Shaken to the Core

The economic impact of the disaster in Japan is far reaching

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Devastation in Japan after the March 2011 earthquake and tsunami.

AS JAPAN EMBARKS on the long and arduous path to reconstruction and recovery from the devastating March 2011 earthquake and tsunami that claimed more than 23,000 lives (as of May 23) and caused damage estimated at $200–$300 billion, the disaster could yet prove to be a watershed for the world's third-largest economy.

The economic impact of the disaster is being felt far beyond the immediate vicinity of the quake. Across the ocean at the DARCARS Toyota dealership in Silver Spring, Maryland, seven thousand miles from the source of the earthquake, sales manager Constantin Nicorescu is contemplating the possibility of running out of cars to sell.

"At the moment we are selling overflow inventory from last year, but [if things continue this way], we'll run out of cars in 2 to 2½ months' time," said Nicorescu.

Shortages in integrated circuit systems and vehicle microcontrollers—the computers that control many of the car engines' electronic functions—have forced production lines into an involuntary slowdown. Toyota has already announced that normal production is unlikely to resume before September 2011.

Typically, the DARCARS dealership receives 300 cars a month. In the next few months, it has been told to expect only 12 to 15 percent of normal inventory, or about 40 cars.

Japan and the global supply chain

The impact of the quake on vehicle production lines illustrates the highly integrated nature of the global supply chain, Japan's role in that chain, and its importance in a few key industries—notably, vehicle manufacturing and electronics.

For example, Renesas Electronics Corporation is the world's number one supplier of microcontrollers and produces 30 to 60 percent of car microcontrollers and integrated circuit systems. With factories located in one of the country's manufacturing hubs in the Tohoku region—the northeastern part of the largest Japanese island—the company suffered a severe blow when the quake and tsunami temporarily knocked out several of its semiconductor plants.

So complex and specialized has vehicle assembly become—a modern-day car requires some 30,000 to 40,000 different parts—that under the *kanban* "just-in-time" lean inventory system, the absence of a single key component can shut down an entire production line.

The production network in Japan and around the world has become much more sophisticated and interlinked, and thus more vulnerable to a disruption in the supply chain, compared with 15 years ago. So the economic consequences of the quake and tsunami have had a ripple effect on the wider region.

Asian economies are also highly integrated through cross-border production networks with Japan, which is an important supplier of machinery equipment and electrical and semiconductor components. For example, Japan accounts for about 10 to 15 percent of value-added production in Malaysia, Thailand, and Taiwan Province of China.

Although Japan manufactures goods higher up the value chain than competitors like Korea and Taiwan Province of China, the concern is that over time, if Japanese suppliers fail to reestablish production, it could lose market share to those rivals.

But even as some firms scramble to mitigate the effects of one of the costliest natural disasters on record, the overall impact on the global economy is likely to be limited. Although Japan is the world's third-largest economy, with nearly 9 percent of global gross domestic product (GDP), its share in global trade is lower at about 5 percent.

Naturally it is Japan itself that has borne the brunt of not only the human cost of the disaster, but also its economic effects. Immediately following the quake, both industrial production and exports plunged. Firms in the affected region suspended operations and Japanese consumers reined in spending as concerns grew over the problem at the Fukushima nuclear power plant, with worries about electricity shortages also weighing down confidence.

Three months after the quake, signs of recovery are gradually emerging. Japanese manufacturers are forecasting that production will turn around in the coming months, albeit at a moderate pace. Major corporations such as Honda and Sony have restarted factory lines at reduced levels, and the Tokyo Electricity Power Company has raised its power supply forecast, relieving some worries about power shortages while efforts to stabilize the damaged Fukushima plant continue.

As the situation stabilizes, attention has shifted to broader questions about the likely impact of the disaster on Japan's long-term economic outlook. What will be the shape of the post-earthquake recovery? What are the key risks facing the country's economy and, perhaps most important, what policies might help ensure a vigorous upturn and put in place the seeds of future growth?

Back to the future

History provides some guidance. The 1995 Kobe earthquake also hit an important production center, and it affected an area that accounted for about the same amount of economic output as the region affected by this year's disaster (about 4 percent of GDP). The experience from Kobe and other large-scale disasters would suggest a "V-shaped" recovery: a sharp initial slowdown followed by a recovery supported by reconstruction spending.

But historical precedents and the comparison with Kobe are of only limited use. Despite the devastating nature of many recent natural disasters in advanced economies, whether Hurricane Katrina in the United States in 2005 or the recent floods in Australia, the catastrophe that overwhelmed Japan's northeast coast is exceptional for its size and scope.

Compared with Kobe, the economic damage this time around is much greater: 3 to 5 percent of GDP, nearly double that caused by the 1995 earthquake. This year's quake also disrupted the power supply to the Kanto region around Tokyo, which accounts for nearly 40 percent of the nation's economy, raising the risk of power shortfalls during the summer months, when demand typically rises. Unlike Kobe, where supply constraints were addressed quickly, the possibility of a deterioration in the nuclear or electricity situation continues. Such uncertainties can start to affect public confidence and weaken demand; firms may be forced to cut earnings or lay off workers, and households facing greater financial uncertainty may choose to save rather than spend.

Research suggests that such shocks can generate sharp recessions (and recoveries) as firms become cautious about spending amid heightened uncertainty. Given the particular circumstances of the more recent disaster, this time the recovery could prove more gradual as low confidence pulls down any incipient resurgence. Compounding the difficulties are Japan's recent history of anemic growth, high levels of government debt, and mild deflation.

But forceful macroeconomic and financial policies can play a vital role not only in supporting reconstruction and sustaining the recovery—by offsetting private weakness and boosting confidence—but also in pointing to a possible strategy for addressing longer-term challenges and helping the country escape the grip of its economic malaise.

The will of the authorities was on display immediately after the quake. The Bank of Japan moved quickly to maintain stability in the financial markets, while the Financial Services Agency ensured that affected residents had access to their money and banking services. The government also moved swiftly to pass the first of a series of supplementary budgets to repair damaged infrastructure.

Now, in dealing with the disaster, Japan's authorities will have to walk a fine line between short-term increased public spending to repair damaged infrastructure and longer-term reforms to improve the country's fiscal position by paying down its high level of debt.

The two aims need not be contradictory. While reconstruction spending will likely add to the deficit, the size will be manageable and the spending temporary. To maintain public confidence, it will be important to link the reconstruction spending to a clear strategy for bringing down public debt over the medium term. Even after the emergency funding is paid off, Japan will continue to need substantial funding to address rapidly rising social security costs. It will have to reduce public spending, increase taxes, or both.

A valuable tax

One possible measure to meet the costs of the recovery, and contribute to fiscal sustainability in the long term, is an incremental increase in the consumption tax, an obvious candidate for reform. At 5 percent, Japan has one of the lowest value-added tax (VAT) rates in the world. Raising the rate gradually, say over a 10-year period, could bring the country closer to its European counterparts with VAT rates of about 20 percent.

In addition to its current low rate, other reasons to select this tax for reform include its inherent efficiency (it is a simple tax with a broad base and a uniform rate) and its generational equity: it is fair for the present generation to pay off the debt it has generated rather than shelving it for later generations to confront. An increase in the consumption tax combined with reforms to social security and other entitlement spending would go a long way toward strengthening Japan's fiscal position.

If there is a grain of comfort to be reaped from the devastating events of March, it is that the authorities could use this opportunity to harness Japan's celebrated social solidarity to secure the country's fiscal future. One survey by a mainstream Japanese newspaper found that 58 percent of respondents favored higher taxes to pay for reconstruction. Why not similar backing for the long-term economic well-being of the country?

The devastation from the Great East Japan Earthquake is exceptional, but the strong fundamentals of the Japanese economy remain unchanged: its advanced technology, highly skilled labor force, large domestic savings, and role in the global economy continue to be a boon. The key for policies is to harness these assets to generate a quick and vibrant recovery while at the same time steadily pursuing reforms to bring down Japan's public debt and sow the seeds for future robust growth. ■

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