BOFIT Online
2012 No. 2

Heli Simola

Russian import statistics in the mirror of world exports

Bank of Finland, BOFIT
Institute for Economies in Transition

BOFIT Online
Editor-in-Chief Iikka Korhonen

BOFIT Online 2/2012

Heli Simola: Russian import statistics in the mirror of world exports

27.1.2012
ISSN 1456-811X (online)

Bank of Finland
BOFIT – Institute for Economies in Transition
PO Box 160
FIN-00101 Helsinki

Phone: +358 10 831 2268
Fax: +358 10 831 2294

Email: bofit@bof.fi
Website: www.bof.fi/bofit

Contents

Heli Simola

Russian import statistics in the mirror of world exports

Abstract

In this article, the quality of Russian import statistics is assessed by comparing them to corresponding export data from partner countries. While discrepancies between Russian import data and partner country export data have visibly diminished over the past decade, the quality of Russian import statistics is still slightly poorer than those produced by its peers. Discrepancies are more pronounced at the disaggregate level, and both magnitude and sign vary by partner country and product group. Some discrepancies can be explained by misclassification, while some apparently reflect deliberate misreporting.

Keywords: International trade statistics, mirror statistics, Russia

Assessing the accuracy of trade statistics

Accuracy of trade statistics has been a topic of interest for several decades, but that interest has recently been fuelled by the growing complexity of global trade flows. Accurate trade statistics are important for economic policy and analysis. Poor trade statistics can give a distorted picture of, say, a country's balance-of-payments situation or competitiveness of its domestic industries, and hence lead to misguided policy decisions. For many countries, including Russia, reliable information on foreign trade is also essential for collecting trade-related taxes.

Researchers and officials have developed methods for assessing the quality of trade data and estimating missing data. The most common method is the "mirror" technique, whereby the country's trade statistics are compared to the corresponding statistics of its trading partners. In principle, country A's exports to country B should equal country B's imports from country A. In practice, this is rarely the case.

Causes of discrepancies between mirror trade statistics fall into three groups (Makhoul and Otterstrom, 1998). First, discrepancies can originate from "unavoidable" factors. The most important of these is the common practice of reporting imports on a CIF basis (i.e. costs including freight and insurance) and exports on an FOB basis (free on board). The IMF (2011) estimates that the CIF value on average should be about 10 % higher than the FOB value as it includes transport and insurance costs. There should also be some natural variation depending on the type of goods and the geographical distances between trading partners. Discrepancies in the second category are generated by structural differences such as timing of trade records, thresholds for trade records and exchange-rate valuations.

Finally, discrepancies between mirror statistics can be caused by misclassification or deliberate misreporting. Misclassification can be due to human errors or lack of experience of customs officials, but modernly classification has become considerably more challenging where re-exports are involved. Re-exports are typically goods that pass through a third country, usually an important international transport hub, where they are declared to the national customs as either imports and exports or only as re-exports. Although re-exporting is by no means a new phenomenon, its significance has increased past years with deepening globalization that has complicated compilation of trade data across countries. Deliberate misreporting or total avoidance of reporting by traders is motivated by evasion of tariffs and other trade barriers or taxes. Traded goods may be reported with different tariff list number, as well as deliberate understatement about the value and / or quantity of the goods in order to pay lower tariffs or circumvent quotas.

Earlier studies mainly use mirror statistics to assess quality of trade data (as here) or to estimate transport costs in international trade. The results are somewhat mixed. On one hand, especially for developed countries and on the aggregate level, mirror statistics have been found to match each other relatively accurately especially after controlling for the difference caused by CIF and FOB valuations (Makhoul and Otterstrom, 1998; Federico and Tena, 1991). On the other hand, e.g. Yeats (1995) finds significant discrepancies between bilateral trade statistics that cannot be explained merely by unavoidable or structural factors when examining developing countries and more disaggregate data. Hamanaka (2011), for example, finds that the accuracy of trade statistics of Cambodia identifies serious problems with import data and reporting at the disaggregate level.

The emphasis in research on mirror statistics has recently shifted towards examining causes of discrepancies in trade statistics. Two phenomena have received particular attention: re-exports and deliberate misreporting in trade. Re-exports have grown visibly past years and they have been found to form a notable share of exports from e.g. Hong Kong, Singapore, the Netherlands and even Germany (Mellens et al. 2007). Hence, re-exports can cause significant distortions to trade data. Several studies have corroborated this, especially concerning the case of the US, China and Hong

Kong (e.g. Fung and Lau, 1998; Ferrantino and Wang, 2008; Guo, 2009). Mirror statistics have also been used for examining tariff evasion and other grey schemes in trade, and these factors have been found to explain some of the discrepancies in international trade statistics (Fisman and Wei, 2007; Berger and Nitsch, 2008). Studies suggest that higher tariffs and overall corruption in a country correlate with larger discrepancies between bilateral trade statistics and more grey schemes in trade (Javorcik and Narciso, 2007; Berger and Nitsch, 2008).

Russian import statistics at the aggregate level

The main source for statistics on imports to Russia is the Russian Customs (RC). However, the quality of RC figures have been questioned, so the Central Bank of Russia (CBR) releases its own aggregate-level import figures that it uses for balance-of-payments purposes. These figures are corrected to include estimates of imports not recorded by the customs. To assess the quality of Russian import statistics, Table 1 presents RC and CBR import data, as well as data on combined exports of all reporting countries from the United Nations Comtrade database. The lower part of the table reports the ratios of imports reported by RC to imports reported by the CBR and to exports reported by partner countries. As noted above, even with excellent reporting performance, these ratios would be about 1.1 as noted above, since RC import data is reported on a CIF basis, while import data from the CBR and export data are reported on an FOB basis.

Table 1 Comparison of Russian import data and partner country export data, 2000−2010.

	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Imports by RC, USD bn (CIF)	33.9	41.9	46.2	57.3	75.6	98.7	137.8	199.7	267.1	167.5	229.0
Imports by CBR, USD bn (FOB)	44.9	53.8	61.0	76.1	97.4	125.4	164.3	223.5	291.9	191.8	248.7
Exports to Russia, USD bn (FOB)	42.5	52.0	57.1	74.7	101.2	126.9	162.0	226.0	285.0	160.5	218.6
Ratios											
RC / CBR	0.76	0.78	0.76	0.75	0.78	0.79	0.84	0.89	0.92	0.87	0.92
RC / Exports	0.80	0.81	0.81	0.77	0.75	0.78	0.85	0.88	0.94	1.04	1.05
Number of export countries	130	130	129	136	136	132	141	136	132	131	119

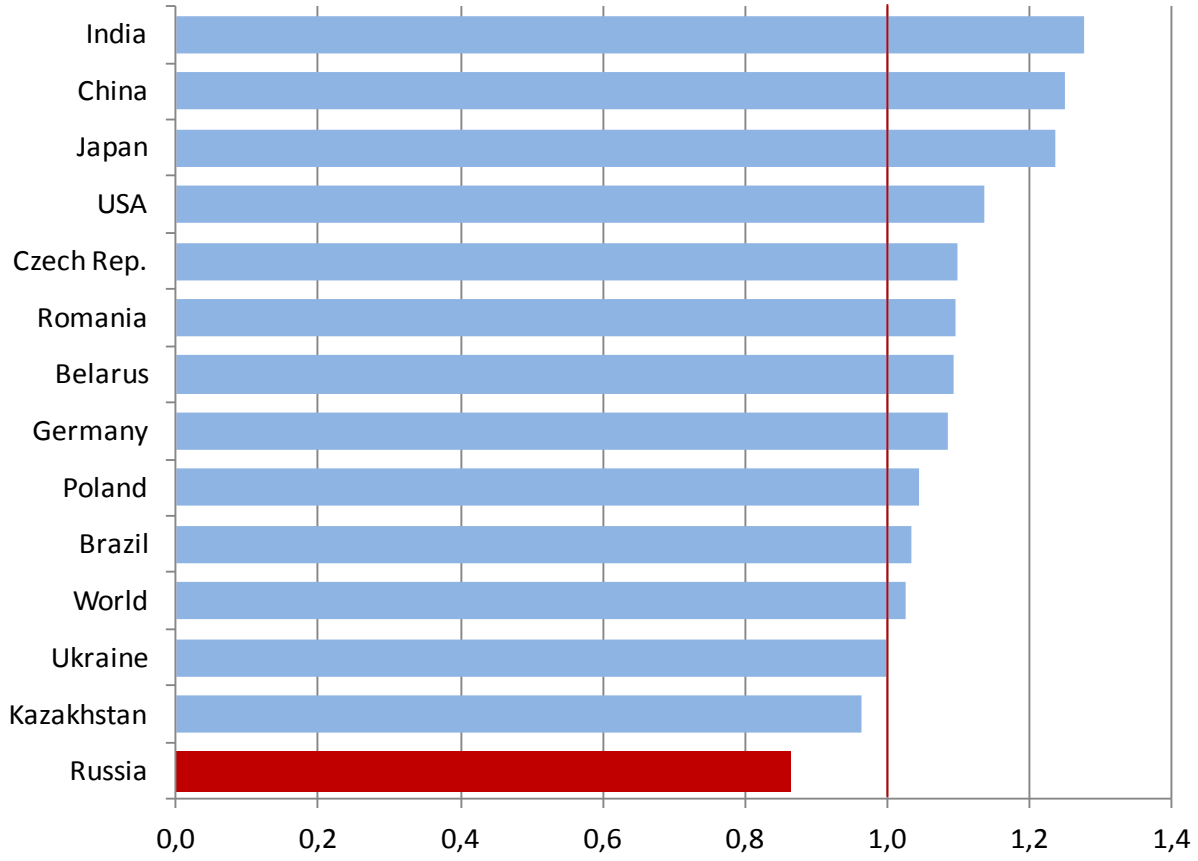
Sources: Russian Customs, Central Bank of Russia, Comtrade

Table 1 suggests the accuracy of import statistics of Russian Customs improved fairly steadily over the past decade, but some imports remain unrecorded. The ratio of imports reported by the RC with respect to imports reported by the CBR or exports reported by partner countries is visibly lower than the benchmark value of 1.1 throughout the entire observation period of 2000−2010. Towards the end of the decade, the ratio to partner export figure is already quite close. However, the 2010

comparison includes fewer partner countries than in earlier years (although accounting only for a tiny share in Russian imports) and is still subject to possible slight revision. Thus, while it may be premature to conclude that the accuracy of Russian import statistics has reached the level of its peers, Russia has clearly closed the gap.

To put Russian statistics in an international perspective, we compiled similar comparisons for several peer countries. Figure 1 presents the average ratio of the value of imports for select countries relative to sum of their partner countries export value during 2000−2010. For most countries, the ratio is between 1 and 1.2, i.e. relatively close to the benchmark value of 1.1. For the Asian countries in the sample, the value is higher than 1.2, which likely reflects substantial re-exporting activity at important transit hubs such as Hong Kong and Singapore, above-average transport costs or under-reporting of exports in partner countries. For these countries, the discrepancy at least carries the "right" sign, i.e. import value exceeds export value. At the other end of the spectrum, we have Russia. Among our sample countries, only Russia and Kazakhstan have a ratio below 1: Kazakhstan's ratio is 0.96, Russia 0.86. Hence this comparison further supports the above conclusion that Russian import data from past decade suffered from under-reporting.

Figure 1 Average ratio of import value to sum of partner country export value in 2000-2010.



Source: Comtrade

Russian import data by partner country and product groups

Even if import aggregate-level data on has improved visibly past years, import data is often needed at the more detailed level, so its accuracy should be evaluated. Data on Russian imports by country and product group are provided only by Russian Customs. As earlier studies have shown, discrepancies can be large at the disaggregate level, even if the data at the aggregate level are considered accurate. To assess the quality of the disaggregated Russian data and possibly reveal the origins of certain discrepancies, it is useful to examine Russian import data in terms of partner countries and product groups.

In Table 2, Russian import data by country are compared to corresponding export data of the relevant partner country. Again, we use ratio of Russian import figures to the partner country export figures, which should be about 1.1. It is assumed that a variation of 10% to both directions can be explained by structural factors noted above, whereas larger discrepancies are interpreted as indicating misclassification and/or misreporting. Values indicating a significant negative discrepancy (ratio lower than 1) are shaded in the table and values indicating a significant positive discrepancy (ratio higher than 1.2) are underlined.[1]

Table 2 Ratio of Russian import statistics to partner country export statistics by main import countries, 2000−2010.

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Belarus	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01
China	0.42	0.61	0.68	0.55	0.52	0.55	0.82	0.86	1.05	1.31	1.32
Germany	0.64	0.64	0.62	0.59	0.57	0.62	0.63	0.69	0.72	0.74	0.76
Finland	0.49	0.52	0.53	0.48	0.44	0.44	0.52	0.55	0.59	0.70	0.74
France	0.74	0.75	0.86	0.74	0.78	0.88	0.99	0.99	0.97	1.19	1.22
Italy	0.52	0.54	0.62	0.56	0.52	0.59	0.60	0.65	0.72	0.88	0.96
Japan	1.00	1.22	1.04	1.07	1.26	1.30	1.10	1.18	1.12	2.21	1.29
Korea	0.46	0.77	0.87	0.80	0.87	1.04	1.31	1.09	1.08	1.16	0.94
Ukraine	1.05	1.06	1.03	1.03	1.05	1.04	1.07	1.05	1.03	1.07	1.05
USA	1.17	1.20	1.24	1.21	1.08	1.16	1.36	1.28	1.48	1.71	1.88

Source: Comtrade

The first observation from Table 2 is the steady diminution of the discrepancy between Russian import data and partner export data over the past decade. Half of partner country export values in 2000 went unrecorded in Russian import statistics for half of the countries examined. By 2010, this discrepancy was only a quarter even in the biggest cases (Germany and Finland). In money terms,

[1] It is hard to define a ”normal” variation for trade values. As the following comparisons are made on a relatively aggregate data (annual, HS 2-digit level), we expect that such factors as timing and human errors in product classification play relatively minor roles.

the value of Finnish exports to Russia was USD 1.5 billion higher than the corresponding values in Russian import statistics. For German exports to Russia, the figure was nearly USD 9 billion higher.

There are visible differences between countries concerning the sign of the discrepancy, as we can see from Table 2. For the EU countries in the sample and China until 2008, the discrepancy has been negative (i.e. partner country exports are larger than corresponding Russian imports) and quite large up until quite recently. In contrast, the discrepancy with the US, Japan and most recently China, has mainly been positive (Russian imports are larger than partner country exports). In trade with the CIS countries, discrepancies seem to be low throughout the decade.

Table 3 Ratio of Russian import data to partner country export data by main import product groups (HS 2-digit classification) in 2000−2010.

	2000	**2002**	**2004**	**2006**	**2008**	**2010**
Meat and edible meat offal	0.66	0.97	0.73	0.89	0.94	0.96
Edible fruit, nuts, peel of citrus fruit, melons	1.14	0.96	1.06	1.31	1.16	1.31
Mineral fuels, oils, distillation products, etc	0.64	0.93	0.80	0.84	0.96	0.84
Pharmaceutical products	1.09	1.06	1.10	1.11	1.04	1.07
Essential oils, perfumes, cosmetics, toiletries	0.55	0.71	0.75	0.80	0.87	1.02
Plastics and articles thereof	0.53	0.70	0.62	0.77	0.89	1.05
Paper & paperboard, articles of pulp, paper and board	0.70	0.82	0.81	0.78	0.86	0.97
Articles of apparel, accessories, not knit or crochet	0.10	0.26	0.16	0.24	0.47	0.70
Footwear, gaiters and the like, parts thereof	0.12	0.22	0.20	0.48	0.81	1.05
Iron and steel	0.90	0.86	0.87	0.99	0.98	1.05
Articles of iron or steel	0.84	0.81	0.83	0.83	0.91	1.03
Nuclear reactors, boilers, machinery, etc.	0.70	0.72	0.66	0.79	0.94	1.02
Electrical, electronic equipment	0.62	0.72	0.57	0.92	1.02	1.20
Vehicles other than railway, tramway	0.45	0.52	0.83	0.88	0.94	0.89
Optical, photo, technical, medical, etc. apparatus	1.08	0.96	0.94	1.02	1.20	0.99

Source: Comtrade

Comparison by product group shows similar tendencies (see Table 3). The ratio of recorded imports to exports has increased visibly during the past decade for most of the largest import product groups examined below. In some product groups, however, recorded import values are still notably lower than the corresponding export values despite visible improvement. For example, even 90 % of the partners' export value of apparel was unrecorded in Russian import statistics in 2000; that share was only 30 % in 2010. In money terms, that amounts to USD 1.3 billion. As Russia applies a 10 % import tariff to these products, it translates to a loss of USD 130 million in government income if these products were imported unrecorded. Relatively large discrepancies have also been observed for such goods as footwear and vehicles.

Possible explanations for discrepancies in Russian import data

Despite visible improvement over the past decade as shown in the above data, there remain notable discrepancies in Russian import statistics compared to partner country export statistics. Since quite large discrepancies are observed both at the aggregate and the more detailed level, it is unlikely that they can be explained solely in terms of unavoidable and structural factors. Some earlier research and anecdotal evidence support the possibility that some of the discrepancies are due to misclassification or misreporting. Naturally, it is difficult to define the extent to which discrepancies in a country's import statistics are due to any specific reason, but we can illustrate our proposed causes with two examples.

As discussed above, discrepancies on the country level may be due to re-exports, especially as the sign of the discrepancy varies with countries. Russian imports are transported to a large extent through European ports – even those originating from many Asian countries when they are destined for western parts of Russia. Hence, it seems reasonable to assert that some of the trade flows reported in the country of origin as exports to an EU country and in the EU country as exports to Russia are actually in Russian import statistics reported according to the country of origin instead of the intermediate EU country. Here, mirror comparisons result in Russian import figures for the country of origin (e.g. the US or Japan) being higher than the corresponding export figures and for the intermediate EU country (e.g. Germany or Finland) being lower than the corresponding export figures.

Re-exports have been found to be a distorting factor in trade between Russia and Finland, with the vehicles category as the most obvious example. In past decade, passenger cars have been among the most important export products from Finland to Russia despite the fact that Finland produces few cars, and most of its production is concentrated on high-end sports cars and more recently electric vehicles. Most of the trade in passenger cars involves importing of the cars to Finland, possible temporary storage, and then re-export to Russia. When entering Finland, the cars are declared as normal imports and hence they show up later as normal exports to Russia instead of re-exports. In the Russian import statistics, the cars are recorded as imports from their actual country of origin, e.g. Japan, Korea or the US. The share of re-exports in Finnish exports to Russia is estimated to have been around 20−30 % in past years (National Board of Customs, 2010; Ollus and Simola, 2007).

It is also likely that some of the discrepancies in Russian import statistics still reflect deliberate misreporting. Russia still imposes fairly stiff import duties on certain products, which motivates importers to declare a lower value and/or quantity of the imported goods or to declare them as products in a different category subject to lower duties. Back in the 1990s, for example, Russian import statistics showed Russia imported tens of millions of rubber gloves from Finland, despite the fact that production of rubber gloves was negligible in Finland. In reality, the imported

products were car tires, but they were misreported as rubber gloves to evade import tariffs (Ollus and Simola, 2006). The grey trade schemes employed today are typically more complex and more international. It is difficult to identify them simply by comparing trade statistics.

Conclusions

Our examination of Russian import statistics in comparison to partner country mirror statistics showed notable improvement in the accuracy of Russian statistics over the past decade. However, problems with misreporting and underreporting seem to persist. Russian import statistics still show visible discrepancies with partner country export statistics that are clearly higher than import figures issued by peer countries. In addition, discrepancies are higher at the more disaggregated level, although at varying scale and sign by trading partner and product group. These discrepancies reflect partly complications arising from the increasing complexity of global trade networks, particularly the phenomenon of re-exporting. However, deliberate misreporting also appears to continue as a problem in Russian imports.

References

Berger, Helge and Volker Nitsch (2008). Gotcha! A Profile of Smuggling in International Trade. CESIFO Working Paper 2475, November 2008.

Federico, G. and A. Tena (1991). On the Accuracy of Foreign Trade Statistics 1909-1935: Morgenstern Revisited. Explorations in Economic History 28, 259-273.

Ferrantino, Michael J. and Zhi Wang (2008). Accounting for Discrepancies in Bilateral Trade. The Case of China, Hong Kong and the United States. China Economic Review 19, 502–520.

Fisman, Raymond and Shang-Jin Wei (2007). The Smuggling of Art, and the Art of Smuggling: Uncovering the Illicit Trade in Cultural Property and Antiques. NBER Working Paper 13 446, September 2007.

Fung, K.C. and Lawrence J. Lau (1998). The China-U.S. Bilateral Trade Balance: How Big Is It Really? Pacific Economic Review 3, 33-47.

Guo, Dong (2009). Mirror Statistics of International Trade in Manufacturing Goods: The Case of China. United Nations Industrial Development Organization Working Paper 19/2009. Vienna, 2010.

Hamanaka, Shintaro (2011). Utilizing the Multiple Mirror Technique to Assess the Quality of Cambodian Trade Statistics. Asian Development Bank Working Paper 88, October 2011.

IMF (2011). Yearbook of International Trade Statistics 2011.

Javorcik, Beata S. and Gaia Narciso (2007). Differentiated products and evasion of import tariffs. World Bank Policy Research Working Paper 4123. Washington, February 2007.

Makhoul, Basim and Samuel M. Otterstrom (1998). Exploring the Accuracy of International Trade Statistics. Applied Economics 30, 1603-1616.

Mellens, M.C., H.G.A. Noordman and J.P. Verbruggen (2007). Re-exports: International Comparison and Implications for Performance Indicators. CPB Document 149. The Hague, July 2007.

National Board of Customs (2011). Jälleenvienti Venäjälle vuonna 2009. Helsinki, February 2011.

Ollus, Simon-Erik and Heli Simola (2006). Russia in the Finnish Economy. Sitra Reports 66, Helsinki.

Ollus, Simon-Erik and Heli Simola (2007). Finnish Re-exports to Russia. BOFIT Online 5/2007.

Yeats, Alexander J. (1995). Are Partner-Country Statistics Useful for Estimating “Missing” Trade Data? World Bank Policy Research Working Paper 1501. Washington, August 1995.

BOFIT Online

http://www.bof.fi/bofit • email: bofit@bof.fi
ISSN 1456-811X, online