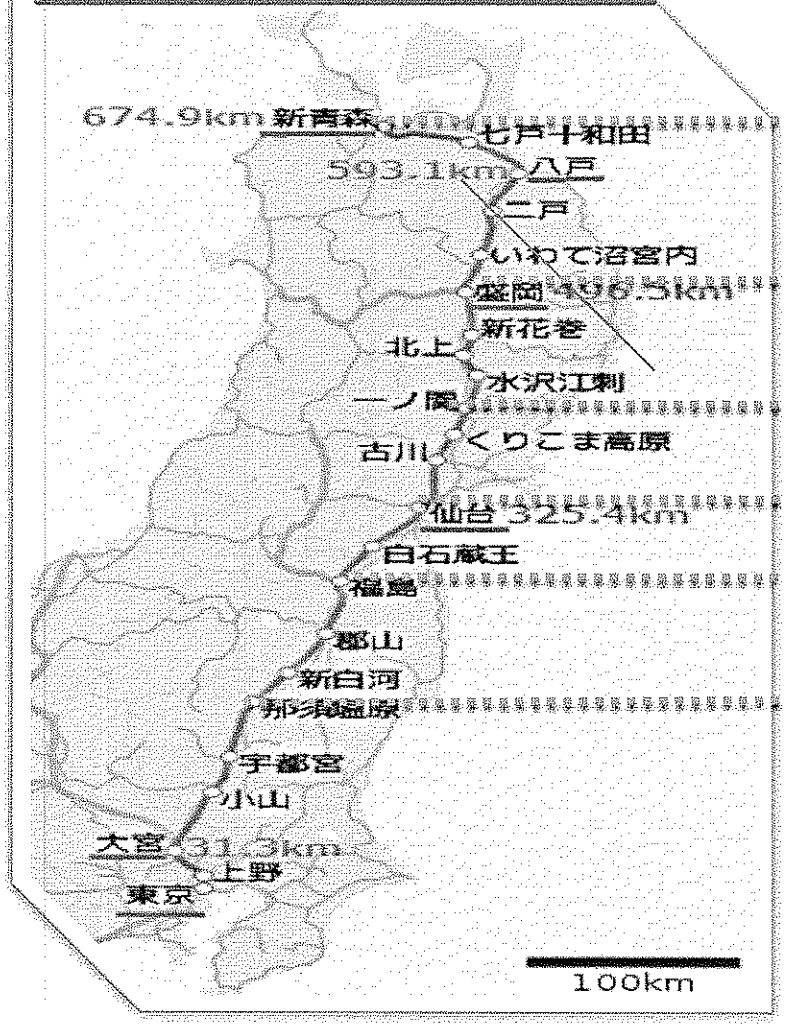
NEXCO East

Mar 21th

1-4. Reconstruction and recovery (Railroads)

- None of the 26 trains operating at the time of the earthquake derailed, nor was there any serious damage to elevated bridges and stations, or collapse of tunnels.
- The entire Tohoku Shinkansen resumed operation on April 29th.

Present status of operations as of April 29th



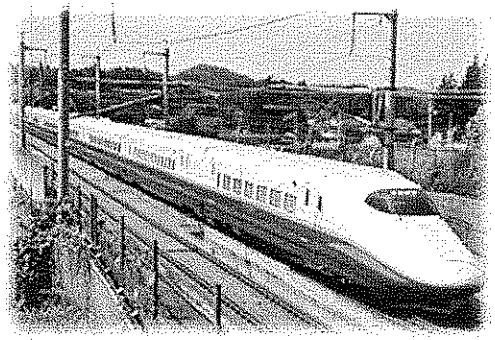
Morioka to Shin Aomori
Resumed operation April 13th

Ichinoseki to Morioka
Resumed operation April 23th

Sendai to Ichinoseki
Resumed operation April 29th

Fukushima to Sendai
Resumed operation April 25th

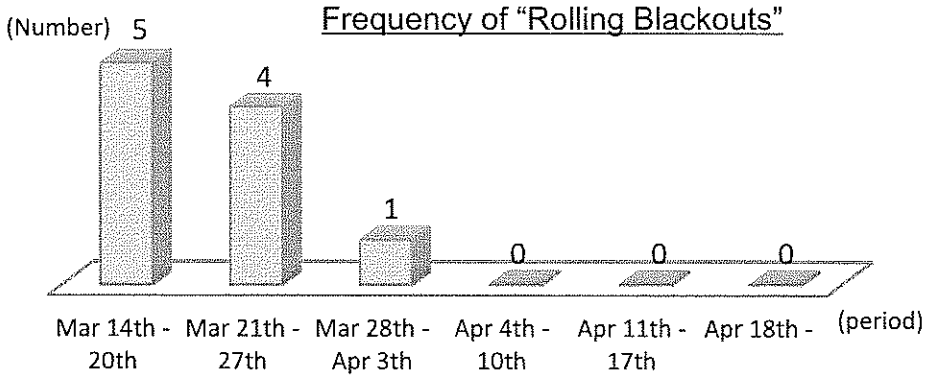
Nasushiobara to Fukushima
Resumed operation April 12th

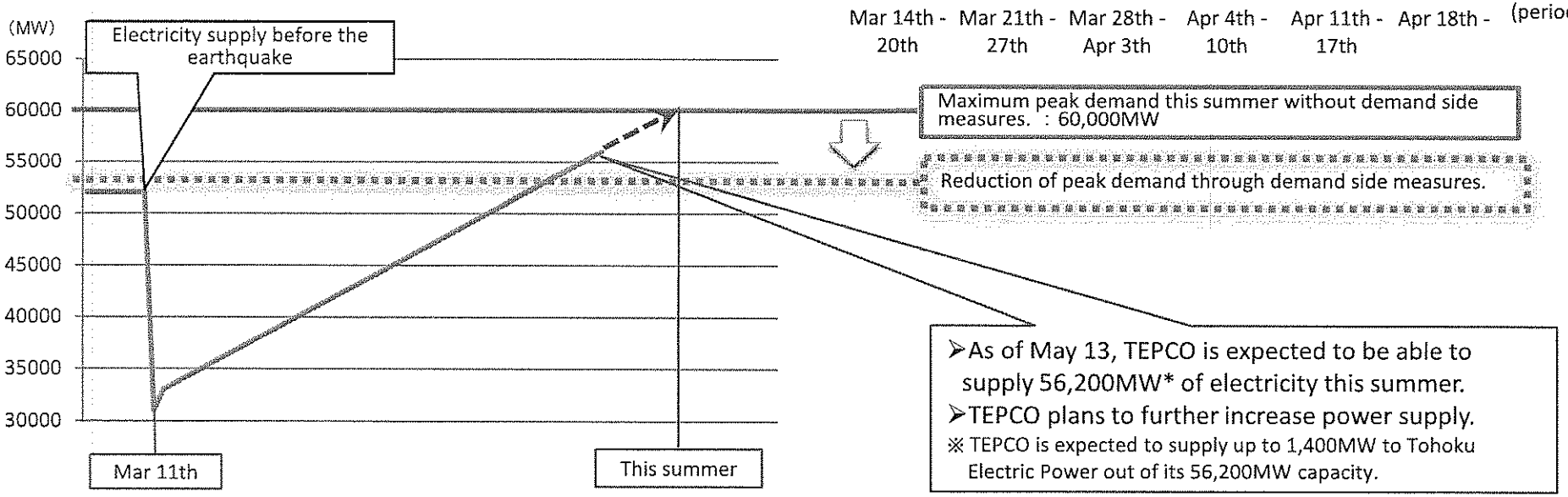


JR East

1-5. Electricity Supply/Demand up to this Summer

- With reinforcement of the power supply, Tokyo Electric Power Company decided, in principle, to not carry out "Rolling Blackouts."
  After March 29th, "Rolling Blackouts" have been discontinued.
- TEPCO expects that it will be able to supply electricity up to 56,200 MW this summer.
- With TEPCO's action to add further power supply and demand side measures, "Rolling Blackouts" is expected to be avoided throughout this summer.





1-6. Electricity Supply/Demand Measures

Forecast of supply capacity in this summer

-restoring the disaster-stricken thermal power plants
-restarting the thermal power plants shut down for a long period
-introducing the power sources such as gas turbines for installation in emergencies
-increasing the purchase of power from private power generation facilities
-using pumped storage power generation power plants

Interchange from TEPCO to Tohoku EPCO

TEPCO area

Expected demand	Forecast of supply capacity	Required demand reduction
60 GW	53.8 GW	10.3%

Tohoku EPCO area

Expected demand	Forecast of supply capacity	Required demand reduction
14.8 GW	13.7 GW	7.4%

Target of demand reduction: 15%

Large customers (Contract electricity: 500kW or more)

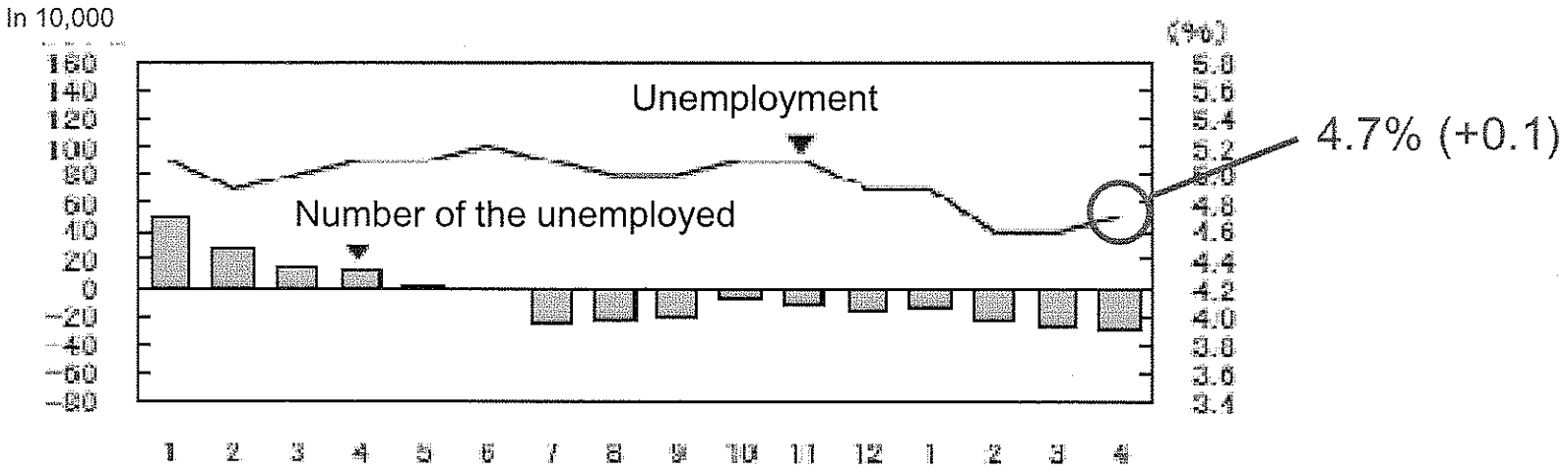
Small customers (contract electricity: less than 500kW)

Households | **national movement**

Government

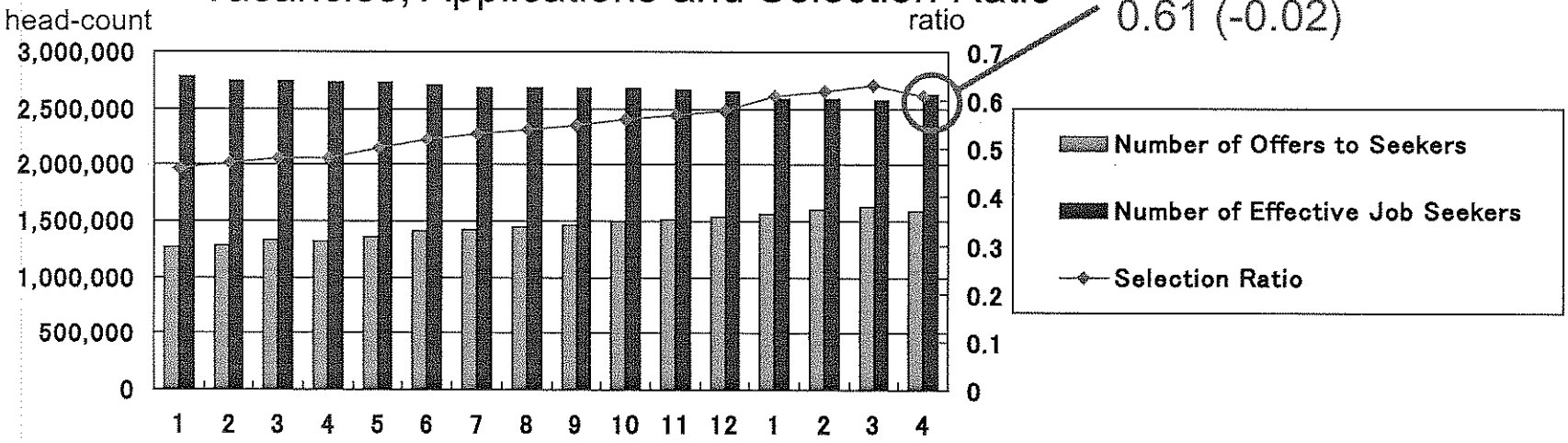
1-7. Employment

Trend in the number of the employed and employment rate (y/y % chg.)



(Source) Minister of Internal Affairs and Communications

Vacancies, Applications and Selection Ratio



(Source) Minister of Health, Labour and Welfare

1-8. Economic Effects of the 2011 Tohoku Earthquake

	Domestic Economy	International Economy
Short-term Effects	**＜Companies＞** ・Decline in Production due to a) direct causes such as planned outage and damages to buildings, facilities and infrastructure and b) indirect causes such as problems in the supply chain. Consequently decline in exports . (－) ・Decrease in investments due to increase in risk aversion. (－) ・Bankruptcy of SMEs. (－) ・Stagnation of exports due to strict radiological inspection Effects of harmful rumors. (－) ・Negative effects on tourist business and service industry. (－)	**＜Companies＞** ・Suspension of production due to cessation of supply of e.g. raw materials or components such as semiconductors or petrochemical products from Japan. (－) → From a macro perspective: possible inducement of inflation ・In some countries rising demand for substitutes (＋) ・Weakening demand for Japanese products. (－) ・Severe hit to the tourist and service industry due to abrupt decline of tourists. (－) ・Decline of Japanese investments. (－)
	＜Households＞ ・Economic uncertainty entails a downward trend in employment as well as consumer confidence. (－) →	**＜Households＞** ・Downward trend in employment as well as consumer confidence due to standstills. (－) ・Shortages due to cessation of supply of Japanese food products. (－) → From a macro perspective: possible inducement of inflation
	＜Agriculture, Forestry and Fisheries Industry ＞ ・Direct damage caused by the tsunami and the damage to the agriculture, forestry and fisheries industry caused by the nuclear accident (including harmful rumors). (－) ・Spillover effect towards the processing industry. (－)	
Mid-term Effects	・Economic boost from restored demand. (＋) ・Public concerns regarding nuclear power resulting in building-freezes and suspension of nuclear plants / uncertainty regarding future energy supply. (－)	・Spillover effect from restored demand. (＋) ・Public concerns regarding nuclear power resulting in building-freezes and suspension of nuclear plants / uncertainty regarding future energy supply. Further upward pressure on the price of oil. (－)

Annotation: „＋" & "－" indicate the expected positive or negative effects on the Japanese and international economy , respectively

1-9. Macroeconomic Impact (Cabinet office estimate)

➢The Cabinet Office forecasts that Japan's growth will be positive following the "Great East Japan Earthquake." It estimates damage to stock due to the disaster to be about 1% of the national stock.

(Real GDP、trillion yen)

	FY2011(2011,4～2012,3)		FY2012 (2012,4～2013,3)	FY2013 (2013,4～2014,3)
	First half	Second half		
Impact on GDP in the affected areas Decline in production due to damage to private plants & equipment	▲1. 25～▲0. 5	▲1. 25～▲0. 5	▲2. 25～▲1. 25	▲2. 25～▲1. 25
Impact on GDP in the non-affected areas via supply-chain connections	▲0. 25	—	—	—
Impact on recovery of damaged stocks (assuming a scenario where recovery takes 3 years) Increase in production corresponding to the gross fixed capital formation	2～3	3～5	6～9. 5	5～7. 75
Total impact on GDP	0. 5～2. 25	2～4. 25	3. 75～8. 25	2. 75～6. 5
In percent of real GDP (annualized)	0. 25～0. 75%	0. 75～1. 5%	0. 75～1. 5%	0. 5～1. 25%
Damage to stocks (Social Capital, Housing, private plants & equipment)	16～25 trillion yen (about 1% of all stock)			

【Source】 Cabinet Office

(※1) Prefectures covered : Hokkaido, Aomori, Iwate, Miyagi, Fukushima, Ibaraki, and Chiba. Period covered : FY2011 – FY2013

(※2) This table shows the difference from a baseline which corresponds to real GDP that would have realized if the Tohoku-Pacific Ocean Earthquake had not occurred. When calculating the ratio to real GDP, estimated real GDP for FY2010 as shown in the government economic outlook (Cabinet decision in January 2011) is used.

(※3) Total stock in Japan is 2,054 trillion yen. (by macroeconomic and fiscal model database 2009)

(※4) Excluding impact on GDP via constraint on electric power supply.

1-10. Forecasts for Economy and Trade

OECD Japanese Economy Outlook	Assumed growth for 2011 0.8% and 2.3% for 2012. Predictions for 2011 expect a decline in domestic demand, a downturn in private final consumption expenditure (▲0.5%) and a 0.0% growth of net export. For the April-June quarter a heavy slump in production due to capital stock damage, power shortage, and suppl-chain disruption is expexted , while during the July-September quarter investment in fixed capital for the reconstruction will result in a swift recovery. However, private consumption will remain on a low level throughout 2011.
IMF World Economic Outlook	Based on the assumption that restrictions on power supply as well as the problems with the atomic power plant will be solved in several months, Japanese economy will, after a deceleration in 2011 (1.4%), recover in 2012 (up to 2.1%). Based on preliminary calculations the conclusion is reached, that altough the downside risk is increasing, the macroeconomic impact of the earthquake is limited. The immediate task is support for reconstruction. Recovery efforts start at a advanced stage of disaster damage tracking, and should link a strategy of reduced public dept ratio and recovery expenditures.
ABD Economic Outlook	Assumed growth for 2011 1.5% and 1.8% for 2012. These rates includes earthquake and tsunami damages but excludes problems of energy shortage and atomic plant. Losses due to the earthquake account 3－4% of the GDP. Warning: recovery spending will put pressure on state finances Impact on Asian economy: (1) Trade: in the short-run decline due to supply disruptions; in the long-run, demand of materials for rebuild efforts might result in increased trade (2) Investment: decline of Japanese foreign investment (3) Commodity markets: possible change in energy supply and demand as a result of the problems with atomic plants
WTO Trade Prospects	Effects of the earthquake （1） 0.5-1.6% decrease of Japanese exports (2) 0.4-1.3% decrease of Japanese imports Decline in exports may be attributet to e.g. lost human capital, damage to company facilities such as export sections or disruption of the supply chain due to damaged infrastructure. Increase in imports may be attributet to e.g. demand of material, technology and know-how to rebuild infrastructure

1-11. Towards Recovery - Government Actions

- Recovery from this disaster is not mere restoration, but requires future-oriented creative efforts
- Japan's wisdom has to be gathered, and concepts for recovery have to be discussed from a wide-ranging point of view

Reconstruction Design Council in Response to the Great East Japan Earthquake

- establisehd on April the 14th; 7 meetings since then
- seven basic principles for restarting as published on May the 10th

1. Thorough Analysis of the Disaster and Transfer of Insights Home and Abroad as well as Future Generations
2. Restore Communities in Affected Areas based on their Regional Character and Diversity
3. Instrumentalize the Regional Potentials for Technological Innovation in Recovery Efforts
4. Construct a Community that Makes Use of Natural Energy
5. Simultaniously Promote Recovery and Japan's Renewal
6. Concentrate on Nuclear Accident, Support and Rebuild Affected Region
7. Promote Recovery through Solidarity and Shared Experience

1-12. The Guideline on Policy Promotion

- For the Revitalization of Japan -

(1) Cabinet Decision on May 17, 2011

(2) Presenting policies to revitalize Japan that are commensurate with the reconstruction following the earthquake.

(3) Basic policies for economic and fiscal management ;

a) Immediate future: Prompt Recovery from the Great Earthquake

We will place the highest priority on assistance for the disaster victims, assistance for the victims of the nuclear incident, disaster relief, and promptly responding to the accident at the nuclear plant. At the same time, we will also promote a variety of policies in a concentrated manner, including clearing away the mood of self-restraint, rebuilding production equipment and facilities, measures for electricity supply and demand, restoring and reconstructing supply chains, employment measures (such as the creation of direct and indirect employment for reconstruction projects and the agricultural, forestry and fishery industries, etc.), and the prevention of damage from rumors in Japan and abroad. -> more…

a) Short-term: Lay the Foundations for Self-Sustaining Growth

We will support the full-scale restoration of the disaster region. At the same time, we will also promote measures such as policy responses to the electricity restrictions and the construction of a system for supplying energy that is resistant to disasters. We will also promote moves such as restoring and strengthening "Japan brand", preventing outflows of companies and human resources to overseas and ensuring inflows of human resources from overseas, and restoring tourism demand by overcoming the damage from rumors in Japan and abroad. -> more…

c) Long-term: Achieve Sustainable and Self-sustaining Growth

We will accelerate the necessary reforms with an eye toward achieving the same level of economic growth as was previously predicted for over the medium to long-term. With regard to prices, for the immediate future we carefully judge the

impact of the cost-push inflationary pressures, and strive for moderate and steady price increases measured by GDP deflators, which are the same as those predicted thus far. -> more…

(4) In accordance with the guideline, an overall view of the policies being promoted will be compiled and publicly announced in the middle of the year.

2. Radioactivity Inspection

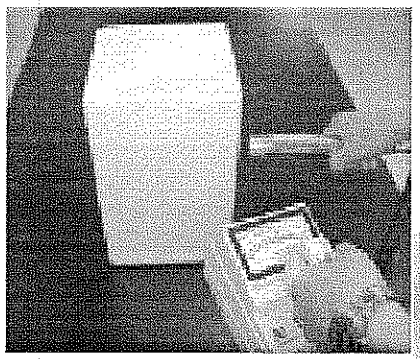
2-1. Safety of Industrial Products

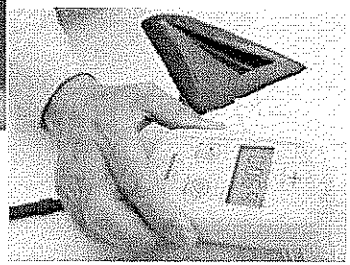
- Japanese manufacturing industries spare no effort to ensure the safety of their products.
- Inspection institutions and industry associations provide testing service of the radiation levels of export products.

Example of Inspection Institutions
- Nippon Kaiji Kentei Kyokai
  (International Inspectation & Surveying Organization)
- SK(Shin Nihon Kentei Kyokai)
- ANCC (All Nippon Checkers Corporation)

etc.

Reference: JETRO Homepage
http://www.jetro.go.jp/world/shinsai/20110318_11.html



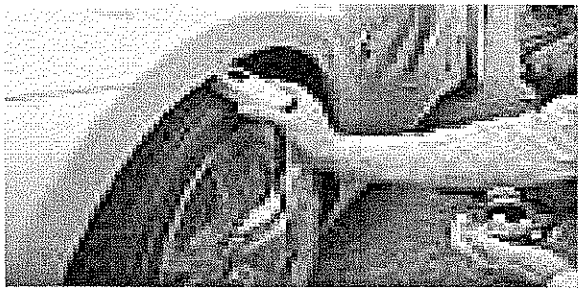


JAMA(Japan Automobile Manufacturers Association)
Comments on Radiation Testing Related to the Fukushima Nuclear Power Plant Situation
(April 18,2011)

<extracts>

The tests implemented by JAMA —which are conducted directly on various designated areas of the surface of vehicles— are showing results that fall within the range designated by the Nuclear Safety Commission of Japan as being unthreatening to human health, based on the daily readings performed by the Ministry of Education, Culture, Sports, Science and Technology in every prefecture since March25.

Reference : JAMA Homepage: http://www.jama-english.jp/release/comment/2011/110418.html



2-2. Measurement of Radiation Dose around the Metropolitan Airports

The current level of radiation dose of airports in the Tokyo Metropolitan area(Narita and Haneda airports) is at very safe level to health.

Measured dose

http://www.mlit.go.jp/koku/koku_tk7_000003.html

	Measurement points		May.29 AM	May.29 PM	May.30 AM		Annual exposure calculation
Narita Airport	○	Narita Airport	0.106 μ Gy/h 10:00	0.105 μ Gy/h 19:00	0.106 μ Gy/h 10:00	≒0.000106mSv/h	0.93mSv
Haneda Airport	☆	Haneda Airport (Ukishimacho,Kawasaki City.)	0.071 μ Gy/h 10:00	0.069 μ Gy/h 19:00	0.070 μ Gy/h 10:00	≒0.000070mSv/h	0.61mSv

1) According to the website of Tokyo-Electric Power Company, the unit is converted as follows;
1 micro-Gray/hour (μGy/hr) ≒ 1 micro-Sievert /hour (μSv/hr).

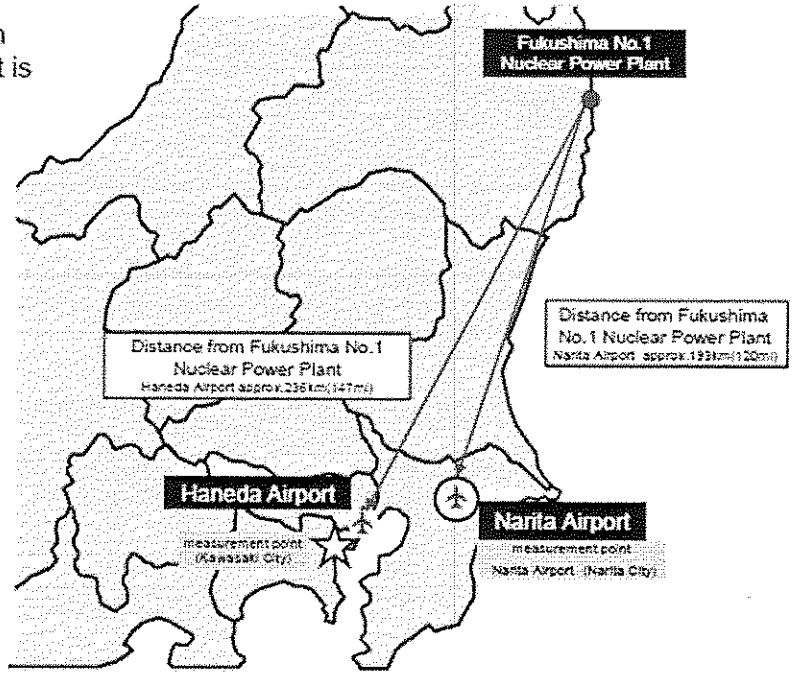
2) " Annual exposure calculation" is the estimation under the condition that the hourly radiation dose measurement at the measurement point is accumulated for 24 hours throughout the year.

3) 1 mili-Sievert (mSv) = 1000 micro-Sievert (μSv)

According to the Ministry of Education, Culture, Sports, Science and Technology, examples of exposure level of radiation in daily life is as below.
- Chest X-ray (once) 0.05 mSv
- 1 roundtrip between Tokyo and New York by air 0.2 mSv
-Stomach X-ray (once) 0.6 mSv

According to the WHO, a person is exposed to approximately 3.6mSv/year on average.

Radiation Measurement Map



References;

○	NARITA INTERNATIONAL AIRPORT CORPORATION Website http://www.narita-airport.jp/en/radiation.html
☆	Kanagawa Environmental-radiation Monittoring-system Website(Japanese only) http://www.atom.pref.kanagawa.jp/cgi-bin2/telemeter_dat.cgi?Area=1&Type=W

Source: Ministry of Land, Infrastructure, Transport and Tourism

2-3. Measurement of Radiation Dose in the Ports around Tokyo Bay

The current level of radiation dose of seaports of Tokyo Bay(Ports of Tokyo, Yokohama, Kawasaki and Chiba) is at very safe level to health.

Measured dose

http://www.mlit.go.jp/kowan/kowan_fr1_000041.html

		Measurement points (Address)	May.25 AM	May.26 AM	May.27 AM		Annual exposure calculation
Port of Tokyo	◎	Tokyo Metropolitan Institute of Public Health (Hyakunin-cho, Shinjuku-ku,Tokyo)	62nGy/h 8:00	62nGy/h 8:00	61nGy/h 8:00	≒0.000061 mSv/h	0.53mSv
Port of Yokohama	☆	Environmental Science Research Institute (Takigashira, Isogo-ku, Yokohama, Kanagawa)	29nGy/h 8:00	29nGy/h 8:00	29nGy/h 8:00	≒0.000029 mSv/h	0.25mSv
Port of Kawasaki	△	Kawasaki Municipal Research Institute for Environmental Protection (Tajima-cho, Kawasaki-ku, Kawasaki, Kanagawa)	41nGy/h 8:00	40nGy/h 8:00	40nGy/h 8:00	≒0.000040 mSv/h	0.35mSv
Port of Chiba	□	Chiba Prefectural Environmental Research Center (Iwasaki-Nishi, Ichihara, Chiba)	45nGy/h 8:00	44nGy/h 8:00	45nGy/h 8:00	≒0.000045 mSv/h	0.39mSv

1) According to the website of Tokyo-Electric Power Company, the unit is converted 1 nano-Gray/hour (nGy/hr) ≒ 1 nano-Sievert /hour (nSv/hr).
2) "Annual exposure calculation" is the estimation under the condition that the hourly radiation dose measurement at the measurement point is accumulated 24 hours throughout the year.
3) 1 mili-Sievert (mSv) = 1000 micro-Sievert (μSv)
1 micro-Sievert (μSv) =1000 nano-Sievert (nSv)

According to the Ministry of Education, Culture, Sports, Science and Technology, examples of exposure level of radiation in daily life is as below.

- **Chest X-ray (once) 0.05 mSv**
- **1 roundtrip between Tokyo and New York by air 0.2 mSv**
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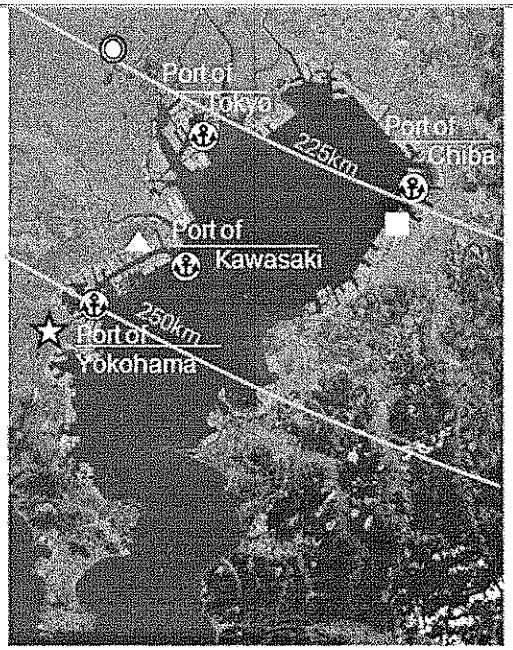
Distance from Fukushima No1 Nuclear Plant



Source;

◎	Tokyo Metropolitan Institute of Public Health Website (Japanese only) http://www.tokyo-eiken.go.jp/monitoring/index.html
☆	City of Yokohama, Environmental Planning Bureau Website(Japanese only) http://www.city.yokohama.lg.jp/kankyo/saigai/
△	City of Kawasaki Website(Japanese only) http://www.city.kawasaki.jp/e-news/info3715/index.html
□	Chiba Prefecture Government Website(Japanese only) http://www.pref.chiba.lg.jp/index.html

Source: Ministry of Land, Infrastructure, Transport and Tourism

3. Information

3-1. Speedy Dissemination of Accurate Information

- Japan is committed to the speedy dissemination of accurate information.
- All necessary information can be found at the following websites.

Japan's Countermeasures

- 1.http://www.kantei.go.jp/foreign/incident/index.html
- 2.http://www.meti.go.jp/english/index.html
- 3.http://www.nisa.meti.go.jp/english/

Measurement of Radioactivity Level

- 1.http://www.mext.go.jp/english/radioactivity_level/detail/1303962.htm
- 2.http://www.nisa.meti.go.jp/english/
- 3.http://www.worldvillage.org/fia/kinkyu_english.php
- 4. http://www.tepco.co.jp/en/press/corp-com/release/index-e.html
- 5. http://www.nsc.go.jp/NSCenglish/geje/index.htm

Drinking Water Safety

- 1.http://www.mhlw.go.jp/english/topics/2011eq/index.html
- 2.http://www.waterworks.metro.tokyo.jp/press/shinsai22/press110324-02-1e.pdf

Food Safety

- 1.http://www.maff.go.jp/e/index.html
- 2.http://www.mhlw.go.jp/english/topics/2011eq/index.html

Ports and Airports Safety

- 1.http://www.mlit.go.jp/page/kanbo01_hy_001428.html
- 2.http://www.mlit.go.jp/koku/flyjapan_en/index.html
- 3.http://www.mlit.go.jp/page/kanbo01_hy_001411.html

Tourism

- 1. http://www.mlit.go.jp/kankocho/en/index.html

3-2. Press Release by International Organizations

Airports

ICAO (International Civil Aviation Organization):

"No Restrictions on Travel to Japan" (News release: March 18)
http://www2.icao.int/en/NewsRoom/Lists/News/DispForm.aspx?ID=37

"Current Radiation Levels in Japan and Travel Advice" (News release: April 1)
http://www2.icao.int/en/NewsRoom/Lists/News/DispForm.aspx?ID=39

"Current Situation for Travel and Transport to and from Japan" (News release: April 14)
http://www2.icao.int/en/NewsRoom/Lists/News/DispForm.aspx?ID=40

IATA (International Air Transport Association):

"No Restrictions on Air Travel to Japan" (News release: March 19)
http://www.iata.org/pressroom/pr/Pages/2011-03-18-02.aspx

"UN Confirms Safety of Japan Operations - No Recommendation for Passenger Screening (News release: April 1)
http://www.iata.org/pressroom/pr/Pages/2011-04-01-01.aspx

Ports

IMO (International Maritime Organization):

"No Restrictions on Travel to Japan" (News release: March 20)
http://www.imo.org/MediaCentre/PressBriefings/Pages/No-restrictions-on-travel-to-Japan.aspx

"Shipping advised to comply with relevant NAVAREA warnings off Japan" (News release: March 24)
http://www.imo.org/MediaCentre/PressBriefings/Pages/13-navigation-off-japan.aspx

"Current radiation levels in Japan and travel advice" (News release: April 1)
http://www.imo.org/MediaCentre/PressBriefings/Pages/17-radiation-.aspx

"Current situation for travel and transport to and from Japan" (News release: April 15)
http://www.imo.org/MediaCentre/PressBriefings/Pages/22-japan-update.aspx

"Current situation of Ports and Shipping in Japan after the Fukushima Dai-ichi Nuclear Power Plant Accident (Circular letter No.3179: May 4) http://www.mlit.go.jp/common/000144003.pdf

IAPH (The International Association of Ports and Harbours) :

"Japanese ports are safe" (News release: March 25) http://www.iaphworldports.org/#

PIANC (The World Association for Waterborne Transport Infrastructure) :

"No fear on port function and people's health" (News release: April 4) http://www.pianc.org/downloads/events/Message%20from%20PIANC%20Japan.pdf

3-2. Press Release by International Organizations

Others

WHO(World Health Organization)

- ***"WHO is not advising general restrictions on travel to Japan" (FAQ March 20)***
  http://www.who.int/hac/crises/jpn/faqs/en/index3.html
- ***"Drinking tap water in Japan poses no immediate health risk," (FAQ March 25)***
  http://www.who.int/hac/crises/jpn/faqs/en/index8.html
- ***"There are no health risks to people living in other countries from radioactive material" (FAQ April4)***
  http://www.who.int/hac/crises/jpn/faqs/en/index.html
- ***"Public health risks beyond the 30km evacuation zone currently still low" (FAQ April 13)***
  http://www.who.int/hac/crises/jpn/en/index.html

Vielen Dank

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