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The Effects of Rising Fuel Costs on U.S. Trade

Alan Bernard Enzo

Tennessee State University, aenzo@comcast.net

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As a result of this research, Mr. Enzo was selected to represent Tennessee State University at "Graduate Education Week - 2007", an annual event hosted by Tennessee's Governor, Phil Bredesen, to showcase the best research projects from all graduate students currently studying in Tennessee universities.

The Effects of Rising Fuel Costs on US Trade.

A Managerial Economics essay and Public Policy polemic by:

Alan Bernard Enzo, MBA
PhD Candidate
Tennessee State University

Prepared for:

Mr. Christian Cahill
President & CEO
Cahill & Dunn CHB, Inc.

And for:

The World Trade Council

***Discuss the effects of rising fuel costs on goods imported into
and exported out of the United States of America.***

For the purposes of this essay, “fuel”, as used above is assumed to mean crude oil, it’s byproducts and derivatives, including diesel fuel, and gasoline.

Any discussion of rising fuel costs and the effects on US trade should be prefaced by acknowledging that the US Dollar continues to hold its place of esteem as the “International Reserve Currency”. All transactions in the world crude oil markets are conducted in US Dollars. All major oil-producing countries receive US Dollars for their oil, and most of them hold their countries’ surpluses in the form of US Dollars.

Almost 70% of the world's international currency reserves—the money that nations use to finance international trade—takes the form of U.S. dollars. Because the United States has a major share of world trade and financial assets, certain commodities, in particular oil, are denominated in it. The net result is a large diversified demand for dollars. (Bonboit, George *"The Bottom Dollar"*, The Guardian, April 22, 2003.)

The majority of nations choose to conduct their international trade in US Dollars because of the Dollar’s relative stability and to protect themselves against financial speculators. These facts strengthen the US Dollar and provide a great economic advantage to the US. It has been argued by some analysts that in essence, the US dollar is backed by oil. The macro-economic effects and importance of the US Dollar’s role as the International Reserve Currency should not be underestimated. As a result of this position, there exists a large and constant global demand for US Dollars.

Three factors make up the “virtuous cycle” experienced by the US economy as a result of the Dollar being the official “International Reserve Currency”:

- 1) Intrinsic benefit from the international oil and fuel markets being conducted in US Dollars (no exchange-rate fluctuation risks).
- 2) Increased demand for oil means increased global demand for Dollars, which raises the value of the US Dollar.
- 3) Increased value of the US Dollar brings other economic advantages: Inflationary pressures are kept at bay within the US economy, increased investment in US assets and holdings, expanding commercial output, increased employment and increased stability in US financial markets.

As we consider rising fuel prices and the effects on trade from a macro-economic perspective, we recognize that oil prices are largely driven by global supply and demand (leaving out of our analysis any artificial market price movements caused by OPEC partner countries). When crude oil prices rise, there is an increase in global demand for US Dollars, since importing countries will need more US Dollars to purchase crude oil and gasoline in the international markets. This rise in demand for Dollars increases the value of the Dollar with respect to other currencies. It follows that when *non-oil producing countries* wish to import goods from the US when the dollar is rising, they will have to pay more for these goods (it takes more of the local currency to purchase one US Dollar, or to purchase oil, exports and other commodities that are sold in US Dollars).

Thus, generally speaking, US exports become more expensive when fuel prices rise. I inserted the term “*non-oil producing countries*” above, because the effects on trade are different for oil-producing countries, especially those countries in which oil comprises the majority of exports. For example, if Nigeria (an oil-producing country) sells its crude oil in the international marketplace, they receive US Dollars for their oil. If world crude prices are rising, then Nigeria will receive *more* US Dollars in return for their oil exports.

If Nigeria then wishes to purchase exported goods from the US, they will not actually be paying a premium for these exports as a result of the higher fuel prices.

This is because in essence, Nigeria benefited equally on the other side of the equation when selling their oil for US Dollars. The “extra” money they received by selling their oil for higher-valued US Dollars offsets the increased price of US exports the country may wish to purchase. This economic advantage is further enhanced by countries which hold their international reserves in the form of US Dollars. If an oil-exporting country receives US Dollars for their oil, and chooses to keep the Dollars as a “reserve” without exchanging or converting the Dollars back into local currency, they can effectively enhance the initial benefit by keeping the Dollars and using them to import goods in the future at better prices (by holding Dollars, they are escaping the risks associated with exchange-rate fluctuations).

US imports, in general, will become cheaper with an increase in fuel prices. With the exception of oil and commodities that are sold exclusively for US Dollars, countries exporting to the US will receive the same amount of their local currencies in exchange for the goods being exported. However, since the oil markets are conducted in US Dollars, and rising oil prices increase the value of the Dollar, it takes *less* US Dollars to pay for those goods imported from other countries.

From a micro-economic perspective, when fuel prices rise, commodities and other goods inside the US become more expensive. With higher fuel prices, it becomes more expensive to manufacture and transport goods. The increase in costs to produce and transport the goods must be factored into a higher price for the products. US sales of the products affected, and particularly volume of US exports may decline as a result of the higher prices that producers must now charge for their goods.

As stated earlier, when fuel prices increase, generally US imports become cheaper. However, from a micro-economic perspective, the *volume* of US imports may decrease significantly, even though they have become relatively cheaper. The reason for this is that demand for oil (and fuel) is *inelastic* in the short term.

To help explain this inelastic demand, consider the following: Truckers are still expected to haul, and commuters must continue to commute. If fuel prices go up, our economy doesn't just stop. People still have to go to work. The result of an inelastic demand for fuel is that people will continue to buy and pay more for the fuel (because they have no immediate alternatives), but will change their spending behavior elsewhere because of their fixed amount of income. If individuals and companies are forced to pay higher prices for fuel, then naturally there is less money available to purchase discretionary items, including imported goods. As a result, we can expect the volume of US imports to decline in response to higher fuel prices.

We don't need to look far to see the tangible effects that rising fuel costs have on the American economy and on international trade. We need only look back to 2005 and early 2006 to observe the market movements and economic ripple effects that occurred after Hurricane Katrina. The heavy economic impact the hurricane had on US citizens and businesses was felt most immediately through the rising fuel prices including crude oil, gasoline and their many derivative products. US crude oil production in the Gulf of Mexico area came to a halt and some off-shore operations suffered severe damages from the Hurricane. Some important inland crude oil refineries were also damaged and US Gulf Coast crude oil refinery inputs decreased significantly.

In the weeks and months after the hurricane, the international crude oil markets reacted with speculation. The reduction in the worldwide supply of crude oil caused a short-term rise in the prices of all petroleum-related products. Increased fuel prices caused commodity prices to increase in response. As markets reacted to the increase in commodity prices, we witnessed increased prices for a wide range of products, and prices for US exports increased. We can see that as fuel prices increase, naturally prices for many other products increase. It is intuitive that any goods requiring fuel to produce them, and those requiring transportation by land, sea or air should be priced to reflect any increase in fuel prices.

To enumerate the important role that oil and fuel prices play in the US economy, consider this interesting statistic: *“On average, every man, woman and child in the United States uses three gallons of oil daily. Transportation accounts for two of those gallons.”* (www.signonsandiego.com)

As we saw in late 2005, when fuel prices increased dramatically, the trucking, air cargo, sea and rail carriers were all forced to work within a new financial framework. Profits were squeezed (and may have been non-existent in the short-term) as businesses adapted to the new environment. Following Hurricane Katrina, many businesses found that by simply incorporating their increased fuel costs into the prices they charged for products or services, they risked losing their competitive position in the marketplace. As more industries struggled with increased fuel costs, the costs were passed-down to consumers in the form of higher-priced products. Now not only was fuel becoming more expensive, but to the average consumer, almost all goods and products were becoming more expensive including food and basic materials. Consumer behavior and small business operations changed as people were forced to adapt in response to price increases on a wide array of products.

POLICY RECOMMENDATIONS:

Most of what makes up the price we pay for diesel fuel and gasoline is taxes. The remainder should be made up ideally of production costs, transportation and a reasonable profit figure. However, a large part of the price we have been paying recently for fuel is based on fear, and not on the laws of supply and demand. For this reason, legislation must be introduced that limits profit-taking by producers, and that creates an “economic buffer” for individual citizens and businesses. It is not only the individual citizens and manufacturers who are hit hard by rising fuel prices. It affects all levels of society from cab drivers to trucking firms, from rail transporters to freight-forwarding businesses. In order that individual citizens and US businesses can continue to survive and prosper, all levels of the transportation industry should work

together and lobby Congress in support of a bill that would insulate the US from erratic market price movements based on fear and speculation (and not based on normal supply and demand). The bill would force internal US market “corrections” to take place when global crude oil prices rise erratically as a result of fears or from collusion-induced profit-taking by OPEC partners. Specifically, in the event of an unexpected price hike in fuels, The Secretary of Energy (or another appointed authority) would as a first option, mobilize supply from the US Strategic Petroleum Reserve. The U.S. Strategic Petroleum Reserve is the largest stockpile of government-owned emergency crude oil in the world. Established in the aftermath of the 1973-74 oil embargo, the SPR provides the President with a powerful response option should a disruption in commercial oil supplies threaten the US economy. As of October, 2006 the reserves hold 688 million barrels with near-term plans to stockpile up to 1 billion barrels for future needs. (www.fe.doe.gov/programs/reserves/index.html)

When global supply of crude oil is tight, creating pressure to increase prices, the US would release some of our strategic reserve into the US supply chain to the point where upward price pressures are negated. By “managing” our US internal fuel markets in this way, we will never again experience erratic variations in diesel or gasoline prices. In addition to using our reserves as a continuous economic buffer, production of fuels from tar sands, oil shale and other methods could be increased. The above proposed legislation could also include subsidies (since these methods of producing diesel fuel and gasoline are more costly) to refiners in the case that supply from tar sands and oil shale is needed to replenish the Strategic Petroleum Reserve. This plan alone is sufficient for solving the problem that individuals and businesses face in controlling production and transportation expenses, while trying to operate within a budget in times of uncertain fuel prices. Without internal controls on fuel prices and their economic effects, both individuals and businesses suffer needlessly. Congress needs to be reminded that without on-going, protected access to reasonably-priced fuels, the wheels of the US economy stop turning.

OTHER RECOMMENDATIONS:

Reduce U.S. dependence on foreign oil. Passenger vehicles are the single largest driver of United States oil consumption. Therefore, methods to decrease oil consumption by vehicles must be addressed. The Bush Administration issued new rules on Wednesday, March 29, 2006 that increased gas mileage requirements for pickup trucks, sport utility vehicles, and vans. Resulting from growing concerns about the U.S. dependence on oil and rising gasoline prices, it represents the most significant changes to the Corporate Average Fuel Economy System in 30 years. (msnbc.com) Also, the fuel efficiencies of vehicles could be increased by producing the vehicles with lighter advanced metal alloys instead of steel. (The New York Times, February 2, 2006)

The U.S. should continue to fund and place high priority on research into alternative energy sources. Alternatives include tar sands, oil shale, coal liquification and gasification, and coal-based fuels. Also, biofuels like corn-based ethanol could reduce our need for oil imports. Measures have already been taken to increase ethanol production. In June, 2005, the Senate voted to require refineries to add 8 billion gallons of ethanol each year to the gas supply by 2012. (The New York Times, June 17, 2005)

The dollar/oil relationship must be maintained to keep the dollar as the International Reserve Currency. However, the price of oil is expected to rise steadily as the supply/demand imbalance increases and the value of the dollar declines. Rising oil prices result in increasing inflation, negatively impacting the global economy, particularly oil-dependent economies such as the U.S. (www.thehfa.org). An increase in inflation could negatively affect the demand for the U.S. dollar. If the demand for the dollar decreases substantially, the dollar/oil relationship could be challenged by the major oil producing countries.

Conclusion:

As we have seen throughout this essay, the relationship in the US between fuel prices and trade is extremely complex because in part, of the special position the US holds within the oil industry and the global marketplace. We are fortunate to be currently experiencing a relative calming of the fears and market pressures that drastically increased fuel prices in 2005 and early 2006. We hope that Congress will one day soon enact legislation protecting American citizens and businesses from the effects of erratic price fluctuations in the fuel markets. I believe it is the continuing inaction of our Congress that is causing a swell in the public debate. People are starting to realize that it is the job of our Congress and Senate to step-in and protect the citizens from robber-barons (Whatever forms they may come in). Our dependence on oil and our supposed need to fight far-off wars could be reversed in a single year if we only had proper leadership in our House and Senate. Think about it: Congress enacts legislation demanding auto-makers produce cars that can run on 90% ethanol, and that all cars on US roads be converted to operate on 90% ethanol by 20XX. Consumers would still have the choice to buy and use gasoline-only-powered-cars, but they would have to pay an additional environmental tax for the privilege. Along with this, corn subsidies are stopped and farmers are now encouraged to farm all the corn they wish. Farmers in the US who are currently being paid *not* to farm, would lose this benefit and would naturally consider farming corn for ethanol production. All US fuel needs could now feasibly be produced *within* the US! When this happens, businesses will regain the ability to accurately forecast transportation costs, citizens will regain the freedom to travel and commute freely, and many of the economic fears, surprises and political pressures we are experiencing today will disappear.