SPOTLIGHT ON THE UNITED STATES

For many decades, America's dependence on oil has had an enormous impact on the economic and national security of the country. As a result, oil security has been a major concern of policymakers.

The Oil Security Index not only compares U.S. oil security with other countries around the globe, but also provides a numerical score of U.S. oil security. This numerical score shows changes in oil security over time. It is calculated by combining results for each metric that are normalized over the entire time series. The score is indexed at 100 in Q1 2000, the first time period.

The combined score for the United States has shown only moderate improvement since Q1 2000. However, it has experienced sizeable upward and downward shifts over the period, fluctuating between a low of 99.0 and a high of 100.4.

The score reached a low point in Q2 2008, reflecting a sharp decline in oil security. This was a result of increasing global oil prices and rising U.S. consumption and imports. As oil prices receded from record highs, and U.S. oil consumption declined, oil security improved somewhat. However, the rise in the score was short-lived, as both oil prices and domestic consumption rebounded in 2010.

Since 2012, the combined score has been rising steadily, reaching its highest levels yet in both Q4 2012 and Q1 2013. This improvement comes as a result of ongoing economy-wide improvements in efficiency, lower per capita oil consumption, increasing domestic oil production, and somewhat lower global oil prices since the "Arab Spring" (and in particular, Libyan outages) in early 2011 (which resulted in the most recent low point for the score). These changing underlying dynamics have seen the United States move from a low of 8th in the Index rankings to its current high of 5th (since Q1 2012).

Both Structural Dependency metrics have shown improving trends. Oil Intensity has observed steady improvement since 2000, falling from 0.73 barrels per $1,000 of GDP in 2000 to 0.56 in Q1 2013, corresponding to a normalized metric score of 103.0 (the best of any metric score over the time period). This improvement is predominantly due to the efficiency of oil use rising at a faster average rate than GDP since 2000. Consumers have also decreased consumption in response to higher oil prices since 2007. In part this shift has been the result of greater efficiency. However, a decline in vehicle miles traveled (VMT) was a much larger contributor, particularly during the recession, due to high unemployment and reduced economic activity overall. Though VMT rebounded slightly in 2010, oil demand growth has not returned in earnest. In 2013, unemployment remains stubbornly high by historical standards and economic growth is slow—both due in part to high oil prices. Over the long term, as economic growth recovers, rising automotive efficiency will play a greater role in moderating total oil consumption.

Changes in Economic Exposure metrics have largely corresponded with changes in global oil prices. This is particularly obvious in the Total Spending on Oil as a Percentage of GDP metric. Specifically, record-high prices that reached $147 per barrel in July 2008 resulted in oil spending of 4.4 percent of GDP in Q3 2008. This corresponded to a normalized metric score of 96.2, the worst score of any metric over the entire time period. Total Spending on Net Oil Imports as a Percentage of GDP has also tracked price movements to a certain extent, and its evolution is similar to Total Spending on Oil as a Percentage of GDP. However, the impact of declining net oil imports (as a result of rising domestic oil production and lower consumption) is noticeable in recent years as the evolution of the Total Spending on Net Oil Imports as a Percentage of GDP metric has diverged somewhat from the Total Spending on Oil as a Percentage of GDP metric. Although Oil Exports as a Percentage of Total Exports by Value have increased, the U.S. economy remains highly diversified, limiting its economic exposure to any decreases in oil revenue that could result from lower global oil prices. Moreover, its exports are almost exclusively of petroleum products, which are of higher economic value than crude oil and require a refining infrastructure that complements domestic exploration and production activities.

100.4

The highest combined score achieved by the United States since 2000 (Q1 2013)

The United States' Supply Security metrics have also observed substantial shifts as a result of changes in consumption and production since 2000. Most obvious is the sharp decline in the Oil Supply Security metric as imports rose to exceed 12 mbd in the 2005 to 2007 period and oil had to be sought from additional (and on average less stable) locations. However, a concurrent decline in consumption accelerated into 2008 as prices hit historical highs. This decline was then intensified by the onset of recession, which coincided with the emergence of meaningful increases in domestic oil production. As a combined result of this consumption decline and production surge, the

FIGURE 20

U.S. Index Score and Structural Dependency Metrics, Q1 2000 to Q1 2013

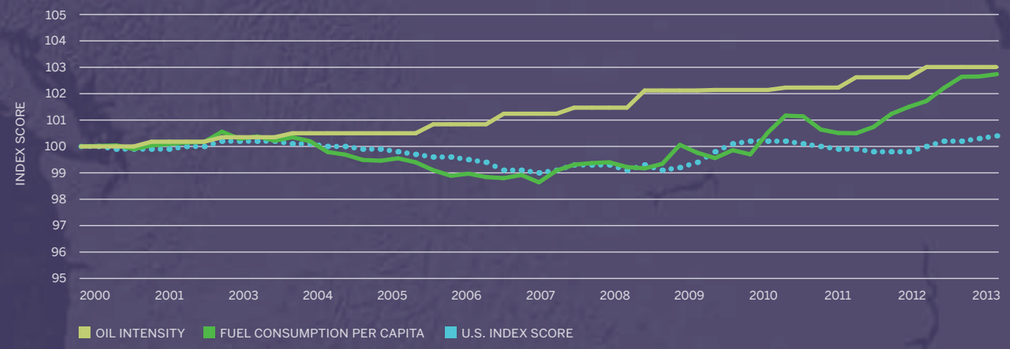


FIGURE 21

U.S. Index Score and Economic Exposure Metrics, Q1 2000 to Q1 2013

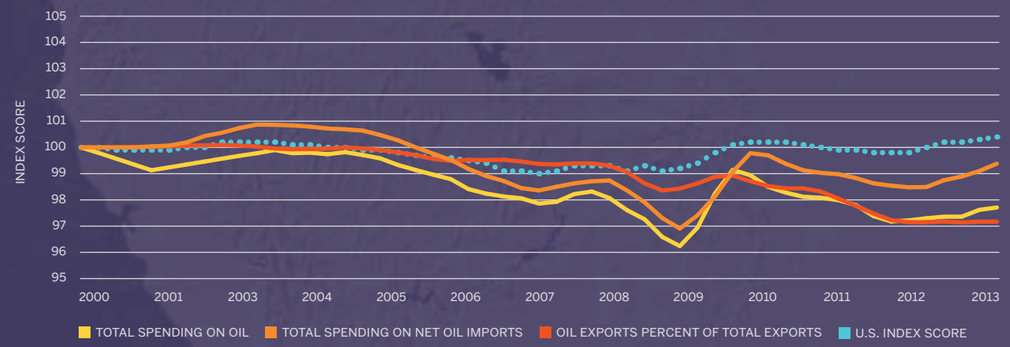
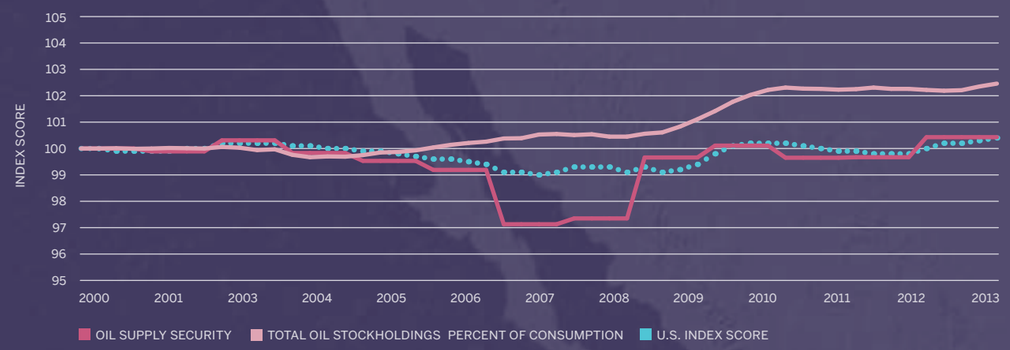


FIGURE 22

U.S. Index Score and Supply Security Metrics, Q1 2000 to Q1 2013



Source: SAFE/RGE analysis

increase in imports observed through 2007 began to reverse. Net oil imports declined from 2008, strengthening the Oil Supply Security metric score substantially from its low point and in fact propelling it to new highs in recent quarters. With stockholdings observing very little change over the time period, declining consumption has had a similarly positive effect on Total Oil Stockholdings as a Percentage of Consumption.

AN UNCERTAIN HORIZON

While many of the United States' individual metric scores have shown improvement, a return of high and volatile oil prices represents a serious and unpredictable threat to U.S. oil security. A recent example is supply outages in Libya in early 2011 that caused global oil prices to spike and contributed to a decline in U.S. oil security. This decline occurred despite positive trends of rising efficiency and falling oil imports (and even though U.S. imports of crude oil from Libya averaged less than 1 percent of total imports in late 2010 and early 2011).[48] Continued improvement in the Oil Intensity and Fuel Consumption Per Capita metrics in particular will help insulate the economy from the effects of higher and volatile prices. Increasing domestic production will also have a positive effect on the Total Spending on Net Oil Imports as a Percentage of GDP and Oil Supply Security metric scores, both of which either remain or have been below 100 for most of the time period, dragging down the combined score.

48 SAFE/RGE analysis based on data from: U.S. EIA

99.0

The lowest combined score encountered by the United States since 2000 (most recently in Q4 2007)

The 0.2 point increase in the combined score over the past three quarters is clear evidence that the trends of increased domestic oil production and improved efficiency are strengthening U.S. oil security, even in a historically high-price environment. Continued improvements in the Economic Exposure metrics (assuming that they are not caused by temporary declines in oil prices or U.S. economic activity) will be indicative of a growing resilience to oil price spikes. However, even with these improvements in its oil security, the United States would remain far from being truly insulated from the high and volatile oil prices characteristic of the global oil market, as its scores for the Total Spending on Oil as a Percentage of GDP and Total Spending on Net Oil Imports as a Percentage of GDP metrics in particular attest.