

## **The Trade and Income Effects of NTR Status for Russia \***

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### **Abstract**

In November 2006 the United States and Russia completed a bilateral market access agreement on the terms for Russia's accession to the WTO. As Russia moves towards full membership in the WTO, the U.S. Congress will vote whether to grant Russia permanent "normal trade relations" (NTR) or "most-favored-nation" (MFN) status. Russia has received extensions of its current NTR status regularly since 1992 with little opposition in Congress. In the absence of NTR status, Russia would face non-MFN duties as it did prior to 1992. This paper examines the trade and income effects of these regular renewals of NTR status for Russia and provides an estimate of its annual economic value, or opportunity cost. We use an applied general equilibrium model to simulate the effects of an increase in tariffs from MFN to non-MFN duty rates. The trade-weighted, average ad-valorem rate facing U.S. imports from Russia increases from 0.4 percent to 7 percent. U.S. imports from Russia decline by approximately 35 percent, and both the United States and Russia experience declines in real income, with the Russian economy experiencing a much larger decline of approximately \$550 million.

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# **The Trade and Income Effects of NTR Status for Russia**

## **Introduction**

In November 2006 the United States and Russia completed a bilateral market access agreement on the terms for Russia's accession to the WTO (US Trade Representative). As Russia moves towards full membership in the WTO, the U.S. Congress will vote whether to grant Russia permanent "normal trade relations" (NTR) or "most-favored-nation" (MFN) status.<sup>1</sup> Russia has received extensions of its current NTR status regularly since 1992 with little opposition in Congress. In the absence of NTR status, Russia would face non-MFN duties as it did prior to 1992.

This paper examines the trade and income effects of these regular renewals of NTR status for Russia and provides an estimate of its annual economic value, or opportunity cost. We use an applied general equilibrium model to simulate the effects of an increase in tariffs from MFN to non-MFN duty rates. We find that the trade-weighted, average ad-valorem rate facing U.S. imports from Russia would increase from 0.4 percent to 7 percent. U.S. imports from Russia would decline by approximately 35 percent, and both the United States and Russia would experience declines in real income, with the Russian economy experiencing a much larger decline of approximately \$550 million.

## **Review of literature**

Evaluating the impact of granting MFN status in an applied general equilibrium (AGE) framework has precedent in previous studies. Arce and Taylor (1997) made inroads using GTAP to study the welfare effects of MFN status to both the United States and China. They found a decrease in exports, terms of trade, and industrial output for China, increased import prices and decreased imports balanced by increased terms of trade and recaptured rents for the United States and a gain to the rest of world by replacing Chinese exports. The net income effect was sharply negative for both countries: -\$422 million for the United States and -\$6.1 billion for China.

The experiment raised the tariffs on Chinese imports into the United States from their current MFN levels to non-MFN levels. The U.S. quota on textiles, a key non-tariff barrier, was accounted for using a two-step approach to correct for an overstatement of Chinese imports if the

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<sup>1</sup> According to the 1974 Trade Act of the United States, the Jackson-Vanik amendment restricted U.S. trade with the Soviet Union. The provision is also tied to Russia's bid to join the World Trade Organization (WTO). Russia can not accede to the WTO, if the United States does not give trade with Russia the same treatment as any other WTO member.

quota was eliminated only for China. The quota was removed on all imports, and then the tariffs on Chinese imports were increased to column 2 rates.

Yao (2001) also studied the value of MFN status for China, with added consideration given to textile quotas worldwide and the special role of Hong Kong in Chinese trade. In separate simulations, Yao revoked MFN status for China 1) with the U.S. Multi-fiber agreement (MFA) quota in place, 2) without the U.S. MFA, and 3) without the MFA worldwide. With the MFA in place, removal of MFN status projected a major disruption and displacement in US-China trade with only partial trade replacement with the rest of the world. Welfare lost was roughly \$16.8 billion to China, \$2.3 billion to the United States, and \$2.7 billion to Hong Kong. Revoking MFN status and simultaneously abolishing the U.S. MFA actually resulted in a net welfare gain to the United States of \$425 million. Removing the MFA worldwide caused a slight U.S. welfare loss.

Fukase and Martin (2000) quantified the ex ante value of U.S. MFN status to Vietnam. Their analysis suggest that MFN status would more than double Vietnamese exports to the United States to \$768 million, with the Vietnamese clothing sector as the primary beneficiary. Welfare gains were small: \$118 million to Vietnam and \$56 million to the United States. Fukase and Martin qualify by saying these are lower-bound estimates, affected by conservative Armington elasticities in the GTAP database.

### **Description of trade and tariffs**

U.S. imports from Russia have grown faster than total U.S. imports since 2002, increasing from \$6.7 billion to \$15.3 billion. Russian imports have more than doubled, exceeding the 44 percent growth of U.S. imports overall (from \$1.15 to \$1.66 trillion). The composition of imports, however, has not changed in a meaningful way since 2002. Petroleum, metals, and wood products dominated then as they do now. Russia's exports and economy remain highly dependent on exports of these commodities. As of 2004, Russia maintained a trade surplus of \$73.5 billion, and was highly trade dependent, with trade equaling 57 percent of GDP.<sup>2</sup>

The United States ranked Russia's ninth largest export destination, while Russia ranked 20<sup>th</sup> amongst U.S. importers, representing one percent of all imports. As a whole, Russian trade in 2005 reinforced ties with Eastern European nations formerly part of the Soviet bloc. Ukraine and Belarus were among Russia's top three export/import partners. That said, trade with large economies in Western Europe, Asia, and North America was also substantial.<sup>3</sup>

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<sup>2</sup> World Bank Development Indicators. Accessed May 1, 2006.

<sup>3</sup> WITS and ITCWEB databases. Accessed April 17, 2006.

Table 1 describes U.S. imports from Russia by GTAP sector. Imports from Russia were highly concentrated in a few intermediate goods. The top five GTAP sectors captured over 90 percent of imports, and the top ten captured nearly all imports.

Converting the GTAP sectors into HS-6 categories, three products dominated imports: petroleum oils, light petroleum oils, and crude oil. In sum, these three represented over \$7 billion, or 44 percent of 2005 imports. Figuring prominently in the remaining sectors were: metals, including aluminum, palladium, steel, and uranium; ferrous metals and derivative iron products, and various chemicals like ethylene and ammonia.

In the analysis presented hereafter, most of the effects of the experiment appear in the wood and metal products sectors, as they are most affected by high Column 2 non-MFN tariff rates.

### **Description of the model**

We apply the GTAP framework to analyze the effects of the United States granting MFN status to Russia. The GTAP framework is documented in Hertel 1997 and in the GTAP web site ([www.gtap.agecon.purdue.edu](http://www.gtap.agecon.purdue.edu)).

The standard GTAP model is based on assumptions that are common in economic literature: perfect competition, constant returns to scale, and no change in the economy-wide employment of resources.<sup>4</sup> Each regional economy consists of several economic agents: on the final demand side, a utility-maximizing household purchases commodities and it saves part of its income, which consists of returns to primary factors and net tax collections. On the production side, cost-minimizing producers employ primary factor services and intermediate inputs to supply commodities. In the model, intermediate and final demand users of commodities differentiate a commodity by its region of origin, i.e., the *Armington* specification is applied. Globally, the sum of household savings is equal to the sum of investment expenditures.

Integrated into this treatment of production, demand, and trade, is a set of domestic and trade policies, which are modeled as *ad valorem* equivalents. These policies affect the equilibrium computed by the model and when they change they induce changes by producers and consumers in all regions. The GTAP model is solved using the GEMPACK suite of software (Harrison and Pearson, 1994).

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<sup>4</sup> The recently developed *GTAP-Dyn* model extends the comparative static GTAP to incorporate dynamic behavior (Ianchovichina and McDougall, 2000).

**Table 1. U.S. Imports from Russia: Customs value, MFN and Non-MFN rates, 2005**

GTAP Sector	Customs Value	Share	Col 1 AVE	Col 2 AVE
Petroleum, coal products	6,048,216,169	38.3%	0.20%	0.51%
Metals nec	3,640,536,141	23.0%	0.66%	13.65%
Chemical, rubber, plastic products	2,034,530,822	12.9%	0.08%	6.87%
Oil	1,499,784,249	9.5%	0.22%	0.44%
Ferrous metals	1,289,125,517	8.2%	0.17%	16.30%
Food products nec	325,569,190	2.1%	0.01%	0.89%
Wood products	209,182,591	1.3%	0.06%	41.42%
Manufactures nec	198,457,825	1.3%	0.02%	7.70%
Transport equipment nec	119,898,188	0.8%	0.00%	11.11%
Machinery and equipment nec	103,818,697	0.7%	0.75%	44.74%
Beverages and tobacco products	79,759,320	0.5%	0.00%	23.27%
Textiles	59,140,794	0.4%	19.07%	69.60%
Minerals nec	57,835,893	0.4%	0.06%	0.50%
Wearing apparel	34,568,791	0.2%	17.79%	82.11%
Coal	21,530,286	0.1%	0.00%	0.00%
Paper products, publishing	19,591,650	0.1%	0.00%	2.37%
Electronic equipment	14,764,675	0.1%	1.19%	34.39%
Metal products	13,247,528	0.1%	0.25%	44.69%
Gas	13,029,310	0.1%	0.00%	0.00%
Mineral products nec	11,323,417	0.1%	0.56%	29.88%
Animal products nec	7,933,913	0.1%	0.32%	3.63%
Leather products	3,031,485	0.0%	8.52%	36.20%
Motor vehicles and parts	1,118,175	0.0%	0.51%	20.98%
Forestry	1,084,778	0.0%	0.00%	0.00%
Cereal grains nec	519,570	0.0%	0.00%	1.48%
Crops nec	255,740	0.0%	3.73%	10.93%
Fishing	182,089	0.0%	0.78%	3.91%
Dairy products	171,848	0.0%	19.45%	23.04%
Vegetable oils and fats	83,213	0.0%	3.94%	22.73%
Bovine meat products	47,340	0.0%	1.45%	5.70%
Oil seeds	28,833	0.0%	0.00%	2.47%
Paddy rice	25,162	0.0%	2.25%	3.53%
Vegetables, fruit, nuts	24,150	0.0%	0.00%	3.03%
Processed rice	5,064	0.0%	1.05%	4.14%
Wheat	2,731	0.0%	0.07%	0.35%
Total	15,808,425,144	100.0%	0.40%	7.30%

Source: USITC Dataweb.

## **Data**

Our analysis is based on aggregated data and parameters derived from the GTAP database, version 6.2, which is benchmarked to 2001 (Dimaranan and McDougall, 2005). Our data has five regions: the United States, Russia, Other members of the x-Soviet Union (X-SovietUnion), the European Union (with 25 members)<sup>5</sup>, and a rest-of-the-world (ROW). In terms of sectors, we identify 42 merchandise trade sectors (that is, all the merchandise trade sectors available in GTAP) and three aggregate services sectors: trade and transport, utilities, and other service. We focus our discussion on the United States and Russia.

## **Simulation design**

We run a preliminary simulation to change U.S. tariffs on imports from Russia from 2001 to 2005.<sup>6</sup> Column 2 in table 2 shows the 2001 estimates of U.S. tariffs in the GTAP data and column 3 shows the 2005 estimates of those tariffs. The policy simulation is based on this revised data. Column 1 in table 2 shows the level of U.S. imports from Russia for 2005.

In the policy simulation we terminate the MFN status granted to Russia by the United States, i.e., we change the U.S. tariffs on imports from Russia from those in column 3 to those in column 4, table 2.

## **Simulation results**

Table 3 presents selected simulated effects for the United States and Russia, at the sector level. Column 1 shows the effects on U.S. imports from Russia; these effects are driven by the magnitude of the increase in the tariff rate (table 2) and the elasticity of U.S. imports, which depends on the Armington elasticity and the share of Russian imports in total U.S. imports. The larger the tariff change and the Armington elasticity, the larger the trade effect would be. The larger the Russian share is, the smaller the trade effect would be. Imports of wearing apparel decline by 95.8 percent but they represent only a small trade flow. Imports of metals nec decline by 59.5 percent and they represent a multi-billion trade. In total, U.S. imports from Russia decline by about 35 percent in quantity terms.

Column 2, table 3 shows effects for total U.S. imports. For sectors for which U.S. imports from Russia have a relatively large share of total U.S. imports, there is a significant effect in column 2. The United States sources around 10 percent of its metals nec imports from Russia:

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<sup>5</sup> Latvia, Estonia and Lithuania have been included in the EU region.

<sup>6</sup> This simulation is run under the *altertax* closure which allows changing policy variables without affecting the structure of the national and global economies (G. Malcolm, 1998).

**Table 2. U.S. imports from Russia and tariffs on imports from Russia**

Sector	2005	U.S. tariffs on imports from Russia		
	U.S. imports from Russia	2001 GTAP	2005 MNF Col 1 AVE	non-MFN Col 2 AVE
	(1)	(2)	(3)	(4)
	<i>USD million</i>	<i>percent</i>		
1 Paddy rice	0.025	0.00	2.25	3.53
2 Wheat	0.003	0.00	0.07	0.35
3 Cereal grains nec	0.520	0.22	0.00	1.48
4 Vegetables, fruit, nuts	0.024	5.94	0.00	3.03
5 Oil seeds	0.029	0.00	0.00	2.47
6 Sugar crops		0.00		
7 Plant fibers		0.00		
8 Crops nec	0.256	0.00	3.73	10.93
9 Cattle etc	0.000	0.00		
10 Animal products nec	7.934	0.05	0.32	3.63
11 Raw milk		0.00		
12 Wool		0.00		
13 Forestry	1.085	0.00	0.00	0.00
14 Fishing	0.182	0.00	0.78	3.91
15 Coal	21.530	0.00	0.00	0.00
16 Oil	1,499.784	0.00	0.22	0.44
17 Gas	13.029	0.00	0.00	0.00
18 Minerals nec	57.836	0.00	0.06	0.50
19 Bovine meat products	0.047	1.81	1.45	5.70
20 Meat products nec		1.91		
21 Vegetable oils and fats	0.083	8.36	3.94	22.73
22 Dairy products	0.172	1.04	19.45	23.04
23 Processed rice	0.005	2.98	1.05	4.14
24 Sugar, manufactured		36.43		
25 Food products nec	325.569	0.19	0.01	0.89
26 Beverages and tobacco products	79.759	0.04	0.00	23.27
27 Textiles	59.141	11.72	19.07	69.60
28 Wearing apparel	34.569	12.49	17.79	82.11
29 Leather products	3.031	11.27	8.52	36.20
30 Wood products	209.183	0.02	0.06	41.42
31 Paper products, publishing	19.592	0.00	0.00	2.37
32 Petroleum, coal products	6,048.216	0.81	0.20	0.51
33 Chemical, rubber, plastic produc	2,034.531	0.15	0.08	6.87
34 Mineral products nec	11.323	1.93	0.56	29.88
35 Ferrous metals	1,289.126	0.83	0.17	16.30
36 Metals nec	3,640.536	0.59	0.66	13.65
37 Metal products	13.248	0.10	0.25	44.69
38 Motor vehicles and parts	1.118	0.61	0.51	20.98
39 Transport equipment nec	119.898	0.00	0.00	11.11
40 Electronic equipment	14.765	0.84	1.19	34.39
41 Machinery and equipment nec	103.819	0.28	0.75	44.74
42 Manufactures nec	198.458	0.01	0.02	7.70
<b>Total</b>	<b>15,609.967</b>			

Sources: GTAP version 6.2 data and authors' calculations based on U.S. tariff schedule.





total U.S. imports of metals nec decline by 1.7 percent. In total, U.S. imports decline by 0.05 percent in quantity terms.

Column 3, table 3 shows effects for U.S. exports. In total, U.S. exports decline by 0.05 percent. For sectors for which U.S. prices increase relative to world prices there is a decline in exports, e.g., metals nec (1.01 percent), and manufactures nec (0.18 percent).

Column 4, table 3 shows effects for U.S. supplies. In total, U.S. GDP declines by 0.002 percent. About half of the sectors listed in table 2 contract. The sector that expands the most is metals nec (0.56 percent).

Column 6, table 3 shows the effects for Russian exports: for several sectors, Russian exports are driven by the decline in U.S. demand for Russian goods, e.g., wearing apparel (35.3 percent), beverages and tobacco (11.7 percent), metals nec (6.9 percent). For other sectors, however, Russian exports expand even though U.S. demand declines, e.g., meat products nec (5.9 percent), transport equipment nec (4.8 percent), and wheat (4.5 percent). These sectors have to expand as they absorb resources from contracting sectors in the rest of the economy. In total, Russian exports do not change.

As a consequence of terminating the MFN status granted to Russia by the United States the rate of return on capital in Russia declines by 0.7 percent (GTAP model variable rorc) thus less investment is undertaken in Russia. Savings decline too, but the capital account improves (i.e., it becomes more positive) thus the Russian balance of trade must improve too (i.e., it must become more positive). With a negligible increase in Russian exports, imports decline to bring about an improvement in the trade balance.

The welfare consequences in table 4 suggest that both the United States and Russia are hurt by the termination of the MFN status granted to Russia by the United States. The United States lose \$23 million and Russia loses \$553 million. As a percent of GDP the U.S. loss is very small; it is bigger for Russia: 0.21 percent of its GDP. The components of welfare effects are different though for each economy.

Each economy experiences an allocative efficiency loss of around \$180 million. The U.S. allocative efficiency loss arises from increasing import tariffs. In Russia the allocative efficiency loss arises from existing domestic taxes and import tariffs.

In the United States, gains in terms of trade (\$159 million) moderate the efficiency loss; in Russia, losses in terms of trade (-\$372) augment the efficiency loss. The Russian terms of trade decline because its export prices decline as Russia tries to ship its previously U.S.-destined goods to other economies.

**Table 4. Welfare effects of terminating U.S. MFN status for Russia**

	USA	Russia	Rest of x-USSR	EU25	ROW
Welfare effect, USD million					
Allocative efficiency	-181	-180	-8	147	107
Terms of trade	159	-372	34	184	-6
Total	-23	-553	26	331	102

Sources: Authors' calculations with GTAP model.

### **Summary and conclusions**

This paper examined the trade and income effects of these regular renewals of NTR status for Russia and provides an estimate of its annual economic value, or opportunity cost. We used an applied general equilibrium model to simulate the effects of an increase in tariffs from MFN to non-MFN duty rates. The trade-weighted, average ad-valorem rate facing U.S. imports from Russia increases from 0.4 percent to 7 percent. U.S. imports from Russia decline by approximately 35 percent, and both the United States and Russia experience declines in real income, with the Russian economy experiencing a much larger decline of approximately \$550 million.

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