SIA in support of the negotiations on a Transatlantic Trade and Investment Partnership (TTIP)

Executive summary
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doi: 10.2781/445337

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Executive summary

1. Purpose of this Sustainability Impact Assessment

This Sustainability Impact Assessment (SIA) is intended to provide the European Commission with an in-depth analysis of the potential economic, social, human rights, and environmental consequences of a Transatlantic Trade & Investment Partnership (TTIP) in order to inform its negotiation approach and recommend certain measures. It does so through robust quantitative and qualitative analysis, informed by a continuous and wide-ranging consultation process with all relevant stakeholders. This final report is the third of three deliverables in the SIA process, following the publication of the interim report in May 2016, and summarises the work undertaken to date as well as the main results obtained.

2. The EU-US economic relationship: a large and deep one

The EU and US together are the largest, the most open and also bilaterally most integrated economies in the world. A long, shared history of trade and intellectual exchange, and a similar rate of economic development, has led to this close and commercially significant relationship and the proposal to negotiate TTIP.

- Joint EU and US GDP stood at around 46 percent of global GDP in 2014;
- Tariffs are at very low levels (2.2 percent for the US and 3.3 percent for the EU);
- Bilateral goods trade amounted to €517.1 billion in 2014, and services trade to €375.7 billion;
- The US is the EU’s main extra-EU trading partner for goods and services;
- The US was the EU’s main FDI destination (€225.2 billion) and origin country (€421.2 billion);
- US controlled enterprises created 5.9 million jobs in the EU, equal to 19 percent of all jobs supported by export, and 50 percent of all jobs supported by export of countries outside the EU;
- Around 4.7 million EU jobs are associated with production for exports to the US.1

3. The Transatlantic Trade and Investment Partnership differs from other trade agreements

TTIP is the largest bilateral trade and investment agreement ever to be negotiated. It would be a unique agreement where (traditional) tariff liberalisation is complemented by significant commitments on regulatory cooperation and a joint rules-based framework for bilateral trade and investment, fit for modern globalised commerce. The future agreement would consist of three pillars: market access, regulatory co-operation and rules. Within these three parts respectively, TTIP aims to remove nearly all customs duties, improve EU and US access to each other’s services and public procurement markets; address and reduce behind-the-border barriers to trade and investment with full regard and respect for consumer, labour, environmental, health and other public policy goals; and to set new and clear rules on horizontal issues governing bilateral trade and investment, such as sustainable development, competition policy and on how to integrate small business in trade, which may serve as examples to the rest of the world.

4. Quantification of TTIP impacts: CEPR (2013) is the most suitable model

The CEPR (2013) study presents the most suitable approach to date for analysing the potential impact of TTIP. This conclusion is also reached by CEPS (2014) in a comparative study of impact assessments for the European Parliament. The CEPR has updated its 2013 analysis for this TSIA. This included: updating and extending the baseline data by three years, ‘splitting out’ the effects on Turkey, disaggregating further the sector breakdown, and splitting out macro-economic effects for EU Member States.2 The scenarios modelled are presented in the box below. For technical reasons and to ensure accurate output, the expected reduction of non-tariff measures (NTMs) in the processed foods’ sub-sectors have not been modelled.3 As a consequence of all the necessary

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2 More details on the modelling, the differences with other studies, and the differences between the CEPR (2013) modelling and the updated modelling are presented in Chapter 1.
3 The subsectors included in the processed food sector are: ruminant meats, other meats, vegetable oils, dairy products, rice, sugar, other processed foods, and beverages & tobacco. NTMs in these subsectors are
methodological adjustments listed above, the results of the updated analysis are slightly lower than the CEPR (2013) estimates. Throughout this report, these updated CEPR results are benchmarked against various other studies (both at EU and EU Member State level). We find that the updated results are highly comparable to other studies, except for two outliers (GED Bertelsmann, 2013; Capaldo, 2014), which present rather implausible effects that stem from different methodological approaches.

The CEPR analysis offered two scenarios for TTIP:

**Less ambitious scenario:**
- 98 percent of tariffs eliminated;
- 10 percent of non-tariff barriers (NTBs) eliminated on both goods and services (20 percent of actionable), except for processed foods, for which a reduction of NTBs has not been modelled;
- 25 percent of procurement NTBs eliminated.

**Ambitious scenario**
- 100 percent of tariffs eliminated;
- 25 percent of NTBs eliminated on both goods and services (50 percent of actionable), except for processed foods, for which a reduction of NTBs has not been modelled;
- 50 percent of procurement NTBs eliminated.

5. **How to interpret the CEPR results**

In general, the results for a particular variable are expressed in percentages. In the figure below, the example of GDP is graphically illustrated. The solid blue line indicates the trend of the GDP level over time. In a scenario without TTIP, represented by the blue dotted line, GDP evolution is shown simply as an extension of the trend line. The alternative, represented by the solid red line, is a scenario with TTIP, as modelled by the updated CEPR results. In the analysis, the GDP level in the TTIP scenario is compared with the GDP level in the baseline scenario for a particular year (in this case 2030). Accordingly, the green arrow in the figure shows the estimated impact of TTIP relative to the level of GDP in 2030 without the agreement in place. Note that gains will materialise every year starting from the moment the implementation of the agreement begins. However, the full gains are not expected immediately. The gains from tariff cuts can be felt instantly, whereas the reduction of NTBs and the gradual adjustment of economic structures imply that some benefits will only be incrementally realised over the course of the years. Because of this, it is not accurate to suggest this percentage can be divided up over a number of years (e.g. 0.036 percent per year). Importantly, the estimated impact is permanent and applies to GDP levels (which are represented by the parallel lines after 2030 and the green arrows in the figure below) and not to GDP growth rates. So, after TTIP is fully implemented, the difference between GDP levels with and without TTIP is 0.5 percent, and this is the case for every year after 2030. Note that the graph is for illustrative purposes and not to scale.
6. **Main expected economic impacts from TTIP: moderate but annual economic gains, ambitious scenario 2030 impact results**

- GDP is set to be 0.5 percent higher each year for the EU and 0.4 percent higher for the US;
- National income is set to be 0.3 percent higher each year for the EU and also for the US;
- Wages for both high- and low-skilled workers are expected to go up by 0.5 percent in the EU, compared with 0.3 percent for high-skilled and 0.4 percent for low-skilled workers in the US;
- Total exports increase for both the EU (+8.2 percent) and the US (+11.3 percent) and so do total imports for the EU (+7.4 percent) and the US (+4.6 percent). The EU’s terms of trade are expected to increase by 0.5 percent, whereas in the US these are expected to worsen by 0.3 percent;
- Bilateral trade is expected to increase significantly from its already high level, with an increase of 27 percent of EU exports to the US and a 35.7 percent increase in US exports to the EU.

7. **Overall sectoral economic impacts of TTIP**

In terms of percentage changes, the largest production (and associated employment) gains in the EU are expected in the leather, textiles & clothing, motor vehicles, beverages & tobacco, water transport, and insurance sectors (see Table 0.1). The top three sectors are those that currently still face large tariffs and/or many NTBs that could be reduced through TTIP. The sectors that lose out relatively are electrical machinery, non-ferrous metals, iron and steel products, other meats, and fabricated metals. It appears that these sectors may be hit harder by the increased competition from third countries after a reduction of tariffs and NTMs. Because the electrical machinery sector is expected to be impacted negatively we would expect upstream sectors such as iron & steel and fabricated metals to also lose out. For the US, the largest output gains in terms of percentage changes are expected in the non-ferrous metals, other meats, other machinery, rice, and textiles sectors (see Table 0.2). The non-ferrous metals and rice sectors, for example, largely benefit from reductions in tariffs and/or NTMs. Motor vehicles, beverages and tobacco, electrical machinery, iron and steel products, fabricated metals, and insurance are the sectors that show relatively the largest decline. The two tables below show these main sectoral impacts for the EU and US. It should be noted that the top sectors at either end of the scale presented here, are the sectors that...

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4 The electrical machinery sector concerns sector classifications GTAP40 and HS85. This sector includes for example: electronic office equipment or communication equipment. A more detailed explanation of the relation between the different sector classifications (GTAP, HS, and NACE) and which products the sector entails can be found in Chapter 6 and Chapter 10.

5 It should be noted that the importance of the leather, textile and clothing sectors, as well as the electrical machinery sector is rather small in the EU and thus the total effect is likely to be only minor. A more detailed analysis can be found in Chapter 3.

6 Please see Chapter 10 for more details on this issue regarding the electrical machinery sector.
will see the largest impact in terms of percentage changes. It is likely that in terms of absolute changes the top five would look rather different. As can be seen from the third column (share in output), although some sectors might see a large impact they are not as important to the economy as other sectors. A more detailed analysis of the sector impacts can be found in Chapter 3 and in the relevant sector studies.

**Table 0.1 Largest positive and negative expected sectoral impact on output for the EU, ambitious scenario**

<table>
<thead>
<tr>
<th>Sector</th>
<th>Declining sectors (% change)</th>
<th>Share in total EU output 2011</th>
<th>Growing sectors (% change)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leather, textiles and clothing</td>
<td>0.3-0.7%</td>
<td>1.8 - 2.7</td>
<td></td>
</tr>
<tr>
<td>Motor vehicles</td>
<td>3.3%</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Beverages, tobacco</td>
<td>1.0%</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>Water transport</td>
<td>0.9%</td>
<td>0.9</td>
<td></td>
</tr>
<tr>
<td>Insurance</td>
<td>1.2%</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>Electrical machinery</td>
<td>-7.9%</td>
<td>1.3%</td>
<td></td>
</tr>
<tr>
<td>Non-ferrous metals</td>
<td>-3.0%</td>
<td>0.8%</td>
<td></td>
</tr>
<tr>
<td>Iron and steel products</td>
<td>-2.5%</td>
<td>1.2%</td>
<td></td>
</tr>
<tr>
<td>Other meats</td>
<td>-1.0%</td>
<td>0.5%</td>
<td></td>
</tr>
<tr>
<td>Fabricated metals</td>
<td>-0.8%</td>
<td>2.1%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Updated results; Note: Estimates to be interpreted as % changes to the baseline scenario (no TTIP) in 2030, 20 per cent direct spill-overs.

**Table 0.2 Largest positive and negative expected sectoral impact on output for the US, ambitious scenario**

<table>
<thead>
<tr>
<th>Sector</th>
<th>Declining sectors (% change)</th>
<th>Share in total US output 2011</th>
<th>Growing sectors (% change)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-ferrous metals</td>
<td>0.6%</td>
<td>3.2</td>
<td></td>
</tr>
<tr>
<td>Other meats</td>
<td>0.3%</td>
<td>2.2</td>
<td></td>
</tr>
<tr>
<td>Other machinery</td>
<td>4.2%</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Rice</td>
<td>0.0%</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>Textiles</td>
<td>0.6%</td>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>Motor vehicles</td>
<td>-2.9%</td>
<td>2.2%</td>
<td></td>
</tr>
<tr>
<td>Beverages, tobacco</td>
<td>-2.6%</td>
<td>0.6%</td>
<td></td>
</tr>
<tr>
<td>Electrical machinery</td>
<td>-2.4%</td>
<td>2.0%</td>
<td></td>
</tr>
<tr>
<td>Iron and steel products</td>
<td>-1.4%</td>
<td>0.8%</td>
<td></td>
</tr>
<tr>
<td>Fabricated metals</td>
<td>-1.1%</td>
<td>1.4%</td>
<td></td>
</tr>
<tr>
<td>Insurance</td>
<td>-0.5%</td>
<td>2.1%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Updated results; Note: Estimates to be interpreted as % changes to the baseline scenario (no TTIP) in 2030, 20 per cent direct spill-overs.

**8. Regulatory co-operation in goods drives the bulk of the results, but tariffs and an open TTIP matter**

For the EU (see figure below), the bulk of the economic impact from TTIP comes from regulatory co-operation, namely 76 percent (more specifically 65 percent due to the reduction of NTMs and 11 percent due to spill-over effects\(^7\)), 24 percent of the total effect comes from tariff reduction. For

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\(^7\) The electrical machinery sector concerns sector classifications GTAP40 and HS85. This sector includes for example: electronic office equipment or communication equipment. A more detailed explanation of the relation between the different sector classifications (GTAP, HS, and NACE) and which products the sector entails can be found in Chapter 6 and Chapter 10.

\(^8\) I.e. the effect on the EU of third countries benefiting from more aligned EU/US regulation. A more detailed explanation of the spill over effects can be found in Section 3.2.
the US (see figure below) regulatory co-operation is also the most important element (87 percent) (74 percent comes from NTM reduction and 13 percent from spill-over effects). The reduction of tariffs counts for 13 percent of the total impact.

**Figure 0.2 Decomposition of the impact of TTIP on GDP, ambitious scenario**

9. **GDP effects vary by EU Member State: the more integrated with the US, the higher the gains**

The positive GDP effect of TTIP is 0.5 percent each year for the EU on average in the ambitious scenario. The figure below shows that all EU Member States are expected to gain from TTIP. However, across EU Member States there is considerable variation. Ireland, Belgium, Lithuania, and Austria stand to gain most, while Malta and Poland gain least. There are several potential explanations for these differences, including the depth of economic integration with the US, the different sectoral strengths of each Member State, and the fact that the results do not take into account any reduction in NTMs for processed foods. This is particularly significant for countries such as Greece, Latvia, Bulgaria, Spain, Croatia, France, Cyprus, Italy, the Netherlands and Poland which could otherwise see significant value added in processed foods exports to the US as a result of NTM reductions in this sector.

**Figure 0.3 GDP impacts, ambitious scenario**

10. **TTIP and third countries: an open TTIP would make a (positive) difference for developing countries**

Because TTIP is not a traditional trade agreement, traditional trade creation and diversion effects only partially apply. The effects for developing countries depend to a larger extent on the degree of non-discriminatory openness in the final TTIP agreement. If in an ‘open’ TTIP, some NTMs are reduced in a non-discriminatory way, many developing countries would gain, in particular those
which are more integrated in global value chains. CEPR (2013), and the updated results, report zero to marginally positive effects for low-income countries in an ambitious scenario. Their GDP will most likely not be affected by TTIP, whereas the exports and imports of low income countries are expected to increase by 0.3 and 0.4 percent respectively. A recent assessment by Brakman et al. (2015), also reports that most low-income countries are expected to not be impacted or to benefit marginally from TTIP. Mercosur, China and India are also expected to see no change in their GDP. Turkey and OECD countries on the other hand are estimated to see their GDP grow by 0.1 percent, and ASEAN countries by 0.5 percent. As for trade, the largest gains in exports can be found in Turkey (2.0 percent), ASEAN countries (1.3 percent), and in OECD countries (1.2 percent). The largest increase in imports are expected to be found in ASEAN countries, China, and Turkey, where imports will increase by 2.0, 1.6, and 1.4 percent respectively.

11. TTIP and Turkey: major bilateral import surge from the US following TTIP

The potential effect of TTIP on Turkey is positive but limited in terms of GDP, national income and wages (0.1 percent). Turkey’s total exports and imports are expected to increase by 2.0 and 1.4 percent respectively. The impact on Turkey’s trade with the US in particular is worth highlighting. However, because of Turkey’s customs union with the EU, it is obliged to adjust its tariffs in line with any changes to the EU’s common external tariff. Tariffs on US exports to Turkey would therefore be eliminated or reduced under TTIP in parallel to the EU’s. However, Turkey would not have the same access to the US, since it is not a party to TTIP and does not have any separate trade agreement with the US. Figure 0.4 shows the potential result. In the model, Turkey’s bilateral imports from the US surge by 23.7 percent, while Turkish exports to the US go up by only 1.3 percent in the ambitious scenario.

Figure 0.4 Decomposition of Turkey-US bilateral exports, ambitious scenario

12. Small business: addressing practical trade concerns is vital for TTIP impact

Small and medium-sized enterprises (SMEs) are the employment backbone of the EU and US economies. If TTIP can facilitate trade for SMEs by removing trade barriers that are prohibitive for SMEs, its impact would be highly significant. SME barriers are very practical in nature: for example, a lack of clear information about the practical requirements for transatlantic trade, a problem often too complicated and expensive for SMEs to solve in comparison to the resources of larger firms. So for SMEs, TTIP needs to deal with practical trade concerns. Beyond the information gap, these include lengthy customs procedures, unnecessary differences or duplicates in testing requirements, and tariff peaks.

13. Overall real income effects: with an ambitious TTIP all groups gain

Average real household income gains of 0.4 percent in the EU and 0.3 percent in the US do not say much about how effects are spread through society. When disaggregating the real incomes to different household groups, we find the following:

- In an ambitious TTIP agreement, all income groups are expected to experience an increase in their real incomes. The poorest quintiles gain marginally less than the richest quintiles;
Those who have jobs gain more from TTIP than those that are unemployed, inactive or retired – the latter groups miss the positive wage impact, but could face a small increase in consumer prices; 

The impact of TTIP on countryside households is not different from the impact on city households.

14. Main expected social impacts from an ambitious TTIP: long-term wages and prices rise, short-term and sectoral adjustment

- **Wages** are expected to rise by 0.5 percent (for high- and low-skilled workers) in the EU and by 0.4 percent for low-skilled and 0.3 percent for high-skilled workers in the US;
- **Wage inequality** in the US is expected to decline because of TTIP;
- Wage effects in TTIP are fuelled by regulatory co-operation in goods sectors and by tariff liberalisations;
- **Labour displacement** – the degree to which employment changes across sectors – is higher in the more ambitious scenario and marginally higher for low-skilled workers, though overall the impact is expected to be within market trends;
- **Consumer prices** are expected to go up marginally in the EU (+0.3 percent) and to have no effect in the US (0.0 percent). This is because higher demand from the US market for European goods and services could lead to slightly higher consumer prices in the EU in the long run. However, for all household groups this is more than offset by higher wages. The increase in consumer prices could also, however, be overestimated as a result of the fact that the model did not consider a reduction in NTMs in processed foods. Consequently, the cost reduction in this sector that could have been passed on to consumers, if NTMs were reduced, is not included;
- **Real household incomes** are expected to go up by 0.4 percent in the EU and 0.3 percent in the US.

15. Sectoral employment impacts of TTIP

In some sectors in the EU, employment is expected to go up (e.g. leather products, textiles, clothing, motor vehicles, and insurance) and in others employment declines (e.g. electrical machinery, non-ferrous metals and iron & steel products). For the US, employment gains are expected in non-ferrous metals, other meats, and other machinery, while in motor vehicles, beverages & tobacco and electrical machinery a decline in employment is foreseen. The expected changes in employment are linked to the expected changes in sectoral output. If a sector’s output is expected to increase, more labour is needed to bring about this increase in output. The contrary holds for an expected decrease in output. Therefore, it is not surprising that the sectors where employment is expected to rise are also the sectors where output is expected to increase (see section 7). The overall labour displacement effects are marginal and well within normal labour market trends. Using data from Eurostat, CEPR (2013) states that 20 workers in every 1,000 on average changed sectors between 2001 and 2007; a number which increased to 37 workers in every 1,000 after the crisis years. It is estimated that TTIP would mean an additional six workers in every 1,000 will change sectors each year by 2030. Because aggregate wages are expected to rise, the pull effect (i.e. workers choose to move to sectors where more employment opportunities and higher wages are offered) dominates the push effect (i.e. workers lose their jobs).

16. Case study 1: TTIP and ILO Fundamental Conventions: no direct effect from TTIP, but competitiveness effects matter and so does an ambitious, legally binding Sustainable Development chapter

The EU has ratified all eight ILO Fundamental Labour Conventions, while the US ratified only two. There will clearly be little impact on the EU, but for the US there are major roadblocks in terms of US law and practice that will impede ratification of these ILO conventions within the context of the TTIP negotiation. TTIP is unlikely to lead to the signing of any other ILO Fundamental Conventions (other than Convention 111, which has already been presented to Congress). This is not to say that

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9 The electrical machinery sector concerns sector classifications GTAP40 and HS85. This sector includes for example: electronic office equipment or communication equipment. A more detailed explanation of the relation between the different sector classifications (GTAP, HS, and NACE) and which products the sector entails can be found in Chapter 6 and Chapter 10.
the US does not already meet the substantive commitments set out in these core labour standards, but rather that ratification by the Senate, requiring a two-thirds majority, is improbable. The EU proposal for the Sustainable Development chapter includes sustainable commitments on labour standards that are comparable to the ILO’s core conventions, as well as very high standards in other areas. These will become legally binding when TTIP enters into force. How this chapter will be enforced is still subject to the negotiations.

17. Case study 2: TTIP and public health: adverse effects from tariff reduction on some commodities can be addressed, and regulatory co-operation could reduce costs and help put new medicines and medical devices on the market more rapidly

This topic was selected to investigate the potential effects of combined tariff and regulatory cooperation elements in TTIP for public health. We looked at impacts of TTIP for a number of food, drinks, and tobacco categories, as well as medical innovations and devices.

Table 0.3 EU-US tariffs in selected sectors (2014)

<table>
<thead>
<tr>
<th>Sector and product group (code)</th>
<th>EU import tariff</th>
<th>US import tariff</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Weighted average tariff in %</td>
<td>Weighted average tariff in %</td>
</tr>
<tr>
<td>Tobacco (24)</td>
<td>22.1</td>
<td>120.2</td>
</tr>
<tr>
<td>Alcohol (22)</td>
<td>0.6</td>
<td>0.1</td>
</tr>
<tr>
<td>Sugars (17)</td>
<td>12.9</td>
<td>8.3</td>
</tr>
<tr>
<td>Pharmaceutical industry (30)</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Other medical apparatus (902229)</td>
<td>2.1</td>
<td>0.8</td>
</tr>
<tr>
<td>X-ray tubes (902230)</td>
<td>2.1</td>
<td>0.9</td>
</tr>
<tr>
<td>Medical parts and accessories (902290)</td>
<td>2.1</td>
<td>0.9</td>
</tr>
</tbody>
</table>

- For tobacco, alcohol, sugars: We find that tariff liberalisation (see table), could lead to increased consumption of these commodities if there is a price-reduction effect. This potential negative effect would be disproportionately higher for the lower income strata of the population (as food constitutes a larger share of their expenditures). However, we also find that the proposed provisions in TTIP regarding the states’ right to regulate in the public interest (e.g. in the area of public health) sufficiently safeguard EU Member States’ freedom to address this negative tariff effect on public health if they wish to do so in order to meet their public health obligations;

- For medical innovation and medical devices: We find that the impact of removing the tariff on medical devices because of TTIP could be positive because hospital equipment would get cheaper, reducing health care costs. We also find that the potential impact of regulatory cooperation – for medical devices this means removing duplicative testing requirements (e.g. mutual recognition of Good Manufacturing Practices (GMP)) and speeding up the take-up of new innovations in medicines (e.g. through convergence on RPS) – could be still more substantial. TTIP could flank and strengthen the ongoing EU-US dialogue at the International Conference for Harmonisation (ICH) and International Device Medical Regulators’ Forum (IMDRF). This work is helping to simplify trade in medical devices while improving patient safety (e.g. regarding Unique Device Identification (UDI)). Finally, there is no evidence that the EU would intend to harmonise the IP regime for medicines with the US, which – some fear – could lead to longer exclusivity periods for patent rights.

18. Case study 3: TTIP and public health services: four (or three) guarantees for the right to regulate at EU Member State level; private sector competition is possible

The EU approach to dealing with public (health) services in trade agreements was established 20 years ago in the context of the GATS in 1995. Within that framework, the EU has negotiated four guarantees for public (health) services:

1. EU Member State governments are free to regulate their public health sector and they can set their own quality standards suppliers need to meet;
2. For public health services, governments do not have to give access to service providers from outside the EU;
3. National, regional, local governments can organise public services as they see fit, for example via a public monopoly, and there is no requirement to privatise these services.
4. EU Member State governments at all levels are free to provide subsidies to the public health sector.
It is expected, but also important for the impact on public health services, that the same guarantees are going to be part of TTIP. Assuming that they are, it is clear that TTIP will have no bearing on public health care services, nor will it lead to changes in national health care legislation.

Healthcare systems vary significantly across EU Member States. In some countries, healthcare systems are partially privatised and this is reflected in the EU offer. Will they be impacted differently? We find that the second guarantee (above) does not apply to fully privatised healthcare providers, unless the EU schedule includes some Member State specific reservations applicable to private health, but that the other three guarantees still do. This means that foreign competition cannot be discriminated against in a fully privatised system, but the health care sector, in all other ways, can still be regulated, organised and supported as an EU Member State wishes. Finally, because of the abovementioned guarantees as well as the clause in Article 2 sub 1 of the EU’s proposal on Investor Protection and an Investment Court System, we believe the right to regulate public health services is not going to be affected.

19. TTIP and human rights: some are affected, others are not because they are not part of the negotiations or because they are safeguarded

Trade policy can have an impact on human rights in various ways, directly and indirectly. We look at various HR that may be affected and that are not elsewhere covered (see three paragraphs above on labour standards, public health and public health services). We believe the human right to an adequate standard of living to be affected positively by an ambitious TTIP for all income groups, because of increased real household income for all groups. Ambition is important, because for the unemployed, inactive, retired and poorest income quintile, a less ambitious TTIP agreement may reduce standards of living owing to slightly higher prices not offset by higher wages. The human right to culture is not likely to be affected, because audio-visual services and broadcasting services have been excluded from the negotiating mandate. The EU has – since GATS in 1995 – upheld four guarantees to protect publicly funded services, no matter how they are delivered. The human right to education is an EU Member State competence that is protected by these GATS guarantees. Concerning the human right to information we find that the TTIP negotiations have become significantly more transparent and provide the right to take part in the conduct of public affairs. A major contributing factor to this enhanced transparency has been strong and continued pressure from EU civil society and EU citizens. It is possible to further increase transparency. The human right to the protection of personal data is not likely to be affected because TTIP will not affect either party's right to legislate in order to protect privacy.

20. Main expected environmental impact from TTIP in the ambitious scenario:

- Total energy demand is expected to go up by 0.2 percent in the EU as a result of TTIP. This is a combination of a reduction in energy demand in engineering and metals, owing to a decrease in output, and an increase in energy demand in all other sectors. However, it should be noted that the model assumes no other policy changes regarding the EU's future energy mix, although the EU is committed to significant action on climate change including via the 2015 Paris Agreement;
- In an ambitious TTIP, demand will increase for hard coal (0.3 percent), natural gas (0.2 percent) and middle distillates (0.2 percent) owing to higher energy demand. Other gas (-0.2 percent) will decline10;
- Absent mitigating policies, CO2 emissions are estimated to go up by 0.2 percent in the EU because of TTIP. This is a combination of increased emissions from textile and clothing (2.3 percent), construction (0.5 percent), and food, drink & tobacco (0.5 percent), and a decrease in emissions from non ferrous metals (-2.0 percent), engineering (-1.2 percent) and iron & steel (-0.5 percent). As with energy demand, this is related to changes in output;
- Looking further into the total impacts on CO2 emissions we see that the results are mainly driven by the composition effect (i.e. relative change in composition of sectors in the economy);
- In the US, CO2 emissions are expected to go up by 0.3 percent because of TTIP, without mitigating policies. Although emissions are expected to decrease in engineering and chemicals by 1.4 and 0.4 percent respectively, the small expected

10 Further explanation of the reasons for this increase can be found in Chapter 5 (p.190).
Trade provisions in TTIP could potentially trigger substantial positive impacts on the sustainability of natural resources globally. Illegal trade between, through and destined for the EU and US markets is significant. In combination with the most concrete and detailed provisions proposed by the EU for TTIP’s Sustainable Development chapter (Article III.4), the area of IUU fishing is likely to be most significantly (positively) impacted by TTIP through an expected increase in multilateral cooperation. In general, both the EU and the US have developed – or are planning to develop – a very strong and comprehensive legislation in all three areas to tackle the illegal trade in wildlife, timber and fish. The most significant, although more uncertain, impact of TTIP is likely to stem from joint EU-US co-operation towards third countries. Joint warnings (‘yellow carding’) or import bans could potentially be a very effective instrument because of the combined size of EU and US markets for natural resources.

22. Case study 5: TTIP and fossil fuels: Not a direct trade effect, but a strategic LNG price and energy dependence effect for the longer run; trade in refined petroleum products will go up

This case study helps to illuminate the figures given above with regards to TTIP’s potential impacts on EU energy demand. It is important to note that the EU's energy mix is likely to change, owing to inter alia, global energy market developments, policies to implement the Paris agreement and other autonomous measures, as well as TTIP itself. TTIP should underpin LNG exports from US to EU which began in early 2016. Through tariff liberalisation, TTIP could have significant economic and environmental impacts, because trade in refined petroleum products would increase. If increased gas use replaces the use of coal in the EU's electricity generation, and does not replace the use of renewable energy sources, it could have a positive impact on the environment (assuming this coal is not used elsewhere). Although LNG exports to the EU are likely to be marginal in the short-run given the current global oil and gas prices, they are an important new source that will help with the EU's energy security and increase competition on the EU gas market. In the longer run, the removal of the LNG export licensing requirement could lead to a diversification of Europe’s energy mix towards more LNG. There are, however, some public concerns about the environmental aspects of shale gas production, such as methane leakages, with shale gas likely to form a proportion of the LNG exported from the US.

23. Case study 6: TTIP and energy efficiency: The impact of TTIP’s regulatory co-operation framework on energy efficiency of products could lead to 0.3 percent energy savings by 2030

There are high ambitions in the areas of TBT (reducing unnecessary and duplicative test procedures, while increasing the use of international standards) and regulatory co-operation (reduce divergent regulatory requirements, without jeopardizing environmental protection levels) in TTIP. Success in TTIP could in the longer term lead to additional energy savings, lower retail prices for energy efficient products and reduced conformity assessment costs for producers. TTIP's impact is most likely to come from exchange of information, the use of international standards in test procedures and, potentially, mutual recognition of conformity assessment procedures. A rough estimate of the total energy savings that could be achieved in the longer term under TTIP in the EU is 0.3 percent of total energy use.\textsuperscript{11}

\textsuperscript{11} This finding is different from the CGE modelling result, because the CGE modelling result does not take into account technological improvements in energy efficiency.

The agri-food sector comprises of the primary agricultural sector and the processed food sector. In the 2013 the sector generated a turnover just over 1 trillion Euro, making it the largest sector in the EU. A significant share of EU’s production is exported to the US market, this mainly concerns spirits, wine and beer, which take up 45 percent of all food and beverages products exported to the US. The EU mainly imports oilseed & soybeans, nuts, and spirits from the US, making up 37 percent of all food and beverages imports form the US. As tariffs can be high in this sector, transatlantic trade is significantly hampered. When exporting to the US average tariffs per product group range from 0.0 to 15.0 percent, but can be more than 100 percent for specific products. Average tariffs levied by the EU are even higher, ranging from 2.8 to 66.4 percent. Besides tariffs, the processed foods sector is also a sector that knows many NTMs. For example the US imposes barriers on EU milk products that fall under the pasteurised milk ordinance (PMO) for Grade A dairy products; exports to the US of live ruminants, beef and derived products from the EU are still restricted due to the US’ overly lengthy and burdensome import approval procedures, though the US lifted, in 2013, a 15 year old ban on imports of EU beef due to the outbreak of BSE in the EU in the 1990s; and US approval procedures for plants, fruit and vegetables from the EU are strict and time consuming to the extent of presenting a trade barrier (applications can be pending for 10 years or longer). As a result of TTIP the expected changes in EU output in the sector range from -1.0 percent for other meats to 1.1 percent for beverages and tobacco in the ambitious scenario. The changes in employment are likely to follow the changes in output and range from -1.3 percent for other meats to 0.5 percent for vegetable oils. Some larger impacts are expected regarding trade, EU exports are estimated to increase between 0.8 and 16.1 percent, depending on the subsector. Imports of the EU sector are estimated to increase between 0.5 and 67.9 percent. These results are, however, likely to be underestimated since a reduction of NTMs in this sector as not modelled.13 With regards to third countries, it is estimated that overall the rest of the world is not significantly affected. However, some preference erosion could occur, depending on the sector and the country (e.g. vegetables and fruits in Mexico), though these impacts are expected to be rather limited. A more detailed analysis of the impact on the different subsectors can found in Chapter 7.

25. Sector study 2: Impacts on the chemicals and pharmaceutical sectors

The chemicals sector is one of the largest and most involved sectors in transatlantic trade and FDI. It is a sector that includes petrochemicals, polymers, basic inorganic chemicals, specialty chemicals and consumer chemicals. In terms of turnover and value added it is one of the largest sectors in the EU. However, globally the EU has lost significant market share to China. In 2004 the EU held 30.9 percent of the global market, but only 17.0 percent in 2014. The majority of EU chemical production is destined for the home market, only 25 percent concerns extra EU exports. The EU’s main export markets are Rest of Europe, NAFTA and Asia. Although tariffs with the US are relatively low, because of the significant value of goods traded, these tariffs still add a significant cost to chemicals trade. Also NTMs add to the cost of trade, it has been estimated that NTMs in the

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12 The EU and the US are currently working on a solution for several EU countries, including the Netherlands.
13 Please see Section 1.4 for more details and explanation.
chemical sector add up another 21 to 29 percent to the costs. One of the issues often mentioned by businesses that result in additional costs is the need for relabelling.

Although most pharmaceutical products are made from chemical substances, they should be treated as a separate industry. While the sector is small in number of enterprises (4,200) and employees (554,000), it is large in terms of turnover (€229 billion) and value added (€80 billion). Worldwide the EU sector accounts for 25.3 percent of world sales. In 2013 its extra-EU exports were worth €113.4 billion, of which 27 percent was destined for the US, its main trading partner. In the pharmaceutical sector tariffs are close to zero, but some NTMs currently in place are burdensome for trade, like e.g. differences in clinical trials and labelling requirements.

The modelling exercise conducted in this study estimates an output gain ranging from 0.1 to 0.3 percent in the EU. Both exports and imports are also expected to increase with around 5.2 to 9.4 percent. The largest gains come from the reduction of NTMs. It is important to keep in mind that the model exercise has combined the chemicals and pharmaceutical sectors into one industry. The outcomes do not imply that the two sectors will be impacted in the same way, but they show merely a range in which the impact might fall. Moreover, the scenario modelled, is more ambitious and not in line with the current negotiations on chemicals, therefore the results are over-estimated. With regard to employment, the model has estimated a small change ranging from -0.1 to 0.0 percent. For pharmaceuticals, additional to direct benefits for the industry, the reduction of duplicative testing and duplicative clinical trials could also benefit patients in terms of improved access to medicines, lower prices (if companies pass the cost reduction on), and fewer clinical trials on both adults and children. In both industries, time and resources that no longer need to be spent on e.g. duplicative procedures could now be used in other areas, such as safety or research and development, which could ultimately benefit the consumer, the environment, or the competitiveness position of the industry. A more detailed analysis can be found in Chapter 8.

26. Sector study 3: Impacts on the mechanical engineering sector

The mechanical engineering sector is a key European sector, employing over 2.8 million people in over 91 thousand companies. The EU sector exported products worth €303 billion, of which €58 billion to the US, its most important export destination, in 2014. When exporting their products to the US, EU firms are faced with average tariffs ranging from 0 to 8.0 percent. The industry mainly suffers from NTMs in the form of differences in standards, requirements and tests, but also from restrictions in the area of public procurement. In terms of the economic and trade impacts, the CGE model predicts positive impacts of TTIP. In the EU, the total output is expected to grow with about 0.5 percent in the case of an ambitious scenario and exports would grow by 1.5 percent. The positive outcomes are in line with the overall expectations of the industry that suggests that the EU mechanical engineering sector is a strong and globally competitive industry. Stakeholders have also indicated that they expect the mechanical engineering industry to gain from TTIP. In line with the expected growth in output and trade, the mechanical engineering sector is also estimated to create more jobs in the EU, equally for the high-skilled and low-skilled workforce, with an increase of about 0.2 percent. On the other hand, growth of the sector’s production and trade across the Atlantic result in growth of CO2 emissions by 0.4 to 0.5 percent in the EU. A more detailed analysis can be found in Chapter 9.

27. Sector study 4: Impacts on the electrical and electronic goods sector

In 2013 the EU electrical and electronic goods sector generated a turnover of 559 million euro and employed around 2.5 million persons. In terms of trade, extra EU exports equalled €280 billion in 2014, of which €41 billion was exported to the US. The US is the second most important trading partner for imports (€29 billion), but clearly lags behind China (€153 billion). The average tariffs that EU producers face when exporting to the US range from 0 to 5.8 percent. However, more important than tariffs are the NTMs present in the sector. NTMs faced by EU exporters are caused mostly by divergence of US standards from international product standards, necessity of 3rd party testing on import products, and the existence of the Energy Conservation Program for Commercial and Industrial Equipment (EPCA). The existence of US state-level safety certifications and the Encryption Control Protocol that is not in line with the international arrangements also creates burdensome for trade, like e.g. differences in clinical trials and labelling requirements.

14 This should only concern tests and trials that provide the same level of safety.
15 These tariffs are weighted averages, within the different product groups tariffs can be higher for some products.
16 1.1 Million employees were employed in the electronic goods subsector (NACE 26), and 1.4 million in the electrical equipment subsector (NACE 27).
17 These tariffs are weighted averages, within the different product groups tariffs can be higher for some products.
The motor vehicle sector analysed in this study comprises of "motor vehicles, including parts and components. With a turnover of €959 billion in 2013, the motor vehicle sector is one of the largest manufacturing sectors in the EU. On the global market China has taken over the EU’s place as leading producer. The EU’s share in world production has decreased over time from 34 percent in 2000, to 23 percent in 2014. The EU motor vehicle sector sees the US as its main trading partner, good for €46 billion of exports in 2014. The average tariffs EU exporters face are relatively low and range from 0 to 1.6 percent, average tariffs levied by the EU are much higher. The NTMs present in the sector are more burdensome and could add a 27 percent additional cost to trade and investment with the US. Often cited issues relate to differences in safety, emission and fuel efficiency regulations. Additional to a tariff reduction TTIP is likely to address many of the differences in safety regulation. An ambitious TTIP could result in an EU output gain of 1.5 percent and an increase in overall exports and imports of 40.9 and 42.1 percent respectively. Also low skilled and high skilled employment is expected to increase, by 1.2 and 1.3 percent respectively. A positive impact is also expected by the EU industry and predicted by other studies. The impact of the scale effect on the environment is negative as increased production could lead to increased environmental pressure in terms of an increase in air pollutants by 1.5 percent in the ambitious scenario. However additional time and resources available due to regulatory cooperation could be used to e.g. improve the production efficiency or stimulate R&D with respect to electric cars. A more detailed analysis can be found in Chapter 10.

28. Sector study 5: Impacts on the Motor vehicles sector

The motor vehicle sector analysed in this study comprises of "motor vehicles, including parts and components. With a turnover of €959 billion in 2013, the motor vehicle sector is one of the largest manufacturing sectors in the EU. On the global market China has taken over the EU’s place as leading producer. The EU’s share in world production has decreased over time from 34 percent in 2000, to 23 percent in 2014. The EU motor vehicle sector sees the US as its main trading partner, good for €46 billion of exports in 2014. The average tariffs EU exporters face are relatively low and range from 0 to 1.6 percent, average tariffs levied by the EU are much higher. The NTMs present in the sector are more burdensome and could add a 27 percent additional cost to trade and investment with the US. Often cited issues relate to differences in safety, emission and fuel efficiency regulations. Additional to a tariff reduction TTIP is likely to address many of the differences in safety regulation. An ambitious TTIP could result in an EU output gain of 1.5 percent and an increase in overall exports and imports of 40.9 and 42.1 percent respectively. Also low skilled and high skilled employment is expected to increase, by 1.2 and 1.3 percent respectively. A positive impact is also expected by the EU industry and predicted by other studies. The impact of the scale effect on the environment is negative as increased production could lead to increased environmental pressure in terms of an increase in air pollutants by 1.5 percent in the ambitious scenario. However additional time and resources available due to regulatory cooperation could be used to e.g. improve the production efficiency or stimulate R&D with respect to electric cars. A more detailed analysis can be found in Chapter 10.

29. Sector study 6: Impacts on the Maritime and air transport sector

While the maritime transport sector is more focussed on freight transport, the air transport sector is more focussed on the transportation of passengers. In terms of EU exports the US is the most important export destination for both the maritime and air transport sectors. Although the services industries do not face the burden of tariffs, they are impacted by other trade barriers. A significant market access restriction in the maritime transport sector is The Jones Act, which effectively excludes the EU industry from the US market. In addition, foreign ownership restrictions, the container security initiative, or local content requirements hinder trade. Air transport services are also hindered by foreign ownership restrictions, as well as by the Fly American Act, and the Clean Air Act. Although not all trade barriers will be lifted in these two sectors, the modelling results show that in both the ambitious and less ambitious scenario output and trade will increase for both sectors. Output is expected to go up by 0.9 percent in the maritime transport sector and by 0.4 percent in the air transport sector. In maritime transport services export and import will increase by 1.2 and 1.3 percent respectively, for air transport these numbers amount 1.1 and 0.7 percent. A large part of the increase in output and trade stems from indirect effects, i.e. increased trade in other sectors (due to a reduction in trade barriers), which requires more transportation of their goods. With regards to the environmental impacts the increase in transportation will most likely lead to increased pressure on the environment. Air pollution is estimated to increase by 0.9 percent in the maritime transport sector and by 0.4 percent in the air transport sector in the ambitious scenario. There are however other factors that might be able to offset these increases. If additional transport leads to an increased demand for ships, more young and less polluting ships will be used

18 Corresponds to product classification GTAP41 and HS84, and includes for example: medical precision and optical instruments, electric and word-processing machines, automatic data processing machines, computer storage devices and scientific and technical instruments.
19 Corresponds to product classification GTAP40 and HS85, and includes for example: electronic equipment for broadcasting and transmission, manufacture of office machinery, manufacture of television and radio transmitters or sound or video recording.
and could potentially replace the old and more polluting vessels. A more detailed analysis can be found in Chapter 12.

### 30. Sector study 7: Impacts on the Financial services (incl. insurance) sector

The financial services sector in the very specific context of trade agreements is separated between insurance on the one hand, and banking and other financial services on the other hand. The EU and US are by far the biggest financial markets in the world, also used as platforms for financing operations outside of their territory. It is estimated that the financial services sector contributed on average 4.9 percent to gross value added in the Eurozone (1999 - 2013) and that the sector's value added contributed just over 5 percent to EU27 GDP in 2011. This study focuses on the trade in financial services (including foreign direct investments in financial sectors), as it has been regulated since the GATS and through various bilateral agreements. Despite losing market share due to the crisis, Europe remained the largest insurance market in the world in 2012. The EU27 is a net exporter of financial services and a net exporter of insurance services; however insurance services exports show a declining trend since 2012. FDI data confirm the strong integration between the EU US financial sectors. EU outward FDI stock in the US over the past few years accounted for approximately 30-36 percent of all EU financial services outward FDI stock. US FDI stock in the EU sector over the past few years amounted to approximately 40 percent of all inward FDI stock. The model results for an ambitious scenario with 20 percent spill-overs indicate a small positive impact for the EU services sectors in terms of output (0.4 percent for finance and 0.8 percent for insurance) and more substantial impacts for trade, and particularly exports (increase by 4.2 percent in exports and 2.6 percent in imports for finance, and by 4.2 percent in exports and 2.6 percent in imports for insurance). Employment impacts are in line with output and are expected to be slightly positive for the EU. These results likely reflect a lower limit of the potential impacts. FDI is not included in the modelling, while this is key for the sector. Minimal direct environmental impacts are expected given the limited increase in output and the fact that trade in financial services will not create substantial transport flows with possible negative effects (e.g. as part of the trade will take place electronically). Potential negative impacts, as seen in particular by civil society but also by several academics, relate to the actual approach taken to regulatory cooperation and the specific form it will take. Given the high level of integration between EU and US financial markets, the main transatlantic barrier in the financial sector remains regulatory divergence, about which the EU has proposed to include in the TTIP some elements to develop regulatory cooperation. This should be done while preserving full autonomy of regulators from both sides, and in order to achieve financial stability as a primary objective, two conditions that the EU has always set out to be its priorities in that field. A more detailed analysis can be found in Chapter 13.
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