

Beggar Thy Neighbor? Application of SPS measures by the Russian Federation

Case Study: The Impact of the Russian Import Ban on Ukrainian Confectionary Producers

Elena Besedina and Tom Coupe



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and

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This working paper presents two related papers *Beggar thy Neighbor? Application of SPS measures by the Russian Federation* and a related case study: *Case study: The impact of the Russian Import Ban on Ukrainian Confectionary Producers*. These papers are presented together as they are separate, but highly interlinked papers.

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Beggar Thy Neighbor? Application of SPS measures by the Russian Federation

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Abstract

Economists often view non-tariff measures as protectionist tools that can be used as supplement or compliment to traditional tariffs. In this paper we investigate the determinants of the SPS application by the Russian Federation. We hypothesize that, along with pure health safety and protectionist motives, SPS measures can be also used as means to exert political and economic pressure on the trading partners. For our analysis we use WTO data on SPS notifications by the Russian Federation since its accession to this organization. Our results seem to be supportive of this hypothesis as we find SPS measures disproportionately being applied to sectors that are ‘vulnerable’ for Russia’s trading partners.

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1. Introduction

A survey conducted by UNCTAD among exporters in several developing countries ranks SPS and TBT measures the top trade barriers with on average 73 percent of the respondents viewing them as the primary trade barrier (UNCTAD 2010).

Application of SPS measures is governed by the WTO agreement. While the WTO recognizes the right of its members to impose measures to protect human, plant and animal health, Article 2.2 of the Agreement on Sanitary and Phytosanitary Standards clearly states that SPS measures “shall not be applied in a manner which would constitute a disguised restriction on international trade”. This wording implies that SPS measures cannot be used as a tool to protect domestic market from foreign competitors.

Many countries use SPS measures and other technical barriers to trade (TBTs) and in some cases the motives for these measures are questionable¹. Kono (2006) finds that TBTs are often unrelated to consumer health concerns, represented by stringent domestic regulations, “but are significantly related to traditional interest-group determinants of protection”.

In this paper we try to distinguish between different motives for the introduction of SPS measures by studying which sectors and countries are more likely to get hit by such measures. We focus on SPS measures introduced and notified to the WTO by Russia, which by many observers has been suspected to use SPS measures as a way to exert political influence. While other studies have investigated determinants of trade measures before, this paper is the first to investigate to what extent trade measures are used to reach political rather than economic goals.

On August 22, 2012, Russia became a Member of the WTO and since then, is obligated to comply with the WTO rules and agreements. However, according to the Global Trade Alert database, the Russian Federation is second in the world ranking of countries that frequently use trade barriers since global crisis of 2008 with 444 measures implemented as of January 1 2015. The ‘leader’ of the ranking is India with 619 measures implemented.

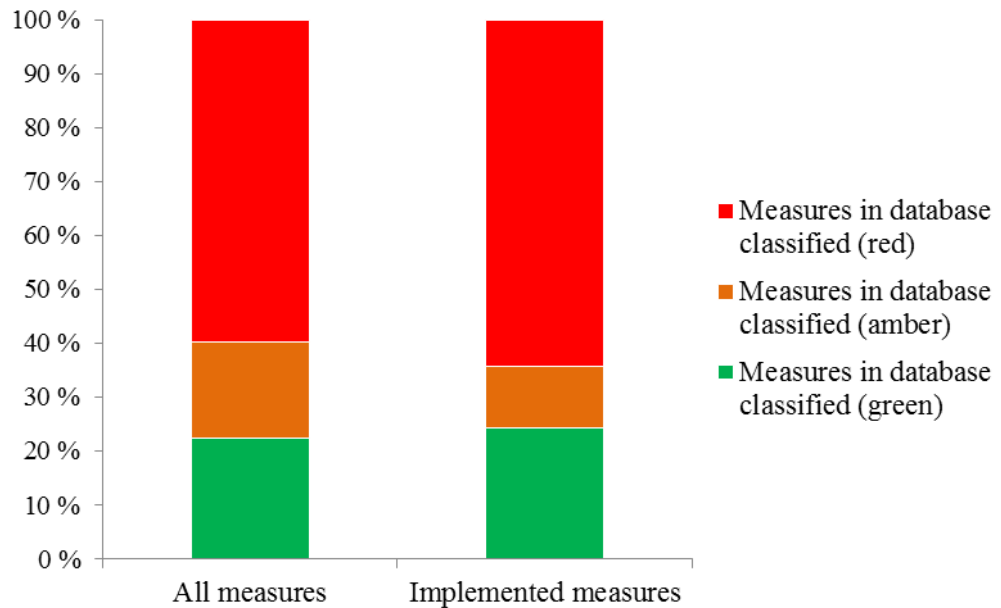
More than 60 percent of measures imposed by Russia are qualified as ‘red’ measures, i.e. “the measure has been implemented since November 2008 and almost certainly discriminates against foreign commercial interests” (Figure 1)². The red measures are differentiated

¹ For example Kono (2006) points out to US avocado ban on Mexican imports or EU ban on hormone-treated beef.

² Global Trade Alert : www.gta.org

from the ‘amber’ measures: measures that have been implemented since November 2008 or announced and are under consideration and “likely involve discrimination against foreign commercial interests”. The harmless group of measures is classified as ‘green’ since they do not foresee any discrimination against foreign suppliers.

Figure 1. Number of trade measures announced/implemented by Russian Federation since 2008 crisis



Source: Global Trade Alert database, www.gta.org

Over the last year Ukrainian exports (primarily foodstuff) to Russia were banned or limited more than 10 times (Box 1)³. The latest ban on vegetables came into force on October 22nd 2014. While in some cases all imports of specific products are banned, there are also cases when single companies are not allowed to import to Russia. One of such cases when all products of the Ukrainian confectionary giant Roshen were banned is analyzed in a companion case study by Coupe and Besedina (2015).

³ See Cenusa et al. (2014) for all discriminatory measures against Ukraine applied by Russia over 2013-2014.

Box 1.***Russia's restrictive measures against Ukraine in the area of SPS over 2014.***

- **June 16, 2014 ban on the import of potatoes from Ukraine (due to repeated cases of detection of a golden potato nematode)**
- **July 28, 2014 ban on the import of the whole milk products. The list includes all 27 Ukrainian companies, which have been certified and have the right to export their products to Russia.**
- **July 29, 2014 ban on the import of canned fruits and vegetables and canned fish from Ukraine.**
- **August 15, 2014 ban on the Ukrainian exports of spirits, beer and beer drinks.**
- **September 5, 2014 suspended imports of Ukrainian confectionery products**
- **October 22, 2014 ban on vegetable products**

For all these cases the Russian Federation did not make any official document publicly available that provides scientific evidence on a breach of its national food safety and quality standards. Moreover, other countries (e.g. Belarus) did not ban these products.

Such bans did not only happen in 2014: for example, in February 2012 Ukrainian exports of cheese and other dairy products were suspended. Many experts see a 'political component' in these trade disputes between Ukraine and Russia" (IER, 2012).

Ukraine is not the only one to suffer from such Russian trade policy: two other countries that signed Association agreements with the EU also suffered from the trade policy of the RF (Cenusa, et al. 2014). And in July 2014, even European exports of foodstuff became subject of the so called 'anti-sanctions'.

In general, exporters that want to supply to the RF face certification requirements of agricultural products for which "certifications are unnecessary or are otherwise unwarranted" (USTR, 2013). Moreover, the American trade representative "has not received scientific justifications nor risk assessments for many of Russia's SPS requirements" (ibid).

As the GTA data show, Russia is one of the most active users of non-tariff barriers in the world and is an interesting case for the analysis. In this paper we focus on the factors that determine the introduction of SPS measures. As mentioned above, we are interested to check whether SPS measures, as a representative of the class of non-tariff barriers, are used for political reasons. We are not the first one to look at non-tariff barriers determination; however, majority of the existing studies concentrate on the protectionist application of such measures. While we think protection of domestic producers is an important motive for policy makers we also believe that trade policy and SPS measures in particular can be used for exerting pressure on trading partners. Since non-tariff measures are often introduced by various agencies behind closed doors these measures are much less transparent and can be easily manipulated. As this is a less studied area in the trade policy determination we believe it deserves careful analysis.

Several recent papers look at the determinants of NTBs around the world. Olarreaga and Vaillant (2011) study the macro and micro determinants of the non-tariff measures in Brazil's trade policy. They use data on temporary trade barriers (TTBs) such as anti-dumping and safeguard measures. Over the period studied, the number of the TTBs used by Brazil has increased and this increase is primarily associated with appreciation of the real exchange rate and increased volumes of imports. At the same time, authors do not find statistical relationship between changes in the prices of imported goods and TTBs application, majority of which were antidumping cases. Gawande et al. (2011) examine the determinants of the trade policy for a number of countries including BRICS (excluding Russia), Argentina, Mexico and Turkey in the aftermath of the global crisis. The primary dependent variable in their analysis is bilateral tariffs at the 6-digit HS level. They show that global crisis did not lead to increased protectionism primarily due to interlinkages between firms in the global world. Vertical integration of foreign and domestic firms is associated with a lower level of protectionism.

Aisbett and Pearson (2012) study the determinants of the changes in the number of SPS measures imposed. In particular, they try to differentiate between health concern motive and protectionist motive. They find that controlling for other factors which may affect SPS measures' application "protectionist motives are one of the drivers of SPS measures".

In this paper, we use the same data on SPS notifications as Aisbett and Pearson (2012). Differently from their paper, we use data on notification by Russia and a more disaggregated data (4-digit level vs. 2-digit level in Aisbett and Pearson, 2012). Also in their paper they do not differentiate against whom the measure was imposed as they focus on the reasons why some countries use more SPS measures than others do. Another advantage of focusing on a single country is a possibility to

disregard institutional variables that seem to play important role in trade policy determination. As discussed above, we are not the first to concentrate on one imposing country: Gawande et al. (2011) and Olarreaga and Vaillant (2011) also analyze single countries but they do not consider SPS measures as we do. For our analysis we employ conditional logit model which allows to control for unobservable characteristics of the Russian trading partners. Our results suggest that application of SPS measures by the Russian Federation was not always driven by public health concerns. These measures are generally found in the sectors which make trading partner more sensitive to imposed measures and sectors where Russia is a net importer and sectors.

The paper is structured as follows. We start with the discussion of the motives behind government policy suggested in the earlier literature, both theoretical and empirical. Section 3 discusses our empirical strategy, while Section 4 describes the data used in the analysis. Empirical results are presented and discussed in Section 5. We conclude with final remarks in Section 6.

2. Non-tariff barriers: Differentiating between the motives

Trade economists have been investigating the shift from tariff to non-tariff barriers. Ray (1987) provides several possible explanations for such shift. First, countries resort to non-tariff measures since they do not have to rely on tariff revenues as they become richer. Second, while tariffs are more strictly regulated in the international trade system (first GATT and now WTO), the non-tariff measures allow for more discretion in their application. And, finally, Ray (1987) claims that “they can be used effectively by special interest groups incapable of getting government support for tariff protection”.

Non-tariff barriers can either serve as substitutes or compliments for the traditional tariffs. Thus for the U.S. trade policy makers the two types are found to be substitutes (Ray, 1981). At the same time, Lee and Swagel (1994) using data for 41 countries for 1988 show that tariffs and NTMs are compliments. Ronen (2014) also studies this relationship in cross-country perspective and finds that there is substitution effect in low-income countries, while in middle and high income countries tariffs and NTMs seem to be complements. The effect also differs across sectors: for more advanced (higher value added) sectors two types are substitutes while for more traditional sectors (food, wood, textiles) application of NTMs is complementary to application of tariffs.

Disaggregated analysis of specific non-tariff barriers also seems to produce ambiguous results. While Bown and Tovar (2007) find that preceding decline in tariff rates on average increases likelihood of introduction of anti-dumping and safeguard measures in India, the effect differs across sectors. Moore and Zanardi (2011) study the relationship between the use of antidumping measures and the

changes in the applied sectoral tariffs. They use unbalanced panel with data for 36 countries over the period from 1991 to 2002 and find that antidumping procedures are used as substitutes for tariffs only by countries who use this type of trade policy tools a lot (more than 50 AD procedures over the period). The substitution effect is absent in other countries.

Economists agree that trade policies are not formulated in vacuum. One of the first studies of the determinants of the trade policy is written by Ray (1981). He uses data on the U.S. trade policy in 1970 and finds that both tariff and nontariff trade restrictions are primarily introduced in sectors where the U.S. has comparative disadvantage, for example, unskilled-labor intensive industries. Ray (1981) also points out that electoral concerns seem to play important role in determining trade policy as well: sectors that are “distributed across regions of the United States in a fashion consistent with the distribution of population and, therefore, voting power in Congress”.

Researchers also compared institutional settings in which trade policy is formulated. The institutions affect trade policy usually through either empowerment of special interests or reduction of their influence (e.g. Baldwin, 1986; Rogowski, 1987, Busch and Mansfield, 1995, Grossman and Helpman, 2005). Such institutional settings as electoral systems, number of political parties, and size of constituencies seem to be important determinants of trade policy (e.g. Hatfield and Hauk, Jr, 2003).

Economic theory has offered several directions to explain the decision to use or not to use particular policy tool. Political economists view governments’ decisions on specific policy as maximizing an objective function of the form:

$$G = aW + C$$

The objective function is broadly composed of two terms: W is aggregate welfare and C is some sort of private interest. In Grossman and Helpman (1994) the second element consists of campaign contributions. In general, the second element could be anything that increases either reelection probability of the politicians or serves personal welfare.

Hence, depending on how much governments care about aggregate welfare, their policy decisions can be not welfare improving and driven by other motives. Gawande et al. (2009) estimate the weight parameter, a , using data for over fifty countries and find that this parameter (the weight that governments place on aggregate social welfare versus their private interests) varies significantly across countries (from as low as 0.6 for Nepal to as high as 404.3 for Singapore).

Introduction of any non-tariff barrier can also be analyzed using this approach: that is imposition of an NTB can be thought of being driven by several motives. In case of SPS and benevolent government, the leading concern of the government would be aggregate welfare, and in particular, human health protection. Existing empirical evidence points to other motives behind the decisions of the government to introduce or make stricter SPS measures. Below, we discuss the intuition and empirical studies on the possible motives of the government.

2.1. Health related concerns

Sanitary and phytosanitary measures in general are used to ensure that food consumed in the country (whether domestically produced or imported) is safe for human health, as well as that animal and plant health is not endangered (WTO)⁴. There are several approaches suggested in the literature. One approach suggested by Kono (2009) is to identify sectors that are similar to those with SPS measures: if SPS measures are not applied to similar sectors, then this questions the public health concern behind SPS application.

Another approach that was used by Aisbett and Pearson (2012) is to use proxies for the level of health and environmental consciousness of the countries when studying the determinants of the SPS. In particular, the authors used two types of indices: Environmental Performance Index (EPI) and Environmental Sustainability Index (ESI). They find that introduction of SPS measures is correlated with higher levels of environmental quality as proxied by these two indices.

2.2. Protection of domestic producers

According to the WTO rules, the SPS measures should not be used as protectionist tools. However, many trade economists suspect that SPS measures are often used to favor domestic producers “in the guise of ensuring human, animal, or plant safety” (USTR, 2013).

When TBTs and SPS measures are used to protect domestic producers they will have similar determinants as traditional tools like tariffs and quotas. In general these determinants can be classified into several groups.

Macroeconomic factors

NTBs can be used to address problems created by macroeconomic shocks (Olarreaga and Vaillant, 2011).

Gawande et al. (2011) examine the determinants of the trade policy for a number of countries including BRICS (excluding Russia), Argentina, Mexico and Turkey in the aftermath of the global crisis. The primary dependent variable in their analysis is bilateral tariffs at the 6-

⁴ www.wto.org

digit HS level. They show that global crisis did not lead to increased protectionism primarily due to interlinkages between firms in the global world. Vertical integration of foreign and domestic firms is associated with a lower level of protectionism.

Stronger domestic currency (exchange rate appreciation) with respect to the currency of a trading partner increases the probability of observing an antidumping or safeguard measure against this trading partner (Moore and Zanardi, 2011; Olarreaga and Vaillant, 2011).

A similar effect on the likelihood of an NTM can be expected from the current account. If the current account is in deficit this would make policy makers more protectionist. Empirical evidence suggests that the effect varies across countries: while antidumping petitions are more frequent under negative current account in developed countries, the effect is positive for developing countries. (Moore and Zanardi, 2011).

Mansfield and Busch (1995) also use macroeconomic variables to study the likelihood of the imposition of an NTB by a country. The dependent variable measured as the share of inputs subject to NTBs is found to be influenced by unemployment and real exchange rate: higher unemployment and appreciated real exchange rate are associated with higher incidence of NTBs.

Weak industries

Similar to tariffs, governments are found to use NTMs to protect weak industries that face increased import competition (Lee and Swagel, 1994; Thornsby, 1999).

Increased import competition proxied with the imports growth and import penetration ratio seem to increase probability of the anti-dumping petition and consequent favorable ruling (Moore and Zanardi, 2011).

Political factors:

Political determinants of trade policy (an SPS in particular) are related to the reelection motives of the politicians. Industries that employ significant amounts of labor are more likely to be protected since policies that favor these industries will ensure many votes for the politicians. Another factor is geographic concentration of the industry makes it more attractive for the politicians since it is easier for the management to monitor whether its employees vote in the elections (Busch and Mansfield, 2007). Hence more geographically concentrated industries are more likely to be protected (empirical evidence in McGillivray, 2004 and Busch and Reinhardt, 1999).

It is widely recognized that a key to whether an industry obtains protection is the extent to which it is able to organize politically. The organized industries can ensure favorable policy through campaign

contributions (e.g. Goldberg and Maggi 1999; Gawande and Bandyopadhyay 2000). While in the seminal paper developed by Grossman and Helpman in 1994, industry organization was exogenous, later papers endogenize this process and show that more concentrated industries or industries populated with large firms are better able to get organized by overcoming free rider problem and hence receive more protection (e.g. Bombardini, 2008).

Vertical integration of the industry into global markets

Global supply chains allow placing production stages in different countries. In this case “protecting a stage of production is different from protecting the market for a good with no production sharing” (Gawande et al., 2011). The difference occurs because such protection increases the cost of intermediates for the overseas or domestic producer who uses them as inputs and hence lowers his demand for these intermediates. Thus if industry is highly integrated in the global value chain of production, then one would observe lower level of protection of this industry. Gawande et al., (2011) test this prediction using two measures of the vertical specialization. The first measure uses the share of imports in a sector that is used directly and indirectly in the country’s own exports. The second measure is defined as the proportion of a sector’s exports used as intermediates by exporters in other countries. Their results suggest that firms sectors integrated in the global value chains are less likely to be protected.

2.3. Political pressure on trading partners

The majority of the existing studies concentrate on the second group of factors related to protectionism. While we think protection of domestic producers is an important motive for policy makers we also believe that trade policy and SPS measures in particular can be used for exerting political pressure on trading partners. Since non-tariff measures are often introduced by various agencies behind closed doors these measures are much less transparent and can be easily manipulated.

If the underlying reasons behind the decision to impose trade barriers are either to punish a trading partner or exert political pressure, the determinants of the sector choice, where the new barrier is introduced, differ from protectionist drivers. In this case, one would not observe any previous ‘threat’ from the trading partner in the form of lower prices or increased quantity. Here the choice is not whether to impose a new NTM but rather where (which sector). Therefore, the vulnerability of trading partners to the measures imposed is the main driver of the choice. This vulnerability is defined by sector characteristics:

Importance of host country market for exporting country

If market of the host country accounts for a large share in total exports in a specific category than in case of application of an NTM (and SPS often come in the form of complete ban on imports) foreign exporter will incur large losses. And is the goods in this category which became

subject of an NTM constitute large proportion in total exports of the foreign country, the effect may be damaging. Hence if political pressure motive dominates one would expect to observe SPS in sectors which are important for the foreign country. At the same time, if imports are vital for the host country or if the trading partner is very important host country may decide not to impose SPS measures against important trade partner or against vital imports. Therefore it is important to control for these factors as well.

As preliminary evidence, Table A1 in Appendix lists 4-digit sectors affected by SPS measures (which are primarily in the form of complete bans) and importance of Russian market for Ukrainian exporters. In all sectors, the share of the Russian Federation is close or exceeds 20 percent, and in some sectors it is above 80 percent making Ukrainian exporters very vulnerable to such ‘sudden’ stops of exports into the RF.

Substitutability of affected imports with domestic production or imports from other countries

Broda et al. (2008) estimate disaggregated foreign export supply elasticities and find that countries that are not members of the World Trade Organization systematically set higher tariffs on goods that are supplied inelastically. That is market power, which is inversely related to export supply elasticity, allows countries to ‘protect’ these sectors using trade policy tool (tariff). Obviously, market power argument can also be used for political pressure explanation of SPS application: host country is more likely to impose SPS where it is less harmed (has higher market power).

Vulnerability of exports to delays (how perishable goods are, etc.)

Goods that are sensitive to delays would naturally be a target in case of a trade war. Sensitivity is determined by the goods characteristics. Since SPS measures apply primarily to food categories, a natural factor to consider would be how perishable the goods supplied are. If there is a sudden barrier to exports non-perishable goods can be stored until the barriers removed or directed to another market.

Our empirical model outlined in the next section takes into account these three groups of factors that potentially affect the decision of the policy makers whether to use SPS and if yes in which sectors.

3. Econometric Analysis

We will follow the approach used in the literature (e.g. Kono, 2006; Aissbett and Pearson, 2012) to investigate the relationship between SPS measures with other consumer health variables. If SPS measures are correlated with proxies for consumer pressures, such as domestic health and environmental regulations, then primary motive is likely to be consumer protection. If on the other hand they are correlated with the other groups of factors of more traditional trade barriers such as

quotas and import licenses, then such measures are protectionist and political in disguise.

In order to study the determinants of the decision to introduce a new SPS measure we use data on notifications about SPS measures. Researchers primarily use two available datasets on SPS: importing country's notifications to the WTO and exporting countries' concerns about the SPS measures in their countries of destination. While it is appropriate to study the effect of SPS measures on exports using SPS concerns database (e.g. Besedina, 2014), in this paper the data on notifications are more suitable since we investigate the factors that are driving introduction of new SPS measures. Not all SPS measures would cause concerns among the trading partners and hence if we were to use SPS concerns we would miss many measures that were announced/introduced. Also since SPS measures that do not raise concerns might be viewed by countries as 'fair' and caused by health concerns, using concerns data would lead to selection bias. Another reason why we think that notifications are more useful in our analysis is that there is often a time lag between introduction of a measure and time when concern is raised by a trading partner.

Our empirical model specifies the decision to introduce an SPS measure as a function of three groups of factors described in Section 2.

$$SPS_t = f(\text{Health concerns}_{t-1}, \text{Protectionism factors}_{t-1,t-2}, \text{Political pressure factor}_{t-1})$$

Our dependent variable is a binary variable equal to 1 if an SPS measure was imposed in the specific sector against specific country(ies).

The set of the explanatory variables include three groups of variables classified according to the motive of the SPS application.

The first group consists of a health concern proxy, while the second group is more numerous and includes macro-factors and import competition. Unfortunately, we cannot include the real exchange rate since data on real bilateral exchange rates are not available at the data frequency (quarterly) that we use in the paper, however. Also the data for the domestic industries in Russia (production, import penetration) at the 4-digit level of HS classification are not available to construct variables related to reelection probabilities. Following previous literature (e.g. Aisbett and Pearson, 2012; Ronen, 2014) we construct variable *Tariff Overhang* as the difference between the bound and applied tariff for each country/product observation. It is included in group 2 since, the smaller overhang would imply lower scope for tariff application and hence if the relationship is negative, than negotiated tariff reductions can be viewed as a driver for SPS (Aisbett and Pearson, 2012). The coefficient on this variable can also be interpreted as measuring the degree of substitution between SPS and tariffs (Ronen,

2014). The third group of variables represents sectoral characteristics. All explanatory variables and expected signs are discussed in Table 1.

To estimate the coefficients of our model, we use a conditional logit methodology. This is motivated by the fact that our dependent variable is binary (one if there is a measure, zero otherwise) and by the fact that we want to include a country fixed effect to capture possible omitted variables that are country-specific but do not vary over time. Given that the conditional logit model estimates coefficients by comparing states with and without measures for given countries, countries that never have been 'sanctioned' by Russia drop out of the sample.

TABLE 1. Determinants of SPS

Health concerns		
Environmental proxy	-	More stringent standards in Russia relative to its trading partner will make application of SPS measure more likely if government cares about citizen's health
Protectionism		
Import volume growth	+	Increased imports pose threat to domestic producers and hence if government will be more likely to use trade policy to restrict undesired imports
Imported price growth	-	Decrease in price of imported goods can signal of potential dumping and hence host country will be likely to impose a trade barrier
Trade balance	+	Positive bilateral trade balance implies that imports exceed exports
Tariff overhang	-	The smaller the difference between bound and applied tariff rate the less scope the government has in applying tariffs and hence more likely the application of NTMs is.
Political pressure		
Market importance for foreign country	+	Larger the share of the host country market in the exports makes trading partner more sensitive to trade barriers imposed by host country
Sector importance for foreign country	+	Similar as above
Partner importance for host country	-	If a trading partner accounts for a large share in host country's trade the imposition of NTBs may hurt trade relations and hence is less likely
Partner importance in the sector	-/+	Similar argument as above: if imports are vital for the host country, the latter may decide not to impose and NTB. On the other hand, partner importance in the sector is related to market importance for the trading partner exporters and hence can be positively correlated with SPS measures.
Inverse Export Elasticity	+	The higher the inverse export supply elasticity, the higher the market power Russia has in a particular sector.
Perishability	+	As discussed above, more perishable goods are more vulnerable to trade barriers

4. Data description

Data on sanitary and phytosanitary measures come from the WTO database, SPS Information Management System. According to the WTO agreement on SPS each member country is required to notify the WTO about the changes or additions to country's SPS regulations. Countries reports two types of notifications: regular and emergency. The first type of notifications mainly refer to routine (often planned) changes in the SPS regulations within member countries while emergency notifications are supposed to be used as ad hoc measures to deal with, for example, disease outbreaks. Majority of the measures are officially initiated by Rosselkhoznadzor (The Federal Service for Veterinary and Phytosanitary Supervision) responsible for veterinary and sanitary control. Overall, since accession to the WTO, Russian Federation made 81 notifications (As of November 1 2014)⁵. Emergency notifications account for more than half of all notifications (43 notifications). We focus our attention on the SPS measures which are applied against specific countries and use bilateral data and hence we exclude SPS measures which are applied to all trading partners.⁶

The data for determinants of the SPS measures come from various sources. Trade and tariff data come from the International Trade Center. Trade data include quarterly bilateral data on the value of imports as well as physical quantity of imports into Russian Federation disaggregated at 4-digit level.⁷ Since SPS measures are very specific policy tools and they do not apply to many sectors we limit our sample to sectors where SPS can be applied. Our sample includes all 4-digit sectors with codes 0101-2403.⁸ Tariff data include data on bilateral tariff rates applied by Russian Federation towards its trading partners and bound tariff rates to which Russia is committed according to international trade agreements.⁹ Applied tariffs vary from zero to as high as 579.72% (applied to imports of Ethyl alcohol & other spirits, coded 2207).

Foreign export elasticities for Russian market are estimated by Broda et al. (2008) under Armington assumption that goods are

⁵ We count only notifications about new measures according to the official numbering by the WTO. Each notification (either regular or emergency) has official number of the form G/SPS/N/RUS/29. Countries also notify about changes in the measures previously notified by them. These types of notifications are coded as amendments to the existing notifications and have numbers of the form G/SPS/N/RUS/29/Add.1.

⁶ Overall there were 27 notifications about SPS measures that are applied to all trading partners many of which were related to Customs Union harmonization. Since SPS measures that are applied to all trading partners are more likely to be driven by health and safety concerns we should be cautious in the interpretation of our results and keep in mind possible selection bias.

⁷ Downloaded from www.trademap.org

⁸ According to 2007 HS classification.

⁹ Downloaded from www.macmap.org

differentiated by country of origin.¹⁰ It should be noted that elasticities were estimated prior to Russia's accession to the WTO and hence the estimated coefficients should be treated with caution.

Following Aisbett and Pearson (2012) we also use the Environmental Performance Index (EPI) but do not use the second index ESI which is available only for 2005.¹¹ We use EPI to construct an indicator which shows the difference between Russian environment performance and environment performance of its trading partner and is defined as the ratio of trading partner with respect to the indicator of the RF. We hypothesize that if the RF is motivated by health concerns than it is more likely to impose SPS measures against countries which are worse than RF in environmental performance.

To test the vulnerability hypothesis we use trade data to construct trading partner share in total imports of the RF. Categorical variable perishable takes on three values: 0 if goods supplied are non-perishable, equal to 1 if semi-perishable and 2 if perishable.¹² We include separate dummies for the last two categories in our econometric analysis.

Our sample contains almost 14,500 of country/product/quarter observations. Descriptive statistics is presented in Table 2.

The countries in our sample that had positive trade with Russia were net exporters to Russian Federation in foodstuff trade. There is a significant time variation in the imported quantity and unit price of imports, though on average there was a decline in quantity and prices of imports. Countries in the sample also have very different environmental scores and on average have higher scores than Russia. In some sectors single trading partners supply the entire Russian market of a specific category of goods. Also there is a large variation in the importance of the sectors for exporting countries but on average shares of each 4-digit sectors in total exports of trading partners are rather low (less than 0.2 percent) which is expected at such level of disaggregation. More than 30 percent of 4-digit sectors in the sample are classified as semi-perishable (25 percent) or perishable (7 percent). Even though in theory, the share of Russian market should not exceed 100 percent of the exports of a trading partner in a specific sector we do observe in the data some cases where this number exceeds 100. There are two plausible explanations for this fact. First, we do not take into account re-export data and hence large numbers can be evidence of trading partners re-exporting goods into Russia. Second, since we use quarterly

¹⁰ Downloaded from <http://www.columbia.edu/~dew35/TradeElasticities/TradeElasticities.html>

¹¹ For detailed description of the indicators see <http://epi.yale.edu/> (EPI).

¹² To construct this variable we use information from <https://nationalvetcontent.edu.au/>.

data there could be some noise in the data. To see if the outliers are important we estimate our model on full sample and on reduced sample without outliers (observations where ‘Market importance for exp country’ exceeds 200 percent, overall slightly more than 200 observations were dropped). The results do not change at all and our analysis we proceed with reduced sample described in Table 2.

TABLE 2. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
SPS (dummy)	14476	0.01	0.09	0	1
EPI ratio	14476	129.78	22.51	58.4	154.6
%Δ in imported qty, from t-2 to t-1	14476	-51.70	59825.68	-2314276	5186208
%Δ in unit value, from t-2 to t-1	14476	-4.46	1676.42	-170073.5	90645.3
Tariff overhang	14476	2.08	10.00	-39.10	80
Trade balance at t-1	14476	10.10	1.95	0	13.59
Market importance for exp country, t-1	14315	10.41	23.46	0	199.44
Sector importance for exp country, t-1	14458	0.19	0.71	0	15.46
Partner share in total imports, t-1	14476	2.73	3.29	0	12.7
Partner share in the sector, t-1	14476	5.06	11.16	0	100
Inverse Export Elasticity	13763	8.83	38.90	0.0	1254.5
Semi-perishable (dummy)	14476	0.25	0.44	0.0	1
Perishable (dummy)	14476	0.07	0.25	0	1

5. Results

We estimate several specifications of our empirical model. The estimation results are presented in Table A2 in Appendix. We start with two traditional groups of determinants: welfare improvement (health concerns) and protectionist. The results are reported in column (1) and (2) in the table. In the first specification we use change in quantity and unit price from $t-1$ to t , while in the second we allow for sluggishness in the decision making by using change from $t-2$ to $t-1$. In both specifications, the proxy for difference in environmental quality (*EPI ratio*) is highly statistically significant but has unexpected sign. Since lower values of the proxy correspond to countries with lower than the RF’s environmental values SPS measures are more likely to be introduced against countries with higher environmental standards. Hence, the results seem to go against the claims that SPS measures are imposed due to health concerns. The odds ratio for net trade balance is around 1.30, which implies that 1% increase in net imports increases the odds of SPS application by more than 30%. In other words, the larger the net

imports in the specific sector the more likely that in this sector an SPS is introduced. Contrary to Aisbett and Pearson (2012) we do not find statistically significant relationship between tariff overhang and application of SPS measures. Also, the coefficient on the change in the unit trade value is not as it would be expected if policymakers were driven by protectionist concerns: SPS measure is more likely to be imposed where the unit price actually increased (in both time periods) but the effect is extremely small as the odds ratio is practically 1, implying that 1% increase in unit value of imports is associated with less than 0.1% change in odds.

Next we add variables from the third groups of determinants to the base specification. The first subgroup includes the variables that control for importance of the exports/imports in a specific sector for a trading partners/Russia (column (3)). Three out of four variables are statistically significant: sectors which account for larger share in trading partners sectors are more likely to be 'punished' with a trade barrier in the form of an SPS measure. The odds ratio is 1.19 meaning that each additional 1% increase in the share of sector in total exports of trading partner raises the odds of observing SPS measure in this sector by 19%. The other two variables that are used as controls also have expected signs: the Russian Federation seems not to impose SPS measures against important trading partners (one percent increase in partner's share in bilateral trade decreases the odds of SPS application by 80%). Also increase in the partner's share in the total imports in the sector is associated with 2% increase in odds of observing SPS which implies that this variable is related to market importance for trading partner. The other factors (environmental proxy, change in unit price and trade balance) do not lose their significance while magnitude of the effect does change, especially for environmental variable (the odds ratio drops from 11.8 to 3.7).

In column (4) we test market power hypothesis introducing inverse export elasticity in the base specification, which turns to be insignificant. As in the previous case, factors that were important in base specification do not lose explanatory power and the odds ratios are practically unchanged in the magnitude. And, finally we test sector vulnerability to delays (column (5)). As results show, SPS measures are more likely to be introduced in sectors with more perishable goods: when goods switch from non-perishable category to semi-perishable and to perishable the odds of having SPS measure are multiplied by a factor 3.12 and 4.58, respectively.

Columns (6) reports results for specifications where all variables are included. The results are practically unchanged with all statistically significant factors from other specifications retaining their explanatory power. Previous studies pointed out to significance of macroeconomic factors for trade policy determination (Moore and Zanardi, 2011; Olarreaga and Vaillant, 2011; Aisbett and Pearson, 2012). To control

for these factors we include quarterly time dummies (specification (7)). Once time dummies are included, health concerns proxy, trading partner importance and change in unit price lose their significance, while other factor are not affected by inclusion of time dummies.

In our analysis we used data on both types of notifications: regular and emergency notifications. While regular notifications are usually planned beforehand and often are related to changes in domestic SPS regulations, one can suspect that emergency notifications are more likely to be used in the opportunistic trade policy. To verify if type of notifications matters, we rerun specifications (6) and (7) for emergency notifications which can be quickly imposed and potentially can be used for other than health protection motives. The results of the estimation are presented in column (8) and (9), respectively. Emergency notifications seem to be also driven by the same factors that influence the introduction of all SPS measures. It is not surprising that the factors that are important for all notifications, also determine decisions on emergency notifications, which account for the majority of observations in our sample.

6. Concluding remarks

With the reduction in tariffs that followed major trade negotiations rounds in Uruguay and Doha, the international trade is still far from being 'free'. Instead of traditional tools, countries around the world started to use more actively so called non-tariff measures. A subset of these measures, known as sanitary and phytosanitary (SPS) standards, has been named by exporters as the most important barrier to trade (UNCTAD, 2010). In general, SPS measures are designed to ensure food, animal and plant safety. But is the application of these measures against foreign companies always justified?

In this paper, we study the factors that affect introduction of SPS measures by the Russian Federation against its trading partners. According to the Global Alert database, Russia is one of the most active users of non-tariff barriers in the world. For our analysis, we use the WTO database with official notifications about SPS measures introduced by member-countries. Our results suggest that factors that are related to protection of domestic producers and, more importantly, to political pressure appear to be important determinants of Russian SPS measures. Thus, the Russian Federation seems to apply SPS measures to sectors where it is a net importer and to sectors which are important for trading countries and to goods which are vulnerable to delays. Contrary to other studies (e.g. Aisbett and Pearson, 2012) we do not find any relationship between tariff overhang and application of SPS measures, suggesting that for Russia tariffs and SPS measures are not related.

As our findings suggest Russia's SPS measures seem to be used for other than human and animal protection motives. In the globalized world the role of international trade institutions such as the WTO is to ensure that all countries avoid arbitrary or unjustifiable application of such measures. As Kono (2009) points out, it is the challenge for the WTO to ensure that SPS measures are used to protect public health and safety but are not abused.

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Appendix

TABLE A1. Ukrainian exports affected by SPS measures introduced by the RF and the share of Russian market in the Ukrainian exports in the sector

HS code	Product category	Russia's share in Ukraine's exports in the sector
'0402	Milk and cream, concentrated or sweetened	30.13
'0404	Whey and natural milk products nes	23.49
'0405	Butter and other fats and oils derived from milk	45.39
'0406	Cheese and curd	86.80
'1702	Sugars, nes, incl chem pure lactose etc; artif honey; caramel	37.47
'1704	Sugar confectionery (incl white choc), not containing cocoa	43.00
'1806	Chocolate and other food preparations containing cocoa	61.54
'2001	Cucumbers, gherkins and onions preserved by vinegar	87.25
'2002	Tomatoes prepared or preserved	83.78
'2004	Prepared or preserved vegetables nes (incl. frozen)	46.46
'2005	Prepared or preserved vegetables nes (excl. frozen)	63.31
'2007	Jams, fruit jellies & marmalades	42.58
'2008	Preserved fruits nes	19.53
'2009	Fruit & vegetable juices, unfermented	49.00
'2203	Beer made from malt	69.76
'2208	Spirits, liqueurs, other spirit beverages, alcoholic preparations	52.14

Appendix

TABLE A2. Estimation results for conditional logit model, odds ratios are reported

Group	VARIABLES	(1)	(2)	(3)	(4)	(5)
Health concerns	EPI ratio	11.801*** [6.963]	9.045*** [4.987]	3.739** [2.062]	9.609*** [5.410]	8.982*** [4.962]
	Protectionist motives Import competition	%Δ in imported qty, from t-1 to t [0.000]				
	%Δ in unit value, from t-1 to t [0.000]					
	%Δ in imported qty, from t-2 to t-1		1.000 [0.000]	1.000 [0.000]	1.000 [0.000]	1.000 [0.000]
	%Δ in unit value, from t-2 to t-1		1.000** [0.000]	1.000* [0.000]	1.000** [0.000]	1.000* [0.000]
	Trade balance at t-1	1.335*** [0.080]	1.380*** [0.084]	1.401*** [0.089]	1.413*** [0.090]	1.262*** [0.078]
	Tariff overhang	0.995 [0.009]	0.994 [0.009]	0.995 [0.009]	0.996 [0.009]	0.990 [0.009]
Political pressure Importance	Market importance for exp country, t-1			1.002 [0.003]		
	Sector importance for exp country, t-1			1.192** [0.093]		
	Partner share in total imports, t-1			0.195*** [0.054]		
	Partner share in the sector, t-1			1.020*** [0.007]		
Market power	Inverse Export Elasticity				0.998 [0.005]	
Sensitivity	Semi-perishable					3.115*** [0.666]

	Perishable					4.575*** [1.289]
	Conditioning group	Country	Country	Country	Country	Country
	Time fixed effects	No	No	No	No	No
	Observations	14,115	14,476	14,315	13,763	14,476

Note: SE in the brackets, *** p<0.01, ** p<0.05, * p<0.1

TABLE A2. (continued)

Emergency SPS

Group	VARIABLES	(6)	(7)	(8)	(9)
Health concerns	EPI ratio	3.984**	3.295	4.231**	4.202
		[2.257]	[3.551]	[2.668]	[8.120]
Protectionist motives Import competition	%Δ in imported qty, from t-1 to t				
	%Δ in unit value, from t-1 to t				
	%Δ in imported qty, from t-2 to t-1	1.000	1.000	1.000	1.000
		[0.000]	[0.000]	[0.000]	[0.000]
	%Δ in unit value, from t-2 to t-1	1.000*	1.000	1.000	1.000
		[0.000]	[0.000]	[0.000]	[0.000]
	Trade balance at t-1	1.299***	1.382***	1.278***	1.355***
	[0.090]	[0.107]	[0.092]	[0.110]	
	Tariff overhang	0.992	0.996	0.981	0.985
		[0.009]	[0.010]	[0.012]	[0.013]
Political pressure Importance	Market importance for exp country, t-1	0.999	0.998	0.999	0.997
		[0.004]	[0.005]	[0.004]	[0.005]
	Sector importance for exp country, t-1	1.253***	1.271***	1.271***	1.329***
		[0.103]	[0.115]	[0.107]	[0.124]
	Partner share in total imports, t-1	0.206***	0.682	0.207***	0.675
	[0.058]	[0.224]	[0.059]	[0.238]	
	Partner share in the sector, t-1	1.020***	1.020**	1.019**	1.019**
		[0.007]	[0.008]	[0.008]	[0.008]
Market power	Inverse Export Elasticity	0.996	0.997	0.998	0.998
		[0.005]	[0.005]	[0.005]	[0.005]
Sensitivity	Semi-perishable	2.867***	2.628***	2.458***	2.183***
		[0.654]	[0.641]	[0.595]	[0.570]
	Perishable	4.208***	4.285***	3.206***	3.189***
	[1.252]	[1.322]	[1.064]	[1.101]	

	Conditioning group	Country	Country	Country	Country
	Time fixed effects	No	Yes	No	Yes
	Observations	13,602	13,602	10,243	10,243

Note: SE in the brackets, *** p<0.01, ** p<0.05, * p<0.1

Case Study

The Impact of the Russian Import Ban on Ukrainian Confectionary Producers

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1. Introduction

At the end of July 2013, Roshen, the biggest confectionary company of Ukraine, was banned by Russia. The official explanation was that Roshen's products contained dangerous substances

“Rosпотребнадзор said in a report Wednesday that the decision on suspending the imports was taken in the wake of exposure of certain encroachment on the legislative requirements regarding sanitary and epidemiological protection /organoleptical indicators, toxic additives/ and the legislation protecting consumer rights /inconsistency of the information on the nutritional value of products placed on the labels/. The agency said, in part, that Roshen's milk chocolate contained benzo/a/pyerene - a substance having carcinogenic and bio-accumulative properties¹³”.

Roshen denied these claims¹⁴ and none of the other countries to which Roshen exports took any measures against its products. What's more, Belarus, Kazakhstan, Moldova and Tajikistan tested Roshen's product

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¹³ <http://itar-tass.com/en/russia/697983>

¹⁴ <http://www.roshen.com/en/news/corporate-news/korporacija-roshen-osucshestvljaet-svoju-dejatelnost-otkryto-i-v-ramkah-2326-2326-2326/>

and found no health risks¹⁵. Russia was the most important export market for Roshen.

Commentators have suggested two (complementary) reasons for this ban:

1. The ban was a retaliation against Ukraine imposing custom duties on cars imported from Russia¹⁶.
2. This ban was aimed at Roshen's owner, Petro Poroshenko, a potential candidate for the next Ukrainian president, and an open supporter of Ukraine's integration with the European Union (and not the Russia-led Customs Union)¹⁷.

At the end of October 2013, Ukraine brought the ban of Roshen products by Russia to the attention of the WTO Committee on Technical Barriers to Trade¹⁸. At the end of November 2013, there were some first signals that the ban would soon be lifted¹⁹, and at the end of December 2013, Russian health officials made public statements that the violations had been corrected and that in early 2014 the ban would be lifted²⁰.

The ban was not lifted, however, as the relations between Ukraine and Russia continued to deteriorate after the February 2014 Maidan Revolution. In September 2014, Russia banned all confectionary imports from Ukraine, mentioning violations of labeling standards by KONTI and AVK²¹, the two remaining major exporters of confectionary²².

¹⁵ <http://www.confectionerynews.com/Regulation-Safety/Roshen-chocolate-okayed-by-Moldova-Tadzhikistan-Kazakhstan-and-Belarus>

¹⁶ <http://www.rferl.org/content/russia-ukrainian-chocolate-ban/25060451.html>

¹⁷ http://www.nytimes.com/2013/10/30/business/international/ukrainian-chocolates-caught-in-trade-war-between-europe-and-russia.html?pagewanted=all&_r=0

¹⁸ <http://itar-tass.com/en/russia/706247>

¹⁹ <http://www.confectionerynews.com/Manufacturers/Russia-lifts-ban-on-Roshen-chocolate>

²⁰ <http://www.rferl.org/content/russia-food-ban-ukraine-chocolate-roshen/25210934.html>

²¹ http://www.rospotrebnadzor.ru/about/info/news/news_details.php?ELEMENT_ID=2333&sphrase_id=161089

²² Note that the Russian ban was not the only that faced Ukrainian exporters: in April-May, 2014 Belarus complicated customs clearance of confectionary goods forcing importers to increase their prices in order to protect Belarus producers - <http://www.capital.ua/en/publication/22835-ukrainskie-konditery-namereny-borotsya-za-mesto-na-vneshnikh-rynках-drugogo-vykhoda-net>

II. Some background on the Ukrainian Confectionary Market

Even before the ban, the Ukrainian confectionery industry was not doing that well, with gradually declining production volumes. As of 2013, Ukrainian producers exported more than 40% of their products (Table 1).

Table 1. Total production and exports of Ukrainian confectionary industry

Year	Production, '000 tons	Exports, '000 tons
2006	1001.6	281.0
2007	1084.6	336.4
2008	1116.9	373.9
2009	1068.3	383.4
2010	1088.4	437.2
2011	1066.1	438.4
2012	1074.9	438.8
2013	1003.9	423.2

Source: Ukrkondprom (2013)

As Figure 1 shows Ukrainian confectionary exports are highly concentrated both in terms of products and destinations as a substantial part of the production is being exported to the CIS countries, mainly to Russia and the main exported confectionary products are chocolates (HS code 180690). Market and product concentration are correlated, for example, around 60 percent of all Ukrainian exports in category “Chocolate and other food preparations containing cocoa” (HS code 1806) in 2012 were supplied to the Russian market, which also account around 34 percent of total Ukrainian confectionary exports. Given a high share of exports in total production, this makes Ukrainian producers very vulnerable to trade barriers in the primary destination markets.

Figure 1. Export destinations in 2012 and product concentration for confectionary industry (HS codes 1704, 1806 and 1905)

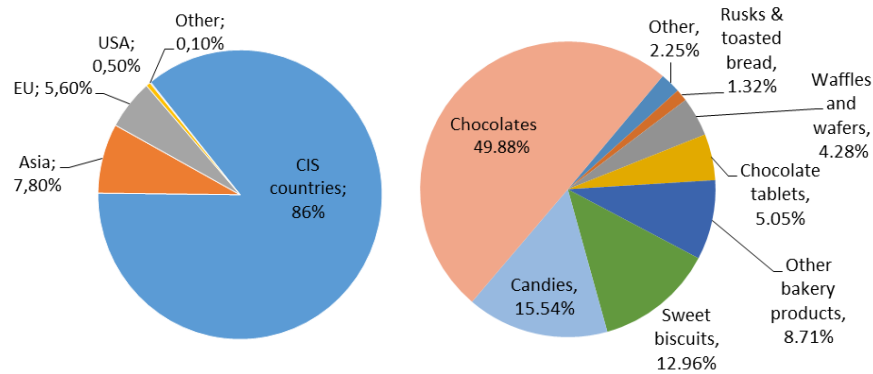
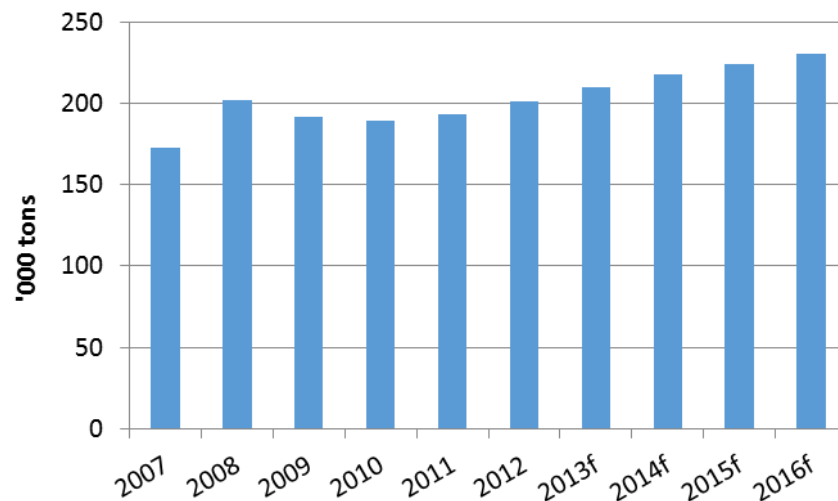


Figure 2. Chocolate Confectionary Market Size, in thousands tons

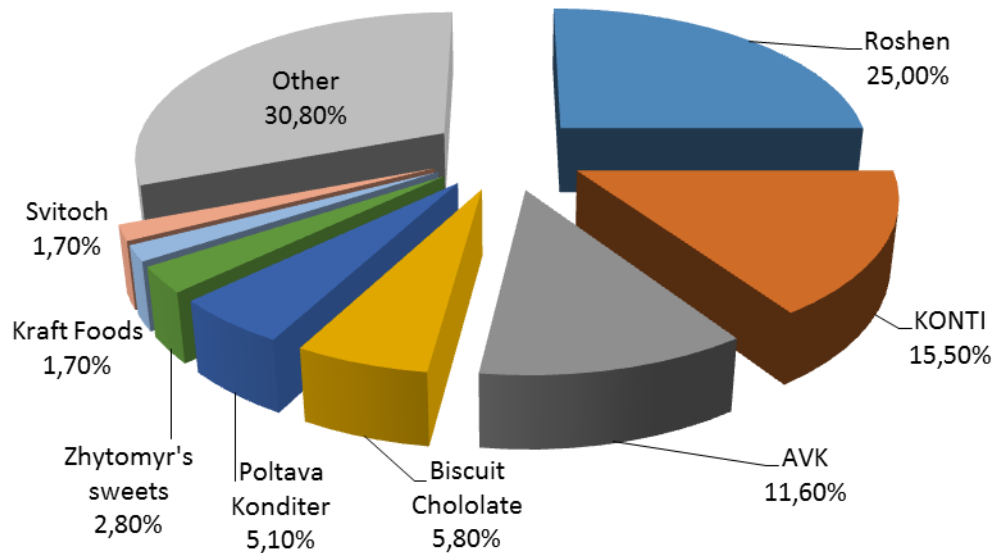


Source: Euromonitor (2012)

At the same time, the decline came mainly from sugar confectionary while the chocolate confectionary market was developing dynamically and was forecasted to continue growing. Euromonitor (2012) forecasted substantial growth in both volumes and value in the *chocolate* confectionary market (Figure 2).

There are several hundreds of confectionary producers in Ukraine with Roshen being by far the biggest player, followed by KONTI and AVK (Figure 3).

Figure 3. Distribution of confectionary market shares among producers as of 2012



Source: KONTI (2012)

III. The impact of the ban on the Ukrainian Confectionary producers

Roshen exported about 100,000 tons of sweets to Russia²³. Compared to its total production of 450,000 tons, this represented a significant share²⁴.

After the ban, some of the production was redirected to Ukraine:

“Mr. Moskalevskiy, the director, said. While the company has been able to redirect some chocolate to Ukraine, the drop in output shows Ukrainians can’t eat it all²⁵.”

This redirection was facilitated by the fact that the retail sector in Ukraine was growing and by the fact that Roshen expanded its own network of Roshen-branded shops.

“Under the Russia’s embargo, Roshen Corporation was able to increase sales of sweets in Ukraine, says Associate Director at EY

²³ http://www.nytimes.com/2013/10/30/business/international/ukrainian-chocolates-caught-in-trade-war-between-europe-and-russia.html?pagewanted=all&_r=0

²⁴ <http://www.roshen.com/en/about/general/>

²⁵ http://www.nytimes.com/2013/10/30/business/international/ukrainian-chocolates-caught-in-trade-war-between-europe-and-russia.html?pagewanted=all&_r=0

in Ukraine Oleksandr Romanyshyn. «The fact is that the number of supermarkets in Ukraine increased by more than 20% in 2013, which is one of the main driving forces of the growth in sales, in particular of confectionery products,» he explains. Roshen's own chain of stores, the number of which is growing is one of the most active retail sales channels. Based on the information on the company's website there are 18 stores in Kyiv, which is 38.46% more than a year ago²⁶.”

Still, the ban led to overcapacity:

“The company had recently invested in a robotic assembly line for a crushed hazelnut and dark chocolate candy that is popular in Russia. But since the ruling, the line is underused, though still making reduced quantities of a devilish little sweet, called Evening in Kiev, only not for the Russians²⁷.”

And already in late 2013, rumors started to appear that Roshen would fire 400²⁸ and even up to 1000 employees²⁹. But these rumors were denied by Roshen's owner, Poroshenko³⁰. Roshen did stop production in Mariupol in February 2014, however and closed its factory in May 2014³¹.

Overall, experts have estimated losses for Roshen of up to \$200 million³².

After the ban against all Ukrainian producers was introduced in September 2014, the owner of KONTI, Borys Kolesnyk, admitted that exports were being redirected to the domestic market but he did not expect this to affect prices negatively:

“Exports will decline twice due to the embargo to US \$300 mn. Kolesnyk admits that the domestic market accumulates the surplus of products... Kolesnyk believes the prices on the Ukrainian market will not fall. Due to the devaluation of hryvnya, the prices of

²⁶ <http://www.capital.ua/en/publication/29378-pokupatelyam-roshen-pozvoljat-vybrat-samye-sladkie-aktivy#ixzz3QCxUMxdE>

²⁷ <http://www.nytimes.com/2013/10/30/business/international/ukrainian-chocolates-caught-in-trade-war-between-europe-and-russia.html?pagewanted=all&r=0>

²⁸ <http://www.economist.com/news/europe/21583998-trade-war-sputters-tussle-over-ukraines-future-intensifies-trading-insults>

<http://www.themoscowtimes.com/business/article/report-says-ukraine-candymaker-roshen-to-cut-staff-following-russian-embargo/489026.html>

³⁰ <http://sputniknews.com/russia/20131107/184575125/Embargo-Hit-Ukrainian-Candymaker-Says-Workforce-Wont-Be-Cut.html>

³¹ <http://www.novostimira.com.ua/news-eng-107621.html>

³² <http://www.themoscowtimes.com/business/article/report-says-ukraine-candymaker-roshen-to-cut-staff-following-russian-embargo/489026.html>

ingredients rose significantly, so it is unlikely that manufacturers will lower their prices³³.”

Another reason why prices might not fall after the ban, is that several producers had to halt production at plants that were located in the areas that were affected by the military conflict between the Ukrainian army and separatists.

In July 2014, AVK stopped production at its Luhansk factory, in January 2015, it also stopped production in Donetsk. The largest production unit of AVK in Dnipropetrovsk continued operation³⁴.

Similarly, the owner of KONTI acknowledged that its company works only at 40% of its capacity, with employees being sent on unpaid leave³⁵.

IV. The Impact of the Export Ban on domestic prices

Economic theory predicts that the effect of the barriers to exports (either in the form of tariffs or other non-tariff barriers) on the domestic market will largely depend of the existing market structure. Under perfect competition, barriers to export lead to reduction of domestic price of the good that is subject to the barrier, as domestic supply exceeds domestic demand. There is anecdotal evidence from the recent experience of anti-sanctions imposed by the RF against the EU exports that bans did affect the price. For example, as the picture that appeared on social networks demonstrates the price for cheese in Finland did decrease.

However, under monopolistic competition, firms have several strategies to cope with the exports barrier/ban:

- Company can reduce output to avoid reduction in domestic price

Kiev.

 @obk

Meanwhile in Finland: 'Thank you Putin, our cheese is now much cheaper!' #sanctions
pic.twitter.com/CKTaqUN4Uv



³³ <http://www.capital.ua/en/publication/28814-konfety-non-grata-rossiya-otkazalas-ot-sladostey-ukrainskogo-proizvodstva#ixzz3QCYiLGZD>

³⁴ <http://www.capital.ua/en/news/39123-avk-ostanovila-fabriku-v-donetske>

³⁵ <http://www.capital.ua/en/publication/28814-konfety-non-grata-rossiya-otkazalas-ot-sladostey-ukrainskogo-proizvodstva#ixzz3QCYiLGZD>

- Company can diversify away from the affected market sell more to other markets decreasing exports price
- Company can do both.

As Figure 1 above demonstrates, half of Ukrainian confectionary exports are chocolate and related products, thus the effect of the should be felt more in the chocolate production. In many countries chocolate production is concentrated and dominated by large producers, while candy markets are more fragmented (Sutton, 1991). This is explained by the fact that fixed costs for chocolates production are found to be larger than the setup costs for candies production, e.g. in the UK the former are almost three times of the latter (ibid.).

Also from the statements by market participants above, we know that in Ukraine, confectionary companies had a hard time to replace the exports to Russia by exports to other countries. We also know that output decreased as factories got closed both because of the consequences of the ban (Roshen) and because of to the military conflict in Ukraine (AVK, KONTI).

Hence, given the above we hypothesize that Ukrainian confectionary market is characterized by monopolistic competition and would expect to observe only a small effect of the ban on local prices. In the case of Ukraine, different companies were hit by the export ban at different points in time. While Roshen was affected from mid 2013, other Ukrainian producers were only affected in September 2014. If the bans had an effect we should see differences in pricing between Roshen and the other Ukrainian producers in the first period (during which only Roshen was banned which should put downward pressure on Roshen's prices) but not or less during the second period when all export to Russia of Ukrainian confectionary was banned.

We do not compare the Ukrainian (domestic) companies to the foreign competitors on the local market since there was a substantial devaluation of the local currency, the Ukrainian Hryvnia, throughout 2014, which is likely to affect domestic and imported prices in different ways. At the same time, this devaluation caused an upward pressure on the prices of confectionary products as the prices of ingredients increased. This meant that all producers had a good excuse to increase prices, but a priori we expect that Roshen would increase its prices less given the ban on the export of its products to Russia.

Our data come from the main Ukrainian online supermarket, zakaz.ua. From this website, we scraped prices since January/February

2014³⁶. While this does not allow us to estimate how the mid 2013 ban immediately affected Roshen, we can compare the differences in pricing between February 2014 and the beginning of September 5, 2014 (when Russia only banned Roshen), with the differences in pricing between September 6 and the beginning of 2015 when all companies were subject to the ban.

As an example, we look at two nearly identical products: Roshen Kyiv Vechirniy (232 grams) and AVK Vechir Zoloty (225 grams), both similarly shaped chocolate candies with whole nuts, a traditional Ukrainian chocolate.



Source: Pictures are taken from the zakaz.ua website

The price, in the Metro supermarket at the beginning of 2014, of the AVK product was UAH 23.68, increased by 57% to UAH 37.24 by the end of August, and then increased a further 20% to UAH 44.9 by the end of 2014. Over the same time period, the Roshen version of (basically) the same chocolates increased from 29.98 UAH to 42.9 UAH (+ 43%) and then to 53.9 UAH (+25%). Hence, when only Roshen was banned, it increased its prices less than its competitor, while when both were banned the differences in the change in price was much less. This example suggest that the ban could be a potential explanation for Roshen's lesser increase in prices.

We next do a more extended analysis using all the products of the different brands for which we have data for both time periods. We have data for two retail shops in Kyiv – Metro and Fourchette. Table 2 gives the results for the data from Metro, while Table 3 for Fourchette.

³⁶ We had a preliminary agreement with zakaz.ua to give us access to data for earlier periods but unfortunately, they recently informed us they have no time to help us given the difficult economic situation in Ukraine.

Table 2. Prices and price evolutions at Metro

Brand	#	Start price	Δ Jan-Aug	Δ Sep-Dec
Roshen	81	13.73	1.33	1.21
AVK	27	24.47	1.23	1.21
KONTI	14	23.71	1.08	NA

Note: All prices and price changes are averages across the products of a given brand. Starting price is the price in January

We have 27 different AVK products and 81 different Roshen products for which we have data in both time periods. For Konti we only have data for the first period, as during the second periods Konti products disappeared from the shelves. Note that the array of products of all brands has shrunk substantially: at the beginning of 2014, there were about 200 Roshen products and about 70 AVK and Konti products (supermarkets generally reacted to the crisis by shrinking the range of products they sold³⁷).

Interestingly, Roshen offers, on average, cheaper products. Somewhat surprisingly, in the period, January-August 2014, when only Roshen products were boycotted, the average percentage price increase of Roshen products was bigger than the average percentage price increase of AVK. In the second period, the average price increases were similar for AVK and Roshen. One of the possible explanations for such average increase is that Roshen enlarged its assortments with more expensive products.

Similar results are found for the more upscale Fourchette (Furshet) supermarket. In Fourchette, we also have products of another Ukrainian producer, Zhytomyr's Sweets.

Table 3. Prices and price evolutions at Fourchette

Brand	#	Start price	Δ Jan-Aug	Δ Sep-Dec
Roshen	78	30.16	1.26	1.00
AVK	43	40.84	1.16	1.06
Konti	7	35.86	1.03	1.18
Zhytomyr's sweets	9	27.17	1.13	1.00

Note: All prices and price changes are averages across the products of a given brand. Starting price is the price in January

³⁷ <http://forbes.ua/business/1370806-opusteyut-li-polki-ukrainskih-magazinov>

Again, Roshen has the cheaper products (based on the median, Roshen products are also cheaper than Zhytmyr's products) but has bigger price increases in the period that only Roshen was banned.

Of course, given the difference in initial starting level (Roshen's average price is much lower) one could argue that the averages we compare are not relevant since the products are not comparable enough across brands.

To make observations more comparable, we next regress the change in prices on the initial price level to account for possible effects of price levels on price changes, and we include dummies for the type of products (candies, chocolate biscuit, and other).

Table 4a. Controlling for initial price levels (Metro)

	Δ Prices Jan-Aug	Δ Prices Sept-Dec
Price at the beginning of the period	0.0028*** (3.2)	0.0017*** (2.46)
Roshen	0.114*** (3.42)	0.008 (0.28)
Constant	1.14*** (27.9)	1.14*** (35.5)
#observ.	108	108
R ² adj.	0.12	0.09

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. AVK is based category, t-statistics in parentheses; robust standard errors are used and dummies for different types of products are included.

Table 4b. Controlling for initial price levels (Fourchette)

	Δ Prices Jan-Aug	Δ Prices Sept-Dec
Price at the beginning of the period	-0.00077** (-1.96)	0.0006* (1.85)
Roshen	0.09*** (3.04)	-0.056*** (-2.41)
Zhytomyr's sweets	-0.15*** (-3.04)	0.13 (1.15)
Constant	1.13*** (42.9)	1.07*** (30.6)
#observ.	137	137
R ² adj.	0.25	0.17

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. AVK is based category, t-statistics in parentheses; robust standard errors are used and dummies for different types of products are included.

The results for two supermarkets are presented in Tables 4a and 4b, respectively. Prices of both producers, Roshen and AVK increased over the periods under consideration which can be explained by sharp devaluation of Ukrainian currency and increase in price for major inputs. However, as we can see, even after controlling for initial levels, Roshen products have a significantly higher price increase in the first period (+ 11.4% for Metro and +9% for Fourchette) but not in the second period³⁸. Actually, the rate of change in Roshen prices for products sold in Fourchette was lower relative to AVK products over the second period when all producers were banned from the Russian market.

V. Concluding remarks

In this case study, we look at how Ukrainian confectionary producers reacted to the export ban imposed by Russia. Our findings seem to suggest that exports ban imposed by the RF did not have negative effect, consistent with perfect competition model, on the domestic price of the affected producer. On the opposite, the affected firm, Roshen, on average increased prices for its products. This finding is consistent with the explanation that adaptation to the ban went primarily through changes in the assortment of the products in the domestic market, as Roshen introduced higher quality (more expensive) products in its array. Our findings also seem to be consistent with our hypothesis that Ukrainian confectionary industry is characterized by monopolistic competition as the firms are able to differentiate their products from competitors. Thus, in line with economic theory, the adaptation to the ban did not go mainly through prices in 2014 but rather through changes in output. It should be noted that due to data limitation we could not analyze immediate effect of the ban which happened in mid 2013. Hence we cannot exclude that the main price effects might have happened earlier when the ban was introduced.

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³⁸ We get the same conclusion if we restrict the sample to candies only (n=54 for Metro and n=95 for Fourchette).

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