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What do we really know about the Transatlantic Trade and Investment Partnership: facts versus myths? Trying to Understand Social Expectations

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ABSTRACT

Purpose
The purpose of this work is to confront the social expectations of the TTIP, and how it effects the so-called "expert knowledge". Defining a mismatch between the social expectations and expert knowledge may contribute to better understanding of the controversies related to the TTIP. Using the NAFTA case study, we investigate if there is a significant gap between ex-ante and ex-post analysis of the Free Trade Agreement (FTA).

Design/methodology/approach:
We rely on Eurobarometer (2014, 2015) and Bertelsmann Foundation (2016) surveys to describe the TTIP-related social expectations. We make a critical overview of the global CGE models, which are the main source of ex-ante estimations of TTIP macro effects. We also use the NAFTA case study as a TTIP reference point that allows for a comparison of ex-ante with ex-post analysis results.

Findings:
Social expectations regarding the economic effects of the TTIP are ambiguous on both sides of the Atlantic. The CGE models have many limiting assumptions. They are, however, a useful tool for exploring the effects of the TTIP, bearing in mind all restrictions and limitations of ex-ante analyses. The NAFTA case study indicates that most ex-ante models tend to overestimate benefits and underestimate disadvantages arising from free trade.

Research limitations/implications: Many such surveys have been conducted recently. The results should be developed upon, for a more detailed, country-specific and time variant understanding of possible sources of social conflicts in the context of the TTIP (or FTA) implementation.

Originality/value:
The analysis tends to prove the existence of a mismatch between social and expert knowledge on the TTIP, which may result in generating social conflicts. A practical and original outcome of our work is a well-supported recommendation to make the TTIP realistic effects much more transparent to the public, which should be important to those supporting the TTIP (and generally speaking FTA).

1. Introduction

In July 2013, the European Union began negotiations with the United States on the conclusion of the agreement on the Transatlantic Trade and Investment Partnership (TTIP). One of the important reasons for opening the negotiations on what constitutes the largest trade agreement in the world is the desire to counter the effects of the 2008 financial crisis, which caused a sharp drop in turnover between the EU and the US, a decline from which we are only now recovering. The share of the European Union in global turnover of goods decreased from 38.6% in 2007 to 32.2% in 2014, and the share of the United States from 11.2% to 10.7% at the same time. China's share was increasing during this period from 7.7% to 11.4%. The growing importance of the so-called emerging economies (e.g.: the BRICS countries) also presents significant competition to the EU and the US; the total GDP of the BRICS countries (in current prices) was predicted to be greater than that of the US at the end of 2016 and also in 2017 (The UNCTAD database, 2015). Therefore, it is increasingly difficult for the US and the EU to maintain a dominant position in the global economy without a deeper integration of both areas and

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the strengthening of their competitive position. Finally, developing common standards to facilitate the launching of goods onto the market is an equally important argument for the introduction of TTIP. In the era of global economic ties, companies need guarantees that they can rely on widely recognized rules while conducting business activity worldwide. The TTIP gives hope that the common standards of the EU and the US will be replicated in other parts of the world, and not vice versa.

However, since the beginning of the negotiation process, the TTIP raises strong, often negative, social emotions, both in the EU and in the US. European opponents indicate, for example, a threat to EU agriculture, as the TTIP will significantly increase the amount of duty-free meat imports and will abolish duties on wheat. In addition, opponents claim that this agreement may result in flooding Europe with cheap, inferior quality food, as the European and American standards in terms of livestock rearing and crop cultivation vary significantly. Opponents are therefore concerned that this harmonization will mean lower quality standards, since manufacturers will seek to decrease production costs. Additionally, local and regional authorities will, for the first time, be subject to the regulations of local public procurement contracts, making it more difficult for them to support local businesses and local economic development. It is believed that this will significantly reduce the ability of local and regional authorities in the EU and the US to use public spending to achieve major social objectives, such as creating new jobs. Furthermore, opposition, especially in Europe, is raised by the mechanism of Investor-to-State Dispute Settlement (ISDS), which gives private investors within the framework of international law the power to use the dispute settlement procedure in cases against foreign authorities. This mechanism essentially grants corporations the status equal to that of governments, allowing them to influence/deviate public policy. Taking into account the above, the evaluation of the expected effects of TTIP from the *ex-ante* perspective is an extremely difficult and challenging task. At the same time, however, it is a key one in order to objectify the balance of possible benefits and losses.

The aim of this paper is to review and undertake a critical analysis of the existing studies on the expected effects of TTIP on different economies, primarily those of the European countries participating in the agreement. We discuss the results obtained in the global CGE models, as well referring to actual international surveys on social expectations arising from the TTIP. In addition, we explore the NAFTA case; the treaty between the US, Canada and Mexico that has been in force for 22 years. It seems that the comparison of the estimated effects of NAFTA (the *ex-ante* analysis) with the recognized effects (the *ex post* analysis) of its functioning can provide a valuable analogy for analyses of the TTIP. Our leading motive in these critical overviews is to confront the possible reality with the social perception, and in this way, to define some borderlines between "facts" and "myths".

2. Social Expectations Concerning Macro-Effects of TTIP

The objective assessment of social expectations of the TTIP on both sides of the Atlantic seems to be quite a difficult task. It is even more difficult to clearly determine what these expectations are like with regard to specific economic results of the agreement. If we wish to rely on the general public as an authoritative source of knowledge in this respect, it should be noted that the number of studies exploring the attitudes of people towards the TTIP is limited.

The cross-sectional material concerning EU public opinion seems to be provided by the research conducted within the framework of the Eurobarometer survey – carried out twice a year in spring and the autumn. The most current survey (Eurobarometer 83 – spring 2015) covered the EU's 28 Member States, and 5 candidate countries – Albania, Montenegro, the Republic of Macedonia, Serbia and Turkey.

It should be emphasized that the TTIP issue was included in the Eurobarometer for the first time in the fall of 2014. The respondents answered the question (QA 19.5) formulated in the following way: "*Do you support or not a free trade and investment agreement between the EU and the US?*". The same question was asked a little less than a year later (in the spring of 2015), which allowed the comparison of the European perception of the TTIP over time. It turns out that Europeans became somewhat more sceptical in their attitudes – more than a half of the surveyed Europeans gave their support to the idea (56%), but this was about 2 percentage points less than the previous year, while 28% of the respondents were against the TTIP (an increase in negative opinions of 3 percentage points). The rest of the group consisted of undecided respondents (16% – a decrease by 1 percentage point).

In 2015 the most anti-TTIP were Austrians (23% in favour to 67% against in 2015), Germans (31% in favour to 51% against) and Luxembourgers (37% in favour to 49% against), while the most favourable towards the TTIP were Lithuanians (79% in favour to 7% against), Romanians (78% in favour to 10% against) and the Irish (77% in favour to 12% against). A decline in support for the TTIP was reported in 14 Member States, an increase in 9, and the same sentiment in 5. It is worth noting that the largest decrease in support was recorded among traditional TTIP opponents – Austrians (a decrease of support of 16 percentage points) and its former enthusiasts – the Dutch (the support declared in 2014 at the level of 74% declined by approx. 11 percentage points).

Eurobarometer does not contain more questions explicitly exploring Europeans' attitudes towards the TTIP, that would indicate the expected economic benefits. Contextually perceiving other major threads of the Eurobarometer survey, it is worth noting that in 2015 unemployment remains for Europeans the most serious problem, next to the so-called "economic situation" and immigration. These are the issues raised by the respondents, both from the perspective of their outlook on their own country and the EU.

Another study, which included both European and American respondents, was conducted by YouGov on behalf of the Bertelsmann Foundation. On 23 February 2016, an online questionnaire was completed by 1,126

American citizens, and on 17-19 February 2016 by 2,019 German citizens. The Bertelsmann Foundation (2016) report summarizing the obtained results includes many comparisons to an earlier study commissioned also by the Foundation at another research centre – the PEW. At the time, the PEW interviewers conducted a telephone survey and the sample size was smaller, as it consisted of 1000 respondents.

The published report (Bertelsmann Foundation, 2016) shows that there are important differences between Germans and Americans in their attitudes to trade. Only 56% of the German respondents perceive increased trade relations with other countries to be something good (27% of the respondents are of the opposite opinion), while in America a positive opinion on the subject is shared by 82% of the respondents (13% of the surveyed people are of the opposite opinion). The German "openness" in this area decreased significantly – 88% of the respondents were in favour of the TTIP in 2014, and only 4% were against it. In the US, support for trade with other countries increased in 2014 in favour of openness in trade relations as 71% of the respondents were in favour and 23% had a negative view of this openness.

Germany also has far more opponents to the introduction of TTIP; this can be related from the results obtained in the Eurobarometer surveys (2014 and 2015). 33% of the surveyed Germans declare a negative attitude towards the agreement, and only 17% have a good opinion. In the United States, opinions have become very polarized: 15% of the respondents expressed their support and 18% their opposition. In the case of both countries, the proportion of undecided, insufficiently informed, or not at all familiar with the topic is devastatingly high. At the same time, roughly half of both German and American respondents expressed their interest in the TTIP, at the same time lacking commitment to participate in public debate on the agreement (approximately ¾ of the respondents on both sides of the Atlantic take no part in the debate).

This study makes an effort to present expectations of citizens concerning the impact of TTIP on the economy and society in a bit more detailed way than for example Eurobarometer does (see Table 1).

Table 1. The distribution of responses to the question: *How do you think the TTIP will affect the following in your country?*

	Germany				**United States**			
	Positive	**Negative**	**Neutral**	**Don't know**	**Positive**	**Negative**	**Neutral**	**Don't know**
economic growth	27%	26%	19%	28%	29%	23%	8%	39%
employment and labour market conditions	23%	28%	22%	28%	21%	27%	11%	41%
international competiveness	29%	24%	19%	28%	24%	22%	11%	43%
your country's global influence	23%	21%	26%	29%	31%	15%	16%	38%
environmental standards	12%	46%	16%	27%	18%	19%	20%	44%
workers' rights/social standards	10%	40%	22%	29%	17%	24%	15%	45%
cultural diversity	24%	17%	30%	28%	26%	12%	22%	39%
public services	10%	27%	31%	31%	15%	13%	26%	46%
democracy	10%	28%	32%	29%	20%	14%	23%	43%
regulatory sovereignty	9%	37%	22%	32%	17%	22%	15%	47%

Source: The Report from the Bertelsmann Foundation survey, *op. cit.* p .8.

It should be noted that among the 11 categories, the first three are of a particularly macroeconomic nature. It seems that the sentiments of the respondents about the role of macro factors in defining the future related to the TTIP introduction are quite ambivalent, however, with a slight predominance of positive prognosis. Americans (29%) more than Germans (27%) expect stimulation of economic growth as a result of the TTIP and in their case, it is the second factor (immediately after "your country's global influence") in terms of importance for persons with a positive opinion of the agreement. Germans have the most (out of all the 11 categories) positive assessment of the chances of increasing their international competitiveness and stimulating economic growth if the TTIP comes into effect. The assessment of the TTIP impact on employment and labour market is negative for both Germans and Americans. However, even these highly positioned on the list of positive expectations of macro-effects and this last-mentioned category generating most of the bad associations cannot overcome Germans' reluctance to the TTIP due to "consumer protection", "environmental standards" or "workers' rights". Americans do not have such strong "for or against" attitudes. It is difficult not to notice that among the German and American respondents (such attitudes are definitely more present in the US) there is a visible lack of dominant views. Apart from the fairly equal number of mutually-cancelling extreme views, people who declare their neutrality and people who do not have the appropriate knowledge of the issue constitute a large group. The lack of knowledge is

particularly evident in the declarations of the US respondents.

3. The use of Computable General Equilibrium Models – the Current State of the Research

The models that have been used so far to estimate the expected effects of specific economic processes/business ventures belong in the class of computable general equilibrium models (CGE). The disadvantages of these models include restrictive assumptions concerning full employment, as well as wage and price flexibility.

At the same time, it is hard not to notice that they provide quite a unique possibility towards a comprehensive and meaningful *ex-ante* analysis. These models are distinguished by:

- A high degree of disaggregation;
- Equations based on the microeconomic fundamentals;
- Increased use of information regarding the structure of the economy rather than the information contained in time series.

The European Commission clearly stresses that, despite the awareness of certain bias in CGE models, it considers this approach as the only reliable one for the purpose of determining TTIP effects (European Commission, 2013). In formulating limitations, the EC goes even further and indicates that not all of the available empirical analyses using these models should be treated equally. The results obtained by the *Centre for Economic Policy Research* (Francois et al., 2013) establish a compelling – for the EC – canon in this respect. There are other studies: Berden, Francois, Thelle, Wymenga and Tamminen (ECORYS, 2008); Fontagne, Gourdon, Jean (CEPII, 2013); Felbermayr, Heid and Lehwald (2013) and a study by Egger, Francois, Manchin, and Nelson (2015), which appeared relatively recently, and hence appears less-often than the others in citations.

All the models offer the "global" perspective. The estimates make use of the GTAP (Global Trade Analysis Project) database, which contains information on 113 countries and 57 sectors of the economy: the subsequent digits in the available versions of GTAP databases used in the study determine the degree of their relevance (version 9 is more relevant than 8; in version 8 the base year is 2007, in version 9 it is 2011). As to the methodological approach, the studies are either based only on CGE models or combine gravity models with CGE models.

In the summary of the content of these studies, it can be concluded that predicted macro-economic effects of TTIP on European economies are positive, regardless of the variant of the proposed liberalization. Their positive outcome is strengthened by increasing the degree of liberalization.

More detailed differences in all the five approaches (Ecorys, 2009; CEPR, 2013; CEPII, 2013; Bertelsmann/IFO 2013 and Egger et al., 2015), covering the data, the assumptions and the results, are shown in Table 2.

Table 2. Comparison of the results of the *ex-ante* models

	Ecorys, 2009	**CEPII, 2013**	**CEPR, 2013**	**Bertelsmann/IFO, 2013**	**Egger et al., 2015**
Type of the model	CGE	CGE (MIRAGE)	CGE	Gravity model and CGE	Gravity model and CGE
Data base	GTAP 7	GTAP	GTAP 8	Undefined	GTAP 9
Time	2008-2018	2015-2025	2017-2027	10-20 years	10-20 years
			Change in %		
GDP forecast for the UE	0.35-0.72	0.0-0.5	0.02-0.48	0.52-1.31	0.1-1.14
GDP forecast for the US	0.14-0.31	0.0-0.5	0.01-0.39	0.35-4.82	0.13-0.88
UE bilateral exports	Undefined	49.0	0.69-28.0	5.7-68.8	Undefined
Real wages in the UE	0.34-0.78	No data	0.29-0.51	Undefined	Undefined
Unemployment rate in the UE (average)	Unchanged (assumption)	Unchanged (assumption)	Unchanged (assumption)	-0.42 (deep liberalization)	Unchanged (assumption)

Source: W. Raza, W, J. Grumiller, L. Taylor, B. Tröster, R. Arnim, *Assessing the Claimed Benefits of the Transatlantic Trade and Investment Partnership*, Policy Note, 10, 2014, p. 2 and P. Egger, P., J. Francois, M. Manchin, D. Nelson, Non-tariff Barriers, Integration and the Transatlantic Economy, Economic Policy, 30(83), 2015.

The interpretation of the analyses, broken down by individual countries or group of countries, carries a positive message for Poland (Felbermayr et al, 2013). The effects of both variants do not show a deepening of the profit discrepancy between European countries. In the moderate variant, the peripheral countries (such as Poland) should gain more than the richer members of the EU. In the variant of deep liberalization, this effect is more flattened. Therefore, one can even speak of intensification of the process of convergence in Europe as a result of the introduction of the TTIP, which is visible particularly in the case of moderate liberalization. Specifically, GDP in Poland is to increase, depending on the degree of liberalization, from 0.3% to 3.73%. In respect to the Polish labour market, changes are also beneficial – an increase in employment (0.15% or 0.58%), a decrease in the unemployment rate (-0.13% or-0.53%) and an increase in the real wage (0.69% or 2.75%).

Meanwhile, national analyses indicate much lower beneficial effects (see Hagemejer, 2015) and Przybylinski, 2015). The first results obtained by Hagemejer shed quite a different light on the diversification of TTIP effects. TTIP benefits for Poland and the other so-called new EU members are smaller than for the older members of the EU, especially Germany. Hagemejer writes also quite clearly about the effect of trade diversion – the intra-EU trade is to be reduced while turnover with the United States increases. In Poland, the effect of trade diversion brings a relative increase in the price of imported goods, which, taking the high dependence of the Polish economy on imported intermediate goods into account, may lead to reduced competitiveness of Polish export goods. Hence, the estimates made by Hagemejer indicate a GDP growth of only 0.1% for Poland.

Przybylinski (2015) makes assumptions about changes to the Polish import and export using estimates provided by Hagemejer (2015) and performs an input-output analysis. According to the author, on the macro scale the TTIP effects for Poland are almost negligible. Growth of global output (and also GDP, assuming a fixed production technology) in the most advanced version is 0.2%. Furthermore, a short-term increase in the number of jobs by 42,000, expected in the long-term to reach 10,000, does not seem to be large (in 2014, 14.1 million people worked in Poland). Macroeconomic evaluation of elimination of non-tariff barriers is therefore quite neutral. Visible effects may, however, appear at the industry sector level, which may lead to changes in the production structure. The strength of these changes will be determined by the solutions adopted at the level of industries.

The study conducted by Felbermayr, Heid and Lehwald (2013) can be referred to when attempting to interpret the results of CGE models in the context of a widely understood geographical diversification of the TTIP impact on the world economy, including a negative TTIP impact on the so-called "third countries", a complaint that is frequently raised by TTIP opponents. In accordance with their results, elimination of tariffs under the TTIP will have the greatest toll on developing countries. These countries will have to face decreasing shares in global markets due to increasing competitive pressure in the EU and the US markets. Reallocation of trade links may be difficult due to a long distance to some alternative locations – it may be felt in particular by countries of North and West Africa, traditionally strongly associated with Europe, and potentially displaced – after the introduction of TTIP – by the United States. East Africa has a better prognosis for initiating or increasing other trade routes thanks to its favourable position relative to China, Australia and New Zealand. Felbermayr et al. suggest that neutralization of negative effects of trade diversion should occur through quick and effective completion of the Doha Round, by signing an agreement satisfactory to all the parties.

4. Criticism of the CGE approach – literature review

In literature, one can find criticism of the existing studies based on CGE model, such as in Raza, Grumiller, Taylor, Tröster, and Von Arnim (2014). First of all, the positive effects of TTIP are relatively low in relation to the long period of their occurrence and the costs incurred. Secondly, the adaptation costs are underestimated or not included in the studies (these underestimated costs are EUR 33-60 billion over 10 years). The costs excluded from the analyses are the costs associated with categories such as: current account balance, public budget and unemployment.

In the category of costs associated with the current account balance, it should be taken into consideration that if – as a result of the TTIP – import is to increase disproportionately in relation to export, it may result in devaluation and affect the level of domestic prices, as well as debt in foreign currency incurred by companies and individuals. In addition, new inflow of FDI may result in the shifting of profits to parent companies. Given the freedom of portfolio investment flows in liberalization processes, smaller countries with inferior competitive positions can be particularly vulnerable to rapid outflows of speculative capital. The authors emphasise that the estimates of current account surpluses in the results derived from CGE models do not take these factors into account.

When it comes to costs to the budgets of the European economies, they will have to bear the losses resulting from the lost revenue from tariffs, which will increase their fiscal deficits. In 2012, 12% of the revenue to the EU budget came from tariffs. Although TTIP proponents stress that the proceeds from the growing export should compensate for these losses, it needs to be noted that export growth has shown a slow tendency, while the decline of the tariff revenue will occur immediately. Despite the declaration of the European Commission concerning the possibility of restructuring the budget with a view to seeking other sources of revenue, the current context of the European and world economy raises reservations as to the effectiveness of the implementation of these promises. Economic downturn combined with quite a turbulent political situation (the migration crisis, the rise of populism in Europe and the US, etc.) does not bode well for great freedom in terms of shaping the budget.

Finally, the last criticism according to Raza, Grumiller, Taylor, Tröster, and Von Arnim (2014), specific to the labour market area, includes a reflection that the structural transformations of the economy related to the TTIP will be associated with structural unemployment, which may be persistent and long-lasting.

Many of these doubts are shared by Capaldo (2015) in his critical study. The author emphasizes the failure of the self-regulating market mechanism in the effective prevention of unemployment. He writes about a lack of automaticity in the mobility of labour force. This automaticity could be provided (in accordance with the assumptions of CGE models) by an efficient transfer of people who lose jobs in non-competitive sectors into other, promising sectors that are able to compete in the new liberalized economic environment. Capaldo, undermining the reliable operation of this mechanism, draws attention to the possibility of uneven dynamics of job creation in different sectors, especially unfavourable if fast elimination of jobs in non-competitive sectors

(quite likely) was to be accompanied by slow employment growth in developing sectors. The author also perceives as important the problem of qualifications mismatch when attempting to match the workforce with job offers, as well as negative consequences of impoverishment of a substantial part of society previously employed in "traditional" sectors.

Capaldo (2015) questions the accuracy of the estimates of the TTIP impact on trade based on CGE models. He believes that insufficient consideration of the trade diversion effect significantly weakens the positive results. The author instead proposes the use of the United Nations Global Policy Model (GPM). The GPM represents a class of models based on Keynesian assumptions. Instead of the assumptions concerning full employment, the effective demand rule is used, and therefore economic activity is controlled by demand, instead of being dependent on productivity. The author stresses that the advantage of this approach is the ability to carry out a comprehensive regional analysis encompassing different regions of the world. Finally, Capaldo praises the GPM model for closer to reality – in his opinion – assessment of employment effects (using the statistics of the International Labor Organization), as it is based on Okun's law and hence allows the definition of the relationships between employment and growth in a dynamic approach, taking into account the so-called jobless growth. Capaldo's results are dramatically different from those obtained in CGE models (see Table 3).

Table 3. The simulation results provided by Capaldo, GPM model (selected data)

	Net Exports (% GDP)	GDP growth (Diff between %)	Employment (Units)	Employment Income (EURO/employee)	Net taxes (% GDP)
US	1.02	0.36	784,000	699	0.00
UK	-0.95	-0.07	-3,000	-4,245	-0.39
Germany	-1.14	-0.29	-134,000	-3,402	-0.28
France	-1.9	-0.48	-130,000	-5,518	-0.64
Italy	-0.36	-0.03	-3,000	-661	0.00

Source: J. Capaldo, *The Trans-Atlantic Trade and Investment Partnership: European Disintegration, Unemployment and Instability*, Economia & lavoro 49.2, 2015 p.14.

The introduction of TTIP – according to Capaldo – after 10 years will lead to losses, not benefits, in terms of net exports as well as GDP and income from employment, and will result in loss rather than creation of jobs. There will also follow, according to the author, a significant replacement of income from employment in favour of income from capital and a decrease in budgetary revenues of the EU countries (mainly from the loss of revenue from indirect taxation). It should be noted that in his analysis Capaldo often explores slightly different aspects of the issues analysed by the authors of studies based on CGE models. Even Capaldo (2015) himself notes that: *"Our simulation does not call into question the results of other studies on the estimation of the impact of TTIP. We are more focused on effects of TTIP in terms of net exports, GDP, public finances and the distribution of income".*

5. The Experience of NAFTA in the Context of TTIP

As previously mentioned, the debate about the TTIP focuses primarily on potential benefits for the participating countries in the form of increased prosperity and improvement of the situation in the labour market, including an increase in employment. Proponents of the signing of the agreement cite the rather optimistic results of empirical analyses conducted using CGE models, published, among others, by the European Commission. In this context, it seems interesting to assess the relevance of such *ex-ante* analyses using the example of the North American Free Trade Agreement (NAFTA), which has operated for 22 years. If it turned out that there are differences between the *ex-ante* projections and the *ex-post* assessment of the expected macro-economic effects of the agreement, it would be an indication that the projections of the potential benefits of the introduction of TTIP should be treated with some degree of caution and scepticism. This may mean that the expectations in relation to the TTIP formulated by the EU and US authorities, economists or the public opinion may not find a (full) reflection in reality.

NAFTA, signed in 1994 by the United States, Canada, and Mexico, created a free trade area between these countries. The countries participating in the agreement abolished duties in mutual trade, while autonomous customs duties were maintained in trade with third countries. The main premise which promoted the conclusion of the agreement was the fact that these countries had common economic interests. A close geographical location and, in the case of Canada and the United States, a common language also played an important role. The existence and successful expansion of the common market in Europe was also of considerable importance, as the newly signed economic agreement was to be competitive in relation to Europe. The basic objectives which were expected to be met through the functioning of NAFTA included the achievement of prosperity, the development of the participating countries and a favourable climate for private investment.

The *ex-ante* projections concerning macroeconomic effects of NAFTA presented in this paper are based on a review of the existing empirical research. Table 4 provides a summary of the results of the analyses conducted. When it comes to real GDP estimates, the results of empirical studies were relatively homogeneous. Hence, for example, in the case of the US, NAFTA was

supposed to bring relatively insignificant benefits. Most of the *ex-ante* studies anticipated real GDP growth in the country to range from 0.1% to 0.3%. The results of the analyses were much more optimistic for Mexico, since they predicted real GDP growth above 2% (Grumiller 2014). Empirical research on the impact of NAFTA on Canada's GDP are few and far between and vary widely. For instance, Brown, Deardorff and Stern (1992) expected GDP growth of about 0.7%, Cox and Harris (1992) of 1.49%, while Roland-Holst, Reinert and Shiell (1994) estimated GDP growth at the level of 0.4-10.6% as a result of the functioning of NAFTA. Generally, in the light of the conducted research, the average GDP growth is 0.14% in the case of the US, 2.27% in the case of Mexico, and 1.1% in the case of Canada.

Taking changes in real wages into account, it was estimated that NAFTA would be beneficial for all the three countries, albeit to a differing degree. Again, the United States were supposed to gain the least benefits in this area (an increase in the level of real wages not higher than 0.2%). In the case of Mexico, the estimates were quite varied, depending on the inclusion or exclusion of the impact from foreign direct investment (FDI) in the studies. The estimates without taking into account FDI pointed to a rise in real wages of less than 1%, the influx of FDI into Mexico, however, increased the dynamics of wage rise to 6-9% (Sobarzo, 1991). With respect to Canada, a few empirical studies showed a relatively small increase in real wages, at the level of 0.4-0.5%, in the study of Brown, Deardorff and Stern (1992) and a relatively high increase, 1.3%, in the analysis of Cox and Harris (1992).

Analyses of the impact of NAFTA on employment are also quite varied for individual countries. For example, Hufbauer and Schott (1993) estimated that thanks to NAFTA, employment in the US would increase by 130,000-170,000 jobs within a few years. In general, most studies point to a small impact of NAFTA on employment growth in the United States (O'Leary et al, 2012). Much better estimates were obtained for Mexico. For example, Marwick (1991), Sobarzo (1991) and Roland-Holst, Reinert and Shiells (1994) predicted employment growth in the range of 2.4-6.6%. In the case of Canada time empirical studies were few and far between and the results were quite diverse. For instance, Roland-Holst, Reinert and Shiells (1994) made projections of changes in employment in the range of 0.61% -11.02%.

Table 4. The results of the most cited *ex-ante* analyses of the impact of NAFTA on basic macro-economic parameters of the participating countries (% change)

	USA	**Canada**	**Mexico**
Real GDP	0.0 to 2.07	0.12 to 10.57	-0.35 to 11.39
Real wages	-0.7 to 0.95	0.04 to 1.3	0.4 to 16.2
Employment	-0.3 to 2.47	0.61 to 11.02	-0.1 to 6.6

Source: Grumiller 2014, p. 8.

The comparison of the presented *ex-ante* projections with the results of *ex-post* analyses of the impact of NAFTA on economic results of the US, Mexico and Canada clearly indicates that the actual impact of NAFTA on the economies of these countries has been much lower than expected in the projections. For example, Caliendo and Parro estimated the effects of NAFTA in relation to real GDP growth in the period 1993-2005 at 0.08% in the case of the United States, 1.31% for Mexico and -0.06% for Canada. At the same time, it should be pointed out that these are the most optimistic estimates, though still ranking far below earlier projections (Caliendo, Parro, 2014). Other studies estimate the annual impact of NAFTA on US GDP at the level of 0.001-0.005% in 1994 and 0.006-0.041% in 2001 (Congressional Budget Office, 2013). Similarly, the results of the studies presented by the U.S. International Trade Commission indicate a negligible impact of implementation of NAFTA on GDP of the United States (Okun et al, 2003). On the other hand, the World Bank estimates indicate a beneficial effect of NAFTA on GDP per capita of Mexico, which rose by approx. 4-5% in the period 1994-2002 (Lederman et al, 2003). However, the results of those estimates have been challenged by other researchers, due to the fact that the data used by the World Bank were not reliable. Weisbrot, Rosnick and Baker using the same model and reliable data indicate that, as a result of NAFTA, the dynamics of economic growth in Mexico has been reduced (Weisbrot et al, 2004). Similar results were obtained by Romalis, who states that NAFTA has had no impact on US and Canada GDP; it has resulted, however, in a decline in Mexico's GDP by approx. 0.3% (Romalis, 2007).

When it comes to the impact of NAFTA on the dynamics of real wages, the results of the research carried out *ex-post*, as in the case of GDP changes, show significant deviations from the results of the *ex-ante* analyses (expectations). The most optimistic results were received by Caliendo and Parro (2014). According to those authors, the reduction in trade barriers had a positive impact on real wages, causing their growth in the period 1993-2005 by about 0.11% for the US, 1.72% for Mexico and 0.32% for Canada. The results of the other estimates are not as favourable. For example, Polaski states that the increasing disparity between the growth in labour productivity and the dynamics of real wages in the United States and Mexico can be explained by a declining bargaining power of trade unions as a result of the signing of the free trade agreement (Polaski, 2006). An empirical study on concerns about elimination of jobs as a result of NAFTA seems to confirm this thesis (Bronfenbrenner, 2002). In addition, McLaren and Hakobyan (2010) said that the rate of increase in wages in the industrial sectors of the US that were to the greatest extent under the influence of NAFTA was clearly lower than in the other sectors. Waldkirch (2003), in turn, proved that the inflow of foreign investment to Mexico as a result of the signing of NAFTA caused an increase in labour productivity. However, the effects of FDI on the average real wages in Mexico were negative, or at best, negligible. Hanson (2003) states that NAFTA has contributed to the growth of income inequality in Mexico. The wages of

skilled workers in the North of Mexico, where the largest influx of FDI was recorded, have increased by much more than the wages of workers in the South, who as a rule are less educated and unskilled. In general, the relationship between NAFTA and income inequalities, mainly in Mexico, seems to be widely accepted (Abbott, 2004). In conclusion, most of the *ex-post* studies found no significant positive effect of NAFTA on real wages in the countries that signed the agreement.

A similar situation occurred regarding the impact of NAFTA on employment. For example, Scott (2011) stated that 683,000 jobs in the United States were eliminated during the period 1994-2010 as a result of a deficit in trade with Mexico, which appeared as a result of the signing of NAFTA. Kletzer (2002) estimates that the United States lost 1,238,000 jobs in connection with an increase in imports after reducing trade barriers, which was approx. 24-27% loss of all jobs in the industry and 10.7% of the total number of lost jobs in the period 1993-1999. Other studies indicate at least 845,000 jobs that have disappeared in the United States since 1994 as a result of an increase in imports from Canada and Mexico (Public Citizen's Global Trade Watch, 2014). It would seem that, in the case of Mexico, one would expect a more optimistic situation in the labour market as a result of the occurrence of prolonged surplus in trade with the United States as a consequence of NAFTA, but the estimates show a completely different picture in this respect. For instance, Polaski (2006) argues that NAFTA has caused a disappointingly small gain in jobs in Mexico, and sees the causes of this situation in increasing labour productivity. Salas (2006) believes that about 1/6 of agricultural workers in Mexico lost their jobs since the beginning of the 1990s, mainly due to NAFTA. The greatest losses occurred in maize production in the years 1991-2000, in which 1,013,000 jobs were lost. The researcher also argues that the inflow of FDI to Mexico has increased significantly as a result of the signing of NAFTA, but it has largely manifested in buying out the existing assets, and consequently it has not had such a major impact on the real economy as was expected. This is a particularly interesting observation, as the most optimistic *ex-ante* projections for Mexico emphasized the significant positive impact of FDI on the country's economy.

6. Conclusion

Social expectations regarding economic effects of TTIP are not clear on both sides of the Atlantic. It seems that their clarification is hindered by uncertainty that largely stems from a lack of knowledge that citizens consider sufficient for the formulation of more definite views of their own. More Americans than Germans are uninformed, and Germans are more critical of TTIP than Americans. This kind of negative attitude, however, is not dominant among other Europeans, although over time, an increase in negative attitudes in Europe can be seen. It seems that the process of formulating expectations concerning economic effects of TTIP is still ongoing and it can to a large extent be influenced by a reliable information policy to promote an objective message understandable by the average citizen.

CGE models have many limiting assumptions that *ex-definitione* should make one careful in developing too many free and wide interpretations of the conclusions drawn from their results. They are, however, a useful tool for exploring effects of TTIP, bearing in mind their restrictions and limitations of *ex-ante* analyses.

The comparative analysis of the *ex-ante* projections and the *ex-post* empirical research results in relation to effects of NAFTA indicates that generally speaking, most *ex-ante* models tend to overestimate benefits and underestimate disadvantages arising from free trade. The NAFTA experience exposes weaknesses of *ex-ante* simulations, therefore the authorities negotiating the Trade and Investment Partnership should take into account the NAFTA experience and treat projections on effects of TTIP with an appropriate dose of scepticism.

The example of NAFTA could be a signal that expectations in relation to the TTIP formulated by various bodies may not (fully) reflect reality.

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