

China will soon become the largest net oil importer and will spend the most for its net fossil fuel imports

—China expands energy imports and Japan increases energy importing burden—

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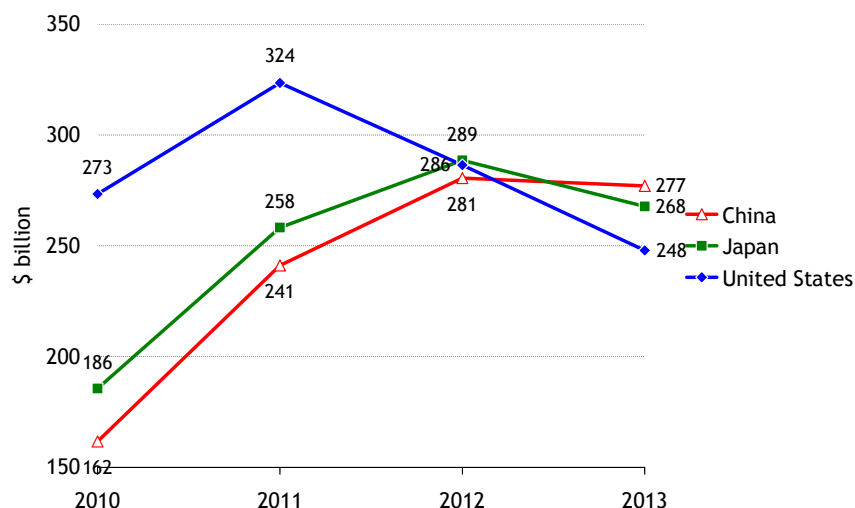
Summary

In 2010, China became the world's largest energy consumer. Energy consumption between 2010 and 2013 has further increased by an amount equivalent to the entire energy consumption of Japan. By the end of this year, or early next year, the world will witness two additional symbolic events representative of the rapidly growing Chinese energy consumption situation.

The first is that China will become the largest net oil importer in the world. This year alone, the number of car sold in China will exceed 20 million, making the country the biggest “new car” market in the world – an increasing car ownership induces additional oil demand. On the other hand, the United States net oil imports are decreasing due to a downward trend in oil consumption combined with an increase in domestic oil production; car ownership has been on the decline since the financial crisis, fuel economy continues to improve and domestic oil production is on the rise due to the shale revolution. China's net oil imports will surpass the United States within the next few months.

The second symbolic event is that China's expenditures on net imports of fossil fuels (coal, oil and natural gas) are about to be the highest in the world very soon. Until 2011, the United States were the largest spender; in 2012, Japan increased its spending and surpassed the United States, but for 2013, it is almost certain that China will jump from third position to the top, in terms of expenditures. The changes in spending on net imports of fossil fuels reflects the trends in net oil imports for China and the by United States.

Spending on net imports of fossil fuels



Although Japan is the fifth largest energy consumer in the world, it consumes five or six times less energy than China or the United States. Japan’s net energy import expenditures, however, are just as high as those countries at about \$250 billion per year. Such fact shows the vulnerability of the Japanese energy supply structure – the result of poor fossil fuel resources and limited domestic production. The proportional economic burden caused by the net import expenditures is significantly larger in Japan. It is 3.6 times larger than for the United States and 1.7 times larger than China’s burden.

The increase in fossil fuel imports into Japan surpasses what is fair relative to the current economic growth and the increase in income. Moreover, the depreciation of the Yen has further exacerbated the burden stressing even further that Japan must accept the reality that the burden expands with the import of massive amount of fossil fuels from overseas.

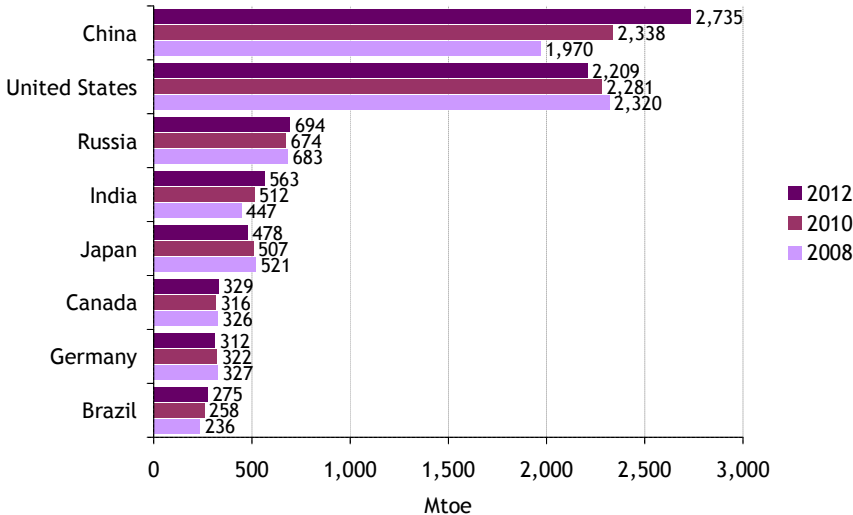
Keywords: Fossil fuel, oil net imports, net import spending, Japan, the United States, China, depreciation of the Yen

China consumes more and more energy

Ever-expanding China

China became the world’s largest energy consumer in 2010. Just the increase in energy consumption between 2010 and 2013 is equivalent to the entire energy consumption of Japan. As the United States is slowly decreasing consumption, the gap between China and the United States is expanding rapidly.

Figure 1: Total primary energy consumption of top eight countries



Source: BP “BP Statistical Review of World Energy,” June 2013

In 2013 – or 2014 at the latest –, the world will witness two symbolic events representative of the rapidly growing Chinese energy consumption situation.

China is on its way to become the largest net oil importer

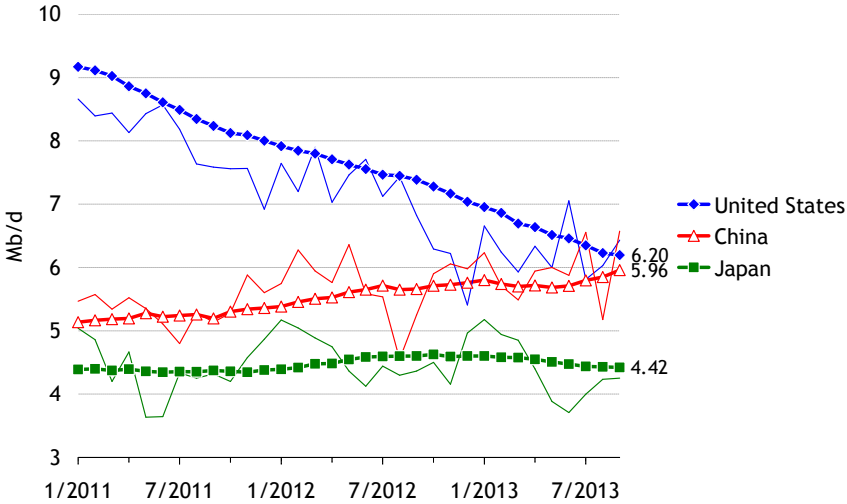
The first is that China is about to become the largest net oil importer in the world. ¹

Although coal consumption dominates the Chinese energy structure, accounting for 70% of the total energy consumption, oil consumption is increasing very rapidly. The difference between China and the United States, which has been the largest oil consumer particularly gasoline for automobiles, is significant. It was predictable that China’s net oil imports would eventually surpass the United States, but most were expecting the “X-day” to take place later rather than earlier.

China is changing dramatically. For example, the number of car sold in China will exceed 20 million in 2013, making the country the biggest “new car” market. The increasing car ownership induces additional oil demand. On the other hand, the United States is accelerating its downward trend in oil consumption due to a decrease in car ownership after the financial crisis and the improvement of fuel economy (CAFE standards). In addition to a decline in oil consumption, domestic production is increasing due to the shale revolution resulting in an overall reduction in net oil imports.

The gap of net oil imports between the two countries has been narrowing to as little as a few hundred thousand barrels per day recently (Figure 2). Chinese net imports are currently very close to those of the United States and will surpass it on an annual basis within the year.

Figure 2: Net imports of oil



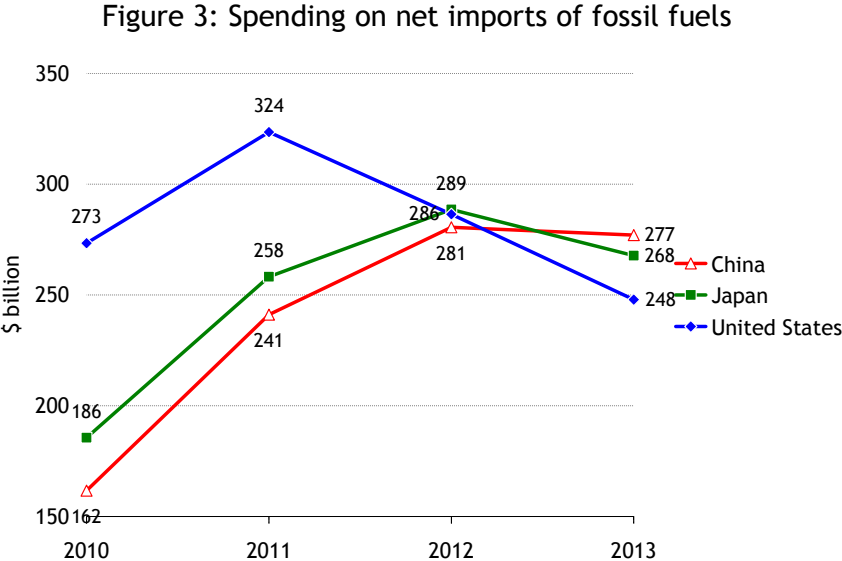
Note: For the year ending each month. Narrow lines stand for net imports in each month.
Source: Joint Oil Data Initiative “Extended Monthly Oil Data Collection in APEC Region”

¹ Oil consists of crude oil and petroleum products. The same hereinafter.

China sets to become the largest net fossil fuel import spender

Another symbolic event is that China is about to spend most on net imports of fossil fuels in the world.

Until 2011, the United States was the largest spender on fossil fuel imports (Figure 3). Japan spent more than the US in 2012 and it almost certain that China will jump up from the third position to the top in 2013.



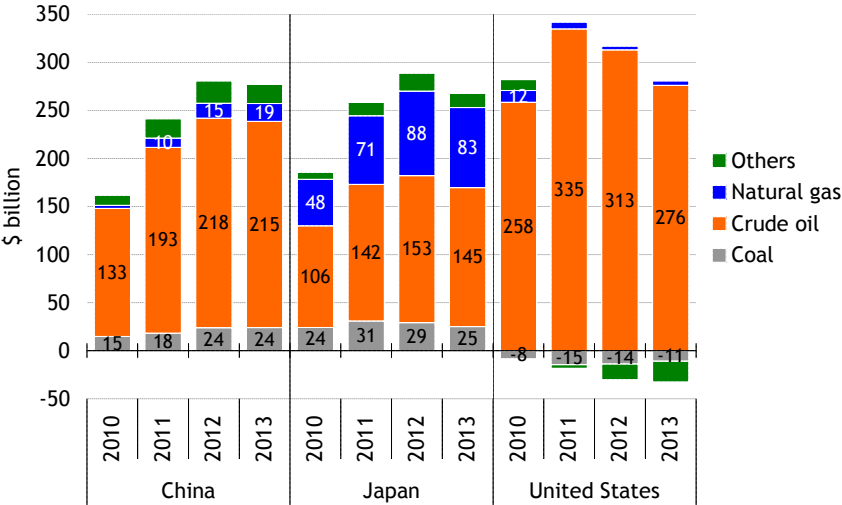
Notes: Harmonized Commodity Description and Coding System (HS) code for “Fossil fuels” is 27. 2013 is for the year ending August 2013.

Source: Trade statistics of each country

Contrasting trend of net oil imports by China and the by United States also affects changes in spending on net imports of fossil fuels (Figure 4). Crude oil accounts for three-quarters of the \$76 billion US *reduction* in spending between 2011 and 2013². Crude oil accounts for 60% of the *increase* in spending on net imports of \$36 billion for fossil fuels in China during the same period and for the period from 2010 to 2013, contribution of crude oil is 70% of the \$115 billion increase.

² 2013 is the year ending August 2013. The same hereafter.

Figure 4: Spending on net imports of fossil fuels by energy source



Notes: HS code for “Coal” is 2701, “Crude oil” is 2709, and “Natural gas” is 271111 and 271121. “Others” includes petroleum products, coal products, etc. 2013 is for the year ending August 2013.
 Source: Trade statistics of each country

Unsecured Japan

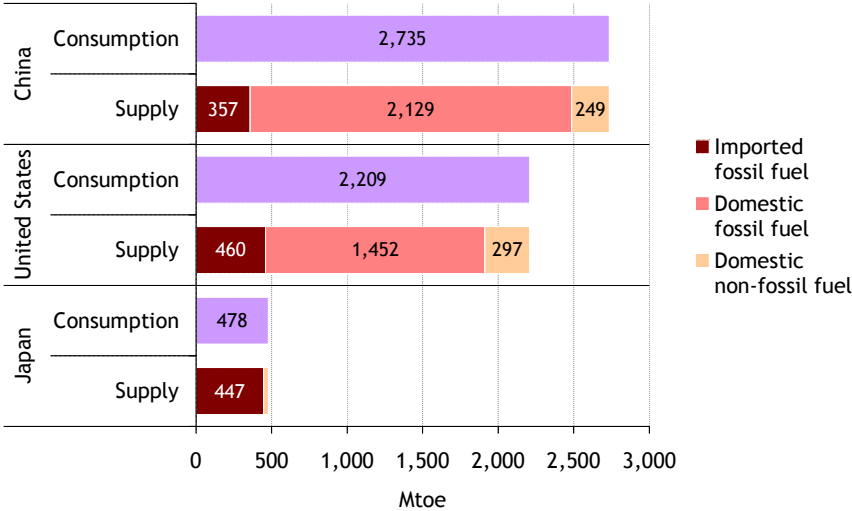
Burden on Japan’s shoulders

Japan has recently shown a very different trend in spending on net imports of fossil fuels than those of the United States and China. It is characteristic of Japan’s energy mix that natural gas contributes as much as crude oil for the recent increase. The contribution of natural gas continues to be the largest in all of the three countries primarily because Japan intensified its use of natural-gas-fired power plants as well as oil-fired power plants to substitute the loss of nuclear power plants, despite high prices.

Although Japan is the fifth largest energy consumer in the world, the country spends on fossil fuels imports almost the same enormous sum as China and the United States, which consumes five or six times as much energy as Japan. This fact shows the vulnerability of Japanese energy supply structure – poor fossil fuel resources and very limited domestic production. Contrastively, China and the United States are both large energy consumers and large energy producers (Figure 5).³

³ The United States was the third largest oil producer, the top natural gas producer and the second largest in coal production in 2012. China was the fourth largest in oil, the seventh largest in natural gas and the top producer of coal.

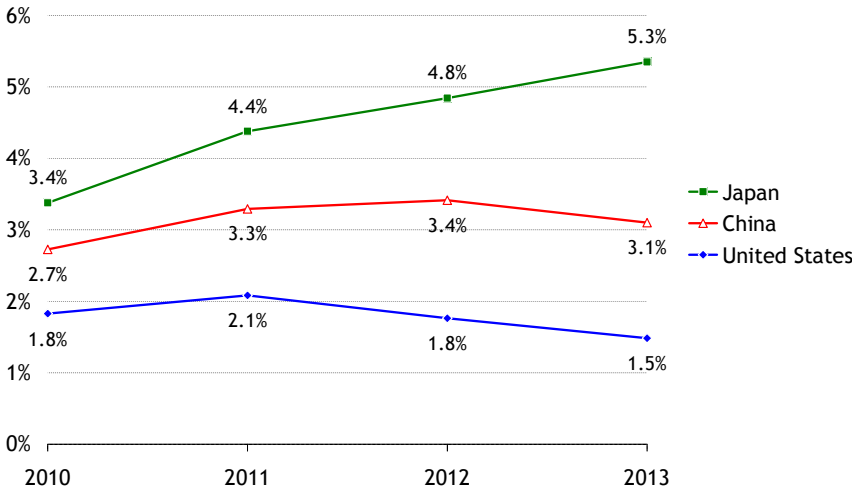
Figure 5: Supply structure of primary energy (2012)



Notes: Estimation based on domestic production and consumption
 Source: Compiled from BP “BP Statistical Review of World Energy,” June 2013

Spending on net imports of fossil fuels by the three countries is around \$250 billion each. The economic burden for Japan, however, is significantly larger compared to the United States and China. Spending on net imports of fossil fuels as a ratio of nominal GDP, an indicator to degree of economic burden, of Japan is much higher than the other two countries (Figure 6). Furthermore, the ratio of Japan will rise even in 2013, differentiating from the two other countries. Japan’s ratio will be 3.6 times as high as the United States’ ratio and 1.7 times China’s ratio.

Figure 6: Spending on net imports of fossil fuels as a ratio of nominal GDP



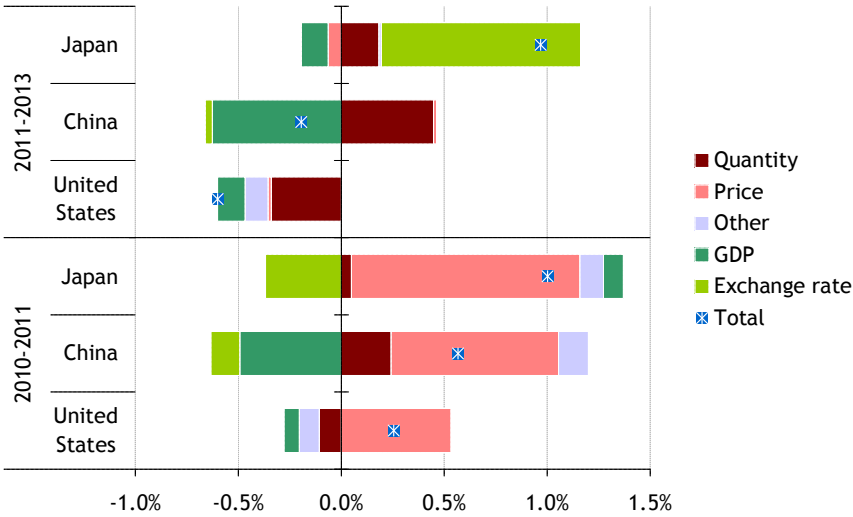
Notes: Same as Figure 4.
 Source: Compiled from trade statistics of each country and International Monetary Fund “World Economic Outlook,” October 2013

Depreciation of the Yen is a double-edged sword

The surge in energy prices pushed up the ratio from 2010 to 2011 for all of the three countries (Figure 7). The explanation for the changes after 2011 is completely different. For the United States⁴, all the contributing factors supported a lower ratio. The fall in the burden ratio for China results from two opposing factors that almost compensated for each other. The impact of the GDP factor more than compensated for the change in quantity. This meant that the fossil fuel imports did not generate an additional burden to the national economy.

For Japan, however, the explanation is far more complex. The contribution of the quantity factor exceeds the GDP factor in Japan (something different from the other two countries); in other words, Japan increased its fossil fuel imports by more than the corresponding economic growth or increase in income now. Moreover, the Japan’s burden increased by one percent point in response to a change in the exchange rate. This is nothing but the adverse effect of the rapid correction of the excessively strong Yen. Although depreciation of a local currency supports exports, it raises prices of imported goods and services in the local currency.⁵ Japan must realise and accept the reality that the national burden expands with massive imports of fossil fuels from overseas.

Figure 7: Decomposition of changes in spending on net imports of fossil fuels as a ratio of nominal GDP



Notes: Quantity and price factors are of coal, crude oil and natural gas. Other factor is combination of quantity and price factors of other energies including petroleum products, coal products, etc. Same as Figure 4.

Source: Compiled from trade statistics of each country and International Monetary Fund “World Economic Outlook,” October 2013.

⁴ There is no exchange rate factor for the United States in principle.
⁵ However, Japanese export quantity of goods and services has not increased in the last one year though export revenue has increased, suggesting that Japan has not utilised fully merits by depreciation of the Yen.

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