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JAPAN: BEFORE AND AFTER MARCH 11

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Japan is a very special case. The second-largest economy in the world until early this year has undergone a successive series of crises such as no other economy in the western mode has experienced. Table 1 shows the evolution of the Japanese GDP in real terms. As has been observed, since the bubble burst in 1990, there have been three periods of crisis, the first from 1991 to 1994, the second from mid-1997 to the end of 1998, and the third in 2001, each with subsequent periods of recovery. The first crisis came about with the bursting of the economic bubble when the interest rate increased, with a strong loss in value of real estate assets and of stock market values. This crisis lasted three years and was the longest of the period. The second crisis coincided with the increase in the general consumption tax from 3 to 5%, which generated an almost immediate fall in consumer demand, weakening the economy. In this period, moreover, the financial crisis became more acute, leading to the greatest banking and credit crisis and coinciding as well with the financial crises of Southeast Asia and the temporary loss of certain Asian markets. The third crisis arose in 2001 in the midst of the United States recession and the telecommunications crisis. In the face of this situation, the actions carried out by the Japanese government centered on the one hand on the deregulation of the economy and broadening of access to the Japanese market, on contingency monetary policy measures, such as a progressive decrease in the

interest rate until it reached 0.5 in 1996, and starting up an ambitious fiscal stimulus program. Despite such measures the real growth of the economy has remained under 2% throughout the greater part of the nineties, unemployment stands at over 5% since 2001, and prices have not ceased to fall since 1999. The problems of the financial system have made banks less willing to give loans, and as a result credit has shrunk.

During the 2002-2007 period, Japan has experienced stable and continual economic growth, the contribution of exports, in particular to China, the gross fixed capital formation of export companies, which have been essential to the growth of the real GDP and have allowed the country to overcome the grave international financial crisis in 2010, while private consumption and the investment of Asian enterprises in the domestic market have shown much more modest behavior. Despite these favorable perspectives in 2010 and part of 2011, deflation has refused to disappear, the unemployment index has remained high in comparison

with pre-crisis levels, and the indebtedness of the public sector continues to be one of the highest in the developed world.

As mentioned, one of Japan's current economic problems is the high public sector borrowing, the consequence of policies carried out during the crisis. On the one hand, the current deficit

The Great Earthquake and subsequent Tsunami of March 11, 2011, put an end to the incipient economic recovery the country was experiencing.

A large portion of the coastal areas in the northeast of the country were destroyed and serious damage was done to key infrastructures, causing a nuclear crisis that casts doubt on the energy model developed to date.

Six months after the disaster the Japanese economy shows signs of economic recovery though the challenges and uncertainties it confronts are considerable.

All of this is taking place within the framework of political instability of a country that in the past five years has had six prime ministers.

has experienced high growth, reaching close to 10% of the GDP, while the growth of public debt accumulated since the early 90's has been spectacular, rising from 1992 levels of nearly 75% of the GDP to 220% in 2010.

To these problems of an economic nature must be added the long-term changes in Japanese society. In 2010 the population of elderly citizens (over 65 years of age) was 29.3 million, 23% of the total population, the world's highest. The population is aging in Japan at a much faster rate than in Western Europe and North America. The elderly population of Japan amounted to only 7% of the total population in 1970, and yet 24 years later, in 1994, it was 14%. In Italy it took 61 years, and in France 115 to double the percentage of the over-65 age group. These comparisons highlight the rapid advance of demographic aging in Japan. As a result, the labor force is in decline, and it is anticipated that it will drop from 87 million in 1995 to 52 million in 2050.

Unless per-worker production increases at a greater rate to compensate for the loss of workers, the Japanese GDP

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will grow at a lesser rate than other developed countries. Nevertheless, Japan still has room to increase the size of its labor force with measures to stimulate immigration, but above all through a flexibilization of the labor market that will allow for a greater incorporation of young people and above all of women, whose rate of participation is among the lowest in the developed world, and 25% lower than that of Japanese men.

Hence the aging of the Japanese population and strong growth of public debt has generated uncertainty in the population, especially with regard to the sustainability of the public health system and pensions. It is estimated that in 2020 close to 30% of the population will be over 65. This situation puts increasing pressure on social security expenditures for a public sector that is already deeply in debt. Tax incomety plus social security payments are expected to reach 33% of the national income by 2025. The social security system must be reformed to limit the increase in the national expenditure as much as possible. At present the retirement age in Japan is 60, some five years under the OECD average. An increase in the average age of retirement would add to the workforce and reduce pressure on the pension system.

March 11 cut off perspectives for growth

The favorable perspectives for the growth of the Japanese economy were dashed on March 11 this year when a 9.0 magnitude earthquake followed by a tsunami with waves as high as 10 meters, and an accident in the Fukushima nuclear reactor devastated the northeastern coastal area of the country, particularly affecting the prefectures of Fukushima and Miyagi and, to a lesser extent, those of Iwate and Aomori located farther to the north, all in the Tohoku region. Table 3 shows the map of the affected area. At the end of August, the human costs had reached 15,700 dead, 4,500 disappeared, 5,700 wounded, and close to 124,000 persons evacuated. These figures are higher than those of the Kobe earthquake (6,434 victims) but still far below those of other earthquakes, such as that of Haiti in 2010, with more than 300,000 victims.

With 67 active volcanoes, Japan is very vulnerable to frequent seismic events, more than 1,500 per year. For this reason the country decided many years ago to work on and invest in earthquake security. The extensive network of high-speed

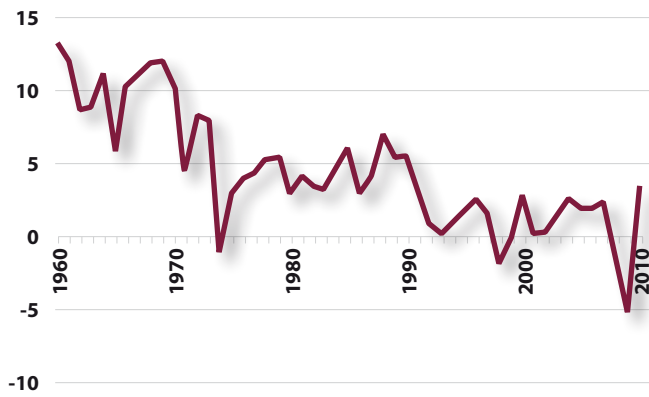
trains has improved and increased the early earthquake warning teams, reducing to 2 seconds the time lapse between the detection of the tremor and the cut-off of the electricity feed to trains. At present, Japan has over 1,000 seismographs: in 2005, 28 new ones were installed on the east coast, and between 2006 and 2010, 97 more have been installed. As a result on March 11 at 2:47:03 p.m. the seismograph on the Oshika Peninsula detected the standard alarm value and within 2 seconds the system cut off

the supply of electricity to the entire network and activated the emergency brakes, 1 minute and 10 seconds before the first tremor.

The emergency and rescue operations were triggered almost immediately, and less than 30 minutes after the earthquake eleven airplanes took off for the zone from their respective bases. Eighteen thousand persons participated in the initial operations, of whom almost 9,800 belonged to the Japanese self-defense forces. Rescue teams were sent from 29 countries, regions, and international organization, with aid proceeding from more than 150 countries and 43 international organizations.

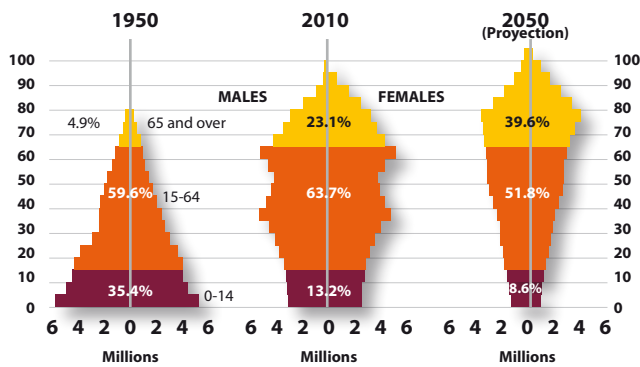
The direct cost of the material damage from the earthquake and subsequent tsunami has come to 16.9 billion yen, according to the late June assessment of the Government Cabinet Office. The greatest losses, of 10.4 trillion yen, pertain to dwellings, buildings, offices, factories and machinery, while damage to agriculture, fishing, and forest resources reaches 3 trillion yen, damage to social infrastructures such as roads, ports and airports are approximately 2.2 trillion yen and, finally, the harm to supply networks, such as gas, electricity, and telecommunications comes to 1.3 trillion yen.

Table 1. Economic growth in Japan (Real growth rate of the GDP at constant prices)



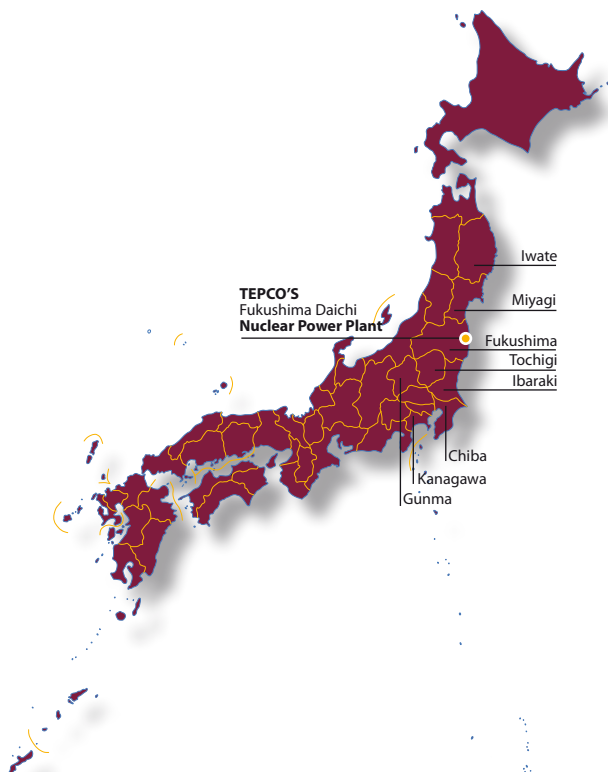
Source: European Commission

Table 2. Japanese population pyramid



Source: Statistics Bureau, Ministry of Health, Labour and Welfare, Japan

Table 3. Map of the Regions and Prefectures of Japan



Source: Statistics Bureau, Ministry of Health, Labour and Welfare, Japan

Despite the fact that the directly affected area was on the coast, the impact has been felt all over the country. This severe initial blow is basically the result of three factors, starting with the abovementioned damage to both private and public infrastructure.

In the second place, the strong electrical restrictions in the Kanto region, which includes Tokyo and represents an area of 42 million persons and 40% of the GDP, supplied by the Tokyo Electric Power Company (TEPCO). The damage to the Fukushima nuclear plants meant a reduction of close to 30% in its capacity to provide electric power, less than 35 million KW, when demand during the summer can reach up to 60 million KW. In an attempt to reduce blackouts coal power stations have been reactivated, and great steel producing corporations such as Sumitomo and Nippon Steel have ceded part of the energy generated in their own plants. The government asked citizens and small- to mid-sized businesses to reduce their consumption of electricity by 15% by reducing the use of elevators, unnecessary lighting and, in particular, air conditioning. The requests for energy saving have led large electronics and automobile companies to move the workday up and exchange working days for work over the weekend using their own energy generators whenever possible. In addition, since June 24, the East Japan Railway Co. has reduced the frequency of local train service in the Tokyo metropolitan area to save electricity.

After the summer, the prognostics on energy supply have been uncertain, since under the Japanese regulatory system nuclear reactors must be shut down for inspection every three months. At present, 35 of the 54 reactors are closed for maintenance, and the rest will go off-line next spring for inspection. Approval of the inspections and the reestablishment of the reactors currently shut down depend on local governments, which, in the face of social alarm, are reluctant to give their approval. In the event that an agreement cannot be reached, next spring all the nuclear reactors, which cover 30% of the electrical needs of the country, will be shut down.

Clearly Japan can substitute other sources, such as coal and renewable energy, for atomic energy, but this is a change that requires time, and as a result Japan would find itself in the position of having to import large quantities of natural gas to replace the lost atomic energy quickly, which would add approximately 10% to its energy costs, according to IMF estimates. The increase in costs and uncertainty about supply could undermine the economic recovery, discouraging investment and accelerating the process of industrial displacement offshore.

In the third place the damage, principally to automobile and electronics manufacturers, which represents close to 35% of Japan's exports, has caused interruptions in the supply chain, cutting off the supply of parts and components not only to the rest of the country, but abroad as well.

At present, the world production networks are highly sophisticated and tightly knit, which makes them very vulnerable to possible disruptions of the supply chain. Japan is a supplier of very specialized parts and components, with a high added value, representing a fifth of the world production of

semiconductors, and its exports of machinery and components represent more than 30% of the world's supply, with the main destination markets in the United States and Asia.

The industries most directly affected by the Tohoku earthquake were basically semiconductors and integrated circuits, and organic chemistry. In the case of the integrated circuits Japan produces microcontrollers that are used in the majority of the automobile industry the world over. One of the main producers, Renesas, controls 30% of the world market and 40% of the market in the automobile industry. The plant with the most sophisticated machinery, located in the disaster area, suffered grave damages and its production halted. As the products have very limited substitutability the effect upon the supply chain, both nationally and internationally, was very significant. Thanks to the aid of the Japanese Au-

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tomobile Manufacturers Association, the company reestablished supply within three months, even though a full year was initially predicted.

Another industry affected by the earthquake was organic chemistry, for example, rubber tires and brakes, and pigments for paints and resins. If other companies could indeed supply some of these products, the problem was the high concentration of production in the affected zone. In the case of certain products, between 30 and 100% of the domestic market might be supplied. For example, Mitsubishi Chemical, which controls 50% of the world supply of a resin (bismaleimide-triazine) used in the production of integrated circuits and of printed circuit boards, had to interrupt production for two months. In some cases a shift in production to another plant within a short period of time was complicated by the specificity of the machinery and the technology used.

Despite the supply recovery certain risks remain. One of the main concerns is the speed of reconstruction and the recovery of basic infrastructure. The production of semiconductors, in particular, requires a stable supply of electricity and potable water. The prolonged scarcity of energy or unexpected blackouts that continue to limit activity, even beyond the disaster zone, make a full return to productive activity difficult. In addition, the disaster can offer Japan's neighbors opportunities in the middle term by giving certain countries additional impetus in the increase of added value for their chains of production, particularly for those with a more advanced industrial base.

An uncertain future

The Japanese economy is already showing signs of recovery. The most recent data on household spending and production indicate that the recovery of activity is already in progress, and the supply chains are being restored more quickly than had been expected, limiting the side effects on other coun-

tries. Toyota, for example, completely restored production in September, two months earlier than expected.

After a strong contraction in the first semester of the year, whose effect will be a negative growth of the GDP of 0.5% for 2011, it is expected that the recovery will continue in 2012 as a result of the normalization of exportations and spending on reconstruction, with a foreseeable growth of 2.3% of the GDP. According to the IMF, the costs of reconstruction could rise as high as 4% of the GDP, though some experts in Japan are talking about 5%. To tackle reconstruction the government approved a first complementary budget in May with a value of 4 trillion yen, 0.8% of the GDP, and in July the second supplementary budget with a value of 2 trillion yen, 0.4% of the GDP, was approved.

The earthquake and its consequences have supposed a "crisis in the middle of another crisis" for Japan. As mentioned, before the earthquake the country was stalled, both in its economy and from a political and social

point of view. At present, Japan must confront both its ongoing challenges and the new ones, which requires a significant effort to allow the country to initiate a course of stable growth.

To all these aspects must be added the framework of political instability that the country is going through, with six prime ministers in five years. The new government of Yoshihiko Noda is facing many challenges. One of them is the unity of the party, divided between the pro- and anti-Ozawa factions. In the September elections Noda won with 215 votes as opposed to the 177 voted obtained by Kaieda in the second round. While some legislators interpret the definitive count as "proof of the waning influence of Ozawa", others say "the power structure is the same as it was the last time, which means that Ozawa maintains a strong influence". In addition, the adjudication of important positions to politicians from the Ozawa circle casts a shadow over Noda's relationship with the opposition of the LDP and New Komeito parties, whose members are showing more and more caution regarding Ozawa, who at present is being judged by the Court of the Tokyo District on accusations of having conspired to falsify reports regarding party finances. Ozawa has pled non-guilty.

The new government of Yoshihiko Noda has focused its objectives on reconstruction of the devastated zone, accelerating the construction of temporary residences, measures of support for the displaced, and clearing of debris. Secondly, to bring a quick end to the nuclear disaster and its consequences it is necessary to guarantee first the stabilization of the Fukushima Daiichi station reactors, then the decontamination of the radioactive materials in the vicinity of the nuclear plant, and in the third place the start of measures of economic aid that can slow the process of outsourcing that is taking place in the business sector owing to the appreciation of the yen, which is affecting both big business—for example, Honda, which is transferring production to the United States and Indonesia—and many small to mid-sized businesses with serious problems of liquidity.

In turn, the increase in the buying power of the yen is stimulating a strong process of mergers and acquisitions of foreign businesses. Between January and August of this year the acquisitions of foreign businesses by Japanese businesses have doubled, tripling in Asia where the process is more intense, where the purchase of pharmaceutical concerns such as the Swiss firm Nycomed by Takeda Pharmaceutical, of toys, such as the acquisition of the American firm Chuggington and Thomas & Friends by Tomy Corporation, and on-line commerce, such as the different purchases carried out by Rakuten. In this sense the Noda government has proposed a series of aids so that the firms can take advantage of the high yen to acquire assets abroad.

To carry out these priorities the government is elaborating a third extraordinary budget much higher than the previous ones, which could be approximately 12 trillion yen, double the two previous budgets, which would suppose an increase in the current fiscal deficit and accumulated debt of the country. One of the problems that most concerns Japanese society is the financing of such a budget. According to the new government, financing would be obtained through a temporary progressive increase in taxes over the next ten years, cut-backs in certain expenses and in the collecting of non-tax revenues, such as the sale of certain public assets, in an attempt to avoid as far as possible the transmission of the burden of current problems to future generations. These measures were defined in late October in the temporary tax increase plan, which foresees the collecting of 112 trillion yen for the reconstruction of the region of Tohoku. The plan, which will extend for approximately 10 years, anticipates an income tax increase from 2013 on, on the price of tobacco from 2012 on, and an increase in the residential tax from 2014 on. One of the main sources of non-tax revenue planned is the sale of the stock of the government property Japan Tobacco, Inc., but for the moment the government cannot put it into effect until the laws prohibiting such sales are revised. Moreover, the Liberal Party is opposed to this measure, as it could prejudice the national producers of tobacco.

Additionally, as some Japanese academics and diverse international organizations have suggested, the country has room, for example, to increase the value added tax. The VAT was introduced in Japan in 1989 at a 3% rate and, despite the 5% increase in 1997, it continues to be the lowest among the advanced economies. Nevertheless, the room the government has to finance itself through the emission of new bonds is scarce, since the capacity of the market to absorb debt tends to decrease as private savings fall owing to the aging of the population.

Another current topic of debate in Japanese society is the energy future of the country. In the midst of voices clamoring for the closing of the nuclear plants, Japan cannot replace its energy sources in the short term, and electrical energy is the basis of all its productive activities. In this regard, Prime Minister Noda has already declared his intention to review

the energy plans in the mid to long term, to reinitiate operations at the nuclear plants to guarantee their safety by stress tests and regular inspections, not to replace those reactors that go off-line while the others remain operative, not to construct new nuclear plants, and to analyze case by case the plants that are under construction (at present there are 14 new nuclear plant project at different stages of construction), to promote the development of new alternative sources of natural energy, such as the adoption of energy conservation measures.

In the field of foreign relations, a topic that also generates controversy is the Trans-Pacific Partnership Agreement (TPP). The Noda government agrees that participation in the TPP would give a boost to exports and foster new investment in the service sector. Nevertheless, in the wake of the

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earthquake it is necessary to evaluate the impact this would have on agriculture and fishing in the affected regions. The highly-protected Japanese agricultural sector is an important obstacle to Japan's joining this free trade agreement in which nine countries participate, including agricultural exporters as important as the United States and Australia.

In short, we can say that the incipient economic recovery that the country was experiencing was truncated by the terrible accidents of March 11, 2011, starting a period of great sacrifices and political, economic and social uncertainty. Nevertheless, Japan has resources to confront the new situation: a high level of private savings, an elevated current account surplus, a strong level of external reserves, and a population that is trained, disciplined, and hardworking. We are certain that, despite the permanent political crisis, and with the permission of the Chinese giant emerging to the east, Japan will achieve it.