



US Oil Imports: Why it is Difficult to "Fix" the Situation - Looking at a Few Graphs

Posted by [Gail the Actuary](#) on July 16, 2010 - 10:25am

Topic: [Demand/Consumption](#)

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With all of our problems in the Gulf of Mexico, we think about importing more from elsewhere. Let's look at some graphs of net imports of crude oil and refined products, and of some US production amounts, to see what is happening now. Perhaps this will give us insight as to what to expect going forward, and how many options we really have with respect to oil imports.

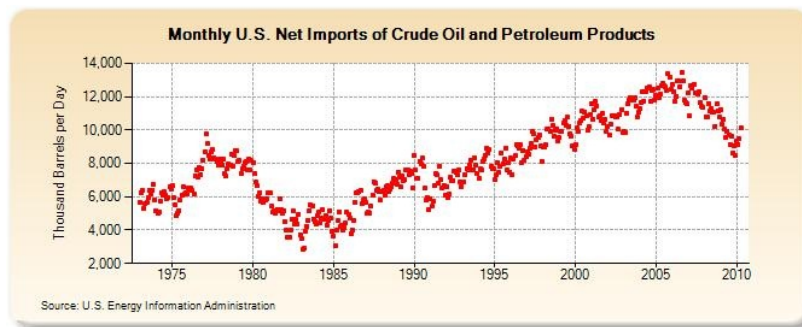


Figure 1. US net imports of oil and oil products, using an EIA chart

As one can see, US net imports peaked in 2005, and have been declining ever since. The year 2005 was the year the world hit its production plateau. This is precisely the pattern one would expect, if world oil production is flat, while demand from oil exporters and China is growing.

(Net imports are imports minus exports. Imports tend to be mostly crude oil. Exports tend to be mostly refined products. Some of the exports go to the same countries as the imports were from - we just return some of the product after processing.)

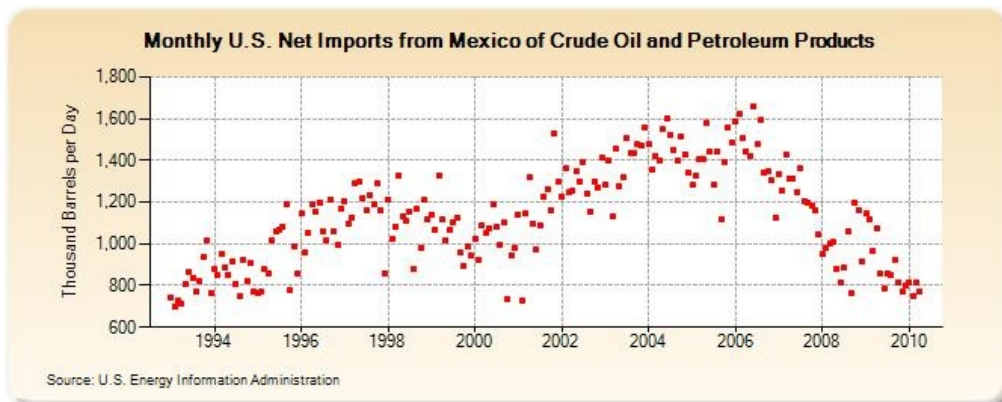


Figure 2. US net imports of oil and oil products from Mexico, using an EIA chart

Part of the problem is of course that some of the countries we are importing oil from are declining in production, and can therefore send us less. Net oil imports from Mexico have declined by about half since reaching their peak.

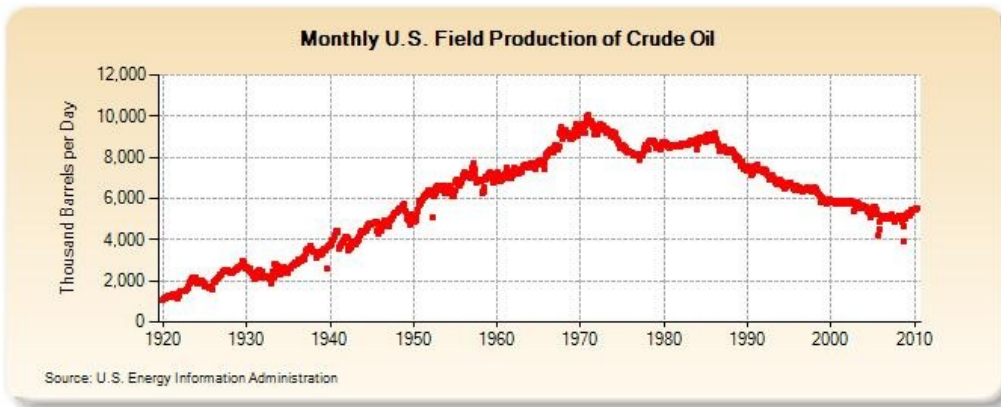


Figure 3. US crude and condensate production, using an EIA chart

Part of the reason that imports can be down is because US crude oil production is up by about 400,000 or 500,000 barrels a day--not really a huge amount, but it helps, when imports are trending down.



Figure 4. Spot oil prices, using an EIA chart

One of the reasons that US oil production could trend up is the higher oil prices in world markets since about 2004. Even now, prices are high, relative to prices in the several years prior to 2004.

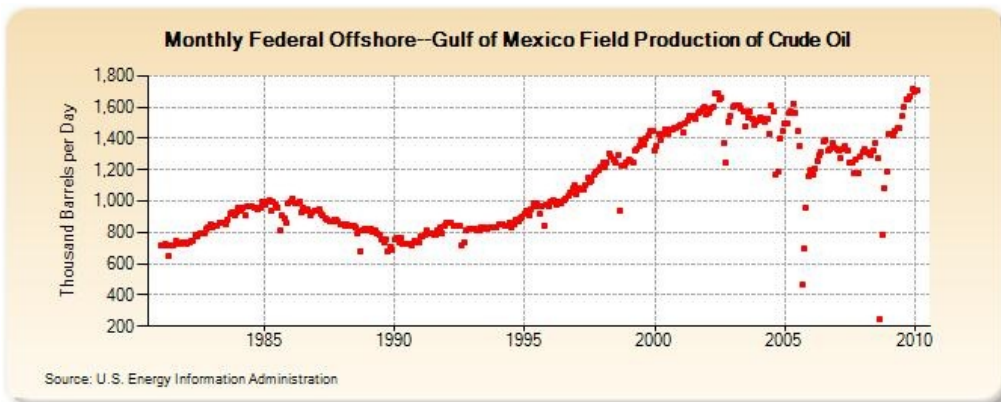


Figure 5. US Gulf of Mexico oil production, using an EIA chart

One of the places where oil production is up is the Gulf of Mexico. The recent increase in production is due to greater deep water production, made possible by higher oil prices and improvements in technology.

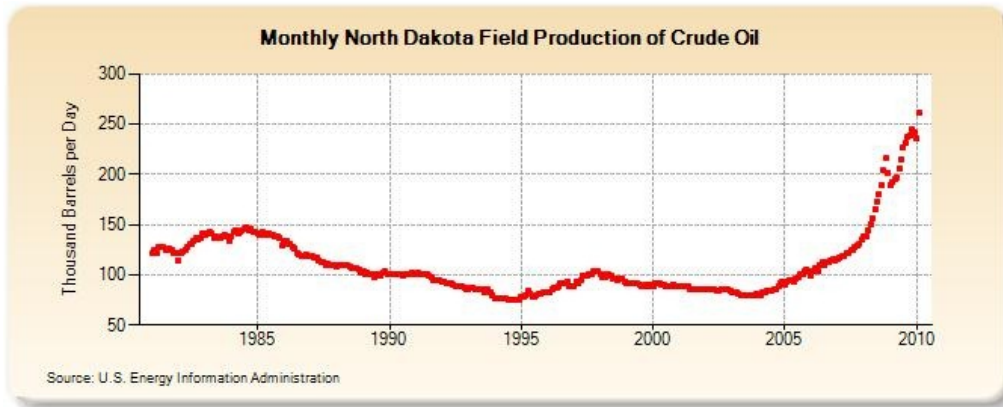


Figure 7. US North Dakota oil production, using an EIA chart

Another place oil production is up is in North Dakota, due to increased production from the Bakken. While the upslope is steep, the total increase in production does not come close to meeting US needs.

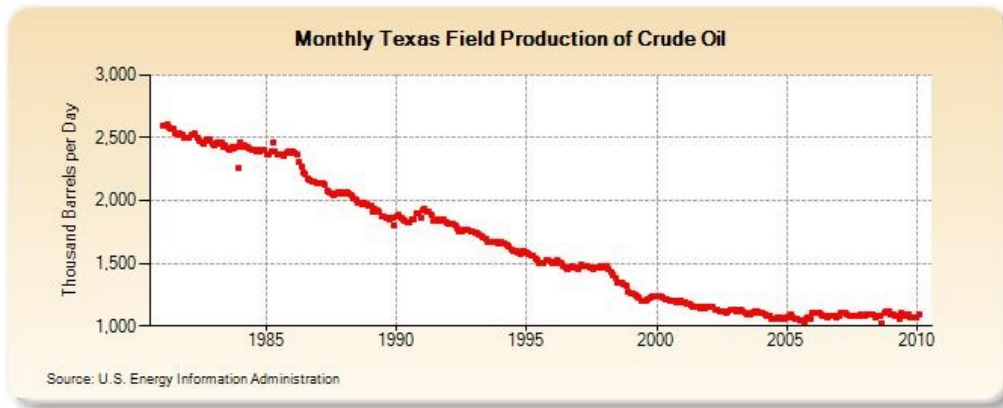


Figure 8. US Texas oil production, using an EIA chart

Meanwhile, Texas oil production--the US's largest state in oil production--has stayed flat, despite high oil prices, the use of enhanced oil recovery methods, and improvements in technology.

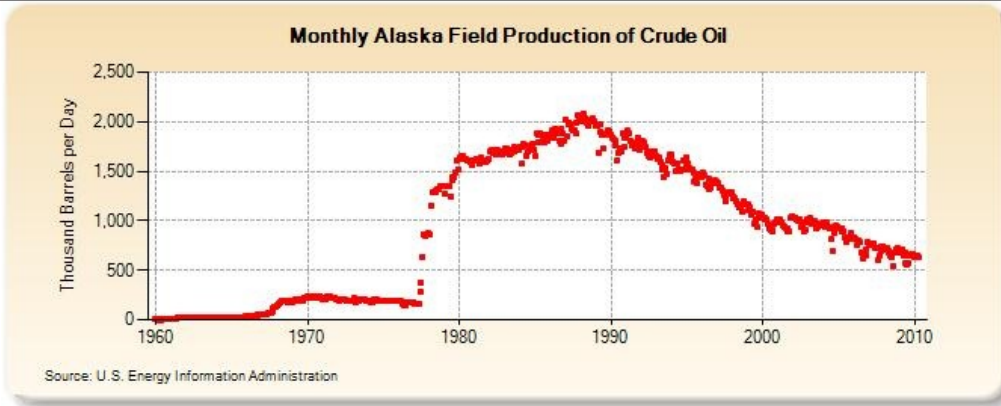


Figure 9. US Alaska oil production, using an EIA chart

Alaska's oil production has continued to decline, despite high oil prices and improved technology. If production is not brought up, at some point in the not too distant future the pipeline carrying Alaskan oil to the US 48 states will no longer be able to operate, because the amount in it will be below its minimum operating level.

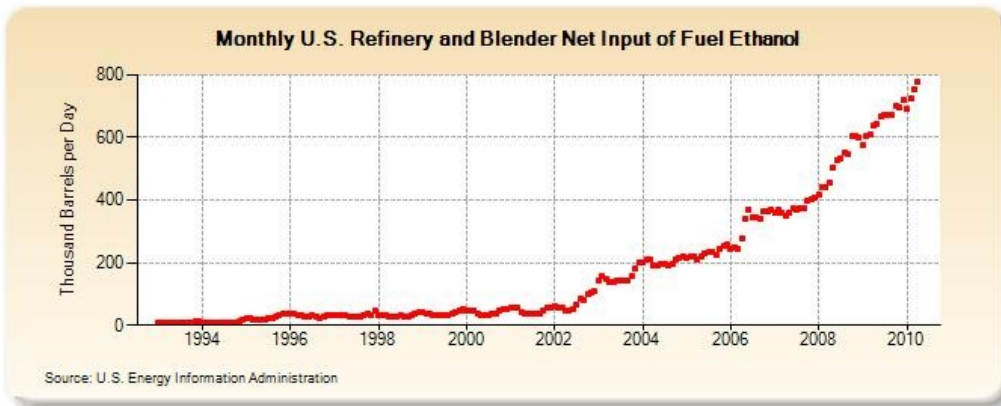


Figure 10. US Ethanol consumption (reflects imports/exports), using an EIA chart

The other bright light in holding the US import needs down is ethanol, now being substituted for part of gasoline needs. (Most of the ethanol in Figure 10 is US produced, but it does also reflect imports and export of ethanol, to the extent they have taken place.) Now that "the blend" wall of 10% of gasoline is being reached, one would expect this area of growth in fuel available to Americans is being cut off (unless the blend maximum is raised to 15%).

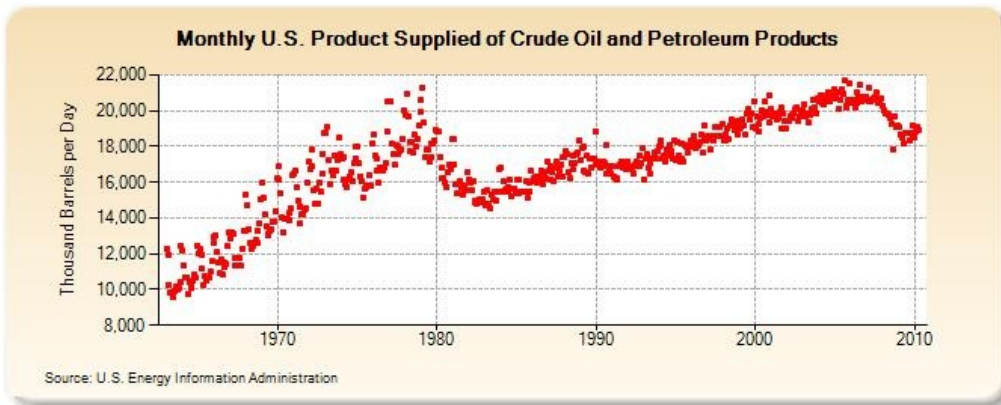


Figure 11. US oil product consumption, using an EIA chart

Part of the reason that oil imports can be down so much is that the consumption of oil products is lower, because of recession (tied at least in part to high oil prices). Figure 11 shows that oil consumption now appears to be trying to turn back up. If consumption is to increase, we will need some source of more product, either internally supplied, or through imports. Of course, there is a not-too-insignificant chance the US will slip back further into recession, and US demand will drop further.

Net Imports to US - Top Countries
Million Barrels per Day* - EIA

	2007	2008	2009	2010-4 mos
1. Canada	2.3	2.2	2.2	2.3
2. Saudi Arabia	1.5	1.5	1.0	1.1
3. Venezuela	1.3	1.2	1.1	1.0
4. Nigeria	1.1	1.0	0.8	1.0
5. Mexico	1.3	1.0	0.9	0.8
Total - Top 5	7.5	6.9	6.0	6.1
World ex Top 5	4.6	4.2	3.7	3.4
World	12.0	11.1	9.7	9.5

Figure 12. US oil product consumption, using an EIA chart

Looking at where our imports are coming from, we see Canada is on top. The next three slots are filled by OPEC countries. Mexico is dropping rapidly as a source of net imports, and now seems to be down to fifth. If we don't like imports from Canada (or Canada decides to reduce sending them to us, because it needs them for its own use), our next choices for sources of oil imports look less than ideal.

Of course, some people are hopeful that Iraq will be able to ramp up production. If that happens, it is theoretically possible that world production will again rise by a few million barrels a day, and available oil for exports may increase a bit.

Another theoretical place for increased production is Saudi Arabia, with its much publicized "spare capacity". My "take" on the situation is that this spare capacity is only available at prices higher than the \$70 - \$85 barrel price range we recently have been in. We have already seen that the world economy does not "do well" with very high oil prices, so it is not clear whether the right conditions for production of this spare capacity will be reached in any reasonable time period. Also, part of the spare capacity requires completion of a refinery which is not yet ready, so this is still a ways off. By the time the spare capacity finally comes on line, it may be needed to offset declines in Saudi Arabian production elsewhere.

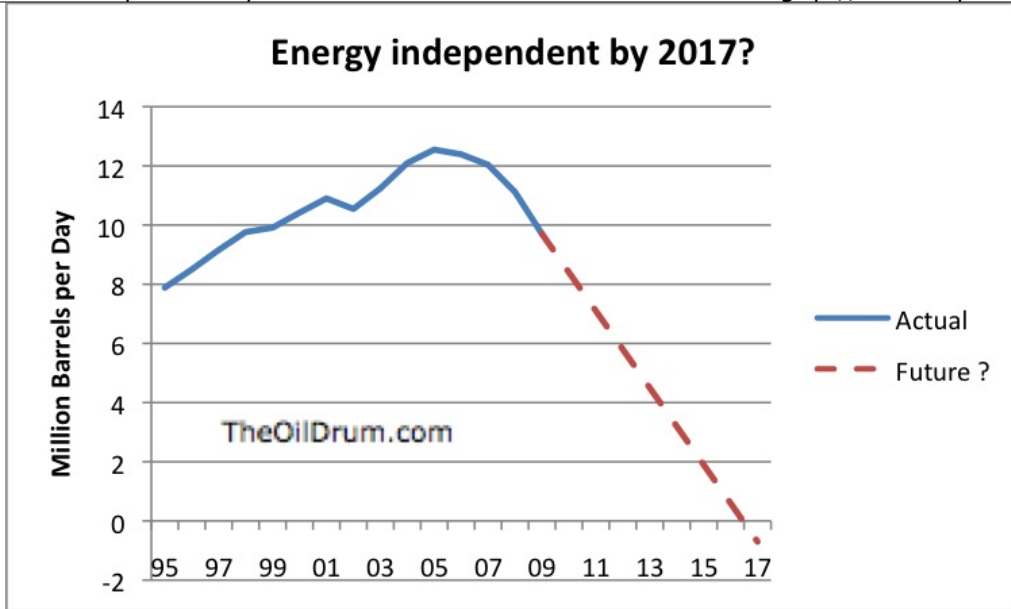


Figure 13. US net oil imports--actual historical amounts, and one very adverse scenario, that is theoretically possible going forward

We don't know how quickly future oil imports will fall. If recent past patterns from Figure 1 continue, net imports may continue to fall quickly--hopefully not as quickly as illustrated in Figure 13, but it is not completely outside the realm of possibility.

The drop in imports we have seen to date are in a world with flat oil production. We really don't know what happens when world oil production in total begins to decline--it seems as though total world exports / imports are likely to drop even faster than the past.

Our biggest source of imports is Canada--but Canada is not really all that large a producer of oil, and its production is almost flat (with increases in oil sands production offsetting decreases in other production). Canada depends on oil imports itself, so if there is a shortfall, Canada may be under pressure to reduce exports.

All of these things lead to a lot of uncertainties. While these graphs don't provide many answers, perhaps they can provide a little insight into the current situation.



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