



Focus on Prices and Spending

Import and Export Prices: Third Quarter 2011

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Current Price Topics

The Impact of the Earthquake in Japan on U.S. Imports

On March 11, 2011, northeast Japan was hit with the strongest recorded earthquake in that nation's history, measuring 9.0 on the Richter scale. The earthquake and subsequent tsunami, which together left more than 20,000 people dead or missing, also damaged much of Japan's infrastructure, especially the country's electric power grid.¹ The economic impact of the disaster on Japan, including its impact on the Japanese export trade to the United States, remained uncertain at the time, in terms of both the availability and prices of Japanese goods.

Despite this uncertainty, and that of the impact of the quake on the world economy, a major earthquake in Japan is not unprecedented. The Hanshin earthquake that hit Kobe on January 17, 1995, offers some insight into what might be expected this time. Although that incident was a considerably smaller seismic event, measuring 6.8 on the Richter scale, the affected regions made up 12.4 percent of Japan's GDP at the time, compared with 7.8 percent in the less industrialized northeast region that bore the brunt of the recent disaster. In 1995, despite extensive damage in the region of the quake, Japanese output actually increased in February and March 1995, following a

1-month drop in production. Even in Kobe, manufacturing output was at 98 percent of prequake levels within 18 months of the disaster.²

What was different with the 2011 earthquake was the impact on Japan's overall power grid from the damage done to a major nuclear powerplant. That damage led to rolling blackouts which, combined with the damage from the quake, forced a number of major companies, such as Toyota, Sony, Honda, Nissan, Toshiba, and Texas Instruments, to either shut down or cut back production at multiple plants.³ Industrial production in Japan, which had risen 1.9 percent from January 2010 to February 2011, plunged 6.4 percent in March in the aftermath of the disaster.⁴ Once the power grid was largely restored, and thanks in part to the spare-production capacity in Japan, industrial production recovered to nearly the February level by July.

Interestingly, the value of Japanese exports actually increased in March 2011, but largely because goods had already left Japanese ports at the time of the earthquake. Exports did fall sharply the next 2 months, and in May were 10.3 percent below the value of what was exported the previous May. In subsequent months, the value of exports recovered: August recorded a 12-month increase of 2.8 percent, the first 12-month advance in the measure since February. Despite the August increase in the value of

Table 1. Imports to the United States from Japan, by product area, 2010

Product area	Value of trade, billions of dollars	Percentage of total imports from Japan
All commodities	\$121	100.0
Motor vehicles designed to transport people	32	26.4
Machinery and mechanical appliances	25	20.7
Electrical machinery	18	14.9
Parts of motor vehicles	7	5.8
Optical, photographic, measuring, and medical instruments	6	5.0
All other imports from Japan	31	25.6

SOURCE: U.S. Bureau of the Census, Foreign Trade Division.

exports Japan recorded a 10.1 billion dollar trade deficit, that same month because of a surge in the value of imports, which was 12.4 percent higher in August than at the same point in 2010.⁵ Much of the increase in imports has been in the form of higher fuel imports in an effort to make up for the electricity supply shortages that resulted from the closing of the Fukushima nuclear powerplants.⁶

As regards trade with the United States, Japan is the world's third-largest economy and ranks as the fourth-largest import trading partner of the United States.⁷ In 2010, the United States imported more than 120 billion dollars of merchandise goods from Japan, representing 6.3 percent of overall imports.⁸ As can be seen in table 1, five broad harmonized product categories—motor vehicles; machinery and mechanical appliances (including computers); electrical machinery; motor vehicle parts; and optical, photographic, measuring, and medical instruments—made up almost three-quarters of total U.S. import trade with Japan.

One way to look at the impact of the disaster on import trade from Japan is to compare the percentage of U.S. imports coming from Japan for each of the industries shown in the table in the months after the earthquake with the percentage of U.S. imports from Japan in 2010. As seen in table 2, the impact on the top five such product areas varied.

For some product areas, there was very little change in the percentage of U.S. imports from Japan relative to imports from the rest of the world in the 5 months following the earthquake. The percentage of imported machinery and mechanical appliances coming to the United States from Japan actually increased. Import trade from Japan for different types of instruments and electrical machinery did fall off to some extent relative to imports from other trading partners, but by less than 10 percent of the 2010 percentages. In contrast, the two product areas for which the percentage of trade from Japan was the largest in 2010, motor vehicles and motor vehicle parts, saw the largest drop. The share of motor vehicles imported

Table 2. Change in trade from Japan after February 2011

Product Area	Percentage of total U.S. imports from Japan, 2010 ¹	Percentage of total U.S. imports from Japan, March–July 2011	Percent change in composition imports of from Japan
All commodities	6.3	5.3	-15.9
Motor vehicles designed to transport people	27.8	20.2	-27.3
Machinery and mechanical appliances	10	10.1	1.0
Electrical machinery	7.1	6.5	-8.5
Parts of motor vehicles	17.2	14.7	-14.5
Optical, photographic, measuring, and medical instruments	10.4	9.9	-4.8

¹ For each industry, the percentage of import trade from Japan was calculated by taking the total dollar value of imports from Japan for that industry and dividing it by the total dollar value of all U.S. imports for the industry.

SOURCE: U.S. Bureau of the Census, Foreign Trade Division.

from Japan fell from almost 28 percent in 2010 to slightly more than 20 percent in the months following the earthquake.

Given how dramatic the drop in trade was for motor vehicles, that product area bears a closer look. Japan is a major producer of automobiles on the world market. Of the nearly 14 million autos Japan produced in 2010, approximately 9 million were sold overseas.⁹ For the year, the United States imported more than 32 billion dollars worth of motor vehicles from Japan, second only to Canada and more than the next two trade partners combined.¹⁰ When the earthquake first hit in March, a number of the Japanese automakers were forced to halt production. The largest, Toyota, halted approximately 45 percent of global production at one point in time.¹¹ Even if Japanese producers had been able to operate at full capacity, they wouldn't have been able to ship any automobiles because many of the ports from which cars are shipped were destroyed.

Chart 1 shows the dollar value of total imports from Japan to the United States, as well as motor vehicles by month, since the beginning of 2011. In March, when the earthquake hit, the dollar value of trade from Japan increased. Much of the trade bound for the United States was already in transit then and was unaffected by the disaster. By April and May, however, the impact was dramatic. The value of motor vehicle trade from Japan plunged 69.4 percent from March to April and then a further 16.9 percent the next month. By comparison, imports of motor vehicles from the rest of the world fell over those 2 months, but only by 10.1 percent. Much of the impact, though, was temporary. By July, the dollar value of imported motor vehicles from Japan was nearly at the average monthly dollar value in 2010. The same month-to-month pattern of trade was true for total imports coming from Japan as well.

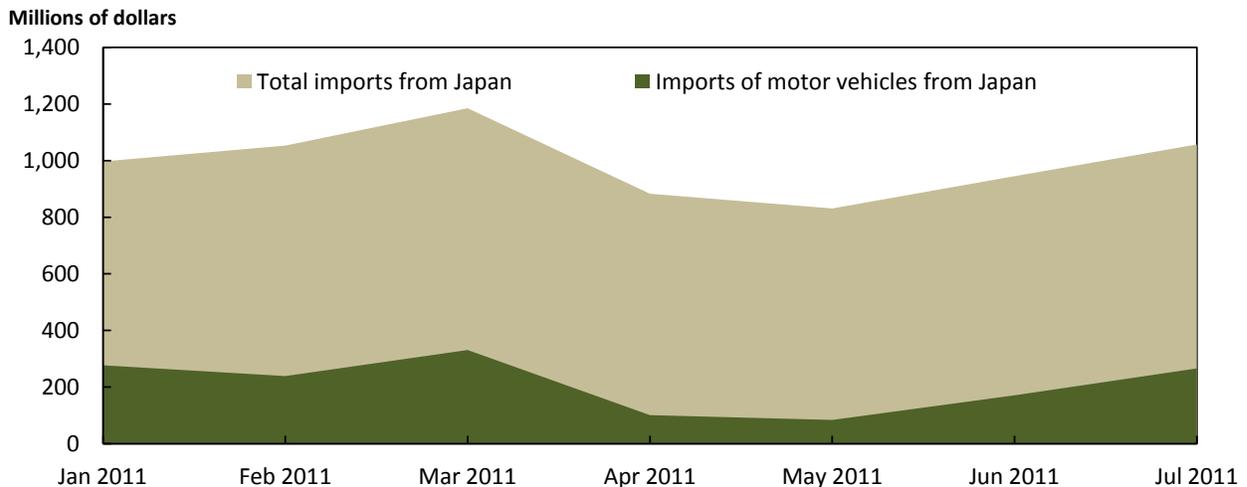
Given the changes in import percentages caused by the earthquake and tsunami,

what impact has there been on the price of imports from Japan? Because Japan is an important trading partner of the United States, any change to the price of imports from Japan could also affect overall U.S. price levels. Typically, if the supply of a good drops dramatically, the price of that good will increase because demand will be higher than supply in the short run. An additional factor that had an influence on import prices in the months following the earthquake was that the U.S. dollar lost 2.9 percent of its value relative to the Japanese yen between March and July.¹² A weaker currency generally results in import prices increasing, because more dollars are needed to purchase the same amount of yen.

So, did the price of Japanese imports to the United States rise, as would have been expected given fewer supplies and a weaker dollar? The answer is yes, but surprisingly little. The Bureau of Labor Statistics produces

a series of indexes that measure price changes by locality of import. Chart 2 compares the locality-of-origin index for imports from Japan with the import price index for all imports excluding fuels.¹³ Import prices from Japan rose 0.4 percent in the second quarter of 2011, following the earthquake in March, compared with 1.3 percent the previous quarter. For the quarter ended in September, import prices from Japan increased an even more modest 0.2 percent, the smallest quarterly advance for the index since prices last fell, in the third quarter of 2008. By comparison, prices for all imports to the United States, excluding fuel, rose 1.2 percent in the second quarter and 0.7 percent in the third. One reason import prices from Japan may not have risen as much as expected is that the disruption in supplies was brief. Another is that demand for imports from Japan may have fallen in addition to supply. While the overall dollar value for U.S. imports advanced from March to July, for the

Chart 1. Dollar value of U.S. imports from Japan, January 2011–July 2011



SOURCE: U.S. Bureau of the Census

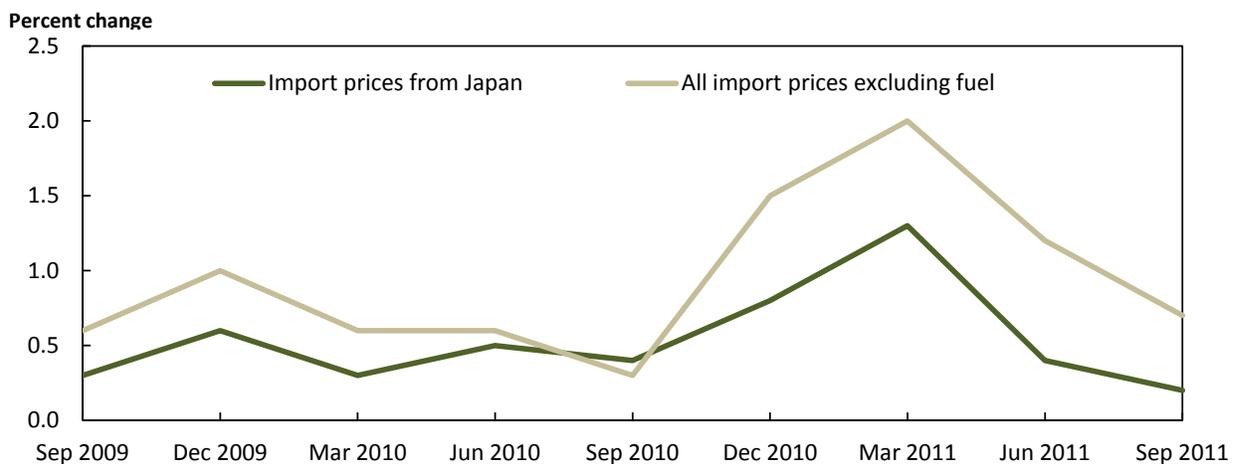
top five product areas for which the United States imports from Japan, U.S. imports from the rest of the world fell 5.9 percent.¹⁴ The United States imported less from all countries in those product areas, not just Japan. A third reason that prices may not have increased any more than they did is that approximately 78.3 percent of imports from Japan were trades between related parties (a company and its subsidiary) in 2010.¹⁵ Prices tend to be less volatile when companies trade with their subsidiaries. So, why didn't the falling value of the dollar versus the yen have more of an impact? The chief reason is that the trend of the dollar falling relative to the Japanese yen did not begin in March. Rather, the trend dates back to mid-2007; thus, it was already an entrenched pattern by the time of the earthquake. Furthermore, the majority of U.S. imports are priced in dollars, and according to a recent study, for items priced in U.S. dollars, only about 25 percent of the change in the

exchange rate, on average, will pass through to the dollar price of the import.¹⁶

Finally, although overall import prices from Japan may not have moved much, prices of automobiles imported from Japan could show a different story if more information were available. Currently, import price indexes by locality of origin are published only at the aggregate level. More detailed indexes would allow for a more detailed analysis, breaking down import prices from Japan into some of the major product areas.

In sum, although the initial impact of the earthquake in Japan had a definite impact on import trade to the United States, that impact was of a short duration. The impact also was greater for some product areas—notably motor vehicles and motor vehicle parts—than others. Finally, overall import prices from Japan did not increase at an accelerated rate following the disaster. 

Chart 2. Percent change in import prices from Japan, including and excluding fuel, September 2009 to September 2011, quarterly data



SOURCE: U.S. Bureau of Labor Statistics



Current Price Trends Quarterly Price Highlights

Import Prices

The price index for overall imports ticked up 0.2 percent in the third quarter of 2011, following a 2.1-percent increase in the second quarter. The increase in import prices was driven by a 0.7-percent advance in the price index for nonfuel imports. Falling prices for fuels and lubricants during the quarter largely offset the rise in nonfuel prices.

Fuel Import Prices

The price index for fuels and lubricants decreased 1.3 percent in the third quarter of 2011, the first quarterly decline since the index fell 6.3 percent in the second quarter of 2010. The quarterly decline was brought about by a 1.4-percent decline in August, while in July and September the index ticked up 0.1 percent each month.

Petroleum prices decreased 1.1 percent in the third quarter, led by a 1.6-percent advance in August. The decline was driven by a combination of economic fears regarding the state of the global economy in general and that of the United States in particular. On August 5, Standard & Poor's downgraded the United States' AAA credit rating for the first time.¹⁷ The reaction to the news was swift: concerns regarding the repercussion of the downgrade and the ramifications it would have on the U.S. and global economies sent oil prices downward.¹⁸ The decrease in oil prices was part of a general decline in equities as investors sought traditional

safe havens such as gold. On August 17, the U.S. Department of Energy's Energy Information Administration announced that the nation's crude supplies had increased by 4.2 million barrels, to 354.0 million barrels.¹⁹ The increase in crude supplies reflected a decline in demand and heightened already growing fears that the domestic economy was heading toward another recession. In response to the growing supply and the U.S. Federal Reserve's plans to keep short-term interest rates near zero, oil prices fell.²⁰

Lower natural gas prices also contributed to the decline in fuel prices, falling 0.7 percent over the third quarter of 2011. A combination of factors, such as abundant shale gas, sluggish demand, and slowed industrial activity, contributed to the decline in prices as well.²¹ Despite the decline during the quarter, natural gas prices have increased 8.0 percent from September 2010 to September 2011.

Nonfuel Import Prices

Import prices excluding fuels increased 0.7 percent over the third quarter of 2011. As is illustrated in chart 3, rising prices for nonfuel industrial supplies and materials, as well as for consumer goods, drove the overall increase in nonfuel prices. Increasing prices for foods, feeds, and beverages and for capital goods also contributed to the increase, although to a much smaller extent.

The price index for nonfuel industrial supplies and materials rose 2.1 percent for the quarter ended in September. Gold prices were the most significant contributor to the increase. Economic uncertainty has led to gold and other precious metals becoming an attractive

refuge for investors.²² Prices for consumer goods advanced 0.9 percent in the third quarter. The increase in gold prices similarly affected prices for jewelry.

Prices of capital goods, as well as of foods, feeds, and beverages, each increased 0.3 percent for the third quarter. The price index for automotive vehicles remained unchanged.

Export Prices

The price index for overall exports increased 0.7 percent for the 3 months ended in September, following a 1.4-percent increase in the previous quarter. Prices of agricultural commodities declined 0.3 percent in the third quarter of 2010, after falling 0.7 percent in the second quarter, while nonagricultural export prices increased 0.8 percent for the quarter ended in September. Prices for all nonagricultural commodity groups except capital goods increased during the third quarter.

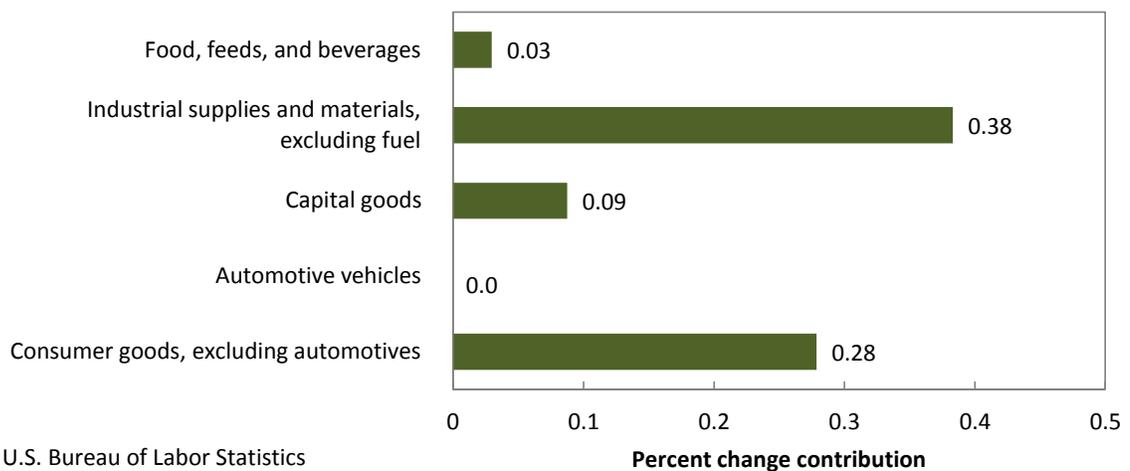
Agricultural Export Prices

The third-quarter decline in agricultural commodity prices was brought about by a steep drop in the price of cotton, which fell 19.2 percent over the quarter. Previously, the price index for cotton had increased through the first quarter of 2011. The resulting high prices encouraged farmers to plant a record 93 million acres of cotton worldwide; the additional supply has helped bring about a sharp decline in the price.²³ A simultaneous drop in demand also contributed to the decline.²⁴

Nonagricultural Export Prices

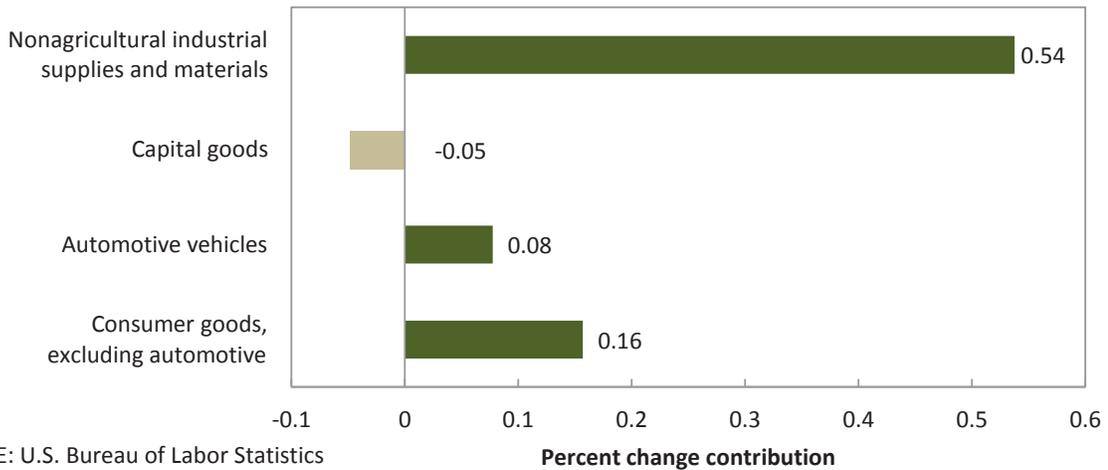
The price index for nonagricultural exports increased 0.8 percent in the third quarter of 2011, following a 1.7-percent increase in the previous quarter. As shown in chart 4, prices of nonagricultural industrial supplies and materials were the primary contributor to the index's movement. Prices for consumer

Chart 3. Major contributors to the 0.7-percent increase in nonfuel import prices, third quarter 2011



SOURCE: U.S. Bureau of Labor Statistics
 NOTE: Because of rounding, figures do not sum to total.

Chart 4. Major contributors to the 0.8-percent increase in nonagricultural export prices, third quarter 2011



SOURCE: U.S. Bureau of Labor Statistics
 NOTE: Because of rounding, figures do not sum to total.

goods also contributed to the overall increase, although to a lesser extent.

The price index for automotive vehicles increased 1.0 percent for the quarter ended in September, the largest quarterly increase since a similar increase of 1.0 percent in the fourth quarter of 1995. Capital goods prices

declined 0.1 percent, the first quarterly decrease since the index fell 0.3 percent in the second quarter of 2010.

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Notes

¹ Armand Vervaeck and James Daniel, “Japan Tohoku Tsunami and Earthquake: The death toll is climbing again,” *Earthquake Report*, Aug. 15, 2011, <http://earthquake-report.com/2011/08/04/japan-tsunami-following-up-the-aftermath-part-16-june/>.

² Bill Witherell, “Tohuko vs. Kobe Economic Impact of Japan’s Earthquake,” *Financial Sense*, Mar. 14, 2011, <http://earthquake-report.com/2011/08/04/japan-tsunami-following-up-the-aftermath-part-16-june>.

³ Andrew Dowell, “Japan: The Business Aftershocks from Chips to Banks, Companies Scramble,” *The Wall Street Journal*, Mar. 25, 2011, <http://online.wsj.com/article/SB10001424052748704461304576216950927404360.html>.

⁴ Japan Ministry of Economy Trade and Industry: Japan Industrial Production, <http://www.meti.go.jp/english/statistics/tyo/zenkatu/index.html>. Note that industrial measures changes in output for the industrial sector of the Japanese economy, which includes manufacturing, mining, and utilities, but does not include agriculture.

⁵ Japan Ministry of Finance: Japan Export and Import Trade, http://www.customs.go.jp/tonkei/Info/index_e.htm.

⁶ Dinakar Sethuraman, “LNG Surges as Japan Vies with China, Exxon’s Shipments Grow,” *Bloomberg*, Sept. 19, 2011, <http://www.bloomberg.com/news/2011-09-19/lng-price-boom-seen-as-japan-vies-with-china-while-exxon-s-shipments-grow.html>.

⁷ Japan is also the fourth-largest export trade partner of the United States, but the discussion here is limited to the impact on import trade because export trade from the United States to Japan was not significantly affected by the earthquake.

⁸ United States Census Bureau: USA Trade Online, <http://www.usatradeonline.gov>.

⁹ Dowell, “Japan: The Business Aftershocks from Chips to Banks, Companies Scramble.”

¹⁰ United States Census Bureau: USA Trade Online.

¹¹ William Alden, “Japan Disaster Threatens Economic Recovery, Affects Economics Globally,” *The Huffington Post*, Mar. 23, 2011, http://www.huffingtonpost.com/2011/03/15/japan-earthquake-economy_n_835874.html.

¹² Federal Reserve Bank of St. Louis: Federal Reserve Economic Data, <http://research.stlouisfed.org/fred2/series/EXJPUS?cid=95>.

¹³ Fuels are excluded here because the industry that produces them is a comparatively volatile industry which makes up approximately 27 percent of overall U.S. imports, but very little of what is imported from Japan.

¹⁴ United States Census Bureau: USA Trade Online.

¹⁵ U.S. Bureau of the Census: U.S. Imports for Consumption for Selected World Areas and Top 10 Countries — 2010, www.census.gov/foreign-trade/Press_Release/2010pr/aip/related_party. By comparison, only 43.7 percent of imports from the Pacific Rim, which includes Japan, were related party trade in 2010.

¹⁶ Gita Gopinath, Oleg Itskhoki, and Roberto Rigobon, “Currency Choice and Exchange Rate Pass-Through,” *The American Economic Review*, Mar. 2010, pp. 304–36.

¹⁷ Zachary A. Goldfarb, “S&P Downgrades U.S. Credit Rating for First Time” *The Washington Post*, Aug. 6, 2011.

¹⁸ Christopher Johnson, “Oil Falls Over \$4 as US Downgrade Spurs Growth Fears” *Reuters*, Aug. 8, 2011.

¹⁹ Weekly Petroleum Status Report (U.S. Energy Information Administration), Aug. 17, 2011, http://205.254.135.24/oil_gas/petroleum/data_publications/weekly_petroleum_status_report/wpsr.html.

²⁰ Mark Shenk, “Oil Heading for Fourth Weekly Decline; Brent Extends Record,” *Bloomberg*, Aug. 19, 2011, <http://www.bloomberg.com/news/2011-08-19/oil-heading-for-fourth-weekly-decline-in-new-york-brent-spread-at-record.html>.

²¹ Jon Chavez, “Natural Gas Prices Fall as Ohio, PA Supply More,” *The Toledo Blade*, Sept. 9, 2011, <http://www.toledoblade.com/Energy/2011/09/23/Natural-gas-prices-fall-as-Ohio-Pa-supply-more.html>.

²² Hibah Yousuf, “Gold Hits New Record Near \$1830 an Ounce,” *CNN Money*, Aug. 18, 2011, http://money.cnn.com/2011/08/18/markets/gold_prices/index.htm.

²³ Gregory Meyer, “Cotton’s Volatile Run Set to Continue,” *The Financial Times*, June 25, 2011, <http://www.ft.com/intl/cms/s/0/a7540cdc-b696-11e0-ae1f-00144feabdc0.html>.

²⁴ Elizabeth Holmes and Carolyn Cui, “Tumble in Cotton Prices, New Wrinkle for Apparel Makers,” *The Wall Street Journal*, July 22, 2011, <http://online.wsj.com/article/SB10001424053111903554904576458270983393048.html>.