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Political Limits on World Oil Trade

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March 2015

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Political Limits on World Oil Trade

by
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International politics affects the oil trade. But why? We construct a firm-level dataset for all U.S. oil-importing companies over 1986-2008 to examine what kinds of firms are more responsive to change in "political distance" between the U.S. and her trading partners, measured by divergence in their UN General Assembly voting patterns. Consistent with previous macro evidence, we first show that individual firms diversify their oil imports politically, even after controlling for unobserved firm heterogeneity. We conjecture that the political pattern of oil imports from these individual firms is driven by hold-up risks, because oil trade is often associated with backward vertical FDI. To test this hold-up risk hypothesis, we investigate heterogeneity in responses by matching transaction-level import data with firm-level worldwide reserves.

Our results show that long-run oil import decisions are indeed more elastic for firms with oil reserves overseas than those without, although the reverse is true in the short run. We interpret this empirical regularity as that while firms trade in the spot market can adjust their imports immediately, vertically-integrated firms with investment overseas tend to commit to term contracts in the short run even though they are more responsive to changes in international politics in the long run.

However, the political pattern of oil imports is not entirely driven by the concerns of hold-up risks, which exist when oil transactions via term contracts are associated with backward vertical FDI that is subject to expropriation. In particular, our results indicate that even financial and commercial traders significantly reduce their oil imports from U.S. political enemies. Interestingly, while these traders diversify their oil imports politically immediately after changes in international politics, other oil companies reduce their oil imports with a significant time lag. Our findings suggest that in designing regulations to avoid harmful repercussions on commodity and financial assets, policymakers need to understand the nature of political risk.

To the extent that developing countries have higher hold-up risks because of their weaker institutions, the political effect on oil trade should be more significant in the developing world. We find that oil import decisions are indeed more elastic when

firms import from developing countries, although the reverse is true in the short run. Our results suggest that international politics can affect oil revenue and hence long-term development in the developing world.

(1) Why do oil importers diversify their import sources politically? Evidence from U.S. Firm-Level data

Since Churchill's days the key to "energy security" has been thought to be oil diversification, and perhaps because of that many oil-poor countries have developed overseas oil-development policy to ensure equity oil can be imported readily.[1] Oil investment by multinational companies is indeed the one of the oldest forms of foreign direct investment (FDI) in the developing world, and today there is more trade internationally in crude oil than any other goods. It is not difficult to understand that import decisions from national oil companies are subject to state influence.[2] However, when import decisions are decentralized among private firms, is oil trade still affected by international politics? At the end, is it irrational for ExxonMobil Corporation and ConocoPhillips, two of the largest US oil companies, to abandon their multibillion-dollar investments in the heavy oil deposits in Venezuela following the breakdown of the negotiations with Hugo Chavez's government in 2007?

Understanding the political determinants of oil trade is important, especially in a time of concern about sustainable development and energy security. In this paper, we ask the following questions: (1) Do political tensions between states reduce oil trade when import decisions are highly decentralized? (2) To the extent that misalignment in political interests between states is an impediment to private oil imports, what firms are more responsive to changes in such a "political distance"? For example, compared with other trading or financial companies, are FDI-based imports from firms with oil reserves overseas more sensitive to changes in international politics? Finally, (3) Are these FDI-based imports even more elastic when their trading partners are state-owned

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[1] The idea of energy security can be traced back to the time when Winston Churchill changed coal to oil as a power source for the Royal Navy prior to the First World War. According to Churchill, "Safety and certainty in oil lie in variety and variety alone" (55 Parl. Deb., H.C. [5th ser.] [1913] 1465 [U.K.]).

[2] The China-Venezuela oil deal is a case in point. The round trip voyage from Venezuela to the US Gulf ports is almost five times shorter than that to China, and hence any effort to diversify Venezuelan oil sales away from the United States to China does not appear to be cost effective. After all, it appears more than political rhetoric, when China deposits $8 billion in an infrastructure development fund in exchange for Venezuelan oil.

companies in developing countries where private property rights is less well protected?

Unlike many policymakers, some economists maintain that the world oil market is "one great pool," because crude oil is fungible in an integrated oil exchange market (Adelman, 1984). According to this view, the composition of global oil trade is irrelevant because with an organized market that facilitates trade among strangers, there should be no political limit on oil trade. In practice, however, there are two main reasons why oil may only be partially fungible. First, many oil companies from major oil-exporting countries are state-owned ones. Although some of these state-owned companies sell oil in the spot markets, most of them are still using term contracts (Slade, Kolstad, and Weiner, 1993).[3] Compared with other firms that import mainly through spot oil trading, these oil-importing firms that are committed to term contracts may find it costly to adapt to changes in international politics in the short run.

However, oil production involves massive upfront investments in exploration, and geological knowledge is country- or even oilfield-specific. In the presence of sizeable appropriable quasi rent (Klein, Crawford, and Alchian, 1978), it is common for bilateral oil trade to be subject to state influence with relationship-specific investment in exploration, refining capacity, and pipelines. Indeed, Hajzler (2012) shows that foreign firms in mining and petroleum are more vulnerable to expropriation.[4] International contracts are largely self-enforcing (Thomas and Worrall, 1994). When one party of an international oil agreement becomes a hostile dictator, there are nontrivial risks of royalty and tax renegotiation as well as forced divestment.[5] Therefore, the presence of political risk as such suggests that import from international oil companies with investment overseas may be more responsive to changes in international politics in the long run.

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[3] Unfortunately, existing evidence on the integrated-market view is based on movement of prices of different crudes traded in the spot market (e.g., Nordhaus, 2009). Although these spot and contract markets sell the same physical commodity, because of the many stipulations on the magnitude, price, and quality of the product delivered under long-term contractual arrangements, no arbitrage relation necessarily hold between spot and contract market magnitudes similar to those which hold between futures and spot market magnitudes. Wolak (1996) finds that in the case of the US steam coal market, there is a fairly large price premium on contract versus spot transactions.

[4] A related reason why oil is only partially fungible is that oil has to be refined, and refineries are built to handle specific types of oil. For example, according to the EIA, Venezuela's crude oil is heavy and sour by international standards, and hence a significant fraction of the Venezuela's oil production must go to specialized domestic and international refineries (http://www.eia.doe.gov/cabs/venezuela/oil.html).

[5] Expropriation in the mining and petroleum sector has a long history. For instance, Kobrin (1984) documents that mining and petroleum expropriations accounted for 32 percent of all nationalizations over the period 1960-1979 period.

Using voting records for the United Nations General Assembly to measure the degree of misalignment in political interests between country pairs, we first examine if private oil-importing firms in the United States diversifies their imports away from the political opponents of their government over the period 1986-2008. Consistent with previous macro evidence (Mityakov, Tang, and Tsui, 2013), we find American firms indeed diversify their oil imports politically, even after controlling for unobserved firm heterogeneity. Moreover, we find that large oil-importing firms are less responsive to changes in international politics in the short run, suggesting that these firms may be committed to term contracts within a year.

To test the hypothesis that vertically integrated firms are more responsive to political risk in the long run, we investigate heterogeneity in responses by matching transaction-level import data with firm-level worldwide reserves. Our results show that long-run oil import decisions are indeed more elastic for firms with oil reserves overseas than those without, whereas the reverse is true in the short run. Finally, we also show that this political trade pattern appears only in the sample of oil-exporting countries with higher risk of expropriation.

(2) The effects of International Politics on Oil-Exporting Developing countries

Oil investment by multinational companies is one of the oldest forms of foreign direct investment (FDI) in the developing world. When there is more trade internationally in crude oil than any other goods in modern times, oil exports from developing countries are of particular interests. Partly because of their heavy dependence on a single commodity export, national saving in these developing countries appears to be strongly linked to the foreign demand for oil. Moreover, when the oil sector of many of the developing countries are monopolized by their government, oil revenue becomes a major source of government revenue, and hence fluctuation in oil exports has direct impacts on government investment as well as welfare spending in these countries.

In this paper, we consider a particular source of uncertainty that affects oil exports from the developing world, namely the risk of international politics. Recent empirical work on the pattern of import diversification has confirmed that international politics has a distinctive impact on oil trade. In particular, macro evidence shows that unlike many other traded goods, major-power countries with oil investment overseas diversify their oil imports significantly away from their political enemies (Mityakov, Tang, and Tsui, 2013). In a companion paper, we find that even when import decision is highly decentralized, American firms also diversify their oil imports politically

(Kashcheeva and Tsui, 2014). However, little is known about whether this political effect on oil trade is larger or smaller when the exporting countries are developing ones.

There are several reasons to expect why the trade effect of international politics are different when the oil-exporting countries are developing ones. For instance, Mityakov, Tang, and Tsui (2013) show that the political effect on oil trade is concentrated among the subsample of nondemocratic countries with higher expropriation risk. Mityakov, Tang, and Tsui conjectured that oil imports are affected by political risk because oil trade is often associated with backward vertical FDI, which is subject to selective discrimination risks, such as tax renegotiation and expropriation. Under this *hold-up risk hypothesis*, the political effects should be larger for exporting countries with higher expropriation risk, and only firms with oil investment overseas is expected to respond to international politics. To the extent that developing countries tend to be nondemocratic and associated with higher expropriation risk, one may expect changes in international politics has a larger effect on oil exports from these developing countries.

However, a more careful examination of import decision of individual firms reveal that large oil-importing firms with investment overseas are less responsive to changes in international politics in the short run, perhaps because these firms are likely to committed to term contracts (Kashcheeva and Tsui, 2014). If these vertically-integrated firms tend to have investment in developing but oil-rich countries, oil exports from these developing countries can be less sensitive to changes in international politics at least in the short run.

But why international politics appears to affect oil-exporting developing countries more in the long run? First, we should notice that oil expropriation happened in countries with different stages of development in our sample. For example, due to the wave of nationalization in the oil sector during the 1970s, high-income countries today such as Kuwait and Saudi Arabia are classified as countries with expropriation experience in our sample. Two countries, namely Russia and Venezuela, who expropriate the oil sector after the turn of the century are classified as middle-income countries. Bolivia is a low-income country that expropriate recently. To the extent that developing countries are more likely to expropriate in the modern times, the finding that international politics appears to affect them more in the long run is consistent with the hold-up risk hypothesis that firms reduce their oil imports from these countries with higher political risk in the long run.

Our findings, therefore, suggest that focusing on short-run response in oil exports from developing countries may understate the importance of international

politics in shaping oil trade. While these countries may gain financially in the short run, in the longer run these developing countries will suffer from more volatile exports and hence government revenue due to changes in international politics. To the extent that national saving and investment co-move with oil revenue in these countries, international politics can also affect long-term development in the developing world.

(3) Political Influence in commercial and financial oil trading: the evidence from US firms.

Liberalization of energy markets, associated with an increase in energy derivatives trading and other related financial investor activities, have been encouraging investors to use energy commodity assets as a hedge against increasing portfolio risks recently. For instance, there is more trade internationally in crude oil than in any other commodity. Despite the increasing interaction between energy and finance because of the low correlation between returns to energy products and stock returns, little is known about the political risk of energy commodity trading.

Over the past several decades, the global oil industry has seen a transformation in the contractual structures used to purchase and sell crude oil. The current spot markets have been developed since the early 1970s, when they were aimed at fine-tuning demand and supply that covered not more a few percent of international oil trade. In other words, spot and futures market are relatively new to the oil industry. Indeed, even today the majority of the oil products are still sold under term contracts. Political risk is important in the modern oil market because the oil sector in many oil-rich countries are controlled by the state-owned monopoly companies. While the extreme high price volatility is well-known in the modern oil market, the coexistence of spot market and term contracts in oil trade has created a great deal of confusion in many public debates (Smith, 2009).

To the extent that financial and commercial traders are not subject to any expropriation risk, one may expect changes in international politics has a smaller or even no effect on these profit-maximizing traders. However, the results presented in this paper reveal that not only oil companies, financial and commercial traders also respond to changes in international political risk. Apparently, the hold-up risk hypothesis cannot explain the behavior of these financial and commercial traders. At the same time, we are very skeptical that the trading behavior of these financial and commercial traders can be explained by the strategic commodity hypothesis either.

While we are unable to provide a compelling reason why financial and commercial traders diversify their oil imports politically, we believe the trading pattern we have identified in this paper has important implications for investors who use commodity assets as a hedge against increasing portfolio risks.

First, while political uncertainties have long been discussed in the business world, the precise nature of political uncertainties have received little attention. The finding in this paper suggest that, even in the absence of the concern of hold-up or expropriation, changes in international relationship between importer and exporter in the case of oil can have a profound impact on trading behavior. In other words, when traders diversify politically, the political risk these traders are trying to diversify is country-paired specific, rather than just specific to any exporter (such as risk of civil war, leadership turnover, terrorist attacks, bad weather, etc.).

Second, unlike other oil companies, financial and commercial traders diversify their oil imports almost immediately after changes in international politics. Knowledge about the nature of the relevant political risks and how financial traders respond to these political risks are useful to policymakers trying to design regulations to avoid consequential harmful repercussions on commodity and financial assets. As liberalization advances and environmental and energy derivative markets grow and develop, and as energy commodities are becoming closer to financial commodities, these knowledge have become more critical than ever.

Our paper adds to the growing literature of the role of politics in international trade. The evidence we presented suggests that even when import decision is decentralized bilateral trade can be subject to influence of international politics. Why international politics appears to affect financial and commercial traders more in the short run? First, if these financial and commercial traders have no investment in oil-exporting countries that are sunk, they are more able to adjust their oil import in the short run. However, if we reject the hold-up risk hypothesis, why should these financial and commercial traders who only trade in the spot market respond to changes in international politics at all? Is it just because oil is a “strategic commodity”? Regardless of the cause of the political oil import diversification pattern identified in this paper, policymakers trying to design sound and rigorous regulations to avoid consequential harmful repercussions on commodity and financial assets need to improve their understanding of the relationship between political risk and oil trading when environmental and energy derivative markets continue to grow and develop.