

Disaster in Japan: Nuclear Energy, the Economy and the U.S.-Japan Alliance

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Center for a New American Security (2011)

Stable URL: <http://www.jstor.com/stable/resrep06214>

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MARCH 2011

## Disaster in Japan *Nuclear Energy, the Economy and the U.S.-Japan Alliance*

POLICY BRIEF



By David L. Asher, Patrick M. Cronin, Daniel M. Kliman and Christine Parthemore

**A** devastating catastrophe continues to unfold in Japan. Yet as Japan's focus shifts toward recovery, it is worth remembering that the short-term decisions made in the wake of this tragedy will have long-term consequences for both Japan and for the world. American policymakers must therefore begin asking critical questions about what this disaster means for the U.S.-Japan alliance, the future of nuclear energy and rebuilding Japan's economy. In this policy brief, four analysts from the Center for a New American Security provide their perspectives.

### **The U.S.-Japan Alliance**

*Daniel M. Kliman*

American disaster relief efforts, conducted against the backdrop of continuing radiation leakage from the stricken Fukushima nuclear power plant, will deliver an immediate boost to the U.S.-Japan alliance.<sup>1</sup> How this catastrophe will shape the alliance over the longer term remains less clear.

#### *Will this catastrophe produce more dynamic leadership in Tokyo?*

The disaster unleashed on March 11, 2011 could

change the nature of Japan's domestic politics. Since 2005, the Japanese government has cycled through four lackluster prime ministers. Turnover among cabinet members has occurred at an even faster pace. Although well intentioned, the country's current prime minister, Naoto Kan, appeared headed toward political oblivion before an undersea earthquake triggered the massive tsunami that rolled over northeastern Japan.<sup>2</sup> This lack of dynamic leadership in Tokyo has hindered the U.S.-Japan alliance.

The unfolding catastrophe has given Kan's government a new, if temporary, political mandate. If Kan can successfully manage relief efforts and avoid a full-scale nuclear meltdown, he will emerge from this crisis with greater prestige than any recent Japanese prime minister and wield the political capital to push forward new alliance initiatives. It is too early to discern how the Japanese people will evaluate their government's response. But if Kan fails, he will fall from power and so, in all likelihood, will the Democratic Party of Japan he leads.

#### *Will this catastrophe reorient Japan's defense policy?*

Prior to March 11, Japan's defense policy focused on external security challenges. The National Defense Program Guidelines – a strategic planning

document unveiled by the Japanese government late last year – set forth a vision of securing Japan's southwestern islands against foreign incursions and deploying more robust missile defenses.<sup>3</sup> This growing external focus was encouraged by the United States, which sought greater Japanese support in managing security challenges along the Indo-Pacific rim. However, this catastrophe could redirect Japan's defense policy away from areas prioritized by the United States and toward humanitarian assistance and disaster relief, particularly if the public deems the Japanese Self-Defense Forces' (JSDF) response during this crisis unsatisfactory.

### *To what degree will the cost of rebuilding constrain Japan's defense spending?*

Even before this catastrophe, the mushrooming social security and pension costs associated with a rapidly aging population threatened to crowd out Japanese defense expenditures. Since the early 2000s, the country's defense outlays generally saw year-on-year reductions despite a steadily worsening security environment featuring a more assertive and militarily capable China and a bellicose North Korea armed with nuclear weapons.<sup>4</sup> The cost of rebuilding after multiple calamities – early estimates exceed 100 billion dollars – will add to these fiscal pressures and could lead the Japanese government to cut back further on defense expenditures.<sup>5</sup> This would reduce the capabilities Japan brings to its alliance with the United States and make the objectives outlined in the National Defense Program Guidelines untenable.

### *Will this catastrophe shift Japanese attitudes toward U.S. bases?*

The devastation of northeastern Japan has underscored the utility of the U.S.-Japan alliance. American troops and naval assets stationed around Japan mobilized rapidly to engage in disaster relief. Working seamlessly with the JSDF, the U.S. military has helped with rescue

efforts, and provided food and medical aid to the survivors of the worst natural catastrophe to engulf Japan in almost a century. The relief missions undertaken by the American military have garnered considerable goodwill in Japan. This is not surprising; a similar dynamic occurred when the U.S. Navy came to Indonesia's assistance following the devastating Indian Ocean tsunami of December 2004.<sup>6</sup>

Although Okinawa was not substantially affected by the succession of earthquake, tsunami and radiological contamination that has rocked northeastern Japan, the relief role played by U.S. forces could soften public attitudes toward the American troop presence on the island.<sup>7</sup> Until this catastrophe, the question of where to relocate Futenma, a Marine Corps Air Station on Okinawa, had bedeviled the alliance. Local opposition had stymied efforts by the Japanese government to implement an agreement with the United States to transfer units at Futenma to another American base on Okinawa. But this disaster has highlighted the benefits of stationing U.S. forces in Okinawa and Japan more broadly. If garrisoned in Guam or an even more remote location, American troops would have required substantially more time to come to the aid of Japanese victims.

## **The Nuclear Future**

*Christine Parthemore*

American policymakers must recognize that the energy decisions made in the coming months and years will be pivotal in determining the world's nuclear technology path. The decisions that await a recovering Japan will not be easy. Nuclear power generated about 30 percent of Japan's electricity at the time of the disaster, with fossil fuels such as coal and natural gas making up the remaining generation capacity.<sup>8</sup> Given its closed fuel cycle, Japan considered its nuclear program a source of "domestic" energy production. Reducing nuclear generation

capacity would likely require an increased dependence on fossil fuel imports in the near term and, as a result, an increased vulnerability to supply disruptions and price spikes. This is not only a strategic blow to Japan, but it is a potentially severe economic blow considering that Japan imports all of its coal and more than 90 percent of its oil and natural gas.<sup>9</sup>

The Japanese government has become known for its nuclear energy programs and its careful attention to non-proliferation standards as it has struggled to reduce its heavy reliance on imported energy. It has carved out a niche as one of the world's top high-technology exporters. Yet in the wake of the devastation of the Fukushima facilities, Japan will reconsider its future energy path. As its nuclear energy future is altered, the world's nuclear energy future will shift as well.

*Will some countries abandon nuclear energy – and if so, which countries?*

Public opinion on nuclear energy will change in the United States and globally in response to the tragedy unfolding in Japan. Indeed, this disaster will likely mark a real shift in what has been characterized as an emerging “nuclear renaissance.” Every country in the world will reevaluate its energy balance and carefully evaluate the nuclear option. However, all energy sources (and in particular fossil fuels) come with safety and environmental challenges, so decisions regarding energy investments will remain complicated. Japan's chosen recovery path for electricity production and how it rebuilds, shrinks or abandons its nuclear sector will have implications for Japanese society for decades into the future, as well as for other nuclear energy exporting countries. Likewise, countries that import nuclear technology from Japan – and each of the world's more than 45 countries that have declared their intentions to develop new nuclear energy programs<sup>10</sup> – will face new energy investment choices in the wake of this tragedy.

Shifts in countries that have newly embraced nuclear energy – such as those in Southeast Asia and the Middle East – will be especially critical in shaping the world's nuclear future and its inherent safety, environmental, economic and proliferation concerns. The nuclear energy question for each country is complicated by desires to gain scientific prestige, access dual-use technologies and promote a sense of strategic security, especially for those with nuclear-capable neighbors. Though no one can predict the degree to which recent events will alter the world's nuclear course, it is notable that within the first week since the earthquake Germany and China, two existing nuclear energy producers, slowed their nuclear plans while several Southeast Asian countries hoping to enter the nuclear energy market, notably Vietnam and Indonesia, have stated that they will continue with their plans even in the wake of Japan's disaster.<sup>11</sup>

*If countries continue to embrace nuclear energy, will they prefer to hasten development of next-generation nuclear reactors or rely on existing technologies?*

Many companies and governments are pushing a range of blueprints for “generation IV” and small modular reactors, with claims that designs such as traveling wave and pebble bed modular reactors will have superior safety and non-proliferation credentials.<sup>12</sup> Those investing in nuclear energy may prefer to slow their purchases until these reactor designs are tested and available. Less than one week after the crisis in Japan, an official from the Vietnam Atomic Energy Commission declared, “We will choose the advanced nuclear power technology” as a means of reducing the risks involved.<sup>13</sup> A slowdown in purchases of existing reactor technologies would have direct implications for Japan's role as a major exporter of nuclear energy, especially given its heavy investments in becoming a world leader in mixed-oxide (MOX) fuel systems.<sup>14</sup>

### *Will countries view Japanese nuclear technology as reliable?*

Current events could ravage Japan's nuclear export industry if purchasers fault its safety standards or ability to build resilient facilities. But, if foreign publics perceive this tragedy as unforeseeable or even the best planners, they may view Japan's reactors as relatively resilient given the scale of the devastation they withstood. In recent bids for sales of nuclear reactors to the United Arab Emirates and Jordan, Japanese producers stressed the high safety standards their own country maintains, and the media has noted that these strict standards and building regulations likely saved lives in Japan. It is worth remembering, though, that costs and ancillary benefits (such as strengthened military relationships or lucrative trade deals) often influence these decisions. What we can tell now is that public opinion regarding Japanese exports is likely to weigh more heavily into final decisions than it would have in the absence of this crisis, especially when coupled with the rapid political change unfolding now in the Middle East.

### *Will the crisis in Japan change how countries view nuclear fuel enrichment and reprocessing?*

The Japanese cite safety and stringent non-proliferation standards as allowing them to store spent fuel, process MOX fuel and maintain a closed fuel cycle. All of these activities involve storing or using separated plutonium, which is easier to weaponize. This disaster, which includes catastrophic damage to spent fuel pools, may encourage other countries to minimize the risks involved with enrichment and reprocessing within their own borders. If so, this tendency would be compounded by global pressure to move to international fuel banks and fuel-supplier arrangements. It would be yet another reason to forego enrichment. This crisis may add new impetus to the non-proliferation discussions that go hand-in-hand with nuclear energy decisions.

While Japan and others should see the ongoing tragedy as an impetus for further energy supply diversification, in particular by hastening advancement of renewable energy technologies, Japan's exact energy future is not yet clear. No matter what that path looks like, it is likely that the current nuclear energy trajectory has been altered. As one way of helping Japan, U.S. planners should explore the impact that Japan's and the world's energy choices could have on Japan's recovery.

### **Rebuilding Japan's Economy**

*David L. Asher and Patrick M. Cronin*

The full impact of this catastrophe on Japan's economy remains uncertain because national authorities have yet to contain the nuclear crisis. It is already clear that Japanese businesses will operate under adverse conditions for the foreseeable future, at least until reconstruction efforts such as large infrastructure and investments get underway in earnest. Even in these early days of the crisis it is useful to raise a few critical questions about the future of Japan's economy and what the United States might do to help Japan on its road to recovery.

### *How will this catastrophe affect Japan's economy?*

The severity of the nuclear meltdown is crucial and may determine whether Japan eventually bounces back to its original economic trajectory or plunges into another deep recession. What we do know at this point is what has happened in the past. Following the Kobe earthquake in 1995, Japanese institutional investors, including insurance companies, rushed to sell government bonds and other liquid securities and repatriate overseas funds to cover expected losses and recovery costs. This history is repeating today, resulting in a sudden surge in the value of the yen. This threatens to undermine the effectiveness of the Bank of Japan's emergency monetary measures, increase asset deflation and price Japanese exports out of foreign markets. Combined with the disruptive effect of the

earthquake on consumption and production as well as the impact of the nuclear crisis on confidence and investor sentiment, a rising yen threatens to drive Japan back into recession. Japan has remained stuck in a “liquidity trap” for years – meaning that, with interest rates approaching zero, the government cannot stimulate the economy by making borrowing less expensive. Because of consistently depressed interest rates at home, Japan has realized scant returns on its financial and trade surpluses. The disaster that has engulfed Japan has made extricating the country from this “liquidity trap” even more difficult.

*What can the United States do to help Japan achieve economic recovery?*

The United States should formulate a comprehensive strategy to help support Japan’s economic stability and recovery, including measures to allow for a moderate revaluation of the yen and to support expanded bilateral trade, investment and energy cooperation. Whatever the cost of recovery, the strength and resilience of the Japanese economy is a vital interest of the United States. After all, Japan is the second largest investor in U.S. Treasury bonds, America’s second largest foreign direct investor and its fourth largest trading partner. America’s prosperity, in other words, is inextricably linked to Japan’s well-being.

Japan has long searched for a way to diminish its reliance on export-driven growth. Reconstruction will provide a mechanism to recalibrate Japan’s economy toward domestic demand and away from exports. Japan’s economy depends on exports more than is widely understood. And, indeed, from 2008 to 2009 Japan suffered the largest drop in industrial production, exports and gross domestic product among the world’s major economies. The reconstruction needs of its devastated northeastern coast will provide Japan with a productive outlet for domestic investment and help

avoid duplicating much of the wasteful infrastructure spending of the past.

Reconstruction and revitalization also will accelerate the sort of fundamental fiscal reform that Japan has delayed for too long. Japan has sufficient private surpluses to afford its enormous debt, given ultra-low interest rates. Nonetheless, with a working population in steady decline and a rapidly aging society, Japan will not be able to put public financial reform off much longer.

*Japan is the second largest investor in U.S. Treasury bonds, America’s second largest foreign direct investor and its fourth largest trading partner.*

The United States should support Japan’s recovery by announcing that it intends to sustain an exchange rate of 100 yen to the dollar, which would facilitate Japanese exports to the United States. Although this might not be an easy sell to the U.S. Congress, which is focused on U.S. exports and job creation at home, such a gesture would help stabilize prices, bolster confidence and spur a sustained rally in Japan’s stock market. Additionally, it would forestall the possibility of a panicked withdrawal by Japanese investors from the U.S. Treasury bond market, a frenzied sell-off that would severely undermine an already fragile U.S. economy. Announcing a targeted exchange rate could be accompanied by a U.S. commitment to support Japanese earthquake reconstruction financing, as well as the U.S. government’s intent to negotiate a bilateral comprehensive economic security treaty, including a free trade, investment and sustainable energy development agreement, once Japan’s economy has stabilized.

## Conclusion

Beyond caring for the survivors of this catastrophe and mourning those who lost their lives, there are no obvious paths or easy choices. But going forward, one of the best ways the United States can help its ally is to begin asking – and answering – these critical questions.

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A Japan Ground Self-Defense Force soldier conducts a search operation following the March 11, 2011 earthquake triggered tsunami at Natori, Miyagi Prefecture, Japan.

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