

*June 12, 2023*

## **The Issue of the Terms of Trade**

In a recent [\*Bi-Weekly Geopolitical Report\*](#), we discussed the emergence of the petroyuan. One of the important aspects of that report was that foreign nations were beginning to pay for oil in their own currencies. As we noted in the report, George Shultz and Henry Kissinger negotiated a deal with the Saudis, where in return for providing security support, the Kingdom of Saudi Arabia agreed to price oil in U.S. dollars. The ability to pay for oil in one's own currency is powerful. Essentially, a country can then print money for oil, but obviously, it's not quite that simple. If a country abuses that power, it could find itself losing its ability to do so.

In the aforementioned report, we noted that America's aggressive use of financial sanctions was leading some countries to explore alternatives to the dollar-based reserve system. After the U.S. sanctioned Iran and Russia, effectively isolating both nations from the global payments system, other nations worried about also running afoul of Washington and began to work on developing an alternative payment mechanism, which included the ability to pay for oil in a currency other than U.S. dollars.

What has surprised us, so far, is the absence of response from Washington to this development. If the Nixon administration felt that paying for oil in dollars was important, if President Carter expanded the U.S. security role to include the Persian

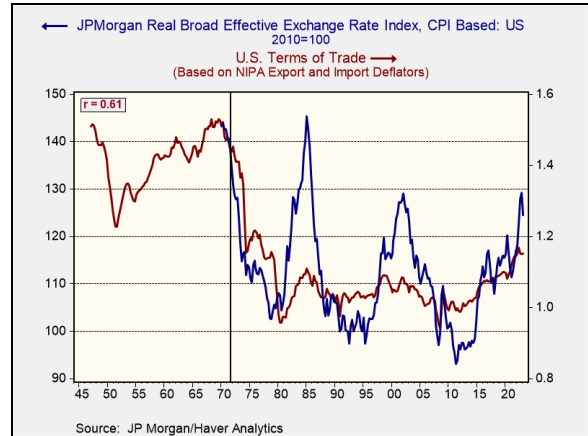
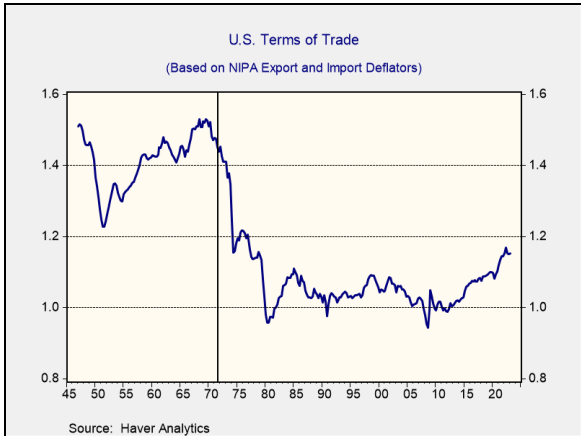
Gulf's oil flows, and if President Bush liberated Kuwait, why hasn't there been more of a pushback against denominating oil in other currencies?

Examining this question has led to an unexpected outcome—America's terms of trade (TOT) have now changed due to the shale revolution, and that adjustment has changed the risk profile for the global economy. Our assertion is that the U.S. realizes that, due to this change, insisting on pricing oil in U.S. dollars could foster financial instability. And so, for now, Washington is willing to tolerate the pricing of oil in other currencies.

In this report, we will begin with an examination of U.S. TOT, including an analysis of its effect on the dollar. Once this context is established, we will detail the risks that come from the dollar/oil relationship, which has led the U.S. to no longer insist on pricing oil in dollars. We note the factors that have led to this change in the terms of trade may not be permanent, which could lead the U.S. to reverse its stance to allowing oil to be priced only in dollars. We will close with market ramifications.

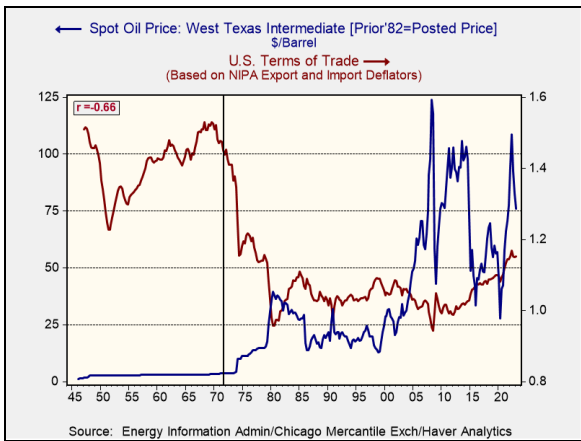
### **The Terms of Trade**

The first step in this analysis is to define terms of trade (TOT). TOT is the ratio of a nation's export prices to its import prices. If a nation pays for imports by its exports, a rising TOT means that nation can buy an increasing level of imports for each unit of export. Conversely, a falling TOT leads to the reverse outcome.



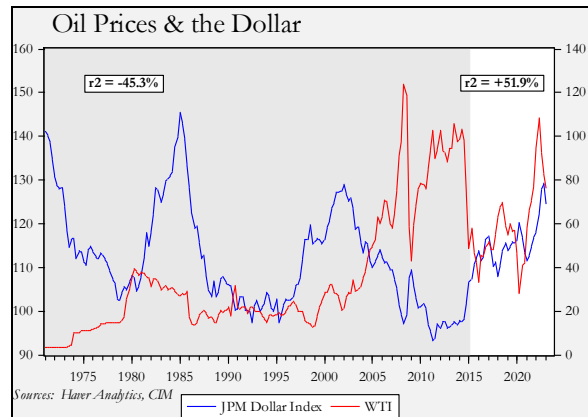
The above chart shows the U.S. TOT using the GDP deflators for imports and exports. A rising number indicates an improving TOT, whereas a falling number indicates a deteriorating TOT. In the era of Bretton Woods, the U.S. TOT was elevated and rose heading into the period of floating exchange rates denoted on the graph with a vertical line. The precipitous decline was primarily a function of two factors: 1) the dollar’s weakness that emerged once Nixon removed the U.S. from the gold standard, and 2) the spike in oil prices.

This chart shows the relationship between the TOT and the dollar. In general, dollar strength tends to improve the TOT. This suggests that demand for imports and exports is price inelastic in the short run. Thus, when the dollar appreciates, the cost of imports falls, while the cost of exports rises. At the same time, if a nation creates products that rise in price over time, as compared to foreign nations which may lack this condition, the TOT will improve on that basis. Essentially, the direction of causality may not be consistent. The data would suggest that the dollar’s exchange rate is significant in the short run, but better products for export that command high prices can lead to persistently rising TOT.



The impact of oil prices on the terms of trade are shown in the above chart. Note that the Arab Oil Embargo of 1973 led to a sharp deterioration in the TOT.

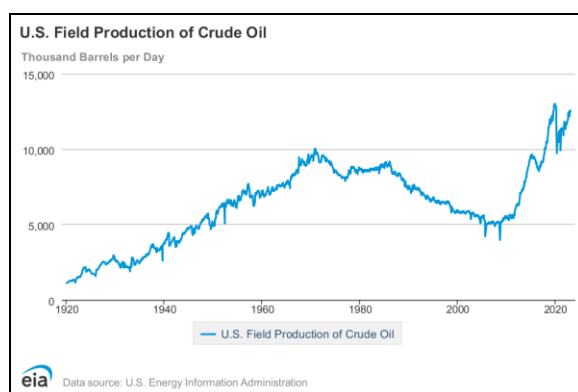
The relationship of oil to the dollar has, until the past few years, been inverse.



From 1971 through 2014, shown in gray on the previous chart, oil prices and the dollar were inversely correlated. Since 2015, however, the sign on the correlation has flipped. This change is important so we will expand upon it in the next section.

### Why Did the Correlation Reversal Occur?

As the previous chart shows, from the early 1970s into 2015, the dollar and oil prices were inversely correlated. This makes sense because oil was almost universally priced in dollars, so appreciation increased the cost of oil to the world, ex-U.S. Conversely, when the dollar weakened, it acted as a price cut. Therefore, a stronger dollar dampens oil demand, whereas a weaker dollar supports oil demand.



This chart shows U.S. oil production from 1920 to the present. Note that U.S. oil production generally rose until the 1970s and peaked in early 1971, just before the fixed-exchange-rate regime of Bretton Woods ended, and then began to decline in earnest after 1986. From a peak of 10 mbpd to a low of under 5 mbpd, the general expectation was that U.S. oil production would continue to decline.

Producing oil from shale rock has been around for centuries, predating conventional oil production. However, extracting oil from shale rock became prohibitively expensive when compared to drilling into

liquid oil deposits. Commercial work on shale extraction in the U.S. essentially ended by the 1860s, although various projects would be undertaken for national security purposes. It continued in other parts of the world, often spurred by wars which disrupted regular oil flows. There was a modest revival in the 1970s in the U.S., but projects closed rapidly when oil prices collapsed in the mid-1980s.<sup>1</sup> In general, though, shale oil was simply too expensive to produce when compared to conventional oil. The discovery and exploitation of Middle Eastern oil mostly doomed shale.

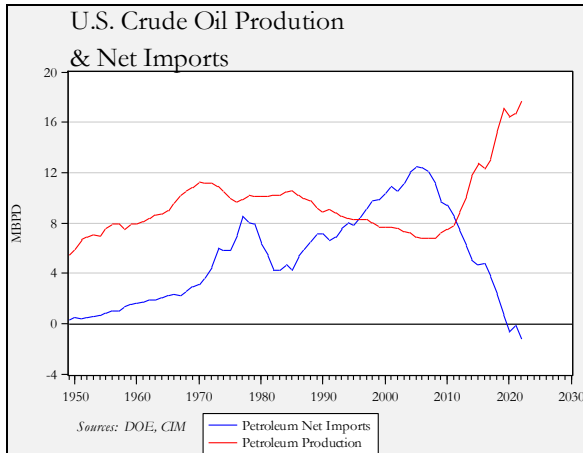
A series of factors converged to bring about the boom of production in mid-2011 shown on the previous graph. First, hydraulic fracking, which uses water and sand injected into shale rock at high pressure to free the trapped oil in the formation, was perfected and led to lower costs. Second, horizontal drilling methods had also improved which allowed for higher well productivity as a single horizontal well could generate much more oil production versus a simple vertical well. Third, in the wake of the Great Financial Crisis, interest rates plunged and stayed low as the economy remained weak. Low interest rates supported investment, which led to rapid expansion of production. Finally, oil prices hit record highs during the first decade of the century, led by rapid Chinese demand growth and stagnant conventional oil production growth.

The fracking revolution led to the aforementioned surge in production and reversed the U.S. role in the global oil markets. As the following chart shows, not only did U.S. petroleum<sup>2</sup> production rise,

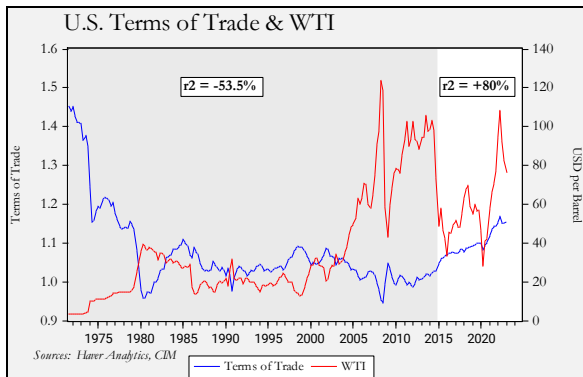
<sup>1</sup> I was living in Denver in the early 1980s and saw the impact of the collapse of projects in Colorado on the local economy.

<sup>2</sup> Petroleum is defined as crude oil and associated natural gas liquids.

but the U.S. also switched from being a large petroleum importer to a net exporter. Combining crude oil, NGLs, and petroleum products (e.g., gasoline, diesel, etc.), the [U.S. exports over 10 mbpd, up from just under 2.5 mbpd in 2010](#).



By becoming a petroleum exporter, the U.S. now finds that its terms of trade improve as oil prices rise.



As the above chart shows, the correlation between the TOT inverted after U.S. oil production accelerated post-2015. Now, higher oil prices lead to a stronger dollar and improved terms of trade.

**The Problem**

Because of the dollar’s reserve currency status, there is an incentive for foreign borrowers to take out debt denominated in dollars. In general, interest rates on such borrowing tends to be lower because lenders

view dollar debt as having less risk than lending in local currencies. Thus, a bond issued by a foreign borrower denominated in dollars is more attractive to buyers versus a similar bond denominated in the borrower’s local currency. However, this borrowing carries risks to foreign issuers since the currency can’t be generated in the domestic market and the borrower must acquire dollars to service the debt. Thus, there are two primary risks. First, if U.S. interest rates rise and the loan is floating, this will mean higher debt costs. If it is fixed, it means the price of the bond falls. The second risk is tied to the dollar; if the dollar appreciates, then the costs of debt service will rise.

Another complication emerges if the country is an oil importer. Since oil is traditionally transacted in dollars, an appreciating greenback means higher oil prices, which would increase potential stress on a foreign country that borrows in dollars and imports oil.

As noted above, the following conditions existed until 2015:

1. U.S. TOT was directly related to the dollar. When the dollar appreciated, the TOT rose.
2. Oil prices and the dollar were inversely correlated. Thus, when oil prices rose, U.S. TOT deteriorated.

Under these conditions, a foreign borrower of dollars in an oil-importing nation would tend to be harmed by dollar strength which raised debt service costs, but that problem would be offset by weaker oil prices.

After 2015, conditions changed in the following manner:

1. U.S. TOT was still directly correlated to the dollar.

2. But now, since the U.S. was an energy exporter, rising oil prices improved the TOT and boosted the dollar.
3. Thus, rising oil prices led to a stronger dollar.

After 2015, an oil-importing nation that had borrowed in dollars faced a serious problem as now higher oil prices raised both energy costs and debt service costs. [The Bank of International Settlements data shows that foreign borrowers in dollars owe \\$12.8 trillion](#). Essentially, rising oil prices now increase the odds of global financial stability.

### The Dog that Didn't Bark

As mentioned, when we wrote the report on the petroyuan, we were generally surprised that Washington took such a cavalier attitude toward other nations paying for oil in currencies other than the U.S. dollar. After all, the U.S. took great pains to encourage Middle Eastern oil producers to accept dollars in return for security support. After intervening militarily in the region on more than one occasion, why did they now decide to allow these nations to accept other currencies for payment without at least a diplomatic protest?

It is quite possible that the change in the relationship between oil and U.S. TOT has led U.S. policymakers to rethink the dollar/oil link. If the U.S. continues to insist on dollar payment for oil, it has the potential to increase global financial instability. Allowing foreign nations to pay for oil in their local currency could remove a source of potential instability.

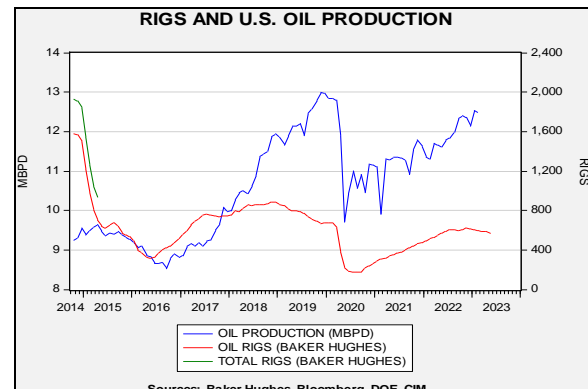
This change in the TOT relationship probably isn't the only reason for the apparent change. The U.S. pivot *toward* Asia requires a pivot *away* from other areas. If giving up a source of Treasury bond

demand is required to reduce American involvement in the Middle East, it might be worth it. However, the potential gain in global financial stability that could follow from pricing oil in local currencies makes the decision of not protesting the action easier.

### Ramifications

There are two ramifications worth watching on this issue. The first is the impact of oil producers accepting currencies other than the U.S. dollar. Although this action may improve the financial situation of oil-importing nations, it may not be helpful to the oil exporters. After all, accumulating currencies of nations that lack deep financial markets could create a situation where the oil exporters are sitting on "dead money." The U.S. dollar is almost universally accepted, whereas other currencies may be less so. If this acceptance policy spreads, it may increase the financial instability of the oil exporters. One solution could be for oil producers to accept gold, but that could be even worse for oil-importing nations if gold prices rise.

The second issue could be that the U.S. shale renaissance may not last. We note that despite high oil prices, rig utilization and oil production remain mostly steady.



If it turns out that oil production won't materially increase beyond the 2019 peak, then it's possible that oil exports will

eventually peak as well. If the shale revolution turns out to be a short-term rebound and not a permanent situation, the U.S. TOT could return to its pre-2015 relationship. In that case, Washington may be less sanguine about oil pricing. However, if oil exporters become accustomed to accepting currencies other than dollars, it may be hard to return to the previous relationship.

Although the market ramifications may not be obvious, we suspect that pricing oil in local currencies will support demand and thus tend to lift prices. If de-dollarizing oil leads to the use of gold as a reserve asset, then gold prices would be well supported.

Bill O’Grady  
June 12, 2023

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