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# Losers and Winners of Russian Countersanctions: A welfare analysis

In this brief we provide a quantitative assessment of the consequences of countersanctions introduced by the Russian government in 2014 in response to sectoral restrictive measures initiated by a number of developed countries. Commodity groups that fell under countersanctions included meat, fish, dairy products, fruit and vegetables. By applying a basic partial equilibrium analysis to data from several sources, including Rosstat, Euromonitor, UN Comtrade, industry reviews etc., we obtain that total consumers' loss due to countersanctions amounts to 288 bn Rub or 2000 rubles per year for each Russian citizen. Producers capture 63% of this amount, importers 26%, while deadweight loss amounts to 10%. 30% of the transfer from Russian consumers toward importers was acquired by Belarus. The gain of Belarusian importers of cheese is especially impressive – 83% of total importer's gains on the cheese market.

In August 2014, in response to sectoral sanctions initiated by some countries against Russia, the national government issued resolution No. 778, which prohibited import of processed and raw agricultural products from the United States, the EU, Ukraine and a number of other countries (Norway, Canada, Australia, etc.).

Russian countersanctions were, in particular, imposed on meat, fish, dairy products, fruit and vegetables. Later the list of counter sanctioned goods was edited: inputs for the production of baby food and medicines have been deleted from the ban list, while new items were added. Salt was added to the list in November 2016 and animal fats in October 2017.

The popular idea behind the countersanctions was to limit market access for countries, which supported sectoral sanctions. The other rhetoric of the countersanctions was to support domestic producers via trade restrictions, or by other words – import substitution.

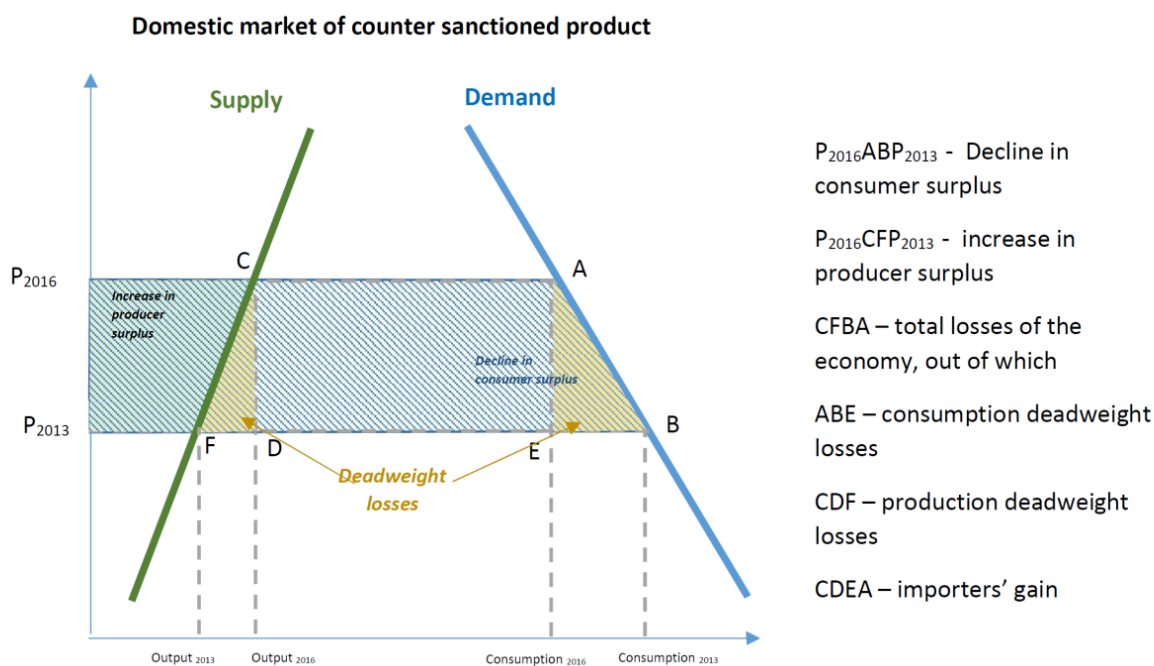
We apply a basic partial equilibrium analysis in order to evaluate the effect of countersanctions on the welfare of main stakeholders - consumers, producers and importers. The overall results are in

line with general microeconomic consequences of trade restrictions in a small open economy, that is, we observe a decline in consumer surplus, increase in producer surplus and redistribution across importers. Perhaps, even more interestingly, we are able to provide a numerical assessment of redistribution effects between Russian consumers and producers, on the one hand, and among importers from different countries, on the other.

## Partial equilibrium welfare analysis

We apply a framework of the classical analysis of import tariff increases to Russian countersanctions. Countersanctions resulted in increased domestic prices, declining consumption and increased domestic production. Given the increase in prices and declined volumes of consumption, we evaluate the losses by consumers as a decline in consumer surplus. Respectively, given the increase in prices and increase in domestic output we identify the producers gains as an increase in producer

Figure 1. Visualization of deadweight losses, consumer and producer surplus changes



surplus. The only difference with a classical analysis is the lack of increase in government revenues. In this case increases in domestic prices were driven by restrictions on trade with historical partners which were substituted by more costly producers. Given the changes in the composition of importers after sanctions, we identify countries which lost and gained access to the Russian market. We use changes in volumes of trade as a measure of respective gains and losses. Figure 1 presents all relevant concepts.

In order to measure all relevant welfare changes, we rely on consumption, production and price data from Rosstat and Euromonitor, trade data from the UN Comtrade database. We use data for 2013 as a benchmark before countersanctions and compare it to 2016. The measures of own price elasticities of Russian demand and supply were taken from the literature. We use real price (in terms of 2013 prices) and volume information for consumption and supply in 2016 as the resulting points on the supply (point C) and demand (point A) curves as shown on Figure 1. Then we restore

the consumption and production points on these curves (points F and B) as they would have been in 2013 given the own price elasticities of demand and supply and price level as of 2013.

## Welfare analysis

### Data

We consider 12 commodity groups that were included in 2014 in the countersanctions list: pork, cheese, poultry, apples, beef, tomatoes, processed meat, fromage frais, butter, oranges, condensed milk, grapes, cream, sour milk products, milk, and bananas.

Prices and volumes information are taken from Rosstat official statistics, which in a few cases were adjusted by data from Euromonitor. Import values were obtained from the UN Comtrade database. The summary of the original data and results of welfare analyses are reported in table 1. Below we discuss in details the situation in three markets – beef, apples and cheese.

Table 1. Summary table of the welfare effects of countersanctions

| Group         | Price (RUR per kg, 2013) |      | Production (thous. tons) |      | Consumption (thous. tons) |      | Elasticity |        | Consumer losses, RUR mn | Producer surplus, RUR mn | Deadweight loss, RUR mn | Importer gains, RUR mn |
|---------------|--------------------------|------|--------------------------|------|---------------------------|------|------------|--------|-------------------------|--------------------------|-------------------------|------------------------|
|               | 2016                     | 2013 | 2016                     | 2013 | 2016                      | 2013 | demand     | supply |                         |                          |                         |                        |
| Beef          | 376                      | 357  | 238                      | 240  | 600                       | 897  | -0.78      | 0.1    | 11311                   | 4388                     | 234                     | 6690                   |
| Poultry       | 109                      | 108  | 4468                     | 3610 | 4577                      | 4084 | -0.78      | 0.45   | 3263                    | 3173                     | 13                      | 77                     |
| Pork          | 286                      | 289  | 2042                     | 1299 | 2282                      | 1919 | -0.78      | 0.2    | -7167                   | -6447                    | 38                      | -757                   |
| Milk          | 55                       | 47   | 5540                     | 5386 | 5704                      | 5595 | -0.93      | 0.3    | 48234                   | 42507                    | 4443                    | 1284                   |
| Butter        | 343                      | 271  | 251                      | 225  | 340                       | 340  | -0.93      | 0.18   | 27468                   | 17680                    | 3370                    | 6419                   |
| Cheese        | 358                      | 283  | 605                      | 435  | 748                       | 764  | -0.93      | 0.28   | 63493                   | 44259                    | 8437                    | 10797                  |
| Fromage frais | 233                      | 190  | 407                      | 371  | 456                       | 457  | -0.93      | 0.3    | 21803                   | 17104                    | 2600                    | 2099                   |
| Apples        | 84                       | 70   | 324                      | 313  | 986                       | 1665 | -0.85      | 0.1    | 15225                   | 4562                     | 1238                    | 9425                   |
| Bananas       | 61                       | 47   | 0                        | 0    | 1141                      | 1165 | -0.9       | 0.1    | 18967                   | 0                        | 2315                    | 16652                  |
| Oranges       | 65                       | 59   | 0                        | 0    | 932                       | 1059 | -0.9       | 0.1    | 6054                    | 0                        | 272                     | 5782                   |
| Grapes        | 175                      | 131  | 174                      | 101  | 366                       | 459  | -0.85      | 0.1    | 18312                   | 7527                     | 2351                    | 8435                   |
| Tomatoes      | 82                       | 65   | 1130                     | 863  | 1583                      | 1718 | -0.97      | 0.1    | 28824                   | 18177                    | 3290                    | 7357                   |

Data sources: Rosstat, Euromonitor, UN COMTRADE

Green color was used to mark the commodity groups with a noticeable consumption growth in 2013-2016, red color – for those with consumption decrease, and yellow – for groups where consumption changed insignificantly during the period.



## Beef

The Russian beef market experienced a drastic decrease in consumption during two years under countersanctions. In 2013 constant prices, the average real of 1 kg of beef increased by 5.3% from 357 Rub/kg in 2013 up to 376 Rub/kg in 2016. Domestic output decreased by 0.8% and to 238 thousand tons in 2016 from 240 in 2013. Domestic consumption decreased by 33.1% to 600 thousand tons in 2016 from 897 in 2013. Our estimations indicate that consumer losses amount to 11.3 bn Rub or 3.5% of beef consumption in 2013; producers' gains are 4.4 bn Rub or 1.4%; deadweight losses are estimated at 0.2 bn Rub or 0.07%; and importers' gains equal 6.7 bn Rub or 2.1%.

Out of total 6.7 bn Rub of importers' gains, importers from Belarus acquire the major share (88%) – 5.9 bn Rub. Importers of beef from India and Colombia gained 0.4 bn Rub (6% of total) and 0.3 bn Rub (5%) respectively. Beef importers from Mongolia gained 0.03 bn Rub, from Kazakhstan – 0.01 bn Rub. Importers of beef from Brazil, Paraguay, Australia, Uruguay, Ukraine, Lithuania, Poland, and Argentina lost market shares in over the period 2013-2016.

## Cheese

Average real price for 1 kg of cheese increased by 26.5% up to 358 Rub/kg in 2016 from 283 Rub/kg in 2013, both in constant 2013 prices. Domestic output increased by 39.1% to 605 thousand tons in 2016 from 435 thousand tons in 2013. Domestic consumption decreased by 2.1% to 748 thousand tons in 2016 from 764 thousand tons in 2013. Our results indicate the following effects of countersanctions on cheese market: consumers' losses amounted to 63.5 bn Rub or 29.4% of cheese consumption in 2013; producer's gain is 44.3 bn Rub or 20.5%; deadweight loss is estimated at 8.4 bn Rub or 3.9%; importers' gains equal 10.8 bn Rub or 5.0%.

Out of a total 10.8 bn Rub of importer's gains on the cheese market, importers of cheese from

Belarus acquired the major share (82.9%) – 9.0 bn Rub, importers of cheese from Argentina gained 0.5 bn Rub (4.8% of total importers' gain), importers from Uruguay gained 0.4 bn Rub (3.9%), Swiss cheese importers gained 0.2 bn Rub, importers from Armenia – 0.2 bn Rub (1.8%). While importers of cheese from Ukraine, the Netherlands, Germany, Finland, Poland, Lithuania, France, Denmark, Italy, and Estonia lost market access over 2013-2016.

## Apples

In 2013 constant prices, average real price for 1 kg of apples increased by 20.0% up to 84 Rub/kg in 2016 from 70 Rub/kg in 2013. Domestic output increased by 3.5% to 324 thousand tons in 2016 from 313 thousand tons in 2013. Domestic consumption decreased by 40.8% to 986 thousand tons in 2016 from 1665 thousand tons in 2013. According to our analysis, the effects of countersanctions on the apple market are the following: consumers' losses amounted to 15.2 bn Rub or 13.1% of apple consumption in 2013; producer's gain is 4.6 bn Rub or 3.0%; deadweight loss is estimated at 1.2 bn Rub or 1.1%; importers' gains equal 9.4 bn Rub or 8.1%.

Out of a total 9.4 bn Rub of importer's gains, importers from Serbia acquired the major share (49.7%) – 4.7 bn Rub, importers of apples from China gained 1.6 bn Rub (16.7% of total importers' gains), those importing from Macedonia gained 0.8 bn Rub (8.4%), from Azerbaijan 0.6 bn Rub (6.0%), and from South Africa 0.4 bn Rub (4.5% of total importers' gains). While importers of apples from Poland, Italy, Belgium, and France lost market access.

## Overall effects for 12 commodity groups

We calculated the welfare effects for 12 commodity groups: beef, poultry, milk, cheese, cottage cheese, ton butter, dairy products, apples, bananas, oranges, grapes and tomatoes.

Total consumers' loss due to countersanctions amounts to 288 bn Rub, producers gain 63% out of



this amount (182 bn Rub), 26% of total consumers' loss is redistributed to importers (75 bn Rub), deadweight losses amount to 10% (31 bn Rub).

## Distribution of importers' gains

Belarus is the major beneficiary of Russians countersanctions: its exporters gain 29.4 bn Rub (38%), Ecuador's exporters are in the second place with 16.4 bln Rub (21). Exporters from Serbia gained 5.1 bn Rub (7%).

## Conclusion

There is no doubt that countersanctions were paid out of the pockets of Russian consumers: our estimation of total consumer losses amounts to 288 billion rubles, i.e. each Russian citizen paid 2000 rubles per year. Out of this sum, Russian producers received 144 billion rubles, i.e. transfer from Russian consumers to producers equals 1260 rubles per person per year. Among Russian sectors, major gains and associated increases in production happened in pork industries (50%), poultry (20%), dairy products (10-30%), fruit and vegetables (10-50%).

The transfer from Russian consumers toward importers from non-sanctioned countries equals 75 billion rubles a year (520 rubles per person per year), out of which 30% was acquired by Belarusian importers. Countersanctions lead to deadweight losses in the efficiency of Russian economy equal to 31 billion rubles or 215 rubles per person per year.





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