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**IT'S NOT THE ECONOMY STUPID!
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UNDERDEVELOPED?
A TEST USING GRAVITY MODELS**

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Politicians, pundits and experts in both Russia and the US frequently bemoan the “underdevelopment” of US-Russia trade, arguing that political factors have inhibited the development of economic ties. It is also often argued that political relations between the two countries would also be more cooperative and less conflictual if these ties developed up to their full potential. The paper seeks to test the conventional wisdom that the US-Russia trade is underdeveloped by employing a standard gravity model to measure where trade between the two countries “should” be. We find no evidence that the US-Russia trade is underdeveloped. In terms of its ability to live up to the predictions of the model, trade between the two countries is predicted by the standard determinants of trade, suggesting that there is nothing erratic about the US-Russia trade and it behaves like any average country pair. These findings suggest that US-Russia trade relations actually live up to their economic potential and that the commonly held idea that political relations between Russia and the US can be dramatically improved by tapping into the “unfulfilled” promise of improved trade relations is unfounded. Moreover, our analysis demonstrates that the sectorial structure of the two economies, factor endowments and comparative advantages do not seem to indicate that there is significant potential for increased trade, as the conventional wisdom would suggest. The conventional view argues that poor political relations have impeded the development of economic relations between the two states. But, in fact, the opposite may be true: relations between the US and Russia are characterized by rivalry and conflict because there is little solid economic grounds for more pacific relations.

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Introduction

Relations between Russia and the US have deteriorated to their lowest point in decades, and many experts believe that the two countries now find themselves in a new Cold War (Trenin 2014, Legvold 2014). The new “Cold War” lacks the same intense ideological intensity as the previous struggle as well as the symmetry between the opponents –with the US much stronger than post-Soviet Russia. Nevertheless, geopolitical and military competition between the two sides is growing to the point where both sides see each other as a major threat to their security and wellbeing. The hopes that the end of the first Cold War would usher in an era of qualitatively new relations based on shared values and shared interests have been bitterly disappointed. This has especially been the case with the economic relationship between the two countries. It is often argued that the two sides have not developed a solid economic foundation that would help alleviate the mistrust that exists between them and provide powerful economic incentives for both sides to set aside their differences and establish the kind of global partnership that their leaders envisioned when they put an end to the first Cold War (Mankoff 2009).

However, in this paper, we argue that policymakers, academics, and businessmen seem to significantly over-estimate the potential of US-Russia trade and that US-Russia trade is roughly where it should be given the standard bilateral trade barriers between the two economies and country specific barriers of trade. Moreover, when we include a US-Russia pair dummy into the gravity equation to evaluate whether the US-Russia pair has a negative association with trade, we find that the US-Russia pair actually trades significantly more than any other average pair. We can thus conclude that US-Russia trade relations are no more “underdeveloped” than Russia’s trade with other countries.

Due to the limits of our model (explained below) we are not able to isolate the effects that domestic political barriers such as poor domestic institutions, rule of law or property rights in Russia are having on US-Russia trade relations. The removal of these barriers could very well improve US-Russia trade. However, we do show that the effects that these are having on US-Russia relations are no different from their effects on any other Russia trade pair. What is more, in a separate piece of analysis, we show that the sectorial structures of the two economies, factor endowments and comparative advantages do not seem to indicate a great potential for increased trade-- even if these Russia-specific domestic barriers were removed.

Conventional Wisdom: Is US-Russia Trade Under-Performing?

The idea that US-Russia trade has performed below its potential has become conventional wisdom. Policy makers bemoan it in their speeches and it has become a dominant theme in

bilateral meetings between the top leadership. According to former US Ambassador to Moscow Michael McFaul, "Perhaps no dimension of our relationship has greater unrealized potential than our economic ties" (McFaul 2013). These sentiments have been echoed by Russian Minister of Economic Development Alexei Ulyukayev, "Our current bilateral trade is incomparable in size to the two countries' economies... We have to create more opportunities for trade" (Dunayevsky 2014). Most academics take the underdevelopment of US-Russia trade as a given. In comparing the volume of US-Russia trade to US trade with other large economies Anders Aslund and Gary Hufbauer (2012) conclude, "The dominant impression from these numbers is that trade between Russia and the United States is seriously underdeveloped and that US companies could find much larger export markets in Russia, especially since Russian exports and imports are set to double in the next five years" (pg. 16). Business leaders also lament the "underdevelopment" of US Russia trade ties. According to Evgeny Savostyanov, vice president of the Russian communications giant Sistema, "Even in Stalin's time, the United States was our No. 1 trading partner --it's sad that we've fallen so far behind" (Zagorodnov 2013).

Experts on both the Russian and American sides argue that poor political relations are holding trade relations back and preventing them from developing their full potential. Up until recently, the Jackson Vannick (JV) amendment, which dates back to the Cold War and was a response to Soviet policies limiting the freedom of Soviet Jews, is said to have played an important role in hampering the development of trade links. Though legislation remained in place, JV was routinely suspended by presidential order since the end of the Cold War. However, critics believe it still created a good deal of uncertainty and added an element of political risk that discouraged US and Russian business from investing in the development of closer economic ties (Batyuk 2000). JV was rescinded by congress in 2012. However, soon after JV was repealed it was replaced by the Magnitsky Act, which has had an equally acrimonious effect on the relationship. The Magnitsky Act was initially intended to punish Russian officials who have implicated in the death of Russian lawyer Sergei Magnitsky. But many Russian observers believe it is having the same negative effect as JV on overall trade (Gasyuk 2012a).

Not only is politics posited to lead to the underperformance of US-Russia trade, but the failure to put relations on a firmer economic footing is also thought to have an adverse effect on political relations between the two countries. Russian ambassador to the US Sergei Kiselyak has identified the lack of "normal trade between the two countries and of stable relations between the two countries' business communities" as one of the most important barriers to the development of friendly and productive relations between the two states (Gasyuk 2012b). Improved trade and economic ties would create vested interest in both countries that will support the maintenance of good relations. Russian commentators argue that the US would have more regard for Russia's

interests if the two shared broader economic ties, as American business with interests in Russia would use their influence in Washington to argue for less provocative policies (Troistskii 2013). As a result, US-Russia relations do not enjoy the same broad economic base as America's relations with other advanced industrial countries or even Russia's relations with Europe. According to Jeffery Mankoff (2009), "The lack of US-Russian economic integration has meant that the business communities in both countries, often the loudest voices in favor of close political relations, did not carry much weight in discussions about US-Russian relations. Nor could mutual economic interest provide an incentive for the two countries to settle their differences" (pg. 122). The agenda continues to be defined by both countries' governments and it has failed to develop beyond Cold War era security issues such as disarmament. "Put simply, Russia and the U.S. are free to antagonize each other because they have very little to lose economically from deteriorating relations." (Mathews 2014)

Both sides see the potential gain from improving trade ties. McFaul, who made increasing trade a priority of his tenure in Moscow, has argued that it can become a "ballast" that can stabilize the overall relationship and "help us when there are rocky waters in other areas" (Earle 2012). Russian Deputy Foreign Minister in Charge of relations with the US Sergei Ryabkov has made similar arguments, "The achievement of and realization of opportunities and potential [in trade] would be very important from the political point of view because political relations are more vulnerable and sag frequently without solid economic support" (Interfax 2013). Improving economic and trade ties was at the center of the highly touted "reset" policy pursued by the Obama and Medvedev administrations. The Bilateral Presidential Commission established to set out a roadmap for improving relations focused much of its effort on improvement of the economic relationship. Non-governmental groups such as the Russian Union of Industrialists and the US Chamber of Commerce also received government support for their efforts to boost bilateral trade and investment (Mankoff 2009, pg. 123). Yet despite these considerable efforts the reset ultimately has failed to deliver on the lofty expectations it engendered in Washington and Moscow-- largely because the US and Russia failed to find areas of common interest where cooperation was possible (Kuchins 2012). This has been as true of economic relations as it has been of areas such as security and human rights, where the two countries' interests and viewpoints most visibly diverge (Charap 2013).

The issue of "underdeveloped" trade and economic ties is no less relevant in the wake of the Ukrainian crisis. American commentators lament that the US does not have the kind of economic leverage over Russia it needs in order to punish Russia's belligerent behavior in Ukraine and discourage further transgressions. The US has to rely on the Europeans, who are too divided and dependent on Russia to accept a harsher sanctions regime (Mead 2014). Meanwhile observers in

Russia lament that the US can bully Russia with sanctions because the economic costs of doing so – in terms of lost trade and investment – are minimal. Some even believe the US is deliberately looking for an enemy, and since picking on China is too costly because of the strong economic relationship between the two countries it instead chooses to antagonize Russia (Suslov 2014).

A large body of academic literature going back to Kant and his concept of “perpetual peace” supports the general argument that increased trade and economic interdependence reduces conflict and promotes peaceful relations between states (Kant 1991; Doyle 2005; Oneal and Russett 2001; Maoz 2009). According to some proponents of this argument, states with extensive trade relations and economic interdependence will be less likely to go to war because they will not want to sever these mutually beneficial economic relations (Oneal, Oneal, Maoz and Russett 1996). As the WTO pithily notes in its report on the “ten Benefits of free trade”, trade helps keep the peace because “sales people are usually reluctant to fight their customers” (WTO 2003). Trade and commerce are also posited to have a pacifying effect on leaders and citizens alike: as economic interdependence expands economic interests come to supersede security interests and national interest comes to be defined more by the pursuit of wealth rather than state power (Doyle 1997: Chapter 8.). Other proponents of the “liberal peace” argue that the inverse relationship between trade and conflict does not necessarily stem from the way trade ties affect each side’s calculations of the costs of going to war. Rather a state’s willingness to forego economic ties improves its ability to signal its resolve when bargaining over a dispute, thereby making the kinds of miscalculations that often lead to war less likely to happen (Gartzke 2007). Several prominent large-N quantitative studies that examine the relationship between state dyads seem to confirm these insights, supporting the general proposition that there is an inverse relationship between trade and conflict (O’Neal and Russett 2001; Maoz 2009).

There thus seems to be considerable theoretical justification to back the argument that improved trade and economic ties between Russia and the US could help reduce tensions and conflict between the two powers. Nevertheless, this argument still hinges on the assumption that the potential to improve trade and economic ties between the two sides does exist. The central focus of this article is to test this assumption by using gravity models to measure this potential and compare it to the figures for actual trade between the two countries.

Measuring Trade and Its Potential

A first glance at the trade numbers seems to support the conventional wisdom about the supposed “underdevelopment” of US-Russia trade. The annual total trade turnover between the countries was only \$38.2 billion in 2013 (U.S. Department of Commerce 2014).¹ Russia is only the US’s 28th largest trade partner, accounting for less than one percent of overall trade and 0.4 percent of US exports. The US is only Russia’s ninth largest trade partner, and trade with the US accounts for 4.5 percent of Russia’s overall foreign trade and 5.2 percent of Russia’s exports. Despite the fact that the US is the world’s largest economy and Russia is eighth largest economy, US-Russian bilateral trade ranks just ahead of US trade with Panama, and behind US trade with Colombia and Thailand (Ibid). According to Deputy Minister Ryabkov, the current level of trade is “ridiculous not only considering the scope of the U.S. and Russian economy but also considering trade turnover with, say, the Netherlands, Germany and other countries of the top five trade partners” (Interfax 2013).

Extensive economic sanctions, which have been introduced against Russia in response to its policies in Ukraine, have only had a modest effect on overall trade turnover. According to U.S. Census data, two-way trade between the two totaled \$34.57 billion, or less than a 10 percent decrease from 2013 (US Census Bureau 2015). The fact that the decline has been so modest – despite the deterioration of political relations – seems to further attest to the underdevelopment of the trade relationship between the two economies (Rapoza 2015).

Table 1 summarizes the data on imports, exports and total trade turnover and its significance to both economies in 2013.

Table 1: Russia-US Trade Figures (2013)

Total Trade Turnover	As % of Overall US Trade	As % of Overall RU Trade
\$38.2 billion	0.8%	4.5%
US Imports from Russia	As % Overall US Imports	As % Overall RU Exports
\$27.1 billion	1.2%	5.2%
US Exports to Russia	As % Overall US Exports	As % Overall RU Imports
\$11.1 billion	0.4%	3.5%

Source: US Census Bureau; UN COMTRADE

The trade figures and anecdotal evidence presented by many proponents of the conventional wisdom are persuasive. Yet, the widely accepted proposition that US-Russia trade is underdeveloped (and the corollary that this is due largely to poor political relations between the

two countries) has yet to be tested in a more rigorous and scientific way. It is the purpose of this article to fill this gap.

We start by formulating four hypotheses from the conventional wisdom about US-Russia trade and its (potential) impact on US-Russia relations:

Hypothesis 1: US Russia trade is underdeveloped, in that it does not live up to its economic potential (if compared to Russia and US trade relations with other countries).

Hypothesis 2: US-Russia trade is underdeveloped because of poor political relations between the two countries.

From hypothesis 1 and 2 we derive a third hypothesis:

Hypothesis 3: If political relations between the two improved trade would reach its potential.

Finally, the conventional wisdom also makes an assumption about the effects that economic relations has on overall political relations:

Hypothesis 4: Overall US-Russia relations would improve if trade did live up to its potential.

In what follows we will test these hypotheses by using gravity models of trade. We first construct a conventional gravity model from the empirical trade literature, which allows us to predict values for US-Russia trade across years. Our model includes the complete universe of all dyadic cases from 1996 to 2012 and uses these to generate a predicted value for the potential of US-Russia trade.

A Gravity Model Estimation of US-Russia Trade

Gravity models estimate patterns of trade between countries using the same logic as Newton's theory of gravity in physics, according to which physical bodies attract each other with a force proportional to their mass and the distance between them. In his seminal work, economist Yan Tinbergen suggested that similar laws apply to world trade (Tinbergen 1962). The flow of bilateral trade between states is proportional to the size of their economies (their economic mass) and the distance between them. Economic factors such as tariffs and non-tariff barriers have been included in applications of the gravity model, as have "non-economic" factors such as language similarities, the presence or absence of former colonial ties, etc. (Head 2003).

The use of gravity models is consistent with traditional trade theories that focus on factor endowments and modern approaches that stress the importance of market imperfections and product differentiation (Helpman and Krugman 1985; Bergstrand 1989; Deardorff 1998). More importantly for our purposes, gravity models enjoy strong empirical success and are accurately able to predict actual trade flows (Head 2003). Because of these strengths they have become a widely accepted tool for analyzing trade flows between states and for testing the effects that various factors have on trade. We use the model to capture the potential of Russia-US trade

predicted by the standard determinants of trade flows; and this is consistent with a large and growing literature that employs gravity models in the social sciences (van Bergeijk and Brakman 2010).

We estimate the standard log-linear gravity equation a la Anderson and Van Wincoop (2003) with time-varying importer and exporter fixed effects (see also Feenstra (2002) and Baldwin and Taglioni (2007)):

$$\log Imports_{ijt} = a + b_k \tau_{kijt} + R_i * Year_t + R_j * Year_t + \varepsilon_{ijt}$$

where $Imports_{ijt}$ is imports from country i to country j in year t ; a is a constant; τ_{kijt} represents all k bilateral determinants of trade; R_i is exporting country fixed effects; R_j importing country fixed effects; $Year_t$ is yearly time fixed effects; and ε_{ijt} is the unaccounted-for error term.

We use the estimates of the gravity model to calculate predicted values for what US-Russia bilateral trade should be given the standard bilateral trade barriers between the two of them. We take standard determinants of trade flows that are commonly accepted in the empirical gravity literature. These variables, τ_k , are logarithm of geodesic distance, contiguity, common language, common legal origins, colonial links, free trade agreements, World Trade Organization membership, common currency and generalized system of preferences agreements.² Then, we estimate a standard gravity model of log of aggregate import flows on the determinants of trade and time-varying importing and exporting country fixed effects with all the world countries between 1996 and 2012. Using the estimated model coefficients, we compute the predicted trade values which tell us where the bilateral trade should be according to the standard gravity model. It is important to notice that, in our model, country specific fixed effects capture political and institutional variables that can inhibit trade such as official and unofficial state policies to protect domestic industry, protection of property rights, rule of law, or corruption (de Jong and Bogmans 2011).

Gravity models predict actual trade flows with surprising accuracy (Head 2003). We expect that the trade volumes of most country pairs will be within the 95% confidence band predicted by the model unless there are some impediments to trade, such as bad bilateral political relations between country pairs, which are not predicted by the model. Thus the model can be used to test whether such political effects are impeding trade or the standard determinants of trade do a good enough job in approximating trade flows.

An examination of the actual and predicted trade flows shows that across many country pairs with poor or strained relations actual trade underperforms predicted trade. For example, actual trade between India and Pakistan, Turkey and Greece, China and Japan, China and India, and Israel's trade with most Arab States³ are consistently lower than the lower bound of the 95% confidence band predicted by the model. This tells us that poor political relations between these countries hamper their trade and this is not captured by the standard determinants of trade. The

model is also able to capture the effects that worsening political relations can have on trade. For example Russia's trade with Georgia began to underperform the model (below the 95% confidence band) after political relations with the country began to deteriorate in the period after the 2003 Rose Revolution.

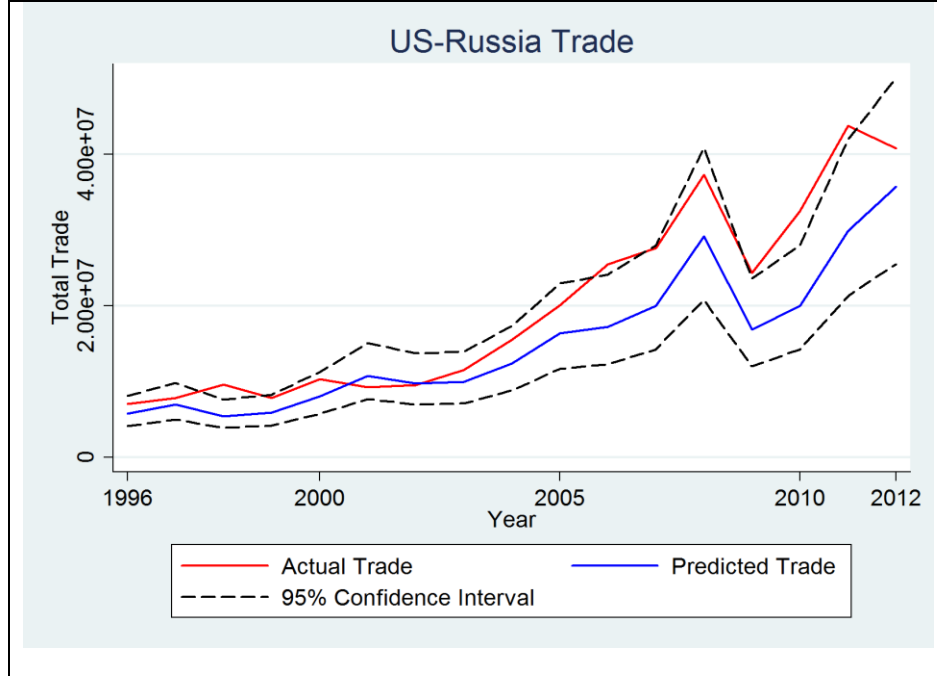
What about US-Russia trade? In Table 2 and Figure 1 we compare the predicted values of US Russia trade with actual trade values. We find that US-Russia Trade does not differ significantly from the predicted values. The variation between predicted and actual values is not statistically significant in that it is within the bounds of the 95% statistical significance value predicted by the model. Importantly, the actual US-Russia trade does not underperform the model predicted by very standard factors of trade.

We find that actual trade fits within the 95% confidence band of our gravity model. This shows that the US-Russia trade is not different than the average pair predicted by the gravity model and allows us to conclude that it is, therefore, not under performing. Actual trade lives up to its potential as predicted by the gravity model, there is nothing erratic about the US-Russia trade that is not predicted by the model, and that there is little actual room for improvement, thereby negating the conventional wisdom.

Table 2: Total US-Russia Trade (Imports and Exports) – Predicted vs. Actual Values

Year	Actual Trade	Predicted Trade	Lower 95% CI Predicted	Upper 95% CI Predicted	Actual/predicted
1996	7083588	5794338	4128976	8131522	1.22
1997	7811384	7021474	5006769	9847030	1.11
1998	9592804	5444195	3882946	7633297	1.76
1999	7861361	5917085	4223721	8289451	1.33
2000	10356666	8048120	5748602	11267594	1.29
2001	9255530	10791922	7705449	15068377	0.86
2002	9543946	9791678	6989387	13717682	0.97
2003	11534650	9977648	7124054	13977046	1.16
2004	15558588	12369541	8832772	17302432	1.26
2005	20042315	16358696	11697281	22962300	1.23
2006	25416967	17211177	12292986	24181393	1.48
2007	27565333	19957231	14247898	28000000	1.38
2008	37235346	29148507	20823699	40800000	1.28
2009	24382809	16850054	12022800	23577017	1.45
2010	32468034	19961134	14258967	28001247	1.63
2011	43785365	29900000	21304261	41900000	1.46
2012	40800000	35800000	25480522	50100000	1.14

Figure 1: US Russia Trade, Actual and Predicted with 95% Confidence Intervals



In fact actual trade outperforms predicted trade in some instances over the course of the time period examined (see Figure 1). In 15 out of the 17 years examined actual trade exceeded the prediction of the model. Over the entire period actual trade exceeded total trade by 31%, though this finding was still within the confidence interval predicted by the model. While noteworthy, this finding is not statistically different (i.e. it still falls within the 95% confidence bands predicted by the model).

Therefore, the data show that US-Russia trade is not different from the average pair predicted by the model, as the standard variables included in the model are able to predict US-Russia trade to a great extent. If something erratic or unusual was going on (such as tensions in bi-lateral relations negatively effecting trade relations) actual trade would not fall within the confidence bands predicted by the model. We can therefore conclude that US-Russia trade is not under-performing – at least not relative to Russia’s trade with the rest of the world’s countries.

Country specific political barriers to trade such as poor protection of property rights or the absence of rule of law in Russia are captured in our model through country specific fixed effects and they are included in our predicted values for trade. Our model cannot tell us whether these kinds of political barriers are having a negative effect on the volume of US-Russia trade. However, in generating our prediction of US-Russia trade our model uses the average value that

Russia specific fixed effects have on Russia's trade relations with the rest of the world. The fact that US-Russia trade falls within the models statistical band of predicted values suggests that the country specific effects (including the domestic political barriers to trade) in the US-Russia dyad is no different than the effect that they have on Russia's average trade with the world's countries. US-Russia trade could very well improve if these Russia specific domestic political and institutional obstacles to trade were removed. But then it is also likely that Russia's trade with all other countries it trades with would improve. Moreover, the structural analysis of US Russia trade in the section below suggests that even if these conditions were to improve the room for trade to grow is limited.

Alternatively, one can include a US-Russia pair dummy into the estimating equation to evaluate whether the US-Russia pair has a negative association with trade. That is what we do in Table 3. In Table 3 we observe that the US-Russia pair is never significantly negative in any of the specifications. The coefficient of US-Russia pair is either insignificant or positively significant. In column (1) of Table 3, when we do not control for the determinants of trade, the US-Russia pair has no significant impact on trade. However, in columns (2) and (3), when we control for the determinants of trade and past import flows, the US-Russia pair has a positive and significant effect. This means that, given all other determinants of trade and past trade flows, the US-Russia pair actually trades significantly more than any other average pair.

Table 3: Effect of US-Russia Dyad on Trade

	(1)	(2)	(3)
US-Russia Dummy	-0.111 (0.150)	0.448*** (0.145)	0.121** (0.047)
Log Imports (t-1)	No	No	Yes
Controls	No	Yes	Yes
Time-Varying Importer Fixed Effects	Yes	Yes	Yes
Time-Varying Exporter Fixed Effects	Yes	Yes	Yes
# Observations	391,638	363,272	351,440

Note: Dependent Variable: Logarithm of Imports.

Controls: Log Distance, Contiguity, Common Language, Common Legal Origins, Colonial Links, Free Trade Agreements, WTO Membership, Common Currency and Generalized System of Preferences Agreement.

Standard errors clustered at the dyad level are in parentheses.

Significant: *** 1%, **5%, *10%.

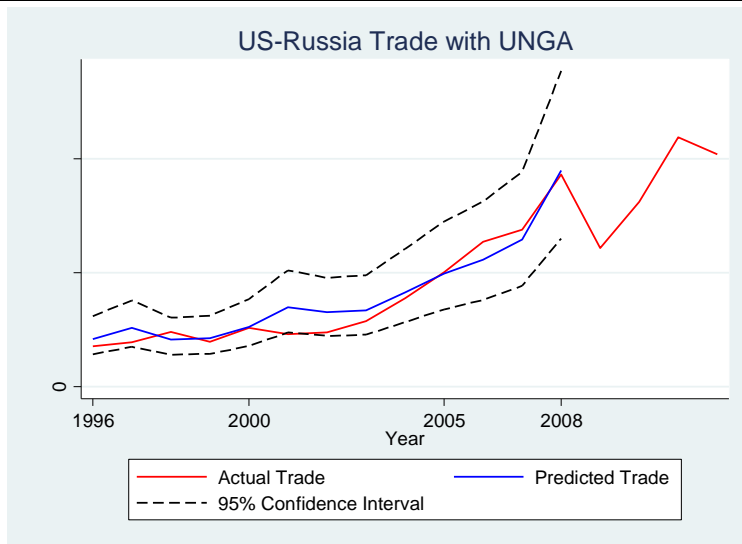
Controlling for Political Effects

At their most basic form gravity models use geographical distance between two countries as an intermediate variable, operating on the assumption that there is an inverse relationship between geographical distance between countries and trade. Political relations can also be conceptualized to have a similar effect. All things being equal, the poorer the political relations between the two countries, i.e. the greater the “political distance” between them, the less they will trade. Our initial model controls only for the standard determinants of trade and therefore the predicted value for US-Russia trade (presented above) does not take political distance into account. We can adjust the model to control for political distance and tease out the effects that it may be (or may not be) having on US-Russia trade.

We use two indicators to measure political distance between state dyads: 1) The “Affinity of Nations Index”, which measures the similarity of state preferences based on voting positions of pairs of countries (dyads) in the United Nations General Assembly (UNGA); 2) Democracy scores as measured by the Polity IV dataset. Admittedly none of these quantitative measures offer a perfect depiction of the quality of political relations between states. However, they are the best measures available and have been used in similar studies to measure the political relationship between states (Mayer and Thoenig 2008).

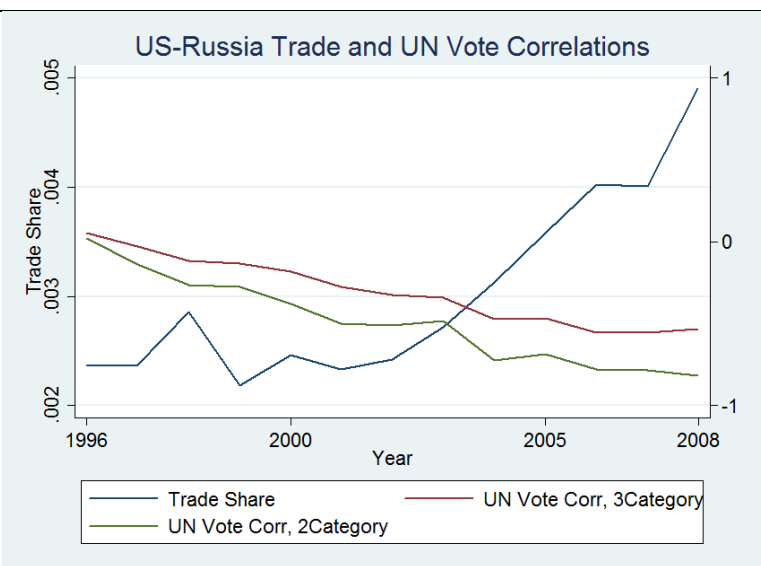
The “Affinity of Nations” index measures the similarity of UNGA preferences in voting patterns among state dyads from the period of 1946-2008. Scholars have argued that UNGA voting represents a good measure of preference as the costs and benefits from voting in the General Assembly are few (Gartzke 2006). Many observers view the action as largely symbolic -- thus there is a higher level of honesty in expressing state preference. Similar or shared preferences indicate political affinity and are a cornerstone of good political relations between states. The Russia-US score on the affinity index is relatively low. Nevertheless, Figure 2 presents the predicted results of an augmented gravity model that takes into account the aforementioned determinants of trade flows as in equation (1) as well as UN voting correlations. When the gravity model we are using is adjusted to include the affinity index as a control variable this has little impact on the predictions for trade. Moreover, actual trade is still within the 95 percent confidence intervals predicted by the model – and it actually out-performs the model’s prediction for some years.

Figure 2: US Russia Trade Accounting for Affinity of Nations Scores



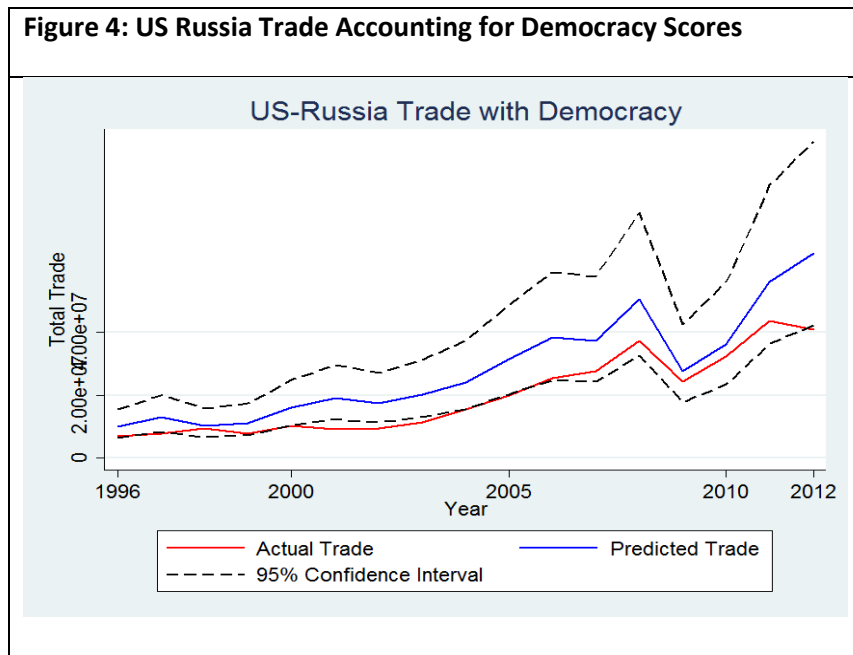
If we plot the Affinity Index Data with actual trade over time we actually find that trade between Russia and the US has increased over time despite the fact that affinity, as measured by the correlation of their UNGA votes, has decreased.

Figure 3: US Russia Trade and UN Vote Correlations



Countries with similar domestic political regimes and institutions may also have closer political relations. A large body of literature in the democratic peace tradition argues that democratic dyads will have peaceful and cooperative relations (Russett and Oneal 2001). According to these arguments democracies identify with one another because they share a common commitment to values of individual liberty and freedom (Dixon 1994). Moreover, democracy socializes political elites to act on the basis of democratic norms, which mandate non-violent conflict resolution, tolerance and reciprocity. They bring the democratic norms and political culture to their interaction with other democrats in interstate relations as well (Weart 2000). Finally, because their internal politics is open and transparent, democracies find it easier to signal their commitments when bargaining with other states. This is particularly important in crisis situations, when miscalculations about other state’s resolve can lead to war (Fearon 1994).

More recent literature has extended many of the same findings to autocratic state dyads, finding that they have less conflictual and more cooperative relations than mixed democratic-autocratic dyads (Mattes and Mariana Rodriguez 2013). Quantitative studies that examine the effect consistently find that mixed dyads (democratic-authoritarian) tend to be the most prone to conflict and war (Dafoe 2011). In order to measure political distance we use Polity IV scores, which aggregates indicators of executive recruitment, executive independence, and political competition into a single numerical score. The positive end of the polity scale (+10) denotes a strongly democratic regime, while the negative end (−10) indicates a strongly autocratic regime. We subtract country scores from one another to construct an indicator of difference between regimes. Thus the “difference” between Russia’s regime, with a score of “4” (characterized by Polity IV as falling in the category of “open anocracy”)⁴ and the US, with a score of “10” (and characterized as a “full democracy”) would be “6”. We have adjusted the model to account for these differences in “regime type” (see Figure 4):



Here the model outperforms actual trade, and predicts that trade would improve by an average of 17% if the two countries' Polity IV scores were identical. However, this finding is not statistically significant. For all but three years (2001-2004) actual trade falls within the 95% confidence band and for all years it is easily within the 90 percent confidence band. Thus the predicted 17% increase may just be a result of “statistical noise”.

Political distance, whether measured by looking at UNGA vote correlations or Polity IV scores, does not have a statistically significant effect on trade relations between the US and Russia. This provides evidence against hypothesis 3: *if the political relations between the two countries improved, trade would reach its potential*. According to the model, actual trade is living up to its potential -- despite the evident political distance between the two countries.

A Closer Look at the Potential for Economic Cooperation – Breaking Down Trade by Sector

Next, we take a closer look at the actual breakdown of US Russia trade by sector in order to develop a preliminary understanding of what areas may be improved. As is the case for Russian exports to most of the world, Russian exports to the US are heavily dominated by energy and raw materials. In 2012 Mineral fuels, oils and distillation products represented 73% of US imports from Russia, iron, steel and aluminum 9.51% and inorganic chemicals, precious metal compounds and isotopes 4.38%. At the same time, however, hydrocarbon exports from Russia only represented 5.06% of total US hydrocarbon exports. Though Russia is a major world hydrocarbon exporter, the potential for its share of the US market to grow is not there for economic reasons. Firstly, the US receives most of its oil from sources that are closer and which have much better developed logistical ties in the energy trade, such as Venezuela, Mexico and the Middle East. Moreover, as the shale revolution in the US continues to advance, domestic production of hydrocarbons will displace imports further contracting space for Russian producers. In 2012 Gazprom abandoned plans to develop the vast Shtokman gas field in the Barents Sea. Initially gas from this field was supposed to be exported to the US in LNG form, but this plan became economically unfeasible because of the Shale revolution in the US (Hulbert 2012). Russian exports of metals only represent 6% of US imports. However, exports of metals such as aluminum and other raw materials will also contract, as processing them in the USA becomes cheaper due to lower energy prices.

US exports to Russia are more balanced and are primarily dominated by high end manufactured goods: machinery, nuclear reactors, boilers represented 22.1%, vehicles (other than rail) 14.3% and aircraft (including parts) 16% of all US exports to Russia in 2012. With the exception of aerospace (where US exports constituted almost 34% of Russian imports), US exports in these categories represented less than 4% of the total Russian imports in these categories. This seems to suggest the potential for further growth, especially in the high tech sector if export restrictions to Russia for dual use technologies is lifted. Nevertheless, the numbers here must also take into account Russian preferences for European (particularly German) products and brands in these

product categories. This is particularly true for machinery, where imports also reflect the preferences of European investors in Russia that are setting up production and other facilities (Supyan 2008). Moreover, US producers will also face stiff competition from producers in China, particularly when it comes to the lower end products (such as economy model vehicles) where Chinese producers can offer prices that are more attractive to the Russian middle class, whose purchasing power will still lag behind US and Western consumers (Davydov 2008). Tables 4 and 5 break down US Russia trade by economic sectors:

Product Category	% of Overall US-Russian Trade	As % of overall US Imports	As % of overall Russian Exports
All products		1.29%	5.74%
Mineral fuels, oils, distillation products	72.71%	5.06%	5.94%
Iron, steel, aluminum	9.51%	6.17%	9.59%
Inorganic chemicals, precious metal compound, isotopes	4.36%	7.85%	16.78%

Product Category	% of Overall US-Russian Trade	As % of overall US Exports	As % of overall Russian Imports
All products		.69%	3.37%
Machinery, nuclear reactors, boilers,	22.07%	1.09%	4.07%
Aircraft, spacecraft, and parts thereof	15.63%	1.60%	34.87%
Vehicles other than railway, tramway	14.31%	1.15%	3.42%
Meat and edible meat offal	8.05%	5.33%	11.63%

Source: TradeMap.org

Thus, the above tables and the discussion suggest that the sectorial structure of the two economies, factor endowments and comparative advantages do not seem to indicate towards a

great potential for increased trade as the economic theory would suggest (Feenstra 2004). This is true especially for the Russian exports to the US as the Russian export structure is heavily based on raw materials and hydrocarbons, for which the US is able to meet its demand either domestically or through other already established trade partners.

Discussion

Overall the data presented here seem to invalidate Hypothesis 1, that Russia-US trade relations are not living up to their potential. In fact, according to the gravity models employed here US-Russia trade is roughly where it should be given the size, geographical distance and other standard bilateral trade barriers between the two economies and country specific barriers of trade. These barriers (such as the weakness of institutions in Russia) may indeed be impeding the growth of trade. But they do so for each country's trade with the rest of the world as well. The evidence shows that US-Russian geopolitical rivalry has not had an adverse effect on trade as it continues to fall within the bounds predicted by the model, and therefore, all other factors being equal, trade does live up to its potential. To put it differently, there is no trade impeding bilateral anomaly between Russia and the US (such as bad political relations) that cannot be predicted by the standard determinants of trade.

The above results also invalidate hypothesis 2, that poor political relations between the two countries have played a critical role in keeping trade from reaching its potential. Poor relations may still hamper US Russia trade to a certain degree. But since trade does seem to be living up to its potential (if this potential is measured by using gravity models) then it is much less significant than the conventional wisdom suggests.

Our results also invalidate hypothesis 3: *if political relations between the two countries improved trade would reach its potential*. Poor political relations do not seem to be having a significant effect on the volume of trade, and thus removing them would not necessarily improve trade ties significantly. This is true when we control the model for political distance (measured in terms of UNGA vote correlations or similarity between POLITY IV scores). We find that even if the political distance between the two countries were narrowed it would not have a statistically significant effect on trade.

These findings also allow us to reject, hypothesis 4, that the overall relationship between Russia and the US would improve if the trade relationship lived up to its potential. If US-Russia trade is already at the level that it "should" be based on its potential then it is already having an effect on political relations -- though it may not be the kind of positive effect that most observers and experts are hoping for. In rejecting hypothesis 4 it is important to note that we are not rejecting the claims advanced by proponents of the Liberal Peace, that increased trade and economic interdependence can have a positive effect on political relations between states. Nor is it our intention to test this body of theory. In general it may very well be true that increased economic and trade ties lead to more peaceful relations. However, in the case of US-Russia trade, where

trade is already living up to its potential and there is very little room for it to grow, it is unrealistic to expect that improvements in trade ties can be a vehicle for improving political relations between the two countries.

Admittedly, our model does not derive a value for potential trade that excludes the effects of domestic political barriers to trade, such as poor institutions, the absence of rule of law, or weak property rights. Removing these barriers may indeed improve trade between the two countries, which may also have a positive effect on political relations. Our model does not allow us to test for such an eventuality because of its use of country specific fixed effects. But it does show that the effects that these barriers are having on US-Russia trade are no different than the effects that they are having on Russia's trade with other countries. This conclusion is further validated when we include a US-Russia pair dummy into the gravity equation, as our findings show that the US-Russia pair actually trades significantly more than an average pair. Furthermore, our sectorial analysis of the Russian and US economies also suggests that, given the structures of the two economies, there is little room for enhanced trade, even if these Russia-specific domestic political barriers to trade were removed.

Gravity models may be of only limited usefulness in testing the overall validity of liberal peace theory -- at least not in the way we use them in this paper. But if liberal peace theories are correct and improved trade and economic ties can help improve political relations between states, they can be used to measure the economic potential for improving trade ties between two countries. As such they can become a valuable tool for analysts and policy makers who are looking for ways to use economic engagement to improve relations between state dyads.

Conclusions

What overall conclusions can we draw from these results? Firstly, the results seem to suggest that policymakers, academics, and businessmen seem to significantly over-estimate the potential of Russia-US trade. Our analysis of gravity models shows that trade is at or near its potential, thus any improvement is unlikely. Secondly, following from the conclusion above, our findings cast doubt on the widely held assumption that improving trade is one of the keys to improving the overall bilateral relationship. This is not to say that there are many good reasons to believe that improved trade ties would improve relations between the two countries. Improved ties could very well broaden the interactions between the two societies and create vested interests in both countries for maintaining good relations. However the above analysis suggests that the economic potential for improving trade relations has been overstated.

The uncomfortable truth is that, in economics, as in many other areas, there are very few areas where Russia and the US can find common ground. The interests and values of the two countries simply diverge on many issues and at many levels (Stent 2014). They compete for influence in the post-Soviet Space and Middle East (Tsygankov 2013, pg. 189-192). They are also becoming economic competitors as the Shale Revolution has made the US a major energy producer and it

is intent on using its growing influence in energy markets to loosen Russia's grip on European energy markets (Blackwill and O'Sullivan 2014). All too often Russian and US policymakers have been the victim of false expectations about the shared interests and values their two countries share. When these expectations have failed to come to fruition it has created feelings of betrayal and ill will on both sides that have poisoned relations. We will need to reset these expectations before a true "reset" in relations can happen.

Russian and American experts and policymakers need to develop a more realistic appraisal of each other's interests and honestly recognize where their interests diverge. They need to learn how to agree to disagree and to recognize that in many areas US' and Russia's interests are simply not compatible. Only then will they finally be able to find areas where genuine compromise is possible and relations will be able to move beyond the current crisis in relations and the specter of a "new Cold War". A more sober and realistic assessment of the potential of US-Russia trade, which acknowledges the two powers' divergent economic interests and forgoes the idea that trade can serve as some kind of panacea for strained relations between the two states, is an important step in this larger process.

Data Appendix:

Trade Data are from UN ComTrade data set that include aggregate yearly trade flows across dyads.

Determinants of trade such as logarithm of geodesic distance, contiguity, common language, common legal origins, colonial links, free trade agreements, World Trade Organization membership, common currency and generalized system of preferences agreements are from Martin, Mayer and Thoenig (2008) and Thierry Mayer's webpage.⁵

The Affinity of Nations Index is based on the United Nations General Assembly roll-call data. This index takes values between -1 and 1 for the correlation of votes between countries at the United Nations General Assembly over the period 1948-2008. This data set is available at Eric Gartzke's webpage: <http://dss.ucsd.edu/~egartzke/htmlpages/data.html>

Democracy scores are from Polity IV project. Available at:

<http://www.systemicpeace.org/polityproject.html>

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Notes:

¹ Though trade figures for 2014 are available 2013 has been chosen as a base year for comparison because this is the last year before the US and Russia introduced major economic sanctions against each other. However, as we shall see later, these have had a modest impact on trade turnover.

² See Data Appendix for further data description.

³ Israel's trade relations with Arab Leagues member states Algeria, United Arab Emirates, Oman, Qatar, Tunisia, Egypt, Jordan, Bahrain, Kuwait, Lebanon, Morocco, Saudi Arabia underperform the model (lower than the lower bound of the 95% confidence band) for all observable years. Data for Israel's trade with Algeria, Lebanon, and Syria is only available for a limited number of years and data is not available at all for some Arab League states (Comoros, Libya, Iraq, Yemen, Somalia, and Sudan).

⁴ Polity IV defines an "anocracy" as a regime type that is characterized by inherent qualities of political instability and ineffectiveness, as well as an "incoherent mix of democratic and autocratic traits and practices." An "open anocracy" is classified as having democratic elections, but ones that are not very free or fair. The government circumscribes the political and civil rights of the population and the press and incoming news from the outside world are strictly controlled and monitored. See: Monty G. Marshall, Ted Robert Gurr and Keith Jagers, "POLITY IV PROJECT: Dataset Users' Manual", *Center for Systemic Peace*, May 6, 2014, <http://www.systemicpeace.org/inscr/p4manualv2013.pdf>.

⁵ Available at <http://econ.sciences-po.fr/node/131>.

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