OPTP operačný program technická pomoc
EURÓPSKA ÚNIA EURÓPSKY FOND REGIONÁLNEHO ROZVOJA
ÚRAD VLÁDY SLOVENSKEJ REPUBLIKY
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Institute for Strategy and Analysis
Government Office of the Slovak Republic

19.05.2017

Economic Consequences of TTIP:
A Survey of Literature and Implications for Slovakia

Jan Fidrmuc (Brunel University and ISA, ÚV SR)
Martin Hulényi (ISA, ÚV SR)

This project is funded from the European Regional Development Fund.

Economic Consequences of TTIP: A Survey of Literature and Implications for Slovakia*

Jan Fidrmuc†, Martin Hulényi‡, and Katarína Rimegová§

May 19, 2017

1 Introduction

July 2013 marked the start of trade negotiations between the two largest economic entities: the United States of America and the European Union. The resulting trade agreement, the "Transatlantic Trade and Investment Partnership" (TTIP) should reduce tariffs as well as the non-tariff barriers (henceforth NTBs) on trade in goods and services between the US and the EU. If successfully concluded, it will affect approximately 42% of the world GDP, 33% of global trade in goods and 42% of trade in services. As of now, the negotiations have finished their 14^{th} round and the US administration hopes to conclude them before the end of Obama's term in office. This implies that the final rounds of negotiations may take place during the Slovak presidency of the EU.

The effect of lowering tariffs is likely to be limited, given that the tariffs that apply to the EU-US trade are already relatively low. According to Francois et al. (2013) the average trade weighted EU tariffs are significantly higher than the US ones in motor vehicles (8%) and processed foods (14.6%) sectors, compared to 3.7% percent US tariffs in the primary and 3.3% in the processed-foods sectors. The trade weighted tariffs for other sectors are around or below two percent. Fontagné et al. (2013), similarly, estimate the average ad valorem equivalent tariffs to be around 3% for services and 2% for manufacturing in the both EU and US, while the average tariffs on agricultural products are 6.6% in the EU and 12.8% in the US. Their analysis, correspondingly, concludes that either a full elimination of tariffs or their reduction by more than 95% would have only limited effects.

The economic impact of the reduction of non-tariff barriers, in contrast, is predicted to be more important. NTBs are barriers to trade that stem from national rules and reg-

*The views expressed in this paper are those of the authors and do not necessarily represent the official position of the Government Office of the Slovak Republic. The goal of ISA discussion papers is to encourage and contribute to an open discussion discussion on current issues. This paper did not undergo a language check.

†Corresponding author. Department of Economics and Finance and Centre for Economic Development and Institutions (CEDI), Brunel University; Institute for Strategy and Analysis (ISA), Government Office of the Slovak Republic; Institute of Economic Studies, Charles University; and CESIfo Munich. Email: Jan.Fidrmuc@brunel.ac.uk or jan@fidrmuc.net. Phone: +44-1895-266-528, Web: `http://www.fidrmuc.net`.

‡Institute for Strategy and Analysis (ISA), Government Office of the Slovak Republic, Email: martin.hulenyi@vlada.gov.sk.

§Institute for Strategy and Analysis (ISA), Government Office of the Slovak Republic, Email: katarina.rimegova@vlada.gov.sk.

ulations as well as border procedures rather than from imposition of tariffs or quotas. ECORYS (2009) estimates the NTBs in the trade between the US and the EU. The estimates combine previous finding regarding the NTBs between the US and the EU and the perceptions of NTBs based on a survey of 5,500 companies in both economic entities involved in transatlantic trade crosschecked with OECD data on trade restrictiveness, gravity regressions, consultations with sector experts and regulators, and regressions and simulations. The resulting NTB index (with lower values denoting lower NTBs) tends to be higher for the EU exports to the US than for the US exports to the EU. However, there is a significant difference in the perception of EU NTBs in goods and services, where the former is on average higher than the NTBs that the EU goods exporters have to face. On both sides of the Atlantic, the perception of NTBs in aerospace and space, chemicals, cosmetics, biotechnology and medical goods is the highest. Additionally, EU companies view the NTBs in communication and construction services as well as other business services and electronics production as relatively high, while US companies complain especially about the NTBs in pharmaceutical and textile industries. Based on these results, ECORYS (2009) finds that it is feasible to reduce NTBs by 50% on average, ranging from 69% in the communications services to 40% in electronics.

The reduction in NTBs is not without controversy, however, especially in the EU. The first problem concerns the sanitary and phytosanitary measures, which are politically sensitive in the EU. For instance, there is strong public opposition against allowing the imports of genetically modified organisms from the US and the US considers the EU ban on hormone-fed beef as being protectionist. Additionally, the US have import restrictions on EU bovine meat due to the mad cow disease. Second, the European countries assign great importance to geographical indications such as Parmesan cheese that reflect different gastronomic traditions in the EU, which do not exist in the US. Better protection of geographic indications in the US is one of the objectives of the EU negotiators. Third, it is discussed whether the reduction of NTBs in investment needs an arbitration system to solve discriminatory measures, as it would have limited judicial underpinning and could give foreign investors rights that domestic ones do not have. The latter is again a politically sensitive issue. Besides that, the EU has an interest in accessing the public procurement in the US. Furthermore, the EU companies are subject to a discriminatory taxation in the US due to the use of a distinct reporting system than the IFRS and both entities implement differently the Basel III regulations (Fontagné et al., 2013).

In section 2, we review the various studies that estimate the economic impact of TTIP. In doing so, we distinguish between studies that rely on computable general equilibrium models, and studies that utilize other methodological approaches (chiefly empirical analyses of trade). While section 2 estimates the overall impact from the point of view of all of Europe, in section 3 we present estimates addressing the specific impact of TTIP on the Slovak economy.

2 Overview of Estimates of TTIP Effect

2.1 Computable General Equilibrium Model Estimates

Several methodological approaches have been used to estimate the impact of TTIP (summarized in fig. 1, fig. 2 and fig. 3). The most common approach is the global trade analysis project (GTAP) computable general equilibrium (CGE) model of Francois et al. (2005)

designed specifically to assess the impact of trade policy. The latest GTAP version uses economic data for 114 countries and 20 aggregate regions, updated through to 2007, and can be used to to predict the long run impact (ten years) of trade policy changes.

The aforementioned ECORYS (2009) study makes a good starting point for our review as it considers the overall impact of concluding TTIP for the US as well as for the EU as a whole. As discussed above, ECORYS (2009) is concerned with identifying the feasible scope for reducing NTBs. Based on this, they present results of an ambitious scenario with a reduction of NTBs by 50% and a more limited scenario with a reduction of NTBs by 20%. In both scenarios, 2/3 of the NTBs are assumed to be rent-generating (such as the lack of recognition of professional qualifications for certain occupations between the two entities) and 1/3 as cost-generating (such as product standards). Their results suggest that the EU and the US GDPs would increase by 0.7% and 0.3%, respectively, in the ambitious scenario and by 0.3% and 0.1% in the limited scenario by 2018. Similar results are found for household incomes and wages. It is expected that exports should increase more in the US than in the EU (by 6.5% and 2.7%, respectively, in the ambitious scenario vs. 2.1% and 0.9% in the limited case). Looking at sectors, they predict a relatively large increase in output and exports of the US electrical machinery sector, whereas the main gains for the EU are to be enjoyed in the motor vehicles sector.

Kinnman and Hagberg (2012) use the same scenarios in their CGE model to look at the potential effects of TTIP on Sweden, using the NTBs estimates from ECORYS (2009). They find more modest results, with an increase of Swedish GDP by 0.09% over a period of ten years in the limited scenario and 0.18% in the ambitious scenario compared to 0.51% for the US and 0.22% for the EU. Looking at sector-specific effects, it is expected that TTIP should mainly increase the output of Swedish motor vehicles production, metallurgy, insurance services and food and beverages. In contrast, the output of aerospace and medicines/chemicals sectors is predicted to fall. Furthermore, TTIP is expected to have only marginal trade diversion effects. The results of similar projections by Francois and Pindyuk (2013) for Austria are more optimistic. In this study, the impact of TTIP occurs through changes in productivity. The authors expect an increase of GDP by 1.74% over ten years as well as an increase in wages by 1% and employment by 0.5% in the ambitious scenario. Furthermore, their results suggest a shift in production towards more capital intensive sectors, mainly motor vehicles.

Francois et al. (2013) extend the GTAP CGE model by accounting for the positive spillovers of TTIP on third countries. This is based on the assumption that the trade costs for the third countries fall due to the adoption of common standards in the EU and the US and that the third countries might even adopt the same standards themselves. They use the ECORYS (2009) estimates of NTBs to design two scenarios, one in which tariffs are reduced by 98%, NTBs% for goods and services are reduced by 10% and NTBs for public procurement are reduced by 25%, and a second one with full elimination of tariffs, 25% reduction in NTBs for goods and services and 50% reduction in NTBs in public procurement. Their findings indicate an increase of GDP by 0.48% in the EU and 0.27% in the US by 2027, with similar results for wages and household income. By including the spillovers, the negative output shock in the electronics sector becomes stronger in the EU and even the US experience a decline of output in this sector. An increase in the automobile sector (up to +1.54%) can be still expected for the EU, whereas the US can record improvements in particular in the other transport equipment sector.

A dynamic element, an increase in labor productivity as a result of TTIP, is added to

the GTAP CGE model in Erixon and Bauer (2010); they also incorporate a decline in trade facilitation costs rather than a reduction in NTBs. As a result of the reduction in trade facilitation costs by 3% and a labor productivity increase by 2%, the EU25 GDP is predicted to increase by up to 0.47% compared to a gain of 1.33% in the US. Once again, both economic parties experience a decrease of output in electronic machinery, and both benefit from an increase in the motor vehicles production.

Fontagné et al. (2013) combine the GTAP model with the Mirage model used by the EU for trade policy analysis. Instead of applying the ECORYS (2009) estimates of NTBs, they rely on Looi Kee et al. (2009) for the goods sector and on CEPII with respect to the service sector. The analysis yields a substantial increase of both EU and US exports (both are predicted to go up by around 50%) and an increase in GDP of both entities by 0.3%. Among the member states of the EU, the boost to GDP ranges from 0.4% in the UK and Germany to 0.2% in France and the new member states. What is interesting is that they find a higher increase in agriculture compared to the other two sectors for the US and the new member states. The trade diversion is again expected to be minimal. A robustness check using the ECORYS (2009) data for NTBs results in smaller gains in GDP, as the reductions in NTBs stipulated by ECORYS (2009) are lower.

An alternative model simulation is used by Capaldo et al. (2015) who criticize the CGE approach for its assumption that liberalization always leads to a new equilibrium. They employ instead the United Nations' Global Policy Model (GPM), in which income distribution determines economic activity. This simulation yields a decrease in the GDP growth in the EU members states, ranging from -0.03% in Italy to -0.5% in the Northern Europe. However, the model used by Capaldo et al. (2015) is criticized for not being transparent and for being based on an assumption that an economy can benefit from a trade agreement only if it generates net exports.

2.2 Structural Regressions Approaches

A different methodological approach was pursued by Felbermayr et al. (2013b,a). In these studies, the impact of TTIP is estimated by using structural regressions based on estimating a gravity model of bilateral trade flows among the 126 countries in the dataset. The analysis effectively compares trade among countries with preferential trade agreements with the so-called potential trade (i.e. trade that would prevail in the absence of such an agreement). Since economically more similar countries and countries with a history of close economic relations are more likely to be in a preferential trade agreement, these studies use 2SLS, where the instrumental variables are historical dummies denoting countries with common history (e.g. countries that were part of the same country, colonies of the same country or one was a colony of the other). A counter-factual scenario is then conducted by changing zeros to ones in the preferential trade agreement matrix between the EU and the US as well as, for comparison, between the EU and other big economies. The results point out to more substantial gains from TTIP than the ones obtained with the CGE analyses: an increase in GDP ranges from 9.7% in the UK to 0.03 % in Luxembourg (for Slovakia the gain is estimated as 4.21%). The main beneficiaries are the Nordic, Baltic and Southern European countries as well as the British Isles (see fig. 4). The authors attribute the gains predicted for these countries to the fact their welfare goes up as cheaper imports from the US replace imports from elsewhere in the EU. The US GDP is expected to increase by 13.4%.

The impact on the labor market follows the same pattern: employment effect ranging from +1.38% in the UK to +0.09% in Belgium and the effect on the wages ranging from 6.6% in the UK to 0.42% in Belgium (for Slovakia, it is +0.56% and +2.63% for output and wages, respectively). In the US, employment is expected to grow by 0.78% and wages by 3.68%.

Another difference concerns trade diversion, which is estimated to be substantial. Similarly, intra-EU trade is predicted to fall significantly.

Reinstaller et al. (2016) use a similar approach to look at the impact of TTIP on the trade in manufactured products between Austria and the US. The analysis does not control for endogeneity as the authors argue that they are not concerned with the potential trade flows but with the existing trade flows. According to their results, the main beneficiaries among Austria's sectors are expected to be the motor vehicles industry and the production of mineral goods. On the contrary, the authors anticipate a decrease in the exports of oil related products. A rather surprising result is that economies of scope tend to decrease the positive effect of the TTIP.

The difference between the the structural regressions approach and CGE simulations can be attributed to the fact that the former accounts for a reduction in trade costs other than tariffs and NTBs that include also currency, language, information and security related costs. The structural regressions approach assumes that the preferential agreements also have an impact on these as they lead to a deepening of the financial market and stimulate public and private investment Felbermayr et al. (2013b). A potential weakness of the structural regressions approach is that it assumes that gains attributable to TTIP will be similar to those observed for other preferential trade agreements, which is not necessarily warranted (and is further undermined by the aforementioned concern about endogeneity of preferential trade agreements).

3 TTIP and Slovakia

In the recent years, the US has become the most important destination of Slovak exports outside the EU with a 2.17% share in total Slovak exports, and with an increasing trend since 2009 (see fig. 5). [1] A crucial role in the export to the US is played by the automotive industry with the highest export share. This is also an industry, which is expected to have a the highest output gain from TTIP in the EU. Combined with the Jaguar investment, this may provide a boost for the Slovak economy.

A recent study by the US embassy in Slovakia and the Business Alliance of Slovakia examines the impact of TTIP on Slovakia. The result is a long-term gain in Slovak GDP by 3.96-4.22%, which is very close to the result of Felbermayr et al. (2013b). This result, however, is likely to overestimate the possible impact for several reasons. First, it is based on a survey of 453 entrepreneurs on their expectations of TTIP. The expected GDP increase is calculated solely using elasticity between employment and GDP available in the literature, combined with the extrapolated expectations based on the aforementioned survey. Second, the survey size is relatively small and might reflect a selection bias as around

[1] The sharp increase in exports to the US in 2003 was likely driven by an anticipation of Slovakia's entry to the EU in 2004, which caused it to lose preferential access to the US market under the Generalized System of Preferences benefiting less-developed countries. See Správa o výsledkoch zahraničného obchodu Slovenskej republiky za rok 2004 `http://www.rokovanie.sk/File.aspx/Index/Mater-Dokum-34913`.

60% of the respondents' revenue comes from export (Kičina et al., 2014). Therefore, these estimates had better be taken with a grain of salt. Nevertheless, given the dominant role played by the automotive sector in Slovakia, the adoption of TTIP should be associated with substantial trade and output gains for this country.

4 Summary

The estimates of the economic impact of TTIP on the economic parties involved depend on the model used: CGE simulations yield substantial increases in transatlantic trade that translate to modest increases in the long run GDP (ranging from 0.1 to 0.72%, depending on the assumptions made about the NTBs and their reduction resulting from adopting TTIP), while the gravity models yield a more substantial GDP increase (ranging from 0.03% for Portugal to more than 9% for the US and the UK) and predict a stronger trade diversion with respect to the rest of the world as well as regarding the intra-EU trade. The use of GPM instead of CGE that yields negative results for the EU and positive ones for the US, but this approach has been highly criticized because of its methodology. From the sectoral perspective, the analyses reviewed here suggest that the main beneficiary of the TTIP will be the motor vehicles sector in the EU and the electronic machinery sector in the US.

Finally, it should be noted that there is substantial uncertainty about these results, as they are based on estimates of NTBs, their reduction attributable to TTIP, and other assumptions. The actual reductions in NTBs in particular might differ from these assumptions as some issues (e.g. product requirements) may prove too sensitive to be accepted by the EU member states. Additionally, the results available so far do not consider the possible effects of the United Kingdom leaving the EU, which has in the mean time become much more likely.

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Annex

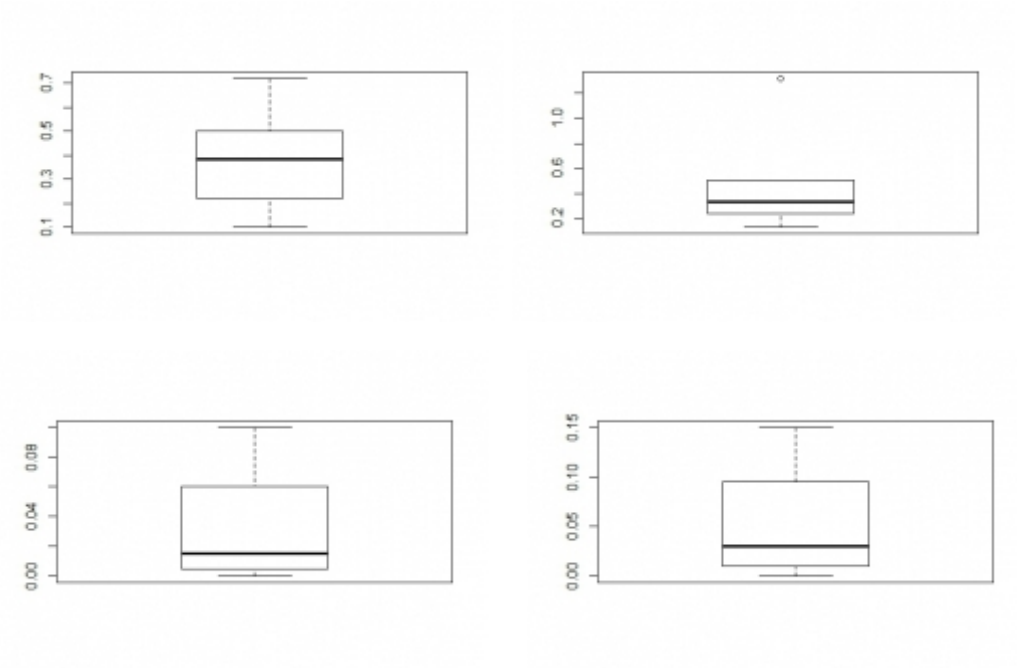

Figure 1: Impact of the elimination of tariffs (lower figures) and the reduction of NTBs (upper figures) within the TTIP on the GDP of the EU (on the left) and the US (on the right) using CGE models. *Source:* ECORYS (2009); Erixon and Bauer (2010); Francois et al. (2013); Fontagné et al. (2013); Kinnman and Hagberg (2012)

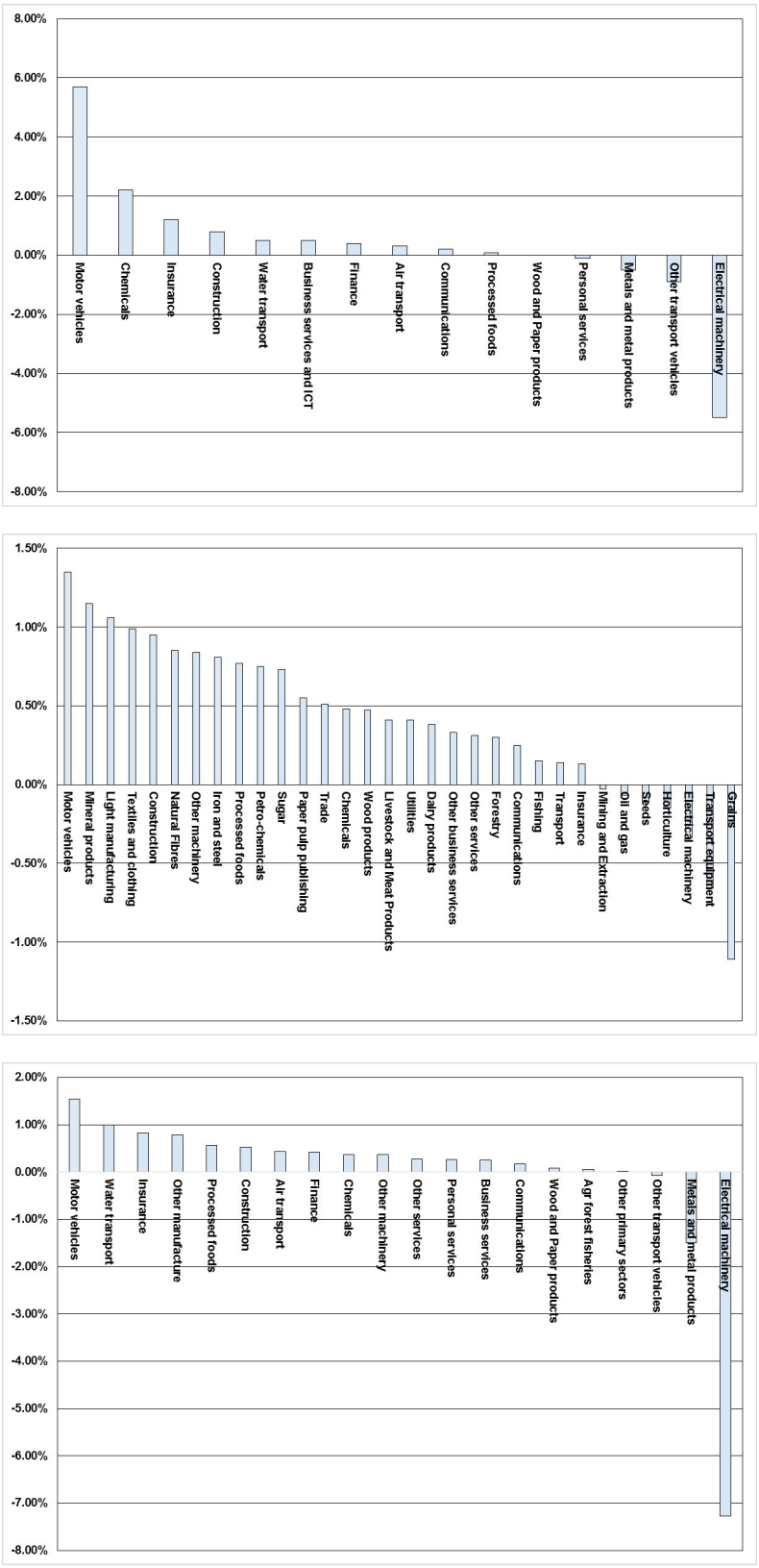

Figure 2: Expected change in industry output from TTIP in the EU. in ECORYS (2009) (top), Erixon and Bauer (2010) (middle) and Francois et al. (2013) (bottom).

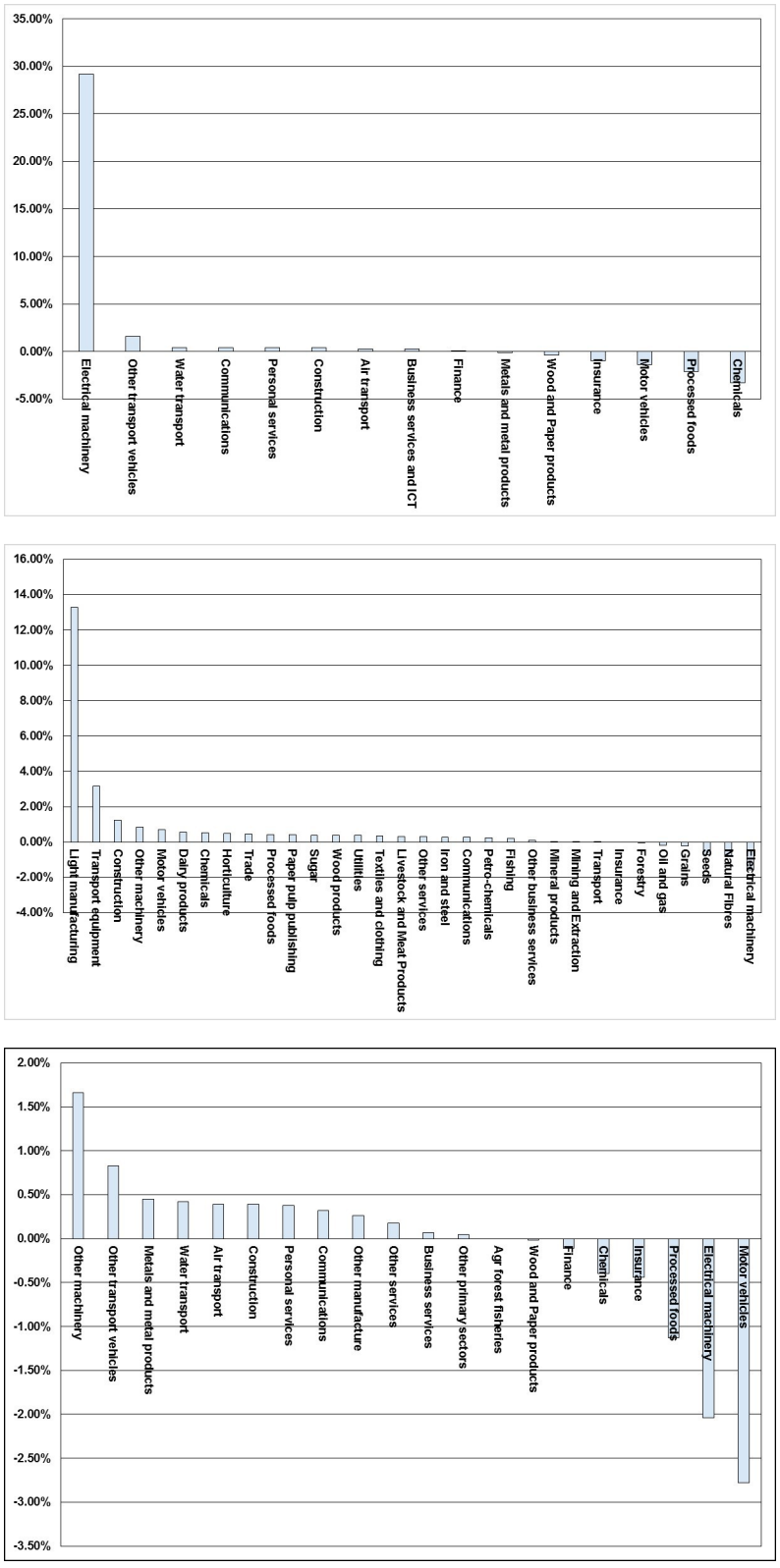

Figure 3: Expected change in industry output from TTIP in the US in ECORYS (2009) (top), Erixon and Bauer (2010) (middle) and Francois et al. (2013) (bottom).

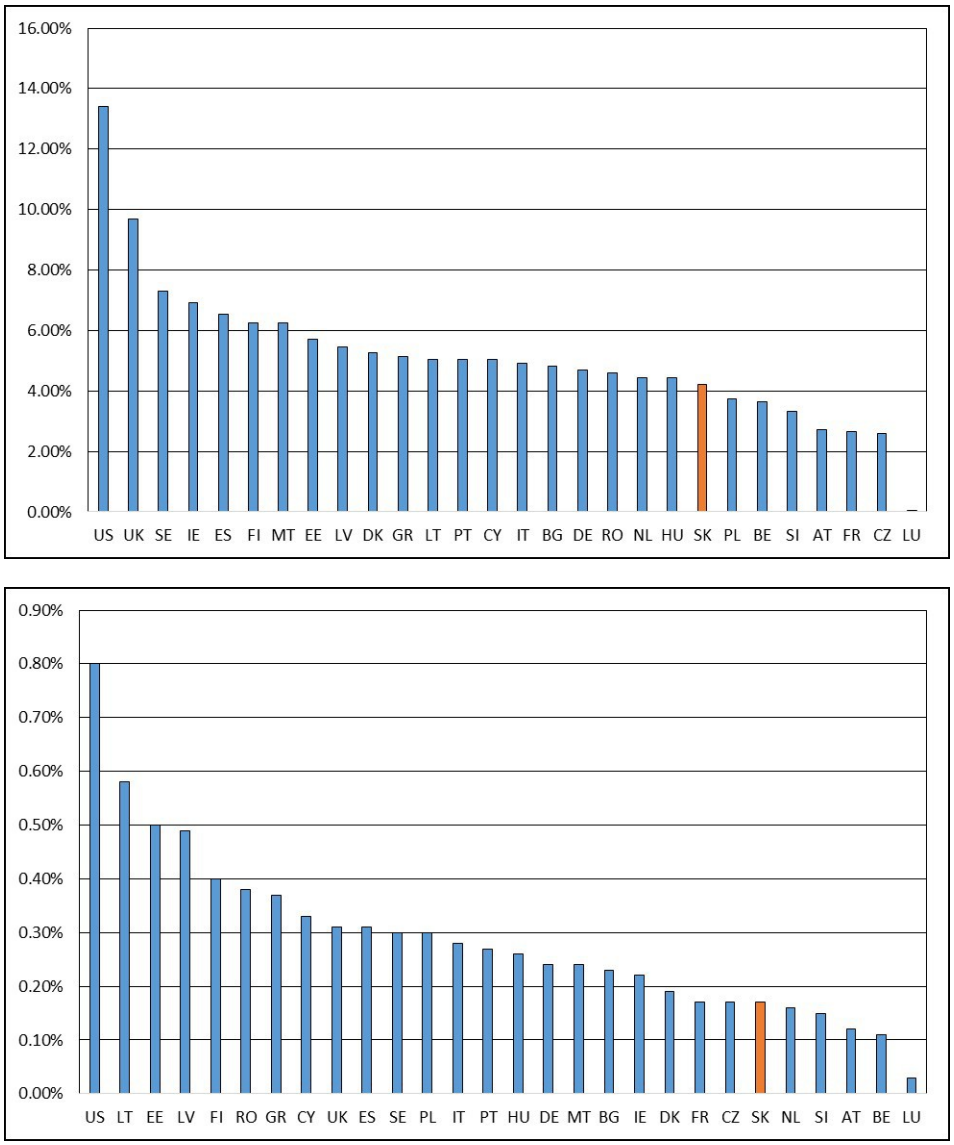

Figure 4: Impact of the elimination of tariffs (lower figure) and the reduction of NTBs (upper figure) within the TTIP on the GDP of the EU member states and the US using a gravity model. *Source:* Felbermayr et al. (2013b)

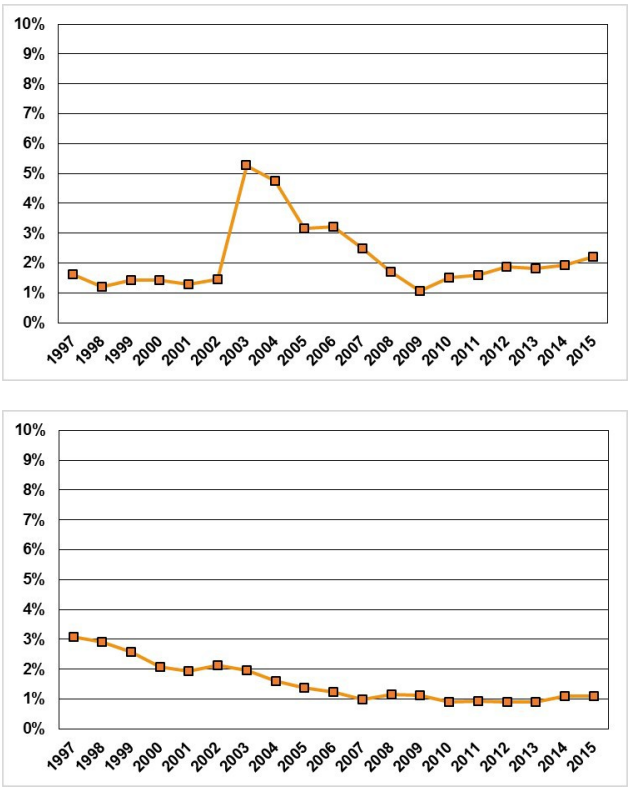

Figure 5: Development of the exports to (above) and imports from the US from 1997 until 2015 as share of total exports and imports respectively. *Source:* Statistical Office of the Slovak Republic.

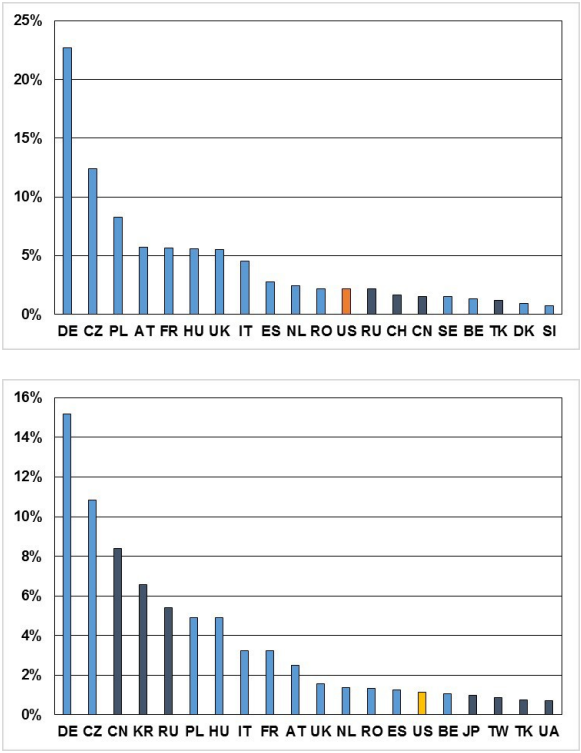

Figure 6: Exports from (above) and imports to (below) Slovakia by country in 2015 as share of total exports and imports respectively. *Source:* Statistical Office of the Slovak Republic.