GED Study

Turkey's EU integration at a crossroads

What consequences does the new EU trade policy have
for economic relations between Turkey and Europe,
and how can these be addressed?

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Table of contents

The most important results of the study

1. Since Turkey's inclusion in the European Customs Union, the country's economic relations with EU states have grown steadily closer. **Since 2002 especially, bilateral trade between Turkey and the EU has benefited from the customs union.** As well as the constant increase in bilateral trade in finished products, a steady **rise in trade in intermediate goods** has been observed. An underlying reason for this development is Turkey's integration into the production networks of European firms. In addition to the high level of bilateral trade in intermediate goods, this can also be seen in the **high levels of foreign direct investment.** Turkish national added value benefits from **integration into European production chains**, as increasingly more complex goods are produced for the EU. Germany has developed into Turkey's leading economic partner in terms both of trade and of investment.

2. **The Republic of Turkey has surrendered its trade-policy sovereignty to the EU through** its partial integration in the **European Customs Union**. Turkey's customs policy for industries covered by the customs union is determined by the European Commission. By yielding trade-policy sovereignty, Turkey has received improved access to the EU28 states. The **customs agreement offers Turkey** a significant **welfare gain** by integrating Turkish industry into the EU. The EU-Turkey customs agreement is, however, flawed with regard to free trade agreements between the EU and third countries. Since Turkey is not an EU member state, it cannot participate in the EU's negotiations on trade agreements with third countries (**problem of asymmetry**). As a result, **Turkey faces significant trade disadvantages** both in third countries and in the EU. Two possible short-term corrections are theoretically conceivable to remove the asymmetry Turkey experiences in the customs union. A) Turkey converts the customs agreement with the EU into a free trade agreement and thus regains full sovereignty over its trade. B) Turkey expands the existing customs agreement to include the agricultural and service sectors. In the long term, Turkey must offset the EU's free trade agreements with third countries by concluding its own free trade agreements with the same countries.

3. By signing the Ankara Agreement, Turkey aligned its external tariffs for industrial goods from third countries with those of the EU. In return, there are no tariffs between the EU and Turkey for trade in industrial goods. In the agricultural sector, there are considerably higher trade tariffs in Turkey than in the EU or even the USA. At the same time, for most agricultural sectors the EU has no bilateral trade tariffs for Turkish goods, as long as defined quotas are not exceeded. External tariffs will continue to exist for Turkey in the EU's future trading partners, albeit at a low level, since the measures negotiated to facilitate European trade apply to the EU but not to Turkey. For example, trade tariffs on motor vehicles will be abolished in the customs union **after the TTIP** while **Turkish companies will still have to face additional costs of 2 percent**. In the case of **free trade between the EU and India, Turkish manufacturers of automobile parts will be further hit with tariffs of 14 percent**. Moreover, the rules of origin will endanger production networks between Turkey and the EU. Investment in the production of intermediate goods in Turkey is becoming increasingly unattractive from the EU's perspective, due to the problem of asymmetry in the customs agreement.

4. Empirical estimates confirm that increasing intensification of economic integration between two countries results in higher average growth in trade. However, estimates also show that some comprehensive free trade agreements can lead to higher bilateral trade flows than, for example, a customs union agreement. In Turkey's case, the question arises, at least in theory, of whether a rollback of the customs union to a free trade agreement represents a better alternative.

5. Under the **existing customs agreement, the EU's new free trade agreements (e.g. the TTIP) have negative consequences for Turkish welfare.** Although the cumulative negative effects are not too great at first, it becomes clear at a sectoral level that important export sectors in Turkey are experiencing a very significant drop in trade. The asymmetrical customs agreement, which disadvantages Turkish exporters on the markets of the EU's new trading partners, is the cause of this sharp sectoral fall in exports. The negative effects for Turkish companies are particularly marked if the EU's new partner countries already have a strong industry in the respective sectors. **In important industrial sectors, in particular, such as the automotive and machinery-construction sectors, falls of up to 10 percent and 4 percent, respectively, are to be expected for Turkish exports to the EU's new partner countries.**

6. **An extension of the EU-Turkey Customs Union** to the agricultural and service sectors would have a strong **positive welfare effect** on the Turkish economy. The gross domestic product could **rise** by an additional **1.84 percent**. Turkish exports to the EU could increase by almost 70 percent. However, the rise in exports would vary from sector to sector. Whereas exports to the EU could increase by 95 percent for the agricultural sector and 430 percent for the service sector, a fall in exports is to be expected in industrial sectors. By deepening the customs union there will be a reallocation of resources away from industry toward the service sector. Furthermore, the increase in exports to the EU will be the result of a sharp decline in Turkish exports to other countries. The deepening of the customs agreement could lead to **per capita income growth of USD 171**.

7. Following the **deepening of the customs union, Turkish exporters can compensate for the problem of asymmetry in the event of new EU free trade agreements.** The conclusion of the six EU free trade agreements under consideration would result in **a 1.89 percent growth in GDP for Turkey,** which is higher than would be the case under a deepening of the customs union alone, without the new trade agreements. It is the growth in exports to the EU in the service sector in particular that will compensate for a fall in Turkish exports to the EU's new partner countries. Although deepening the customs union will offer medium-term compensation for the problem of asymmetry, there is still the possibility for Turkey in the long term to improve welfare insofar as the existing tariff asymmetry is balanced out by free trade agreements with the EU's new partner countries.

8. The **deepening of the EU-Turkey Customs Union** and the conclusion of basic free trade agreements between Turkey and the EU's new trading partners could result in a **2.13 percent rise in welfare for Turkey.** Such a trade policy could **increase per capita income in Turkey by almost USD 200.** If Turkey is able to conclude free trade agreements as comprehensive as those concluded by the EU with the third countries in question, there will be a potential GDP **growth of 2.5 percent.** This would currently correspond to a **nominal GDP increase of USD 18 billion.**

9. **A deepening of the customs union with Turkey leads in Germany and the EU to welfare gains,** while a rollback of the customs agreement to a free trade accord is accompanied both in Germany and in the EU with negative welfare effects.

10. **The rollback of the EU-Turkey Customs Union to a bilateral free trade agreement represents another trade policy option; however, this would result in a fall in welfare in Turkey.** There would be a **drop in GDP of 0.81 percent.** In addition, new EU free trade agreements would lead to a further drop in welfare (of 0.96 percent). The main reason for this is the decline in European-Turkish production networks resulting from a rollback of the customs union to a free trade agreement. Due to the **need for certificates of origin** in free trade agreements, European companies deem Turkey to be an increasingly unattractive location for the production of intermediate goods. Even if Turkey concludes free trade agreements with the EU's new partner countries in such a scenario, this will not lead to better welfare effects than in all of the other scenarios previously considered. Although Turkish exports to the corresponding third countries will increase, since the problem of asymmetry will no longer exist, trade with the EU will decrease, which is of greater importance due to current trade volumes. **A rollback of the customs union to a free trade agreement is not a wise trade policy for Turkey in comparison to the alternative of deepening the customs union.**

1. Introduction

In May 2015 the Turkish government, together with representatives of the European Union (EU), issued a Memorandum of Understanding with the objective of modernizing and expanding the existing customs union (CU) between the two parties.[1] This desire to deepen economic policy relations between the EU and Turkey separately from the stagnating *acquis communautaire* may at first glance seem surprising, but it represents a possible step toward preventing the impending breakdown in economic and trade relations between the two regions.

While political negotiations on Turkey's accession to the EU have not made much progress in recent years, bilateral economic relations are developing in a positive way despite the fact that Turkish membership of the customs union is initially restricted to industrial goods and processed agricultural goods. The starting point for this positive economic development was the Association Agreement between Turkey and the former European Economic Community, the so-called Ankara Agreement. Initiated in 1963, it resulted in the signing of the present customs union in 1995, which came into effect a year later in 1996. Turkish industry has therefore been increasingly linked to the European economy since then. In particular, German companies use the customs union with Turkey to produce intermediate goods cost-effectively in the country and then re-import them for further processing in Germany. It is therefore unsurprising that the majority of foreign direct investment in Turkey comes from German companies.

The EU, meanwhile, is by far Turkey's most important trading partner and, in turn, Turkey is the EU's sixth largest trading partner. Turkey enjoys strong economic relations with Germany in particular. While 9 percent of Turkish exports go to Germany, approximately 10 percent of all Turkish imports are from Germany.

The success of this economic integration has, however, been under threat for some time, since institutional weaknesses in the organization of the European customs union for Turkey have brought about increasingly negative consequences for Turkish industry. The European Commission's focus on signing new regional trade agreements, such as with the USA (Transatlantic Trade and Investment Partnership, TTIP), Japan and Canada for example, has highlighted institutional weak points in what was previously a successful customs union between Turkey and the EU.

As a result of the customs union agreed with the EU, and the corresponding principle of joint customs harmonization for third countries, Turkey is also obliged to open up its market to these third countries when the EU signs free trade agreements with them. In return, Turkish companies can establish free commodity trade with the EU28 states, but cannot receive any of the benefits that are negotiated for European exporters to third countries. Technically there is discrimination against Turkish exports in free trade agreements with third countries, since EU trade agreements are negotiated at EU level and non-members have no right to participate in agreements, even when the effects of these agreements – as in the case of the customs union – have dramatic economic implications for states involved in the integration process with the EU.[2]

If the EU, together with Turkey, does not introduce any appropriate measures, there is a risk that bilateral economic relations will deteriorate and that Turkey's integration process with the EU will thus falter. In 2013 the former Minister of Foreign Affairs and recently stepped down Prime Minister, Ahmet Davutoğlu, already insisted that *"a solution must be found for Turkey in the EU's new free trade*

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1 EU-Turkish Memorandum of Understanding: http://ec.europa.eu/commission/2014-2019/hahn/announcements/eu-and-turkey-announce-modernisation-custom-union__en.

2 In addition to Turkey, Andorra and the Republic of San Marino have the same asymmetrical treaty obligations and rights in free trade agreements between the EU and third countries.

agreements", since otherwise there would be an unfair trade relationship for Turkey and this would not be acceptable.[3]

Nowadays it is possible to understand the customs union agreement between Turkey and the EU, which is increasingly regarded as being asymmetrical and unsustainable, only in its historical context. Turkey signed the agreement regarding integration into the European customs union in the belief that it would soon gain EU membership and did not foresee the consequences that future EU trade agreements would have for its external trade relations. The scope of the regional free trade agreements currently being negotiated is a great surprise from the perspective of the 1990s, since *multilateral* economic reforms took precedence back then when the World Trade Organization was founded.[4] By signing the customs agreement the Republic of Turkey subsequently yielded some of its autonomy in terms of trade policy, without adequately taking into consideration the consequences of new EU free trade agreements.

The objective of this study is, first, to describe the institutional framework conditions that exist between the EU and Turkey while taking new European trade policy into account, and to determine the institutional incompatibilities increasingly emerging as a result. Based on this, we will subsequently quantify the possible economic effects that the EU and Turkey can expect to encounter if there is no alignment in the bilateral economic treaties (EU-Turkey). Not only will the potential medium-term effects of the TTIP be analyzed, but trade agreements currently being negotiated by the EU and third countries, which may have long-lasting consequences for the Turkish economy and European-Turkish economic relations, will also be taken into consideration. After the economic implications have been quantified for participating partners in the "status quo", possible alignments in specific EU-Turkey economic agreements will be assumed in the following analysis scenarios, and possible effects will be quantified. In particular, the core issue here is how a more comprehensive Turkish integration into the EU through the customs union would differ from Turkey's disintegration in the form of a purely bilateral free trade agreement.

A key challenge for the study lies in econometrically extracting the differences between a customs union and a free trade agreement using historical trade data. Although

it is currently possible to differentiate between various free trade agreements, the quantification of more comprehensive trade agreements, which are categorized as somewhere between a comprehensive free trade agreement and a customs union, appears to be a challenging prospect as there are few relevant comparable cases. Countries in the EEA (European Economic Area) and EFTA members negotiate agreements with the EU in addition to pure trade treaties. These result in different degrees of integration according to the country concerned and will be considered here as potential alternative economic relationships.

In broad terms this study intends to quantify the positive economic aspects of a more comprehensive economic integration into the EU for Turkey while taking into account international regionalization. At the same time, it will consider the country's more comprehensive integration into the EU and the accompanying surrender of political sovereignty to the European institutions. From this economic and institutional interplay, plausible standard integration objectives for economic policy will be derived for EU-Turkish relations.

It should be pointed out that this study cannot address the subject of recommendations for action with regard to full Turkish membership of the EU. Such an analysis would have to extend beyond the intended medium-term economic policy aspects and would require a more comprehensive analysis of the matter.

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3   See article in *Handelsblatt, "Türkei droht mit Aussetzung der Zollunion" (Turkey threatens to suspend customs union), 11/05/2014.*
4   In 1995, the World Trade Organization (WTO) was founded in Geneva as a successor to the General Agreement on Tariffs and Trade (GATT). One of its primary objectives was defined as the continual liberalization of global trade under the supervision of the WTO.

2. The development of treaties in EU-Turkish relations

Turkey's continuous and, as yet, unfinished process of economic and political integration into the EU began with the country's application for membership of the European Economic Community on 31 July, 1959. Whereas political integration efforts have stagnated in recent years, bilateral economic relations have flourished, especially since Turkey's entry into the European Customs Union in 1996.

The trigger for this positive economic development was the signing of the Association Agreement, known as the Ankara Agreement, between the former European Economic Community and Turkey in 1963. It was a precursor to the present customs union, which was signed in 1995. Turkish membership of the European Customs Union was initially restricted to all industrial goods and processed agricultural goods traded between the EU and Turkey. Coal, steel, agricultural products, services and public contracts are excluded from the agreement.

The bilateral agreement has always been aimed at facilitating Turkish integration with European countries while at the same time deepening economic relations by means of the customs union. Turkish membership of the European Customs Union is therefore seen by political decision-makers as an intermediate step on the path to full EU membership. Since then EU-Turkish trade in goods has been consistently on the rise, and Turkish industry is subsequently increasingly connected with the European economy.

As a member of the European Customs Union, Turkey yields sovereignty over its trade policy to the European Union. The reality is that Turkey must accept EU trade policy in the relevant industries. In addition, Turkey has no practical involvement in EU trade policy, as it is not a member of the EU and is therefore not represented in the relevant executive institutions.

Technically, membership of the European Customs Union means that countries can set a common external tariff with the EU for third countries and in return receive free trade in goods with the EU28 countries. However, the Ankara Agreement also requires Turkey to recognize future free trade agreements between the EU and third countries and

Table 1: Timeline of previous EU-Turkey integration efforts

07/31/ 1959	Turkey applied to join the European Economic Community (EEC)
12/01/1964	Ankara Agreement between Turkey and the EU came into effect
01/22/1982	Turkey-EU relations suspended
09/16/1986	Turkey-EU relations resumed
06/06/1990	European Commission "cooperation package" adopted, aimed at accelerating cooperation between the EU and Turkey
12/13/1995	Signing of customs union (EU-Turkey)
12/11/1999	Turkey recognized as a candidate country
10/03/2005	EU began negotiations with Turkey on full EU membership
06/08/2011	Founding of the Ministry for EU Affairs
10/30/2014	Republic of Turkey announced the "National Action Plan for the EU Accession", Phase 1
05/12/2015	Memorandum of Understanding (MoU) between the EU and Turkey, aimed at upgrading the EU-Turkish customs agreement.

Source: Turkish Ministry for EU Affairs (homepage)

thus to open up its market to the EU's new free-trade partners. But since Turkey is not a full member of the EU, it neither receives the same free access to trade in third-country markets nor does it have the right to sit at the negotiating table alongside the EU when it comes to discussing the terms of new free trade agreements.

The legal basis for the declared rights and obligations of Turkey within the customs union is defined under *DECISION No. 1/95 OF THE EC-TURKEY ASSOCIATION COUNCIL of 22 December 1995 on implementing the final phase of the customs union.*

The common customs tariffs and preferential customs arrangements are laid down in Article 13:

(1) Upon the date of entry into force of this Decision, Turkey shall, in relation to countries which are not members of the Community, align itself on the Common Customs Tariff.

(2) Turkey shall adjust its customs tariff whenever necessary to take account of changes in the Common Customs Tariff.

Article 16 governs the recognition of preferential customs for third countries:

(1) With a view to harmonizing its commercial policy with that of the Community, Turkey shall align itself progres-

sively with the preferential customs regime of the Community within five years as from the date of entry into force of this Decision. This alignment will concern both the autonomous regimes and preferential agreements with third countries. To this end, Turkey will take the necessary measures and negotiate agreements on mutually advantageous basis with the countries concerned. The Association Council shall periodically review the progress made.

2.1 Institutional challenges of the European Customs Union for Turkey

The present treaty framework of the Ankara Agreement requires Turkey always to open up its market to the EU's new free-trade partners, without receiving the equivalent free access to the markets of those countries from which the European companies benefit. The country is required to pursue its own free trade agreement with any third country in order to allow Turkish companies access to the markets of the relevant third countries in the aftermath of the EU agreements (see DECISION No. 1/95). Figure 1 illustrates the additional trading effects expected following the initiation of the TTIP. First, bilateral trade between the EU and the USA will increase. Furthermore, American exports to Turkey will therefore also rise, since Turkey must guarantee European customs preferences to the country within the framework of the customs agreement.

Figure 1: **Possible additional trade flows after the TTIP enters into force**
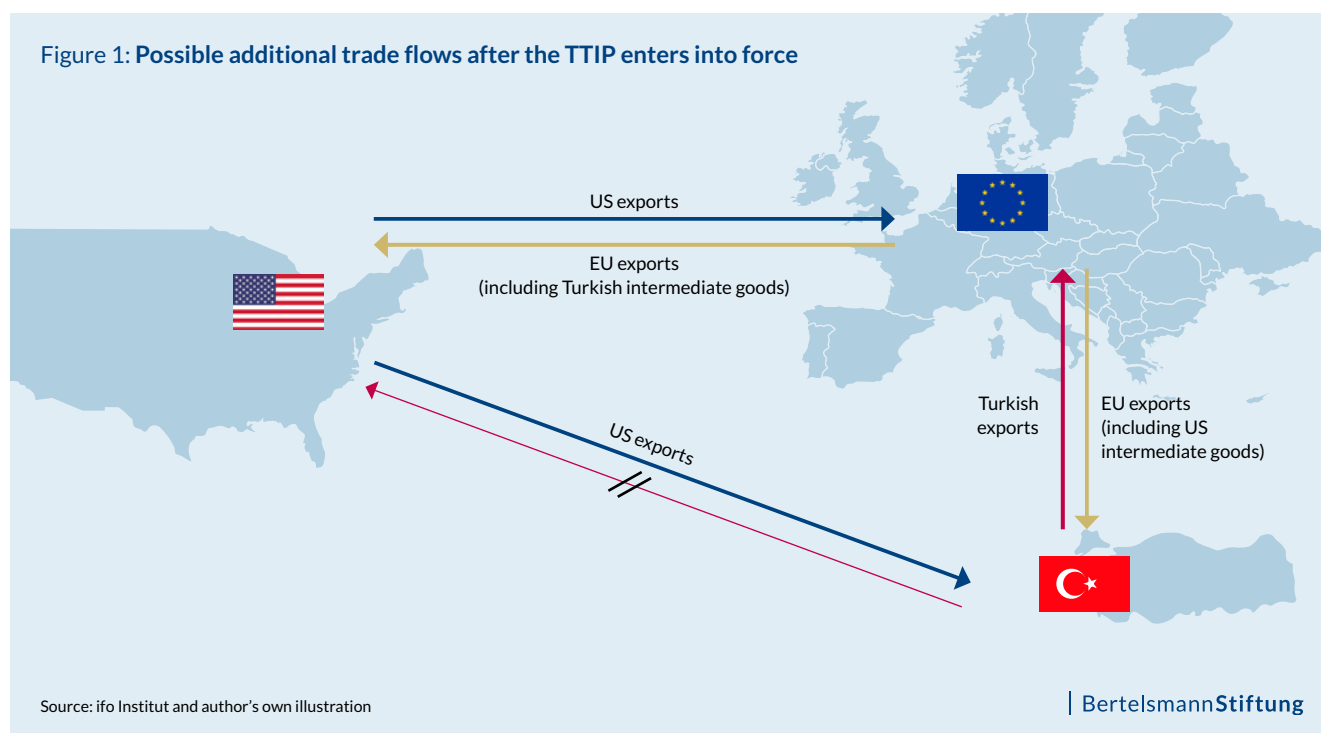
US exports

EU exports
(including Turkish intermediate goods)

US exports

Turkish exports

EU exports
(including US intermediate goods)

Source: ifo Institut and author's own illustration

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Table 2: **EU free trade agreements (FTAs) currently under negotiation**

Initiated European FTA	Start of negotiations	Turkish initiatives
USA	2013	Framework plan on economic and trade cooperation (2009), forum on deepening US-Turkish trade relations in response to the TTIP (2013)
CAN	2009	Public consultation on possible FTA (2010), agreement establishing a joint economic and trade committee
ASEAN	2007	
Singapore	2007	FTA signed (2015)
Malaysia	2007	FTA signed (2014)
Vietnam	2007	Six meetings of the joint economic and trade committee
Thailand	2007	FTA negotiations expected to start soon
Philippines	2007	
Japan	2012	Fourth round of negotiations on a Japan-Turkey economic partnership agreement (EPA) (2016)
Myanmar / Burma	2014	
India	2007	FTA proposed
MERCOSUR	1999	Framework agreement for FTA signed (2008)

Source: European Commission, ifo Institut and author's own illustration

An initial negative effect for Turkish companies will stem from the retention of US tariffs on Turkish goods. Furthermore, it is to be expected that the export of finished products from Turkey to the EU will also be disadvantaged, since competition on the EU market will be intensified by the TTIP. It is unclear how far the export of Turkish intermediate goods to the EU will continue to rise due to the increase in EU-US trade, and whether an increase will compensate for the disadvantages with regard to exports of finished goods to the USA.

After the TTIP comes into effect, Turkey must seek its own trade agreement with the USA so that Turkish exports to the USA may be facilitated. It is obvious that negotiating conditions for Turkey are very unfavorable with the present asymmetrical market-access rules under the customs agreement, since there is absolutely no incentive for the USA to dismantle trade barriers for Turkish companies, because the Turkish market will be opened up to them under the terms of the free trade agreement with the EU (problem of asymmetry).[5] By signing the customs agreement Turkey has therefore yielded some of its autonomy in terms of trade policy, without adequately taking into consideration the consequences of new EU free trade agreements. Turkey is therefore in a poor position to nego-

tiate its own free trade agreements with all of the EU's new trading partners in order to overcome this problem of asymmetry.[6] Furthermore, Table 2 highlights that the EU is currently negotiating new free trade agreements and that Turkey is facing a major structural problem. It is also clear from the table that Turkey aims to conclude its own free trade agreements with the EU's future trading partners, as provided for in the Ankara Agreement; however, the poor negotiating position resulting from the problem of asymmetry remains

The institutional weakness in the EU–Turkey Customs Union relationship, which has been outlined above, is ultimately a symptom of greater and more fundamental problems in Turkey's integration process into the EU. The main goal of this process is defined as Turkey's full membership of the EU, which can be achieved after fulfilling the *acquis communautaire*. This politically charted integration route, in which all reforms in a candidate country are evaluated with the aim of eventually ratifying full membership, leads to conflicts in Turkey with the intermediate reform goals, which are not explicitly defined as such by the EU and, for example, Turkey. The amicable partial integration of Turkey into the European Customs Union, an agreement containing institutional weaknesses which may lead to negative externalities – for instance with the TTIP and other EU free trade agreements with third countries (Japan, Can-

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5 The EU-Turkey customs union has been initially restricted to all industrial goods and processed agricultural goods. Coal, steel, agricultural products, services and public contracts are excluded from the agreement. The problem of asymmetry therefore initially only concerns industrial goods.

6 In addition to Turkey, Andorra and the Republic of San Marino have the same asymmetrical treaty obligations and rights in free trade agreements between the EU and third countries.

ada, ASEAN, etc.) – is an example that can have particularly drastic economic repercussions.

The anticipated institutional conflicts between the EU and Turkey, as well as the possible economic repercussions, must be seen in the wider context. A long-term strategy for Turkey's integration into the EU would be, for example, for a lasting and functioning customs union to be defined as the integration goal. Within such an integration process, in which no complex legal reforms would have to be implemented for the 35 chapters (the EU *acquis* covers 35 themes or legal areas that must be fulfilled before receiving full EU membership), the forming of a lasting economic policy basis between the EU and candidate countries such as Turkey is politically more likely.

A basic question for politicians both in Turkey and in the EU is whether Turkey's inclusion in the EU Customs Union constitutes a sensible integration strategy, particularly in view of the extensive regional free trade agreements between the EU and third countries. In principle, alternative trade agreements that do not involve the problem of asymmetry with third countries, for example, are also conceivable.

2.2 Possible integration policies between sovereign states

Economic integration processes can be categorized according to differing intensities, although cooperating countries often do not pass through all of the following steps sequentially.

Free trade agreements

In internal relationships between the participating countries, trade tariffs for certain lines of goods are dismantled. The free trade of goods is restricted to products that were produced within the area covered by the free trade agreement (free trade area). Members of a free trade agreement continue to have the sovereignty of defining their trade policy toward third countries in an independent manner. Due to the resulting differences in external tariffs between the member states of a free trade agreement, goods are labelled with certificates of origin. This enables member states with higher tariffs to understand where products are imported from and, where necessary, to levy tariffs in accordance with the respective national rules. Example: European Free Trade Association (EFTA), North American Free Trade Agreement (NAFTA).

Customs union

Member states formulate a common customs policy toward third countries and thus yield a considerable portion of their trade-policy sovereignty. In contrast to a free trade agreement, certificates of origin are not used. The trade in goods *between* member states requires a lower level of monitoring and therefore also generates a smaller amount of administrative expenditure. Example: European Customs Union.

Common single market

In addition to a common external trade policy and the free movement of goods between the member states, the free exchange of capital, services and workers is also possible. Example: European Single Market.

Economic union

In addition to the liberalization of flows of goods, capital, services and workers, a common economic policy also exists. Example: European Union.

Currency union

Members determine stable exchange rates among themselves and centralize their pricing and monetary policy within a central bank. Example: European Monetary Union.

Figure 2 illustrates two important correlations that can theoretically occur in the event of a deepening of economic policy relations between sovereign states. On the horizontal axis, the previously discussed forms of economic policy cooperation are displayed with an increasing level of integration intensity. The green function which increases with the level of integration intensity indicates a possible welfare gain that contractual partners achieve if they dismantle economic barriers bilaterally.

For example, two countries can deepen an existing bilateral *"basic free trade agreement"* by dismantling non-tariff barriers in addition to tariffs (e.g. harmonization of standards → *"comprehensive free trade agreement"*). As a consequence of the additional reduction in trading costs, the flow of trade and economic activities between the two contracting partners increases, and as a result an additional welfare effect in the form of higher employment or higher wages is achieved.

Figure 2: **Intensity of economic integration and sovereignty over national policy**

Average additional
welfare gain

Freedom in political
decisions at a national level

Increasing economic & politic integration

| Basic free trade agreement | Comprehensive free trade agreement | Customs union | Common single market | Economic union | Currency union |
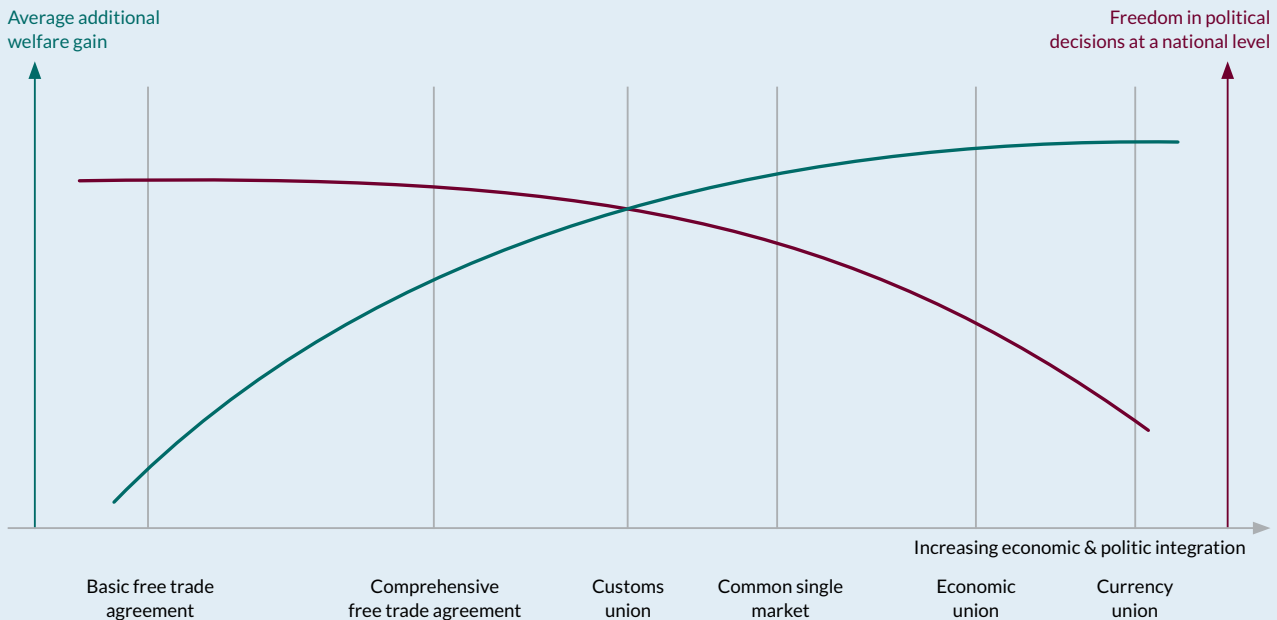
Source: ifo Institut – author's own illustration

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At the same time the figure shows that, with more comprehensive economic integration, the contracting partners limit their political decision-making independence in their respective national territories. The contracting partners accept compromises, for example when harmonizing goods standards, which they cannot adapt unilaterally later on following exclusively national decisions, as long as the comprehensive free trade agreement remains legally valid.

The welfare gains that can be achieved through economic policy integration thus result in a reduction in the level of political freedom at national level. More generally, increasingly comprehensive economic policy integration between member states leads simultaneously to the slowdown of *national* policies. A larger transnational entity emerges with a uniform political framework.

Figure 2 illustrates an optimal integration situation for a customs union between two partners with a corresponding contractual framework. When applied to the EU and Turkey, the graph would be understood as follows. With Turkey's inclusion in the European Customs Union in 1996, all bilateral tariffs between the contracting parties in the industrial goods sector were lifted and the movement of the relevant goods within the customs union is free to

the greatest possible extent. In addition, goods can be transported, from Turkey to Germany for example, without a so-called certificate of origin having to be presented. These are usually necessary when two countries have different external tariffs for third countries. Certificates of origin are used to prevent exporters from third countries from exchanging goods with a free trade area via the country with the lower external tariffs and thus avoiding the tariff costs that are not applied in individual member states. With a customs union there is no need for a certificate of origin since the customs union's external tariff for third countries is identical for all member countries. This represents one of the fundamental differences between a customs union and free trade agreement.

Bilateral trade between the contracting parties increased following the EU-Turkey Customs Union. At the same time – in contrast to a free trade agreement – there are considerable incentives for EU companies to establish production facilities in Turkey in order to produce intermediate goods at lower labor costs and to deliver these to the EU for further processing without providing certificates of origin. The customs union allows Turkey a more cost-effective integration into European production networks than would be the case with a free trade agreement, in which the contracting parties' external tariffs vary and

Figure 3: **Effects of an asymmetrical and flawed customs agreement**

Average additional welfare gain

Freedom in political decisions at a national level

A

B

Increasing economic & politic integration

| Basic free trade agreement | Comprehensive free trade agreement | Customs union | Common single market | Economic union | Currency union |

symmetrical customs agreement   asymmetrical customs agreement

Source: ifo Institut – author's own illustration

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the outsourcing of production facilities would not occur due to the requirement for certificates of origin (or not to the same extent anyway). An EU-Turkey Customs Union therefore leads to greater welfare increases than a more comprehensive free trade agreement would.

However, Figure 2 represents an optimal integration scenario for a customs union in which the assumption is made that the underlying customs agreement determines the rights and obligations of all contracting parties towards third countries in a symmetrical way. In the case of a Transatlantic Trade and Investment Partnership between the USA and the EU, for example, this would mean that Turkey must apply the same external tariffs to US companies as the EU does, which at the same time allows Turkish companies the same trade privileges on the American market as European companies.

Since, in the actual EU-Turkey customs agreement, Turkey
- does not have a say in the EU's free trade agreements with third countries, and
- must reduce tariffs for exporters from third countries in accordance with EU guidelines, without receiving an equivalent cost reduction in the third countries in question in exchange, as EU firms do,

the country has shown considerably greater restrictions in its decision-making independence in relation to its trade policy than is shown in Figure 2.

The economic implications of the asymmetrical EU-Turkey customs agreement are outlined in Figure 3. The greater loss of national sovereignty over Turkish trade policy, which is a result of the asymmetrical customs agreement (flawed agreement) with the EU, is demonstrated in Figure 3 by the lower red line. It runs underneath the darker red function, which represents a symmetrical agreement formulation. At the same time the flawed agreement also leads to another welfare function, which is lower (green curve) than for a symmetrical customs agreement (upper green curve). This can be explained, for example, by the fact that Turkish exports are disadvantaged by free trade agreements between the EU and third countries (e.g. the TTIP, Japan, etc.) due to the problem of asymmetry. Point B shows the expected welfare effects for the existing EU-Turkey customs agreement compared with a symmetrical customs agreement, which would lead to the higher welfare level in Point A. Furthermore, it becomes clear from Figure 3 that the existing EU-Turkey customs agreement, in its present form, could theoretically have lower welfare effects than a more comprehensive free trade agreement between the two contracting partners.

2.3 Potential long-term welfare effects for Turkey in the coming years

The quantification of the welfare effects between Turkey and the EU which have been presented here in theory have not yet been considered systematically. Several studies, however, have analyzed the potential long-term cumulative welfare effects of a comprehensive agreement between the EU and the USA, and have identified the cumulative welfare effects for Turkey in the process. Felbermayr, Heid, Larch and Yalcin (2015), in an empirical study, determined the long-term effects for Turkey, among other countries, in cumulative form. Alignments at industry level were not analyzed in greater depth in this study. Instead, greater consideration was given to a situation in which Turkey would have a new trade and welfare equilibrium following a 10-year alignment period.[7]

Table 3: **Long-term welfare effects after the TTIP**

EU average	Germany	USA	Turkey	Non-TTIP	Global average
3.90 %	3.50 %	4.90 %	– 1.50 %	– 1.00 %	1.60 %

Source: Felbermayr et al. (2015)

It is clear from existing studies that a comprehensive trade agreement between the USA and the EU would lead to considerably more negative welfare effects for Turkey in the long term than it would in other countries not participating in the TTIP, for example. A possible reason for these above-average effects can be found in the asymmetrical trade agreement between Turkey and EU. The TTIP will certainly have a positive effect for Turkey at first, since cheaper US imports to the EU Customs Union will also be passed on to Turkish consumers. However, at the same time Turkish companies will also notice a large fall in their sales in the US as – in contrast to EU firms – they will continue to be faced with American trade barriers. At the same time competition on the EU market, as well as the home market, will intensify for Turkish companies. As for Turkish producers of intermediate goods, there is a chance that they too will profit from higher levels of exports by European companies to the USA. However, the long-term cumulative simulations point towards the fact that this positive effect will be less marked than the accompanying negative trading effects.

The study by Felbermayr et al. (2015) and other analyses have so far provided no indication of how Turkish industrial structures, especially in the medium term, will be affected by the TTIP and other EU free trade agreements currently under negotiation. One of this study's main goals is to quantify these effects.

2.4 Alignment options being discussed for EU-Turkish trade relations

Turkey is in a poor position to negotiate its own free trade agreements with the EU's new free-trade partners in order to overcome the threat of imbalance. Various political alignment options are currently being discussed in Turkey, although it is questionable whether some of the proposals can be accomplished in a timely manner. Four scenarios are possible over the coming years.

a) EU membership for Turkey

The prospect of EU membership, which would integrate Turkey into all EU trade agreements on an equal footing, is not realistic in the foreseeable future. In the last five years of accession negotiations, the EU member states and Turkey have agreed to open two negotiating chapters (Chapter 12: Food Safety, Veterinary and Phytosanitary Policy; Chapter 22: Regional Policy and Coordination of Structural Instruments). The opening of other chapters was negotiated in light of the recent refugee crisis, but the prospect of Turkey gaining full EU membership in the near future continues to look unlikely.

b) Adoption of EU mandate for Turkey

There is a theoretical possibility of Turkey participating in all EU trade negotiations with third countries on an equal footing without the country having full EU membership. This approach would substantially compensate for the existing problem of asymmetry, since access to the US market would also be facilitated for Turkish companies. In practice, however, such a contractual adjustment would be difficult to imagine, as the European Commission conducts European free-trade negotiations and will not adopt a political mandate for a non-member state. Furthermore, the EU's Trade Commissioner, Cecilia Malmström, has clearly stated that negotiations on new free trade agreements can take place only between the EU and the relevant third countries.

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7   In a TTIP study, Egger et al. (2015) also report negative cumulative welfare effects for Turkey.

c) Rollback of the customs union to a free trade agreement

From Turkey's point of view, a third institutional reform that would eliminate the previously outlined problem of asymmetry is the rollback of the customs union to a free trade agreement. This possibility has been repeatedly announced by the Turkish Minister of Economic Affairs as a realistic policy option. Such a reform would mean a setback to Turkey's process of EU integration in terms of economic policy, since Turkey would obtain greater autonomy in international economic policy. At the same time there would be negative effects for Turkish industry in the event of an EU–Turkey free trade agreement, since expensive checks would be required to ascertain the origin of goods traded with the EU. In the case of a free trade agreement, determining which goods can continue to be traded between the EU and Turkey without tariffs is possible only by means of such rules of origin.

d) A more comprehensive customs union

A viable and realistic way of avoiding the disadvantages caused by the Ankara Agreement is to deepen the existing customs agreement further so that the advantages for Turkey outweigh the disadvantages. To this end services and agricultural products, which were previously excluded from the tariff exemption, must be included in the agreements. Furthermore, the European customs agreement could be expanded with a passage in which all of the EU's trade agreements with third countries are automatically extended to customs–union members too.

In the following chapters, Turkey's economic integration, primarily with the EU, will be presented initially. The depiction of sectoral trade relations with respect to intermediate products is of particular interest. By using statistics on trade in intermediate products, the integration of Turkish industry into EU production structures up until now can be determined. The presentation of European-Turkish trade in intermediate goods is of particular interest for the study since future welfare effects in various integration scenarios depend largely on the economic interconnectedness between the EU and Turkey. Foreign direct investment between Turkey and the EU is also presented. Special attention is paid here to German–Turkish economic relations, since Germany represents the most important economic partner for Turkey in terms both of trade and of direct investment. Finally, an overview of the existing trade barriers will be provided.

Intermediate findings:

The Republic of Turkey has surrendered its trade-policy sovereignty to the EU through its partial integration in the European Customs Union. Turkey's customs policy for industries covered by the customs union is determined by the European Commission. By yielding trade-policy sovereignty, Turkey has received improved access to the EU28 states. The customs agreement offers Turkey a significant welfare gain by integrating Turkish industry into the EU.

The EU-Turkey Customs Union is, however, flawed with regard to free trade agreements between the EU and third countries. Since Turkey is not an EU member state, it cannot participate in the EU's negotiations on trade agreements with third countries. As a result, Turkey faces significant trade disadvantages both in third countries and in the EU.

Two possible short-term corrections are theoretically conceivable to remove the asymmetry which Turkey experiences in the customs union. A) Turkey converts the customs agreement with the EU into a free trade agreement and thus regains full sovereignty over its trade. B) Turkey expands the existing customs agreement to include the agricultural and service sectors.

In the long term, Turkey must offset the EU's free trade agreements with third countries by concluding its own free trade agreements.

3. Turkey's economic relations with the EU over time

In broad terms, the removal of economic barriers between the EU and Turkey since the signing of the Ankara Agreement and, in particular, since the expansion of the EU Customs Union, has had a positive impact on the Turkish economy. The various economic profiles (for partner countries, sectors, time) are considered below in order to show the key developments.

Figure 4 summarizes important economic data for Turkey in recent years. With 76 million inhabitants, Turkey has been one of the fastest growing regions in the world over the course of the last 10 years in terms of its economy. From 2002 until 2011, annual economic growth varied between 5 percent and 9 percent (except in the crisis years of 2008 and 2009). Per capita income was $ 10,530 in 2014. At the same time, it is clear that the country still has a strong potential to catch up in economic terms, with Germany for example (income relative to Germany is 22 percent). Furthermore, the country's economic dynamic has waned considerably in the last three years. As well as tensions in internal policy, a series of crises in neighboring countries such as Syria have also played a role.

Figure 4: **Important data for Turkey (in 2014)**

GDP (in billion $) **799.5**	GDP per capita (in $) **10,530**	Relative to GER (per capita) **22.1 %**	Population (in millions) **75.9**	Poverty (Proportion with less than $ 2 / day) **0.4 %**

GDP growth (%) — GDP per capita growth (%)

Source: World Development Indicators – World Bank and author's own illustration

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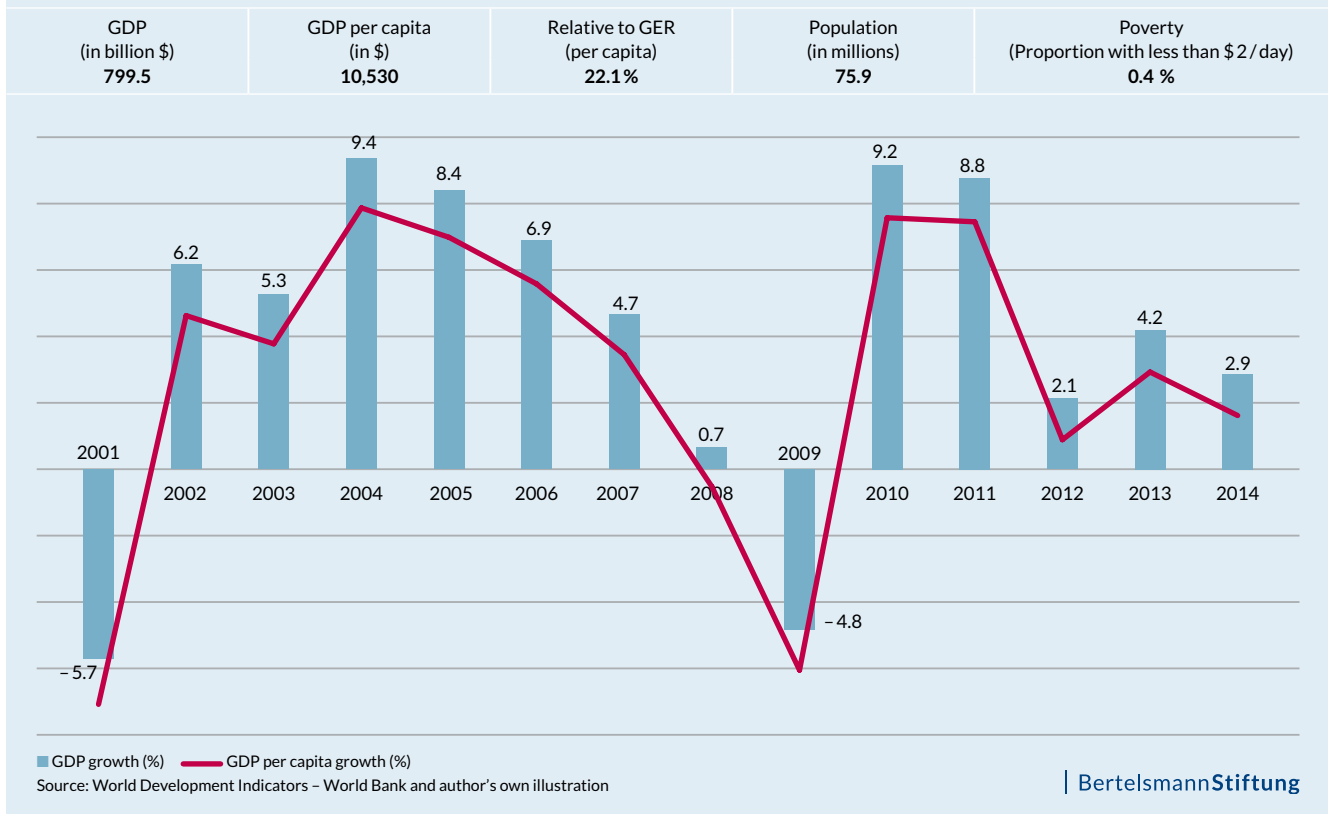
Figure 5: **Development of Turkish exports**

USD (billions)

Turkish exports 2014: **157 bn. USD**

Source: OECD STAN and author's own illustration

Legend: EU28 (incl. GER) — Germany — USA — Rest

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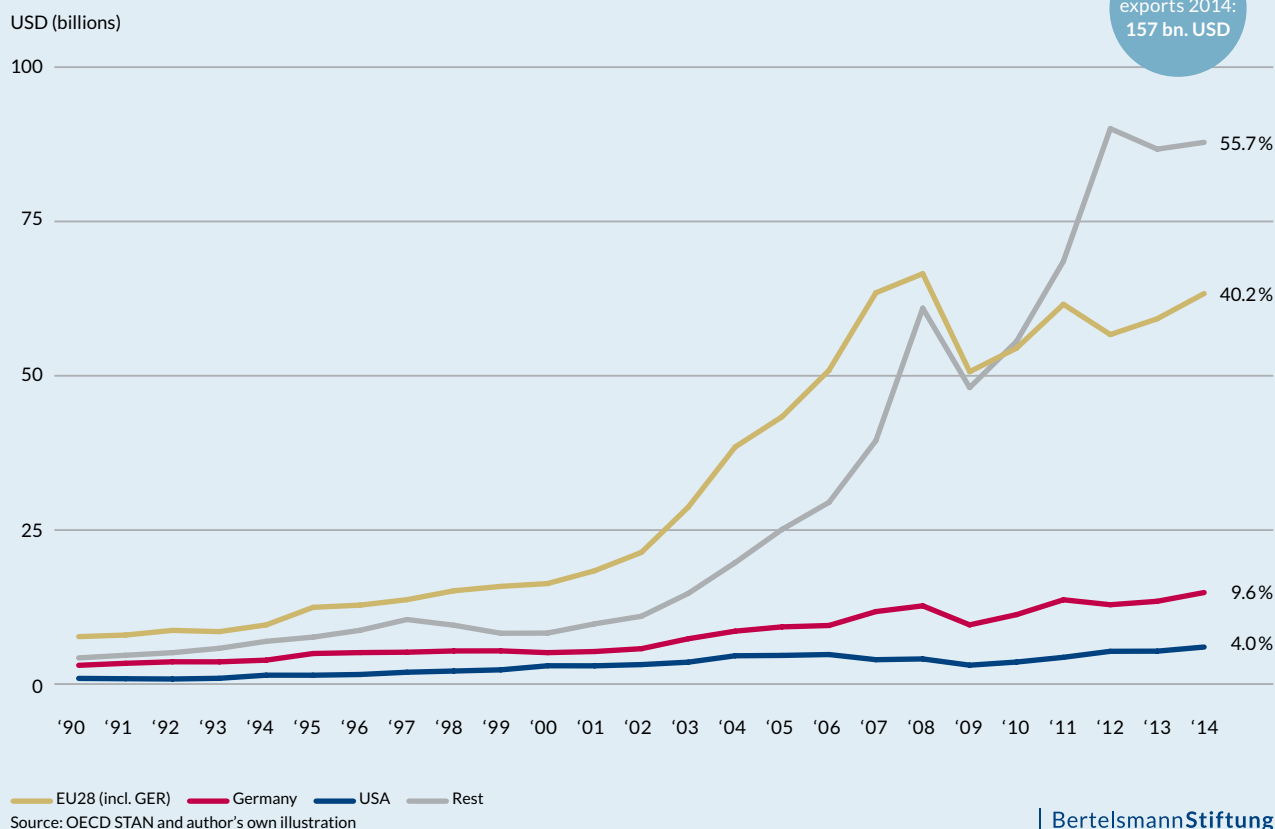
3.1 Trade developments between the EU and Turkey

A key factor in Turkey's positive economic development, especially after the difficult economic crises of the late 1990s, is its increasing economic integration with the EU.

Figure 5 and Figure 6 illustrate the strong growth both in exports and in imports in Turkey since 1996. Due to the difficult economic situation in the late 1990s, which lasted until 2001, a constant and significant rise in trade can be seen only from 2002 onwards. In addition, it is clear that the EU is Turkey's most important trade partner, accounting for 36 percent of imports and 40 percent of exports. With approximately 9 percent of all Turkey's exports and imports, Germany is Turkey's most important trade partner in terms of individual countries. For the years following the most recent economic crisis in 2008/09, it is apparent that exports to countries outside the EU also increased sharply up until 2012. In terms of trade with non-EU countries, imports have grown at a considerably higher rate than

those from EU states since 2005. Since 2012, exports and imports with those countries have stagnated.

Figure 7 shows the five most important EU export destinations for Turkey in recent years. These are Germany, Great Britain, Italy, France and Spain. In particular, exports by Turkish companies to Germany and Great Britain have continued to grow since 2009, whereas in the other important EU markets no significant changes in sales figures have been observed. For many years, the biggest imports from the EU to Turkey have also come from Germany, followed by Italy, France, Spain and Great Britain. Although Turkish imports from Germany increased on average up to 2013, there is no longer any significant growth in the volume of imports from the other four important European partner countries.

Figure 9 shows Turkey's top five trading partners outside the EU. It is noticeable that the USA was the most important sales market for Turkish companies for many years. Since 2007, Iraq, Iran, the United Arab Emirates and Russia have become important markets with very high growth rates.

Figure 6: **Development of Turkish imports**

USD (billions)

Turkish imports 2014: **240 bn. USD**

- EU28 (incl. GER)
- Germany
- USA
- Rest

58.1 %
36.7 %
9.2 %
5.3 %

Source: OECD STAN and author's own illustration

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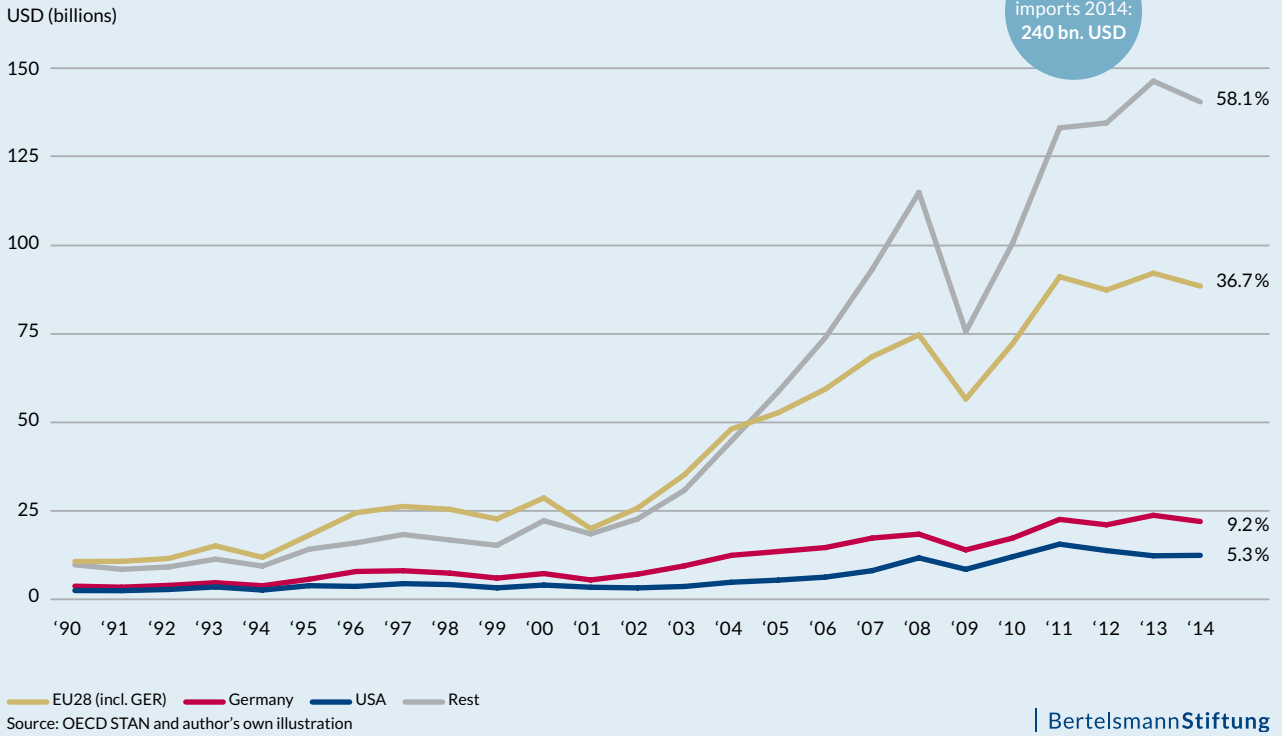
Figure 7: **Top five Turkish export destinations / in the EU**

USD (billions)

- Germany
- Spain
- France
- Great Britain
- Italy

Source: IMF Direction of Trade (DoTs) and author's own illustration

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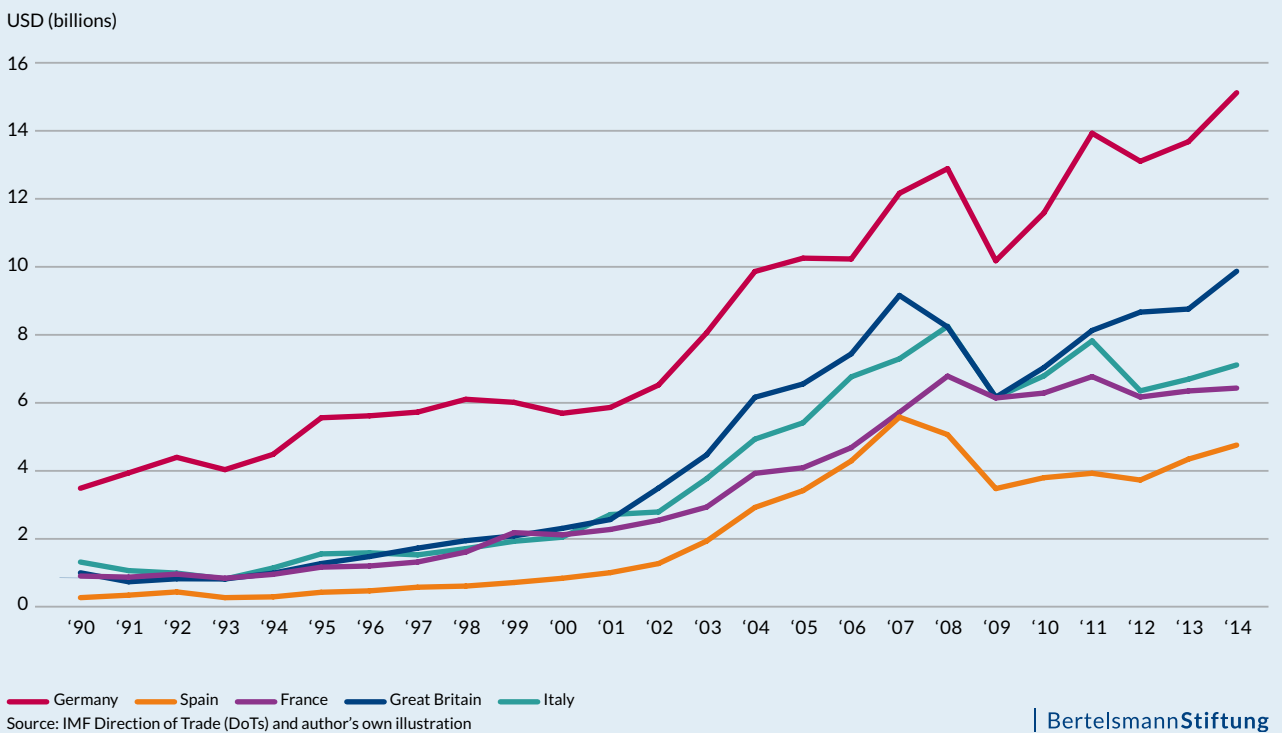
Figure 8: **Top five Turkish import countries / from the EU**

USD (billions)

Germany Spain France Great Britain Italy
Source: IMF Direction of Trade (DoTs) and author's own illustration

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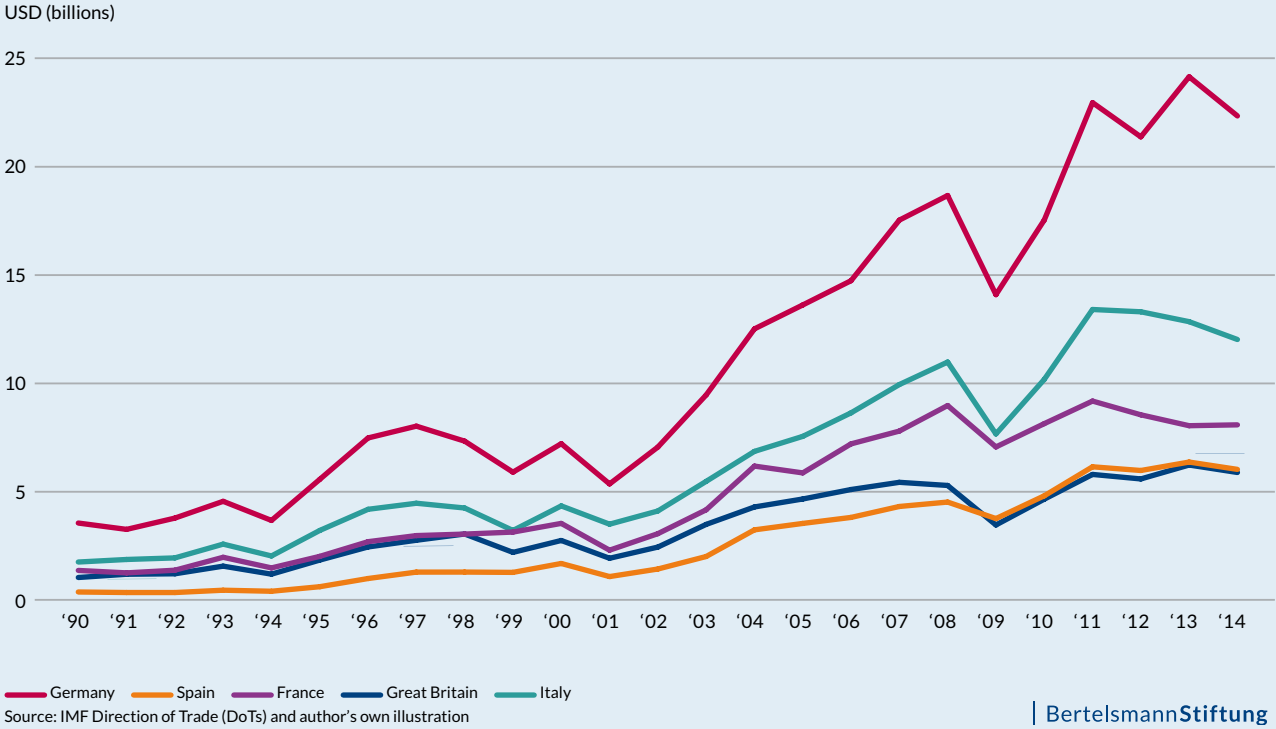
Figure 9: **Top five Turkish export destinations / outside the EU**

USD (billions)

U.A.E. Iran Iraq Russia USA
Source: IMF Direction of Trade (DoTs) and author's own illustration

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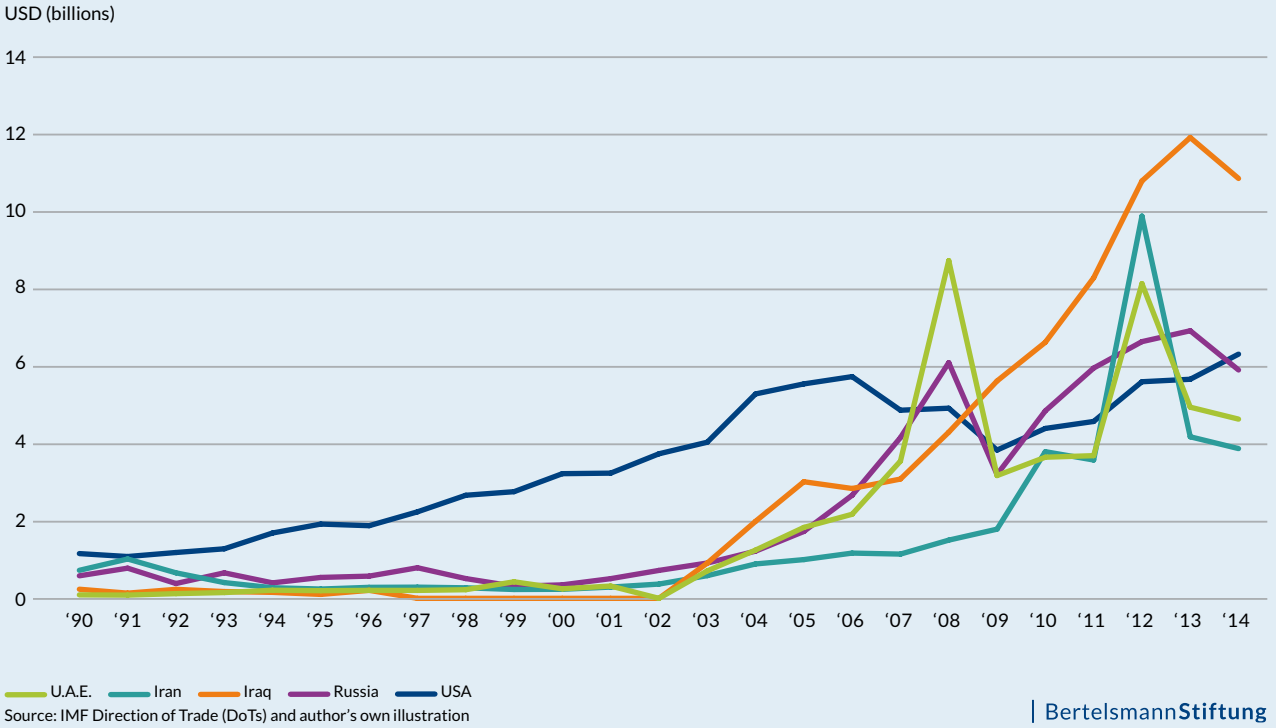
Figure 10: **Top five Turkish import countries / outside the EU**

USD (billions)

U.A.E.　Iran　Iraq　Russia　USA
Source: IMF Direction of Trade (DoTs) and author's own illustration

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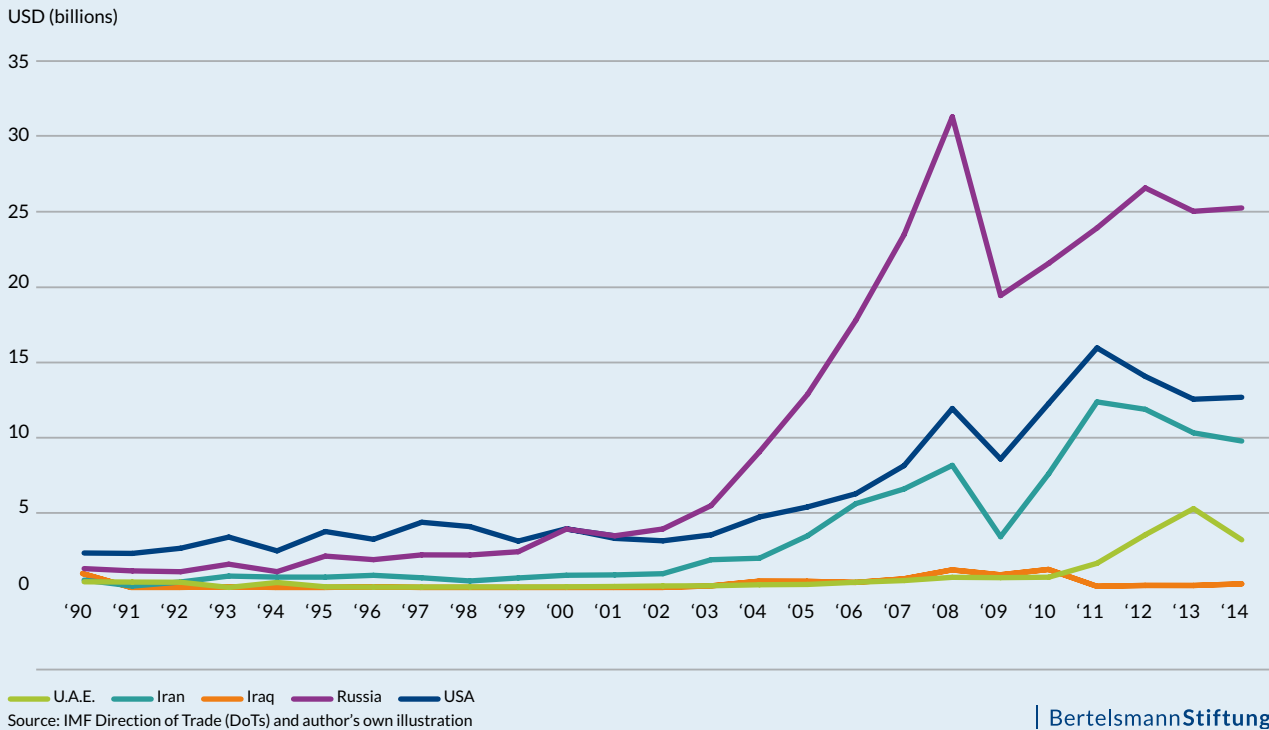
Whereas Turkish exports to the USA have experienced only moderate growth since the financial crisis, there has been much less volatility in the other four countries.

The USA was the most important trading partner up until 2000 in terms of Turkey's imports from non-EU countries. As a result of Turkey's economic upswing after 2002, Russia became Turkey's most important import partner by a large margin. This is mainly due to oil and gas imports. The import of raw materials from Iran also rose sharply.

For an emerging nation, it is no surprise that Turkey has a trade deficit with most of its trading partners. However, in recent years Turkish imports have shown a tendency to increase consistently faster than exports; this must be increasingly financed by foreign capital flows, and Turkey is therefore more dependent on external financiers (see Figure 11). Figure 12 shows the distribution of Turkish exports among all EU states for 2014. In recent years, in addition to Germany, the large EU countries of Great Britain, France, Italy, Spain and the Benelux nations have also developed into important sales markets for Turkish exporters. Furthermore, it is clear from Figure 13 that a considerable proportion of Turkish exports to EU coun-

tries are intermediate goods which can be further processed in the respective destination countries.

3.2 Integration of Turkish industry into European production networks

A very similar trade pattern can be seen in Figure 14 and Figure 15, which show Turkey's overall bilateral imports by country and for intermediate goods, respectively. It can already be deduced from the aggregated data that Turkey is increasingly integrated into the European production network, especially in the industrialized EU states.

The integration of Turkish industry into the EU economy becomes even clearer when trade in finished and intermediate goods is examined more closely at a sectoral level. Figure 16 demonstrates that, in the Turkish metals sector, for example, 95 percent of imports from the EU are currently intermediate goods. At the same time, approximately 85 percent of exported metal goods to the EU are intermediate goods. A similar bilateral trade pattern can be found in the chemical industry. Strong European–Turkish trade in intermediate goods can also be found, to a lesser extent, in the automobile sector.

Figure 11: **Balance of trade with top 10 trading partner**

Exports / imports – USD (billions)

Share – Percent

■ Turkish exports in 2014　■ Turkish imports in 2014　━━ Share of overall Turkish exports　━━ Share of overall Turkish imports
Source: Turkish Statistical Institute and author's own illustration, UAE = United Arab Emirates
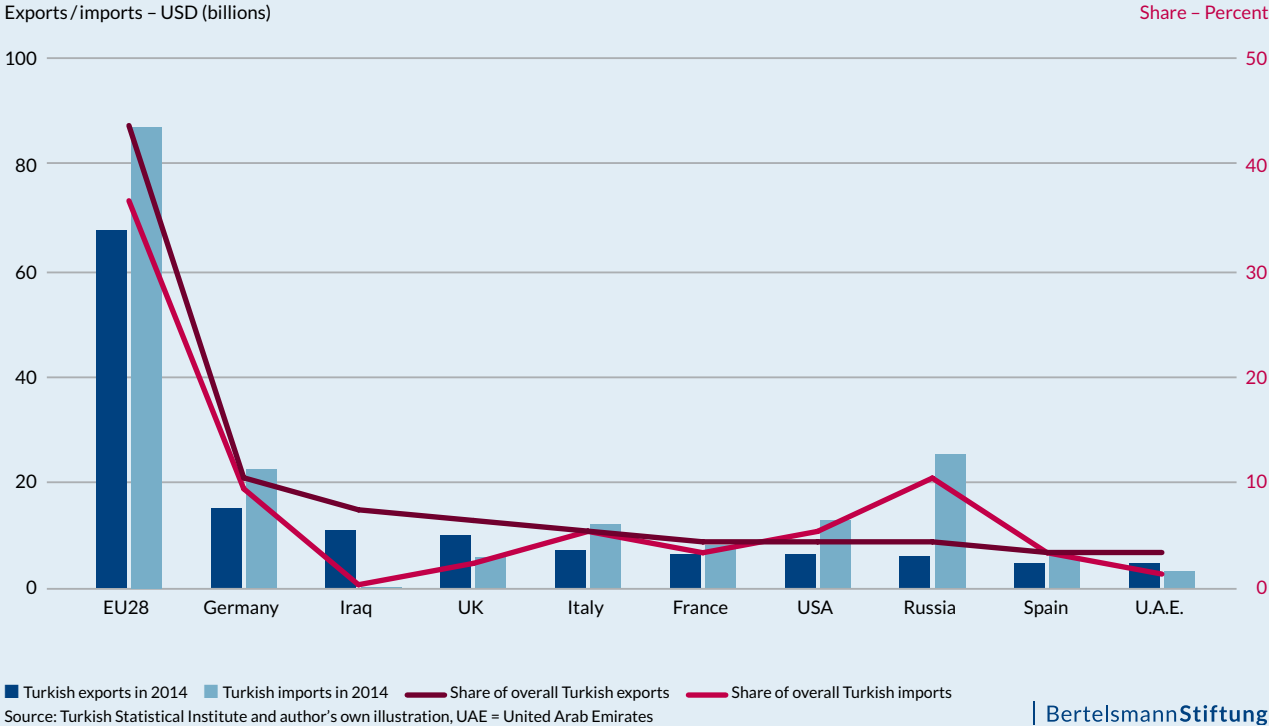
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Figure 12: **Turkish exports to EU countries**

USD billions, 2014: ■ 20 – 15　■ 15 – 10　■ 10 – 5　■ 5 – 4　■ 4 – 3　■ 3 – 2　■ 2 – 1　■ 1 – 0
Source: OECD STAN and author's own illustration
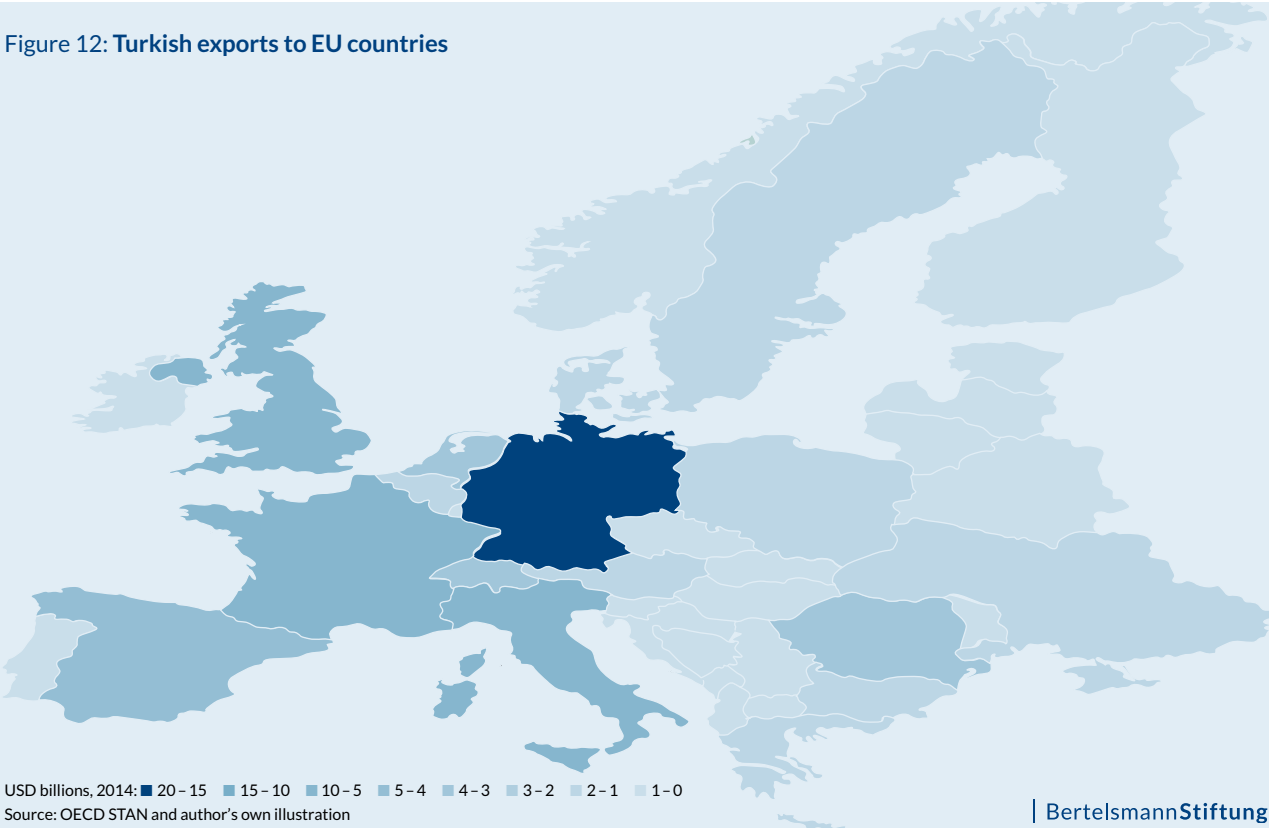
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Figure 13: **Turkish intermediate goods exports to EU countries**

USD billions, 2014: ■ 7 – 6 ■ 6 – 5 ■ 5 – 4 ■ 4 – 3 ■ 3 – 2 ■ 2 – 1 ■ 1 – 0
Source: OECD STAN and author's own illustration

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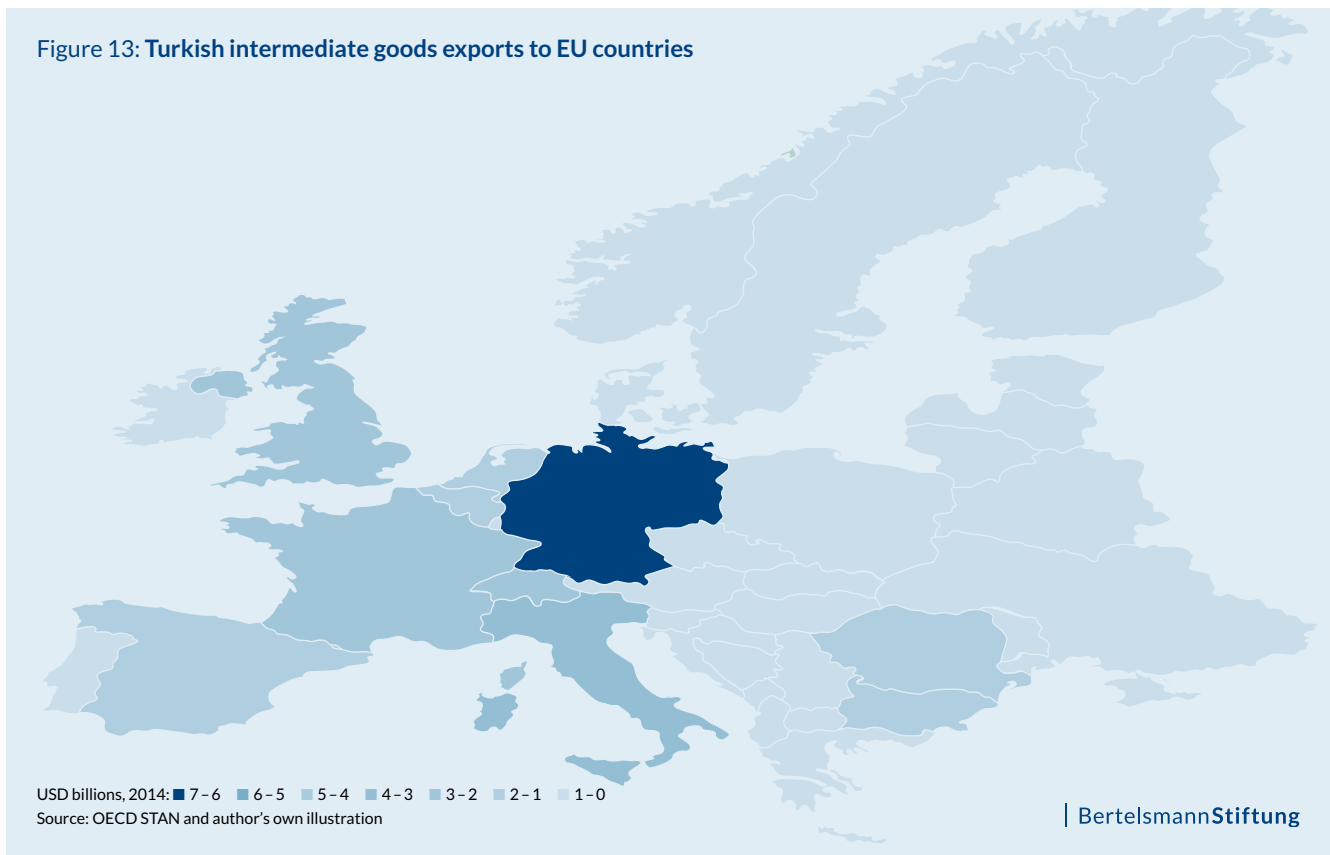
Figure 14: **Turkish imports to EU countries**

USD billions, 2014: ■ 26 – 20 ■ 20 – 15 ■ 15 – 10 ■ 10 – 5 ■ 5 – 4 ■ 4 – 3 ■ 3 – 2 ■ 2 – 1 ■ 1 – 0
Source: OECD STAN and author's own illustration

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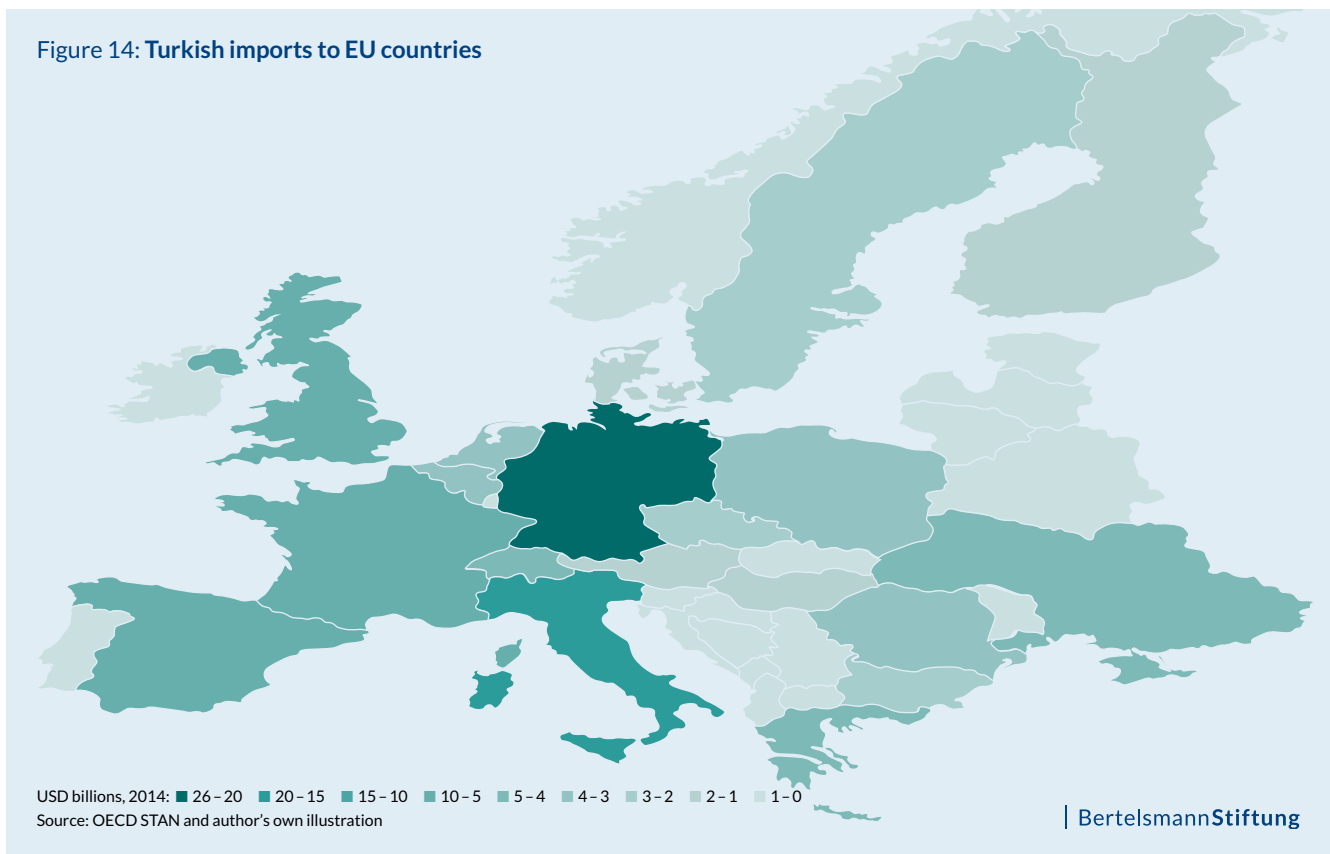
Figure 15: **Turkish intermediate goods imports to EU countries**

USD billions, 2014: ■ 12 – 10 ■ 10 – 7 ■ 7 – 5 ■ 5 – 4 ■ 4 – 3 ■ 3 – 2 ■ 2 – 1 ■ 1 – 0
Source: OECD STAN and author's own illustration

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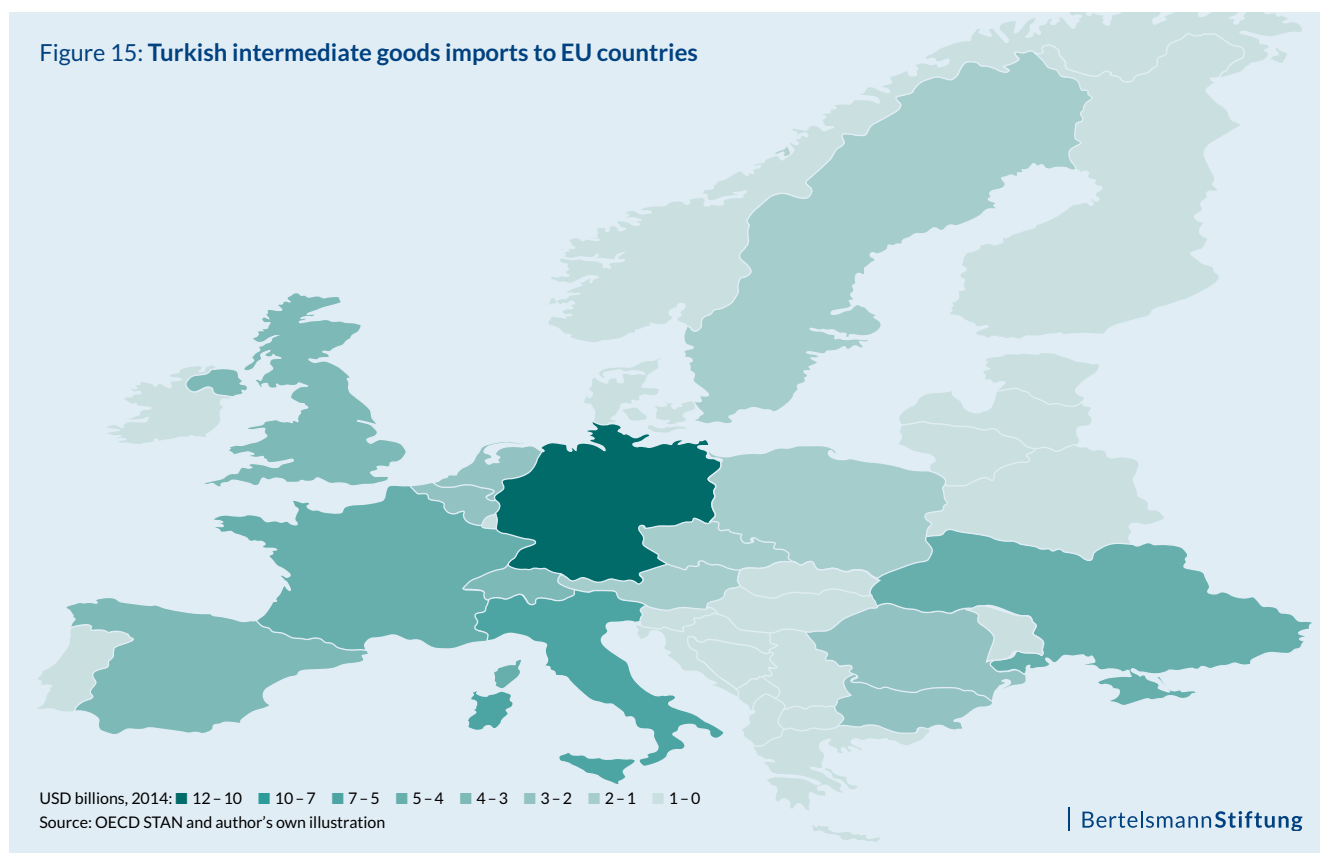
These descriptive statistics show very clearly that Turkey is increasingly used by European companies as a production location for intermediate goods where components are improved and subsequently re-imported into the EU.

3.3 Intra-industry trade in goods and Turkish added value

In order to quantify the extent of bilateral EU-Turkish trade within individual sectors, the Grubel-Lloyd index (GL index) can be applied. This index quantifies so-called intra-industry trade in goods. If, within a sector, two countries have a high level of bilateral trade flows (both imports and exports), then the exchange of goods is not based on the trading partners' specialization in certain products. Intra-industry trade of this sort can be driven on the one hand by heterogeneous products within a single sector, and also by intermediate goods that are exchanged between the EU and Turkey within a bilateral production network. The Grubel-Lloyd index (Grubel and Lloyd, 1971) is calculated as follows:

$$GL_i = \frac{(X_i + M_i) - |X_i - M_i|}{X_i + M_i} = 1 - \frac{|X_i - M_i|}{X_i + M_i} \; ; \quad 0 \le GL_i \le 1$$

Where X = export, M = import, i = sector.

The GL value is close to 0 if a country either exclusively exports or exclusively imports within a sector (no intra-industry trade). A GL value of more than 0.5, however, means that, in the corresponding sectors, exports and imports between the countries in question have similar characteristics (intra-industry trade).

Table 4 lists the GL index for all industrial sectors between the EU and Turkey. For many sectors the value is above 0.5, which points to a relatively high level of intra-industry trade. In particular, in the motor-vehicle, automobile-part and metal-processing sectors, which are characterized by a high amount of bilateral trade in intermediate goods as already demonstrated (see Figure 16), the GL value is especially high.

Figure 17 quantifies Turkey's imported share of added value in German industry as a whole. In 1995, the level of Turkish added value in German goods was USD 2 billion. This value increased six fold to USD 12 billion by 2011. In Figure 18, the average distribution of European added-value shares

25

Figure 16: **Trade in intermediate and finished products in the metals sector**

Turkish exports to the EU in USD billions – metal processing

USD (billions)   Percent
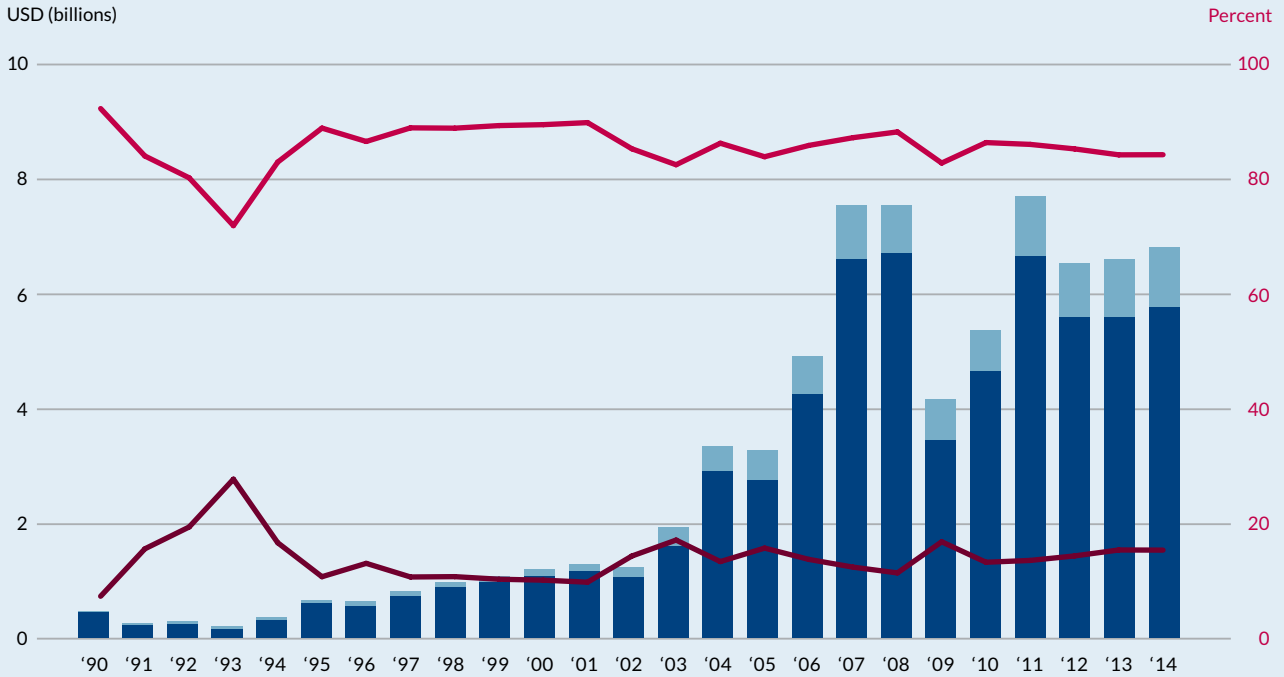
Turkish imports from the EU in USD billions – metal processing

USD (billions)   Percent
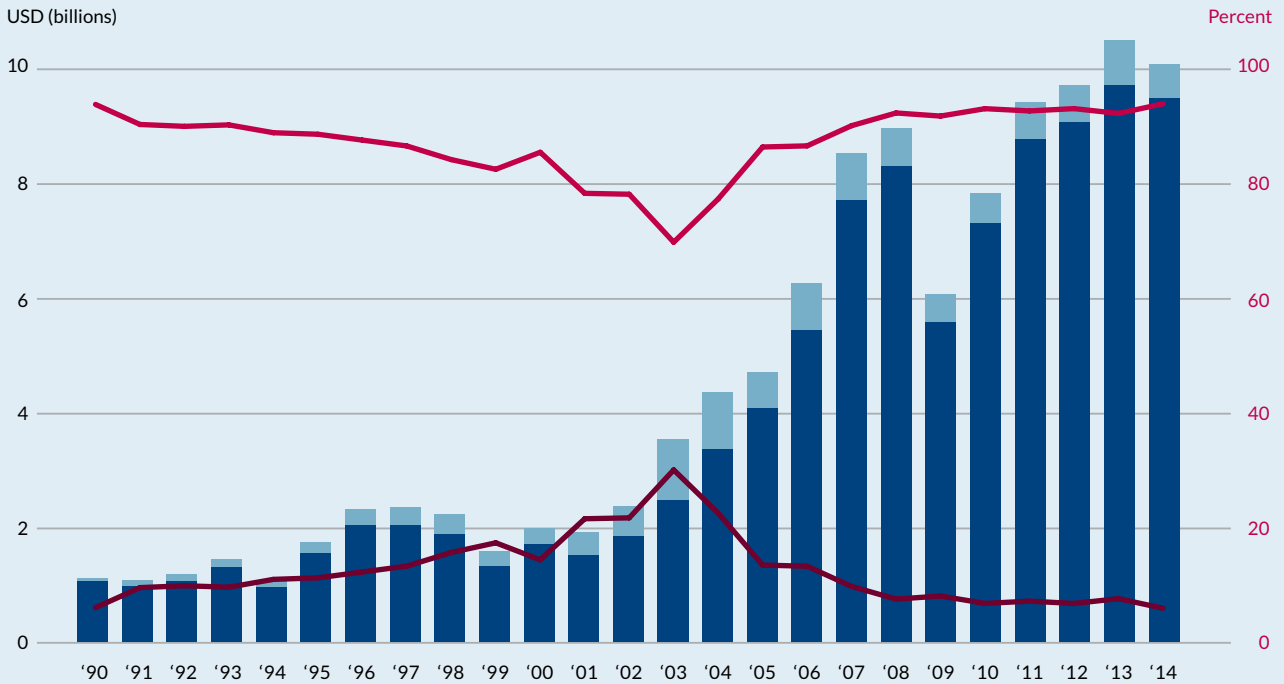
■ Intermediate goods   ■ Finished goods   —— Share of intermediate goods   —— Share of finished goods

Source: OECD STAN and author's own illustration

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Table 4: **Intra-industry trade between the EU and Turkey (USD thousands)**

Sector	Turkish imports from the EU	Turkish exports to the EU	Grubel-Lloyd Index
Food production	1 215 510.0	2 413 295.0	0.67
Beverages and tobacco	537 485.7	119 116.4	0.36
Textiles	1 982 716.0	11 360 354.0	0.30
Clothing	548 524.3	8 263 747.0	0.12
Leather	445 471.4	478 373.3	0.96
Wood	1 007 775.0	855 276.7	0.92
Paper, publishing	2 352 764.0	539 052.2	0.37
Petroleum, coal products	6 326 937.0	1 048 781.0	0.28
Chemicals, rubber, plastic	16 866 191.0	5 827 609.0	0.51
Mineral processing	935 629.4	1 295 111.0	0.84
Ferrous metals	7 222 918.0	2 177 853.0	0.46
Metals	3 317 393.0	1 941 958.0	0.74
Metal processing	2 184 005.0	2 938 686.0	0.85
Automobile vehicles and parts	15 184 622.0	14 433 781.0	0.97
Transport equipment	2 522 823.0	1 050 269.0	0.59
Electronic equipment	2 199 791.0	1 865 636.0	0.92
Machinery and equipment	19 797 258.0	9 513 138.0	0.65
Manufacturing	634 679.4	504 218.3	0.89

Source: IMF Direction of Trade (DoTs) and author's own illustration

Figure 17: **Turkish share of added value in German output**

USD (billions) · Percent
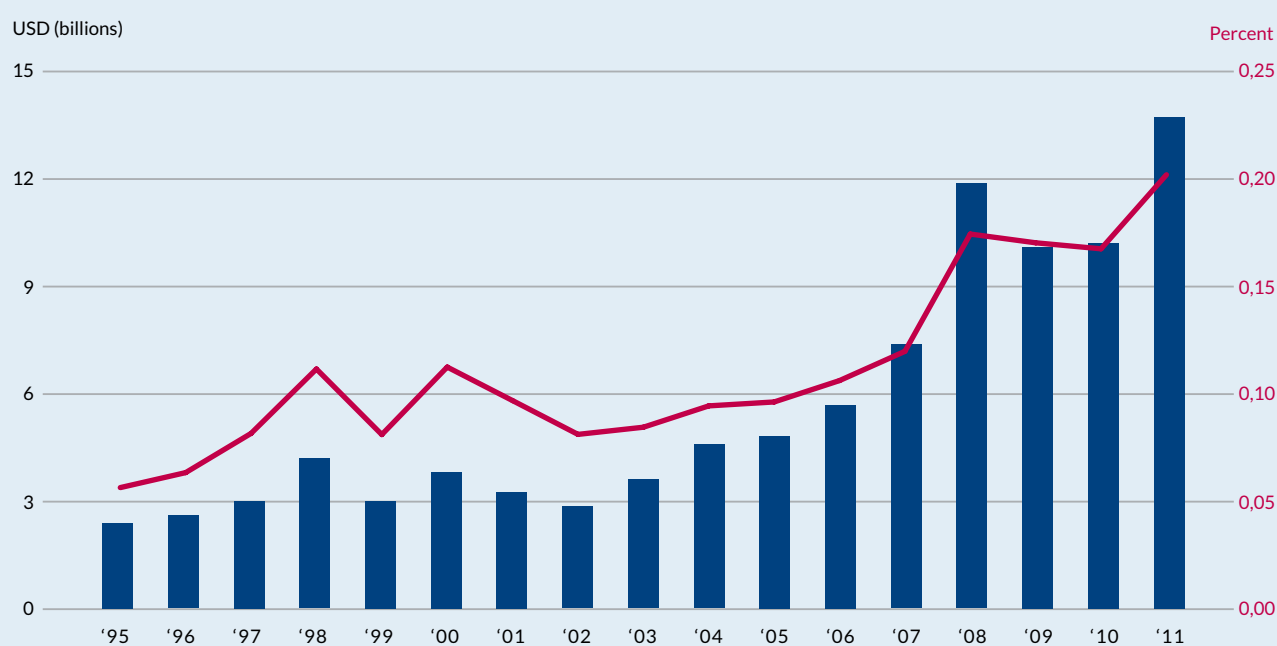
Turkish added value (USD BN) — Turkish added value in percent
Source: World Input-Output (WIOD), author's own calculations and illustration

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27

Figure 18: **Share of added value in German machinery – 2011**
Foreign added value from the EU and Turkey ~12%

2 % Rest EU	
3 % Hungary	3 % Turkey
4 % Sweden	15 % Italy
6 % Czech Republic	
6 % Spain	13 % France
6 % Belgium	
7 % Poland	10 % Great Britain
8 % Austria	8 % Netherland
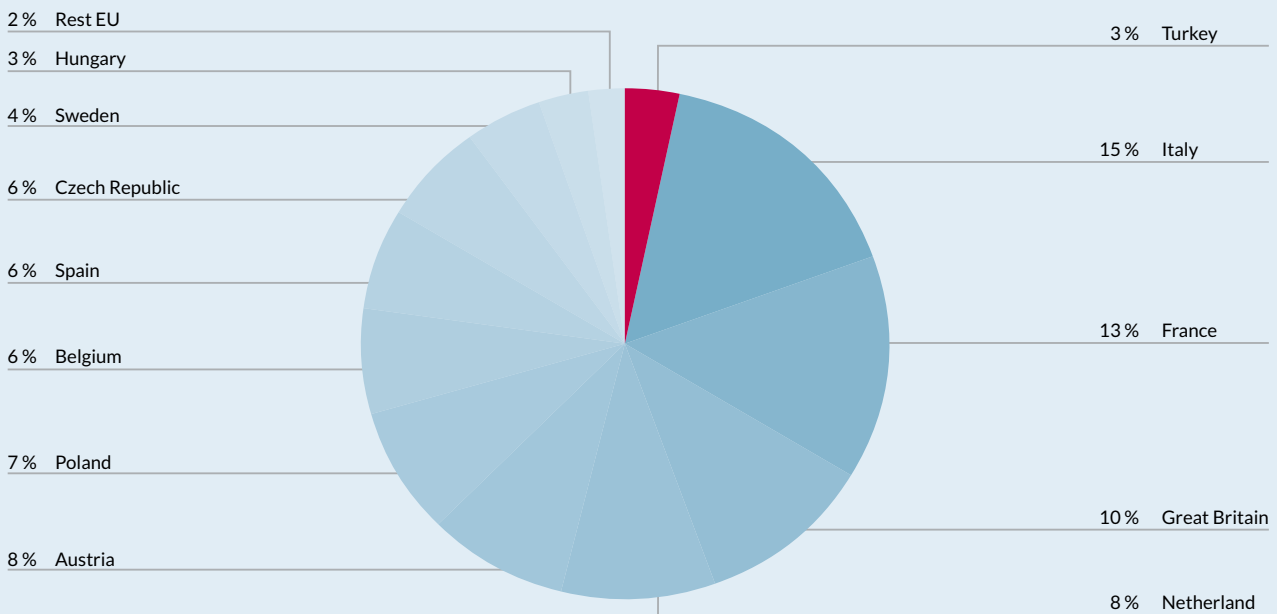
Source: World Input-Output Database (WIOD), author's own calculations and illustration

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in German machinery is depicted. It shows that approximately 12 percent of the added value of German machinery comes from European and Turkish imports. On average, 3 percent of these European deliveries are attributable to Turkey. These statistics confirm the constant rise in the importance of imports of intermediate goods from Turkey to the EU.

Figure 19 presents the composition of annual Turkish exports to the EU by making a distinction between high, mid-high, mid-low, and low technology goods. It becomes very clear that the introduction of the customs union has led to a significant rise in exports to the EU which are categorized as mid-high and mid-low technologies.

3.4 Foreign direct investment (FDI) in Turkey

Foreign direct investment (FDI) is a key factor that causes on the one hand the relatively high amount of bilateral trade in intermediate goods between the EU and Turkey and, on the other hand, the increasing technological complexity of exports (higher added value) associated with the customs union.

Figure 20 illustrates the development of foreign direct investment by German companies in Turkey. Here too it is clear that there has been steady growth since 1996, with the exception of a temporary interval during the years of crisis from 1999 to 2002. Then, in Figure 21, the German investment positions for the four most important sectors are shown. Manufacturers of motor vehicles and automobile parts are the largest German investors, accounting for approximately 40 percent of foreign direct investment.

In combination with the strong trade in intermediate goods these statistics confirm the assumption that, in recent years, Turkey has been increasingly integrated into European economic networks. Here the growth in Turkish exports is attributable not only to an increase in foreign sales figures but also to a considerable extent to a rise in the added value of the exported goods.

Figure 19: **Complexity of Turkish exports**

100 % = 1

■ HITECH ■ MHTECH ■ MLTECH ■ LOTECH
Source: OECD STAN and author's own illustration

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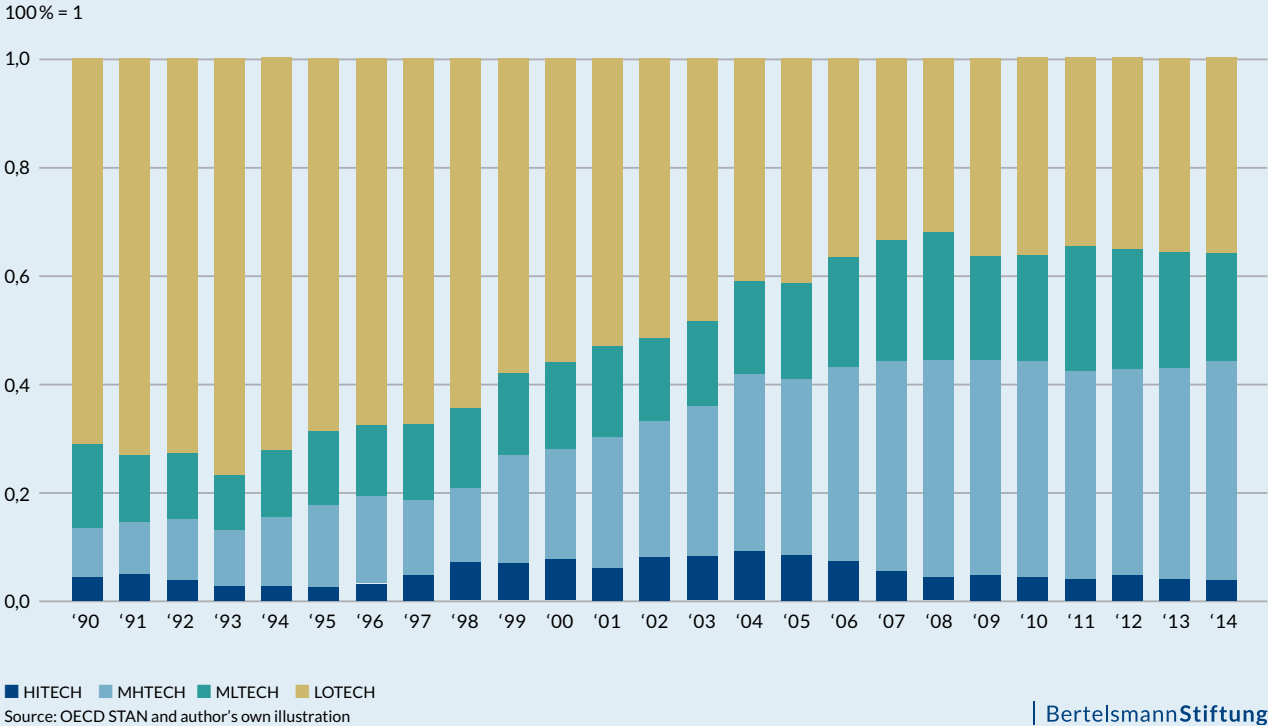
Figure 20: **Foreign direct investment in Turkey (from Germany)**

Euro (millions)   Number of companies

■ German FDI in Turkey ■ Turkish FDI in Germany (left)
— Number of German companies in Turkey — Number of Turkish companies in Germany
Source: German Federal Bank and author's own illustration

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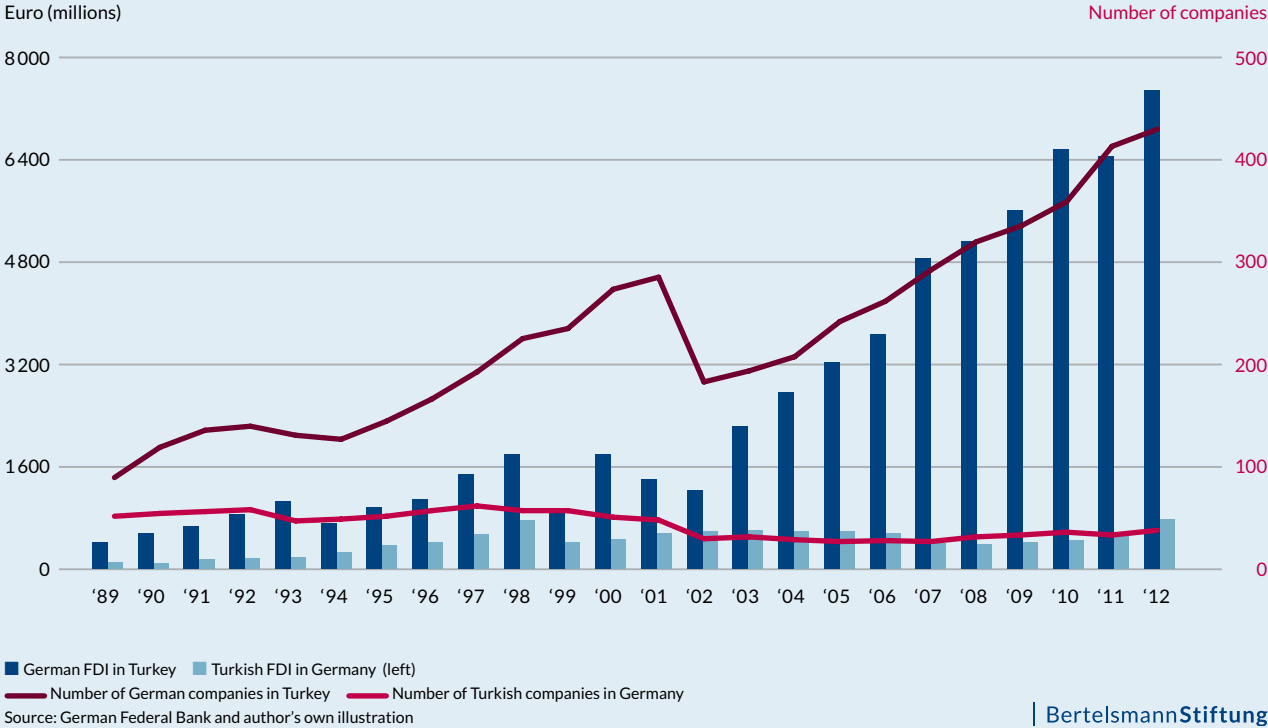
Figure 21: **Sectoral distribution of FDI across the top four sectors**

Euro (billions)

■ Prod. of vehicles and parts ■ Chemical Ind. ■ Mechanical engineering ■ Manufacturing n.e.c.
Source: German Federal Bank and author's own illustration

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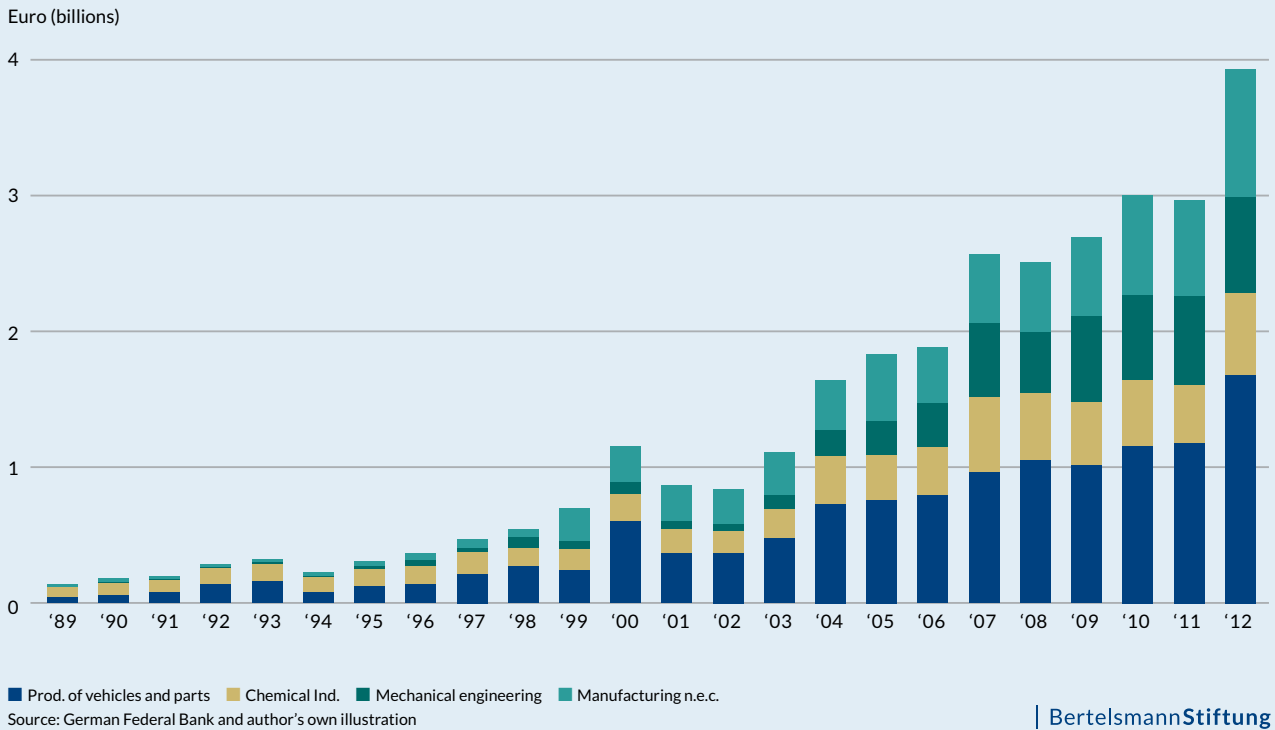
Intermediate findings:

Since Turkey's inclusion in the European Customs Union, the country's economic relations with EU member states have grown consistently. Especially since 2002, bilateral trade between Turkey and the EU has benefited greatly from the customs union. As well as the constant rise in bilateral trade in finished products, a steady rise in the trade of intermediate goods has also been observed. Turkey is increasingly integrated into the production networks of EU firms. Alongside the high level of bilateral trade in intermediate goods, this can also be seen in the high levels of foreign direct investment. Germany has developed steadily into Turkey's most important economic partner. Turkish national added value benefits from integration into European production chains, as increasingly more complex goods are produced for the EU.

3.5 Trade barriers

Tariff-free trade in industrial goods between Turkey and the EU is made possible by the customs union. In the case of Turkey, a special feature of the customs union is that the agricultural sector was initially excluded from the customs agreement. Table 5 lists the average bilateral tariffs applied between the EU and Turkey. In accordance with the rules of the customs union, there are no tariffs for companies from partner countries in industrial sectors. At the same time, Table 5 highlights another particular feature of EU-Turkey trade relations. While Turkey continues to protect its agricultural sector with tariffs that are sometimes very high, the EU has eliminated almost all tariffs for Turkish agricultural imports (sometimes only for defined quotas). This asymmetrical tariff policy can be partly explained by the fact that the Turkish agricultural industry does not represent competition to the EU, since productivity in the Turkish agricultural sector is considerably lower.

Figure 22 illustrates the external tariffs of the EU, Turkey and the USA for third countries. Since all three countries are members of the World Trade Organization, a Most Favored Nation tariff applies, meaning that the MFN tariffs of these countries apply for all trading partners. For indus-

Table 5: **Bilateral tariffs between Turkey and the EU (in percent)**

Bilateral tariffs applied (2013)		Simple average		Weighted average	
GTAP sector		EU from TUR	TUR from EU	EU from TUR	TUR from EU
1	Paddy rice	0.00	32.89	0.00	31.47
3	Grain	0.00	50.00	0.00	108.43
4	Vegetables, fruit, nuts	0.72	35.71	1.28	40.94
5	Oilseed	0.00	11.36	0.00	19.39
6	Sugar cane, sugar beet	0.00	19.30	0.00	19.30
7	Plant-based fibers	0.00	0.00	0.00	0.00
8	Agricultural crops nec	0.00	17.51	0.00	13.95
9	Cattle, sheep, goats, horses	0.00	39.14	0.00	43.19
10	Animal products nec	0.00	7.21	0.00	1.55
12	Wool, silk	0.00	0.00	0.00	0.00
13	Forestry	0.00	0.00	0.00	0.00
14	Fishing	0.00	13.52	0.00	7.67
15	Coal	0.00	0.00	0.00	0.00
16	Oil	0.00		0.00	
17	Gas	0.00		0.00	
18	Minerals nec	0.00	0.00	0.00	0.00
19	Meat: cattle, sheep, goats, horses	0.00	43.75	0.00	125.20
20	Meat products nec	0.00	65.86	0.00	4.99
21	Plant-based oils and fats	0.00	20.42	0.00	9.98
22	Dairy products	0.00	96.79	0.00	132.22
23	Processed rice		45.00		45.00
24	Sugar	0.00	112.00	0.00	131.96
25	Food products nec	0.27	21.74	0.31	10.97
26	Beverages and tobacco	0.00	8.30	0.00	2.76
27	Textiles	0.00	0.00	0.00	0.00
28	Clothing	0.00	0.00	0.00	0.00
29	Leather	0.00	0.00	0.00	0.00
30	Wood	0.00	0.00	0.00	0.00
31	Paper, publishing	0.00	0.00	0.00	0.00
32	Petroleum, coal products	0.00	0.00	0.00	0.00
33	Chemicals, rubber, plastic	0.00	0.02	0.00	0.00
34	Mineral products nec	0.00	0.00	0.00	0.00
35	Ferrous metals	0.00	0.00	0.00	0.00
36	Metals nec	0.00	0.00	0.00	0.00
37	Metal products	0.00	0.00	0.00	0.00
38	Automobile vehicles and parts	0.00	0.00	0.00	0.00
39	Transport equipment nec	0.00	0.00	0.00	0.00
40	Electronic equipment	0.00	0.00	0.00	0.00
41	Machinery and equipment nec	0.00	0.00	0.00	0.00
42	Manufacturing nec	0.00	0.00	0.00	0.00

Source: WITS – Trains Tariff Data

Figure 22: **Tariff distribution for agricultural and industrial goods**

MFN tariffs in 2013 – Agricultural goods
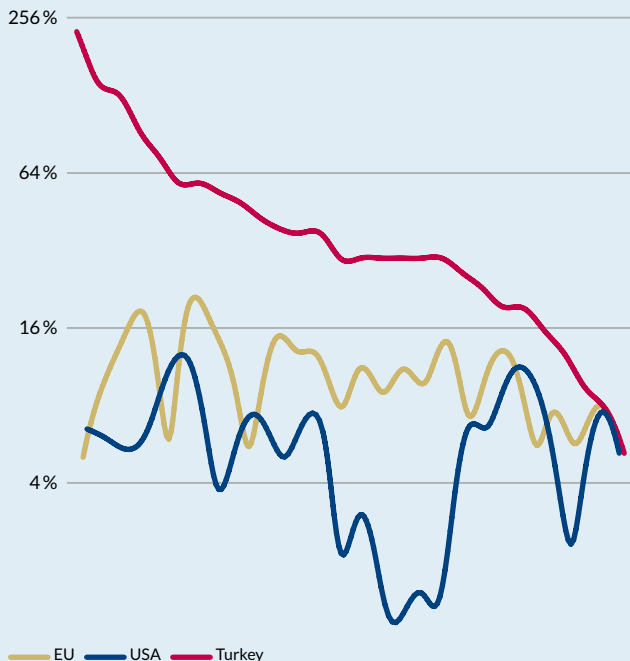
MFN tariffs in 2013 – Industrial goods
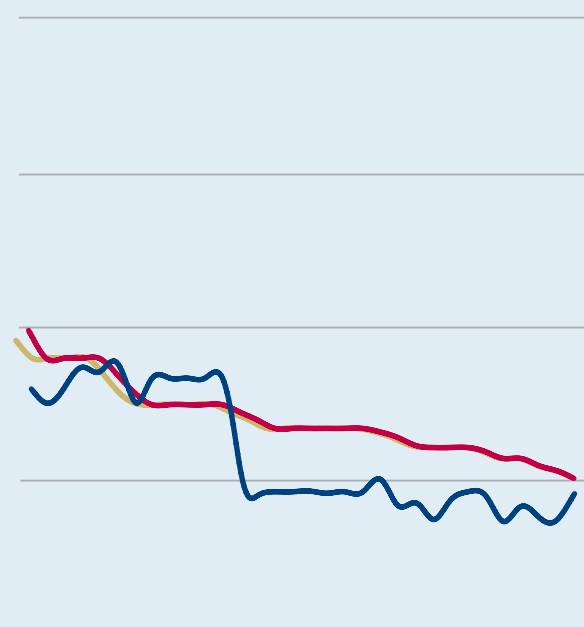
EU   USA   Turkey

Goods on the HS6 level are placed on the horizontal axis in decreasing order of Turkish MFN tariffs.
The classification differs by product (e.g.: 090210 = Green Tea, not fermented). HS2 defines chapters (e.g. 09 = coffee, tea, mate and spices).
HS4 groups goods within the HS2 chapter (example: 0902 = tea)
Source: WITS – TRAINS Tariff Data and author's own illustration

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trial goods, it is apparent that Turkish and the EU external tariffs are identical. The rules of the customs agreement between the EU and Turkey are therefore fulfilled in terms both of internal and of external relations.

Furthermore, it is apparent that the USA's external tariffs for industrial goods are in some cases considerably lower than in the EU and Turkey. At the same time there are products with higher tariffs.

In the agricultural sector, the three countries' external tariffs vary greatly for different products. As an emerging nation, Turkey has the highest tariffs for all goods.

Figure 23 shows the average tariff of the EU and Turkey for all goods, and also lists the corresponding tariff for the EU's new western trading partners. The same tariff statistics are indicated in Figure 24 for some of the EU's trading partners, which are all emerging nations. It is clear from the figures that there is considerable potential to reduce trading costs by eliminating tariffs. As expected, the existing external tariffs in the emerging nations are higher on average.

Table 6 lists weighted average tariffs in the agricultural and industrial goods sectors for a selection of the EU's future trading partners.

From these simple statistics, it is already apparent that the successful conclusion of the free trade agreements under negotiation between the EU and the six regions could bring about substantial negative consequences for Turkey, which are attributable to the problem of asymmetry previously discussed. If, for example, the EU reduces tariffs in the motor-vehicle sector from 7 percent to 0 percent for the USA within the framework of the TTIP, Turkey would have to follow the agreement. At the same time, however, Turkish exports would continue to be faced with American tariffs in the same sector, which amount to 2 percent. By extrapolating this scenario to other possible partner countries and sectors, the extent of the tariff imbalance – which initially appears to be minimal – becomes clear. In the case of India, for example, Turkish automobile-part exporters will continue to be faced with tariffs of 14 percent, while tariff barriers will have been removed on the home market.

Figure 23: **Average tariffs in the EU's future western partner countries**

MFN 2013 – Simple average

	Primary sector	Secondary sector
EU	4.09	3.14
Turkey	35.51	3.63
Japan	3.57	2.24
USA	4.98	2.60
Canada	10.95	2.75

MFN 2013 – Weighted average

	Primary sector	Secondary sector
EU	3.42	2.72
Turkey	16.66	3.44
Japan	2.67	1.21
USA	3.76	1.86
Canada	11.53	2.31

■ Primary sector ■ Secondary sector
Source: WITS – TRAINS Tariff Data and author's own illustration
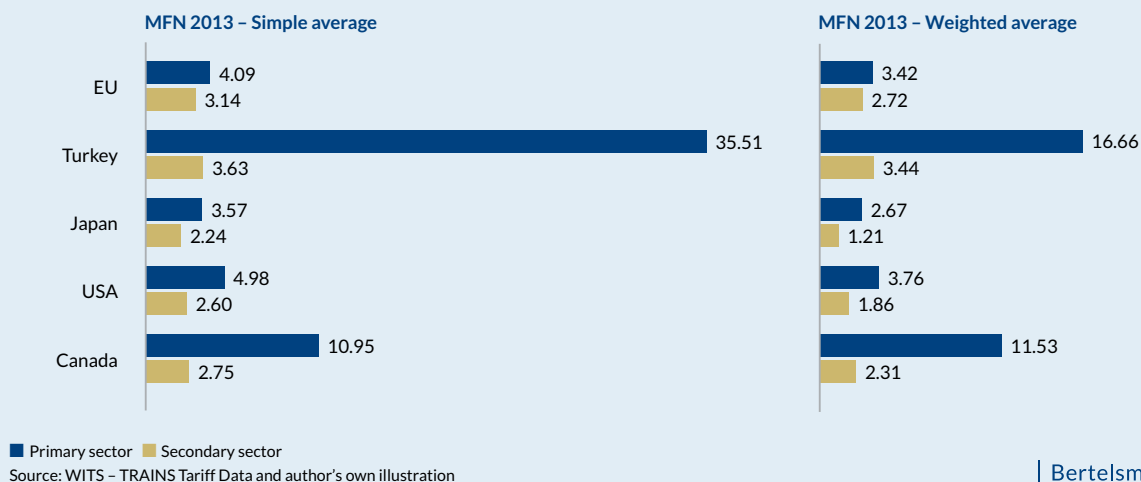
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Figure 24: **Average tariffs in the EU's future FTAs (emerging nations)**

MFN 2013 – Simple average

	Primary sector	Secondary sector
Argentina	8.53	12.76
Brazil	8.47	13.15
Indonesia	4.84	8,53
Malaysia	4.35	7.00
Myanmar	6.05	5.11
Paraguay	9.38	8,53
Philippines	11.55	10.01
Thailand	25.74	10.00
Uruguay	8.83	10.56
Venezuela	16.32	13.46
Vietnam	13.08	9.92
India	30.27	9.13

MFN 2013 – Weighted average

	Primary sector	Secondary sector
Argentina	2.85	12.42
Brazil	6.39	11.07
Indonesia	4.20	4.77
Malaysia	3.61	3.92
Myanmar	14.27	4.88
Paraguay	12.69	8,53
Philippines	10.53	7.18
Thailand	18.00	5.25
Uruguay	11.32	8.46
Venezuela	23.18	10.69
Vietnam	7.75	4.95
India	20.24	4.74

■ Primary sector ■ Secondary sector
Source: WITS – TRAINS Tariff Data and author's own illustration

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Table 6: **Weighted average MFN tariffs for selected countries (in percent)**

MFN tariff vs. WTO (2013)		Weighted average					
GTAP sector		EU	Turkey	India	Japan	USA	Canada
1	Paddy rice	7.70	31.59		0.00		0.00
3	Grains nec	0.00	121.54	49.70	0.52	0.01	0.00
4	Vegetables, fruit, nuts	5.55	28.11	29.24	5.86	4.06	2.66
5	Oilseed	0.00	19.14	26.23	0.00	0.00	0.00
6	Sugar cane, sugar beet	5.10	19.30	30.00	0.00	0.00	0.00
7	Plant-based fibers	0.00	0.00	0.79	0.00	0.00	0.00
8	Agricultural crops nec	0.97	17.31	54.95	0.61	7.96	1.85
9	Cattle, sheep, goats, horses	0.00	34.11	30.00	0.00	0.00	0.00
10	Animal products nec	2.97	1.50	8.97	4.10	0.41	5.69
12	Wool, silkworm cocoons	0.00	0.00	5.00	0.00	0.05	0.00
13	Forestry	0.00	0.00	5.75	0.27	0.33	0.00
14	Fishing	9.93	7.00	10.16	2.08	0.07	1.95
15	Coal	0.00	0.00	2.35	0.01	0.00	0.00
16	Oil	0.00		0.00	0.00	0.00	0.00
17	Gas	0.00		5.00	0.00	0.00	0.00
18	Minerals nec	0.01	0.71	7.25	0.00	0.04	0.04
19	Meat: cattle, sheep, goats, horses	3.25	120.27	18.68	33.16	10.01	11.43
20	Meat products nec	8.97	12.04	40.17	6.02	1.33	55.73
21	Plant-based oils and fats	2.02	16.28	59.96	1.11	3.31	7.39
22	Dairy products	7.06	149.44	27.75	17.26	9.75	177.98
23	Processed rice		45.00	70.00	0.00	11.20	0.00
24	Sugar	8.00	61.90	55.29	1.00	4.21	4.50
25	Food products nec	12.59	15.06	39.38	10.95	4.89	14.83
26	Beverages and tobacco	5.15	12.02	100.18	0.97	2.21	5.56
27	Textiles	9.31	5.92	10.06	7.39	9.42	10.92
28	Clothing	11.28	10.76	9.79	9.30	12.05	16.08
29	Leather products	8.85	9.36	10.00	12.02	10.81	10.99
30	Wood products	1.25	2.58	9.85	2.10	0.50	3.08
31	Paper products, publishing	0.03	0.04	8.59	0.00	0.00	0.00
32	Petroleum, coal products	1.46	2.18	5.08	0.90	5.55	1.05
33	Chemicals, rubber, plastic products	3.11	4.31	7.47	1.30	1.87	1.99
34	Mineral products nec	4.18	4.19	8.71	1.03	3.93	1.86
35	Ferrous metals	0.68	4.60	6.28	0.35	0.35	0.02
36	Metals nec	1.58	0.47	9.08	0.44	1.67	0.00
37	Metal products	2.62	2.83	9.87	0.73	2.07	2.00
38	Automobile vehicles and parts	7.38	7.63	13.61	0.00	1.81	4.62
39	Transport equipment nec	1.69	2.36	6.54	0.00	0.42	2.09
40	Electronic equipment	0.86	1.82	1.75	0.00	0.29	0.39
41	Machinery and equipment nec	1.74	1.80	6.98	0.05	1.04	0.64
42	Manufacturing nec	1.81	2.67	9.99	1.98	1.48	3.17

Source: WITS – TRAINS Tariff Data

3.6 Rules of origin

One tool that is of importance in the international trade of goods is the so-called certificate of origin, also known as rules of origin. These play an important role in free trade agreements and can be contractually structured in various different ways. Basically, these rules establish the conditions under which the origin of a delivered good is allocated to the exporting country. This is determined by defined requirements which are to be fulfilled when processing or further processing materials that do not originate in the exporting country. There are different accumulation rules which are not discussed here.

This rules-of-origin system within a free trade agreement aims to prevent tariffs from being circumvented. The following abstract example briefly illustrates the underlying problem. If two contracting parties (A and B) in a free trade agreement have different external tariffs for the same product – which can often be the case – a third country (party C, which is not a member of the free trade agreement between A and B) has the option of importing goods into the free trade area between A and B via the country with the lower external tariff.

To prevent the circumvention of tariffs, more detailed provisions are required regarding the acquisition of originating status within the free trade area for semi-finished products that do not have a so-called originating status in the free trade area.

If country C, for example, wishes to export goods to country A, it incurs a tariff of 30 percent. Countries A and B, however, have signed a free trade agreement, meaning that country C could consider exporting its product first to country B and subsequently delivering it to country A. Without the rules of origin, the tariff would be only 5 percent.

However, the rules of origin require that, for the tariff-free movement of goods to take place within the free trade zone, these must be products originating in one of the two contracting parties. Country C would not obtain a certificate of origin for imports to country B. Therefore country C must first pay a tariff of 5 percent in country B and then a further 30 percent for imports to country A. Only if the product undergoes sufficient processing or further processing in country B can it be assigned an originating status of country B and the product delivered to country A free of tariffs. Very detailed rules are established in the free trade agreements that define the upper limit for added value, for example in country C (third countries). Semi-finished products that are further exported under the terms of the free trade agreement should not account for more than 30 percent of the ex-factory cost, for example.

In the case of a customs union, there is no need for rules of origin since the external tariff of all contracting parties must be harmonized. As a member of the European Customs Union, Turkey is required to apply the same external tariff as the European Union and to remove any tariffs within the customs union.

Figure 25: **Tariff circumvention by third countries in free trade agreements**

External tariff: 30 %

External tariff: 5 %

A

Contractual partner

B

C
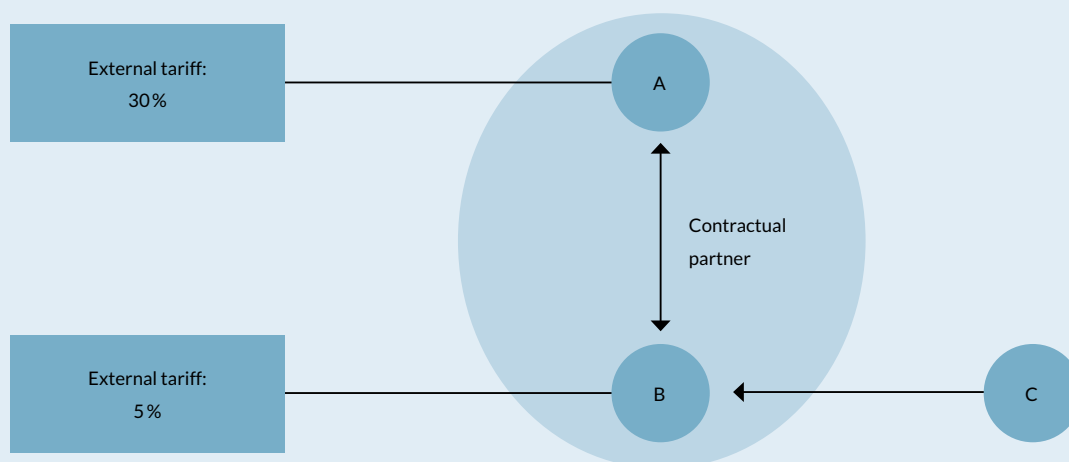
Source: ifo Institut and author's own illustration

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An important advantage of the customs union compared with a free trade agreement becomes evident when considering rules of origin.

If a country has comparative advantages in labor costs, for example, then it is often lucrative for companies from partner countries to outsource production standards for intermediate goods to the more cost-effective country. Chapter 3.4 contains descriptive statistics showing that German companies are increasingly injecting foreign direct investment into Turkey. The production of intermediate goods in Turkey and their export to the EU accounts for a large proportion of total exports in some sectors. Therefore it was, and still is, lucrative for many European companies to build production sites in Turkey. In addition to the cost advantages, however, rules of origin also play a role here.

In the following paragraph an example illustrates the consequences which may be experienced by Turkey if the TTIP enters into force and, at the same time, Turkey does not conclude its own free trade agreement with the USA.

As a result of the establishment of a customs union between the EU and Turkey, German company A built a production site in Turkey. Its products (e.g. intermediate goods for automobiles) are delivered both to the EU and to the USA. Turkey offers company A many advantages as a production location, meaning that the company can produce goods there in more favorable conditions than it could in the European Union. Now the TTIP enters into the example. It is assumed that the tariffs between the USA and the EU will be removed for Company A's goods. Furthermore, the assumption is made that Turkey cannot conclude its own free trade agreement with the USA.

Due to the problem of asymmetry in the EU–Turkey Customs Union, German companies have the following decision-making problem in the medium term:

Company A can save costs when exporting goods to the USA – by not paying tariffs – if it relocates its production site to the EU, e.g. the Czech Republic. Furthermore, there is a risk of additional costs being incurred for exports to the USA from Germany if the intermediate goods produced in Turkey are integrated into finished products that are intended for the US market. Tariffs are payable if the share of added value is too high.

Alternatively, the German company can relocate its production to an EU country due to the additional costs. The

relocation of a production site implies new costs. But, if the volume of trade is sufficiently large over a period of several years, such a relocation of the production site may be profitable.

The following is a short example with figures:

Imaginary Example			
Year	Location	Export volume to the USA	Incoming tariff
2016	Turkey	€ 10 M	€ 1 M
2017 TTIP	Turkey	€ 10 M	€ 1 M
	Czech Republic	€ 10 M	€ 0

Source: ifo Institut and author's own illustration

If export volumes to the USA remain the same, the relocation of the production site to the Czech Republic results in tariff savings of EUR 1 million per year. If it is not clear that the import tariffs incurred by the USA will also be removed – as a result of a free trade agreement between the USA and Turkey, for example – then it can be worthwhile constructing the production site in the Czech Republic.

Furthermore, the transformation of the existing customs agreement between the EU and Turkey is not a cost-free option in view of the rules of origin. European companies that produce intermediate goods in Turkey for their domestic locations would suddenly be confronted with the need to present certificates of origin. In addition to the administrative expense, limits for goods that can be imported tariff-free are also implicitly defined by the previously described added-value limits. This example illustrates the potential consequences of the TTIP for Turkey if the country cannot conclude a free trade agreement with the USA or the problem of asymmetry continues in the long term. Moreover, it is clear that the flawed contractual design of the EU-Turkey customs agreement causes friction for European producers in Turkey, since the rules of origin could suddenly appear in the customs union too. Transforming the customs agreement into a free trade agreement also brings about disadvantages.

3.7 Non-tariff trade barriers

Alongside higher external tariffs, non-tariff barriers (NTBs) also provide scope for national regulations to protect the domestic economy. NTBs offer a large number of

Figure 26: **Non-tariff trade measures 1995-2015, Turkey**

number of (unknown abbreviation) products affected · number of measures
Source: WTO, Integrated Trade Intelligence Portal (I-TIP) and author's own illustration
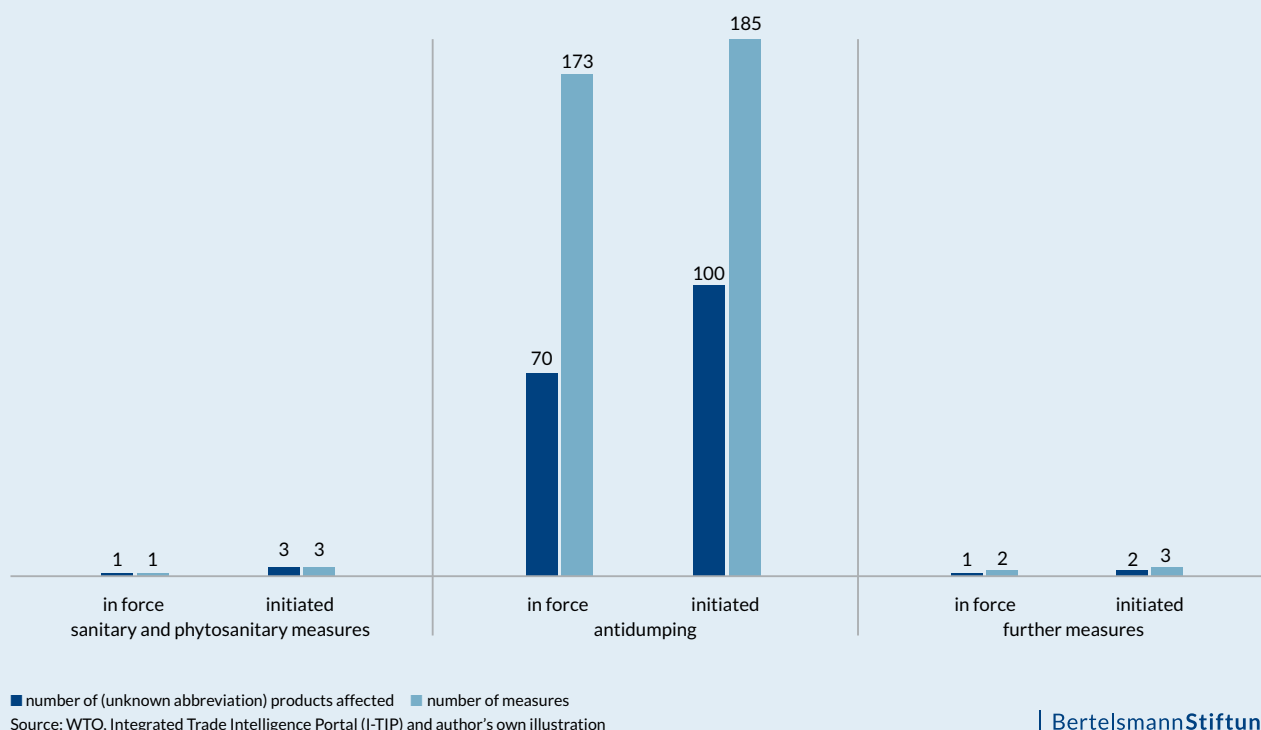
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possibilities to shape this scope for regulations. Many NTBs are often driven by national motives and are used to reach political objectives. This generally occurs in the context of globalization, which raises concerns about health, safety, environmental quality and consumer protection. Protecting the domestic economy by means of NTBs gives rise to new challenges for international cooperation, which hamper international integration.

Figure 26 shows the number of NTBs in Turkey that were implemented or initiated between 1995 and 2015. In addition, protective tariff procedures (anti-dumping) are listed. In total, Turkey initiated 191 measures, affecting 105 products.

In particular, Turkey has focused on anti-dumping and has initiated only a few sanitary and phytosanitary measures. The latter category includes, for example, the measure initiated on 4 June 2014 regarding the Japanese chestnut gall wasp, which was discovered in Turkey's Yalova province. Turkey had three specific sanitary and phytosanitary procedures by 2015, all of which concern the agricultural sector: import bans on farm animals from Hungary and the USA, pet food from Hungary, and bananas from Ecuador.

Intermediate findings:

By signing the Ankara Agreement, Turkey aligned its external tariffs in industrial sectors for third countries with those of the EU. In return there are no tariffs between the EU and Turkey for trade in industrial goods. In the agricultural sector, there are considerably higher tariffs in Turkey than the EU or even the USA. At the same time, for most agricultural sectors the EU has no bilateral trade tariffs for Turkish goods, as long as defined quotas are not exceeded. External tariffs will continue to exist for Turkey for the EU's future free-trade partners – albeit at a lower level – due to the problem of asymmetry. For example, trade tariffs for motor vehicles will be abolished in the customs union after the TTIP, while Turkish companies will still have to face additional costs amounting to 2 percent. In the case of India, Turkish manufacturers of automobile parts will be further hit with tariff costs of 14 percent. Moreover, the rules of origin will seriously threaten production networks between Turkey and the EU. Furthermore, investment in Turkey for the production of intermediate goods is becoming unattractive from the EU's perspective, due to the problem of asymmetry.

4. The ifo simulation model and necessary data

In order to carry out an analysis of the following trade policy scenarios, the ifo simulation model is used. It is based on the trade model of Aichele et al. (2014), which is described in brief below. A detailed description of the theoretical and empirical model can be found in the corresponding article.

As has been outlined, the trade agreement between the EU and Turkey is, in its current form, both a problematic and extremely unique agreement. There are, therefore, particular challenges when it comes to carrying out a structural assessment using parameters derived from data. The empirical identification and quantification of different integration policies, from which the simulation parameters are derived, are also briefly described.

4.1 ifo simulation model: Methodology

The simulation model developed by the ifo Institute enables the quantification of disaggregated trade and output effects. It is a general-equilibrium model for international trade, in which 140 countries in 57 goods and service sectors can currently conduct trade with each other, and in which the trade flows are reduced by tariffs and NTBs. In addition, medium-term welfare effects can be calculated. The model presents international added-value chains and sectoral details in such a way that the intended alignments in various trade policies between the EU and Turkey can be appropriately simulated. The basis for this multi-sector model was developed by Caliendo and Parro (2015). It builds on the pioneering work of Eaton and Kortum (2002). The model is thus anchored in the New Quantitative Trade Theory.8

The model is parameterized using econometric equations which are derived from the model's theoretical equilib-

rium conditions. Two estimated parameters are of particular interest here. On the one hand the elasticity with which tariff modifications affect trade flows in the sectors examined and, furthermore, the effect of non-tariff trade restrictions, which also affect the respective trade flows. Here, a distinction is made between agreements of different levels of integration, which are based on data from Dür et al. (2014). Moreover, the effects of a customs union and the establishment of a single market (EEA, EU) are empirically estimated and taken into consideration. This distinction between the levels of integration for trade agreements makes it possible to quantify the welfare and trade effects for various levels of trade liberalization in the following trade-policy scenarios.

The trade-policy scenarios, which are described in detail below and then assessed quantitatively, are derived from the following scenario: if the EU were to conclude new free trade agreements with third countries – that is to say, remove tariffs and non-tariff trade barriers – what alignments would be made and to what extent would there then be changes to the existing economic parameters of the countries considered? In addition, the effects that would result from expanding the EU-Turkey customs union to include the primary and tertiary sectors are considered. For these theoretical new situations, the possible trade flows, production structures and real global income are calculated based on current real data. As far as the reduction of non-tariff trade barriers is concerned, these will be derived empirically from existing liberalization agreements from the past. Section 4.3 briefly presents the methodology and the corresponding results.

The level effects on the economy resulting from the simulations represent a new equilibrium and are of a statistical nature. The base year that is taken as the starting point is 2011, since there are no more current data available. Possible dynamic alignments at a micro-level, such as company innovations or new investments, for example, are not

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8 See Costinot and Rodríguez-Clare (2015) for a description of these model types.

taken into consideration in this model. With this in mind, the effects presented are conservative results, which are more representative of the lower end of the possible alignments. The results presented show a new economic equilibrium that could be achieved following a real alignment period of 10 to 12 years.

4.2 Scenarios and EU free trade agreements taken into consideration

As described above, the asymmetrical customs agreement between the EU and Turkey has possible economic repercussions if the EU concludes new free trade agreements with third countries. The following free trade agreements currently being negotiated between the EU and third countries are considered for the analysis scenarios, which will be presented in more detail later on:

1. TTIP (Transatlantic Trade and Investment Partnership) with the USA. This is a comprehensive free trade agreement.
2. EU-Japan. This is a comprehensive free trade agreement.
3. CETA (Comprehensive Economic and Trade Agreement). This is a comprehensive free trade agreement with Canada.
4. EU-India. This is a basic free trade agreement.
5. MERCOSUR (Southern Common Market). This is a basic free trade agreement with the following partner countries: Argentina, Brazil, Paraguay, Uruguay and Venezuela.
6. ASEAN (Association of Southeast Asian Nations). This is a basic free trade agreement with the following partner countries: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam.
7. All of the above FTAs are considered together.

For the first three agreements, the assumption is made that they are so-called comprehensive free trade agreements. For the other agreements, which are primarily with emerging and developing nations, it is assumed that they are less comprehensive (basic) agreements, since a comprehensive agreement with the EU seems improbable because of the level of economic development in these countries at the present moment. The classification of the agreements comes from Dür et al. (2014).

As shown in chapter 2.4, the EU and Turkey have a number of different possible courses of action that they could take in view of the EU's forthcoming free trade agreements. On the one hand, various integration alignments between Turkey and the EU are politically conceivable. Furthermore, various economic agreements may also be made between the third countries listed and Turkey. The following scenarios, which are possible in theory and increasingly discussed in political debates, are analyzed.

First scenario: EU-Turkey Customs Union remains unchanged

The EU-Turkey Customs Union remains unchanged, while the EU concludes free trade agreements with the six countries or regions listed. Turkish membership of the customs union is restricted to the industrial goods sector.

A) The economic effects of the TTIP, CETA, Japan and other free trade agreements on the EU and Turkey are shown in the event of complete tariff elimination.
B) The effects of the TTIP, CETA, Japan and other free trade agreements on the EU and Turkey in the event of the elimination of tariffs and non-tariff barriers (NTBs).

Second scenario: The EU-Turkey Customs Union is deepened

The EU-Turkey Customs Union is deepened. Here the EU's new free trade agreements are not considered for the time being.

A) Partial deepening: Agricultural sector is included in the customs union
B) Partial deepening: Service sector is included in the customs union
C) Comprehensive deepening of the customs union: agricultural and service sectors are included in the customs union

Third scenario: The EU-Turkey Customs Union is deepened as in scenario 2 C). In addition, the EU's new free trade agreements are taken into consideration

3.1 Turkey is not part of the EU's six FTAs but must open its market to the EU's new trading partners in all sectors (problem of asymmetry for Turkey).

A) The EU's new free trade agreements take into consideration tariffs and non-tariff barriers. See above for the depth of the FTA.

3.2 In the following sub-scenarios, the assumption is made that Turkey follows suit with respect to the EU's new free trade agreements.

A) The assumption is made that Turkey concludes its own independent free trade agreements (basic ones only) with the USA, Canada, Japan, India, MERCOSUR and ASEAN at the same time as deepening the European Customs Union.

In this scenario, Turkey's agreements with third countries sometimes have different levels of liberalization from those of the EU. The objective of this scenario is to illustrate that Turkey has a worse negotiating position vis-à-vis third countries.

B) The assumption is made that, by making the EU-Turkey Customs Union fully comprehensive, Turkey concludes equivalent FTAs with the third countries and regions listed (open free trade agreement between the EU and third countries).

Fourth scenario: The EU-Turkey Customs Union is transformed into a free trade agreement

A1) The EU's new free trade agreements are initially not taken into consideration. This is a comprehensive free trade agreement between the EU and Turkey in the industrial goods sector (agricultural and services sectors excluded).

A2) The EU's new free trade agreements are initially not taken into consideration. This is a comprehensive free trade agreement between the EU and Turkey in the industrial goods sector and a basic free trade agreement in the agricultural and service sectors.

A3) The EU's new free trade agreements are initially not taken into consideration. This is a comprehensive free trade agreement between the EU and Turkey in the industrial goods sector and also a comprehensive free trade agreement in the agricultural and service sectors.

Based on A2), the following sub-scenarios are taken into consideration:

B) Consideration of the EU free trade agreements (TTIP, CETA, Japan, etc.) but Turkey does not follow suit with respect to the EU's free trade agreements.

C) Consideration of the EU's new free trade agreements and Turkey signs agreements with the same regions. However, the agreements are less comprehensive (Turkey has exclusively basic agreements with the six regions).

For all simulations, there are particular features of the EU that must be considered as follows. In 2013,

Croatia became the newest EU member state. This therefore means that future free trade agreements between the EU and third countries are carried out in a world in which Croatia is already an EU member state. However, the GTAP9 data which are used in the model refer to the base year of 2011 – a time at which Croatia was not yet part of the EU. The effects of Croatia's accession to the EU are therefore simulated initially.[9] The free-trade scenarios discussed above are simulated on the basis of data that identify Croatia as an EU member state. This also implies the expansion of relations between Croatia and Turkey from a basic free trade agreement to a customs union in the industrial sector.

4.3 Empirical quantification of various integration policies

There are particular challenges when it comes to a structural estimation using parameters derived from data. As well as identifying possible average trading effects which were observed in the past following a basic or a comprehensive free trade agreement, this study requires the quantification of the effect of a customs union. The classification of bilateral free trade agreements according to their level of depth is done on the basis of Dür's points system (2014). This points system is available for free trade agreements from 1949 to 2015. To establish the average effects of a customs union, the following customs-union agreements already in existence are used:

A) Andean Community,
B) Eurasian Customs Union,
C) MERCOSUR,
D) West African Economic and Monetary Union.

The selection was made based on the economic parameters of the customs unions and their sufficient temporal variation with regard to foundation and change of members.

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9   For Croatia the model predicts a rise in real income of 13.2 percent as a result of the country's EU accession. The effect on the EU, however, is not significant: on an average across the EU, real income increases by 0.08 percent. Croatia's neighbors, such as Slovenia (+1.6 percent) and Hungary (+0.3 percent) benefit the most. The "sugar", "ferrous metal", "sugar cane and sugar beet", "other metals", "textiles", "leather products", and "company services" sectors in Croatia particularly benefit from EU membership. On the other hand, some agricultural sectors, such as "paddy rice", "dairy products", "other foods" as well as oil, insurance and financial services, are shrinking. Overall, Croatia's trade with the EU is increasing. Exports are rising by 170 percent and imports by roughly 150 percent. In 2011, the EU was Croatia's largest trade partner. Approximately 64 percent of the country's imports came from other EU countries, and about 70 percent of exports went to the EU. This share continued to rise after EU entry, by about 15 percentage points for imports and 20 percentage points for exports.

In order to estimate the effects of free trade agreements and customs unions, bilateral import data on goods trade from the International Monetary Fund's (IMF) Direction of Trade database are used. These data cover the period from 1960 to 2014 and concern the bilateral trade of 184 countries. Sectoral estimations are calculated based on UN Comtrade data. These data cover the period between 1963 and 2014. For the most recent years, this dataset is supplemented by CEPII bilateral trade data. Sectoral estimations are conducted in the sector categories according to GTAP9. The effects in the tertiary sector are estimated using the comprehensive GTAP9 dataset. This dataset covers 140 regions, 57 sectors, and is available for the years 2004, 2007, and 2011.

For an empirical evaluation of the different levels of free trade agreements and the customs union, a gravity equation is applied. In its simplest form, this equation explains bilateral trade using the following relationship:

$$\ln x_{ijt} = -\ln GDP^{Wt} + \ln GDP_{it} + \ln GDP_{jt} - \ln d_{ijt};$$

whereby x_{ij} represents the trade flows between the countries i and j, GDP^W refers to global income, GDP^i and GDP^j refer to each country's gross domestic product and d_{ij} represents the trade barriers between the two countries. t stands for time variation. In the empirical specification, the trade costs d_{ij} will be a function of the distance and dummy variables for a common boundary, common language and of the membership of a free trade agreement.

Using the gravity model at sectoral level, the average effects of different integration policies are estimated:

$$\ln x_{ijst} = FTA(comprehensive)_{ijst} + FTA(simple)_{ijst} + customs\ union_{ijst} + EU_{ijst}$$

In addition, the panel estimations take into consideration target–country year, origin–country year and country-pair fixed effects. The average effects for full membership of the EU are also estimated for the sake of completeness. The wider European Economic Area (EU), which comprises both the EU and the additional members of the EEA (European Economic Area), is defined from the entry into force of the Treaty of Maastricht (1993).

Figure 27 illustrates the average effects for the individual integration policies under consideration. According to the figure, the increasing deepening of economic integration is on average accompanied by a steady rise in trade in the par-

Figure 27: **Average effects of various integration policies**
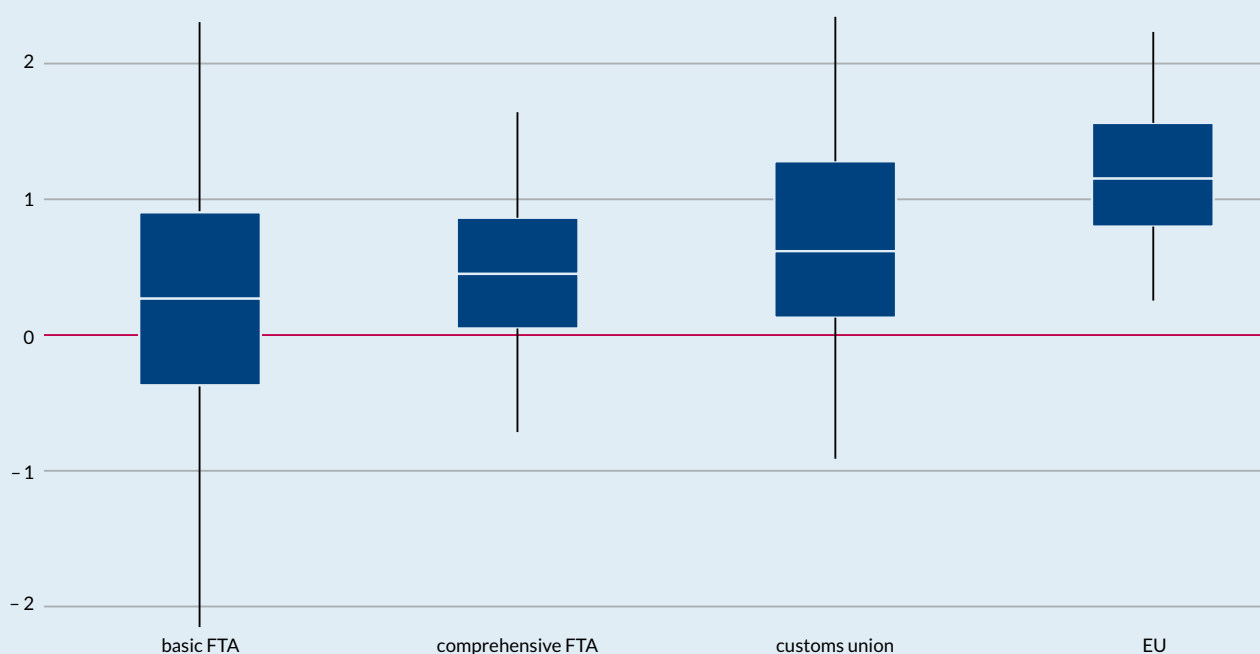
Source: ifo Institut and author's own illustration

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Figure 28: **Average trading effects of integration policies (industrial goods)**

	basic	comprehensive	customs union
textiles	0.21	0.59	0.89
clothes	0.14	0.32	1.23
leather	0.09	0.52	0.92
wood	0.13	0.53	0.59
paper, publishing	0.15	0.34	0.63
petroleum, coal products	0.26	0.37	0.24
chemicals, rubber, plastics	0.25	0.46	0.81
mineral products nec	0.04	0.35	0.48
ferrous metals	0.07	0.37	0.95
metals nec	0.27	0.43	1.02
metal products	0.16	0.36	0.50
automobile vehicles and parts	0.18	0.48	0.93
transport equipment	0.18	0.30	0.58
electronic equipment	0.14	0.28	0.97
machinery and equipment nec	0.15	0.23	0.58
manufacturing nec	0.12	0.33	0.47

■ basic ■ comprehensive ■ customs union
Source: ifo Institut and author's own illustration

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ticipating partner countries. This empirical result therefore corresponds to the theoretical model discussed in Chapter 2.2. At the same time, it is clear from the figure that, within the individual integration options, the trading effects vary considerably. It is therefore possible that countries which decide upon a comprehensive free trade agreement can achieve more positive trading effects and thus higher welfare effects than with the average customs union agreement.

In Turkey's case the result is of particular importance, especially for the analysis of policy options. Due to the problem of asymmetry outlined, it is feasible that Turkey could benefit more from a comprehensive free trade agreement with the EU than it does from its current incomplete membership of the European Customs Union.

Figure 28 shows the estimators used below for the three integration-policy options (basic FTA, comprehensive FTA, customs union) for various sectors in the field of industrial goods. The resulting order of average trading effects is also empirically confirmed at this disaggregated level. The average estimator for a comprehensive FTA in the motor-vehicle sector is 0.48; this is around half the amount for the corresponding customs-union effect, which is 0.93. In the event of an FTA, trade increases by approximately 62 percent on average, whereas it would increase by 150 percent with the alternative of initiating a customs union. The corresponding estimators are also listed for the agricultural and service sectors in the appendix.

Intermediate findings:

Empirical estimates confirm that increasing intensification of economic integration between two countries results in higher average growth in trade. However, estimates also show that some comprehensive free trade agreements can lead to higher bilateral trade flows than, for example, a customs union agreement. In Turkey's case, the question arises in theory of whether a rollback of the customs union to a free trade agreement represents such a preferable scenario.

5. Simulation results: Integration scenarios for the EU and Turkey

In order to investigate possible changes to the status quo of relations between the EU and Turkey, as well as the possible establishment of new relations with other countries, various scenarios have been simulated. The central findings are displayed in tables below. The first four rows represent the simulated effects on GDP, wages, and welfare in Turkey. These are followed by changes in trade flows between Turkey and the EU, the rest of the world, as well as the respective FTA partners. Turkey is always the corresponding nation here. In Table 35 of the appendix, the basic economic data of the underlying dataset are listed for the countries in question.

5.1 Effects of the EU's new free trade agreements on Turkey (status quo)

Scenario 1A) Outright elimination of tariffs

In scenario 1A), the status quo between the EU and Turkey forms the basis. The effects resulting from the introduction of the selected free trade agreements between the EU and third countries are determined in the event of the outright elimination of tariffs.

Table 7 shows that Turkey will not experience a substantial expansion of its foreign trade. The outright elimination of tariffs between the European Customs Union and the respective free-trade partners does not lead to major changes in bilateral trade between Turkey and EU countries. Whereas in the overall scenario (last column: Combined) the simulated Turkish exports to the EU increase slightly, Turkish imports from the EU fall more sharply in percentage terms.

Turkish imports from the respective FTA partner countries increase due to the now asymmetrical external tariffs. Although the MFN external tariffs of the respective FTA partner countries continue to apply for goods from Turkey, the tariffs applicable for exports from these countries to Turkey are eliminated.

In contrast to this, there is a decrease in the volume of Turkish exports to these countries or a considera-

Table 7: **Findings for scenario 1A)**

Scenario 1A)	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
ΔGDP (USD billions)	− 0.07	− 0.05	− 0.03	− 0.02	− 0.02	− 0.06	− 0.22
ΔGDP per capita (USD)	− 0.86	− 0.67	− 0.35	− 0.24	− 0.31	− 0.73	− 2.79
ΔWages (%)	0.02	0.01	0.00	0.00	0.00	0.00	0.03
ΔWelfare (%)	− 0.01	− 0.01	0.00	0.00	0.00	− 0.01	− 0.03
ΔExports TUR – EU28 (%)	− 0.03	− 0.01	0.11	0.08	0.33	0.12	0.63
ΔExports TUR – RoW (%)	0.23	0.22	− 0.04	− 0.14	− 0.17	0.12	0.21
ΔExports TUR – FTA (%)	0.43	− 2.41	− 0.78	− 5.65	− 5.53	0.25	− 0.82
ΔImports TUR – EU28 (%)	− 0.42	− 0.44	− 0.08	− 0.20	− 0.17	− 0.29	− 1.60
ΔImports TUR – RoW (%)	0.23	0.30	0.08	0.10	0.18	0.26	1.16
ΔImports TUR – FTA (%)	5.17	13.63	3.03	1.43	3.36	8.89	5.73

Source: author's own calculations, RoW = all countries in the world except EU28

bly smaller rise in exports than in imports. In connection with the decrease in imports to Turkey from the EU, there appear to be possible trade-diversion effects. In the case of the TTIP, for example, the import of goods from the USA becomes more attractive relative to the EU due to the elimination of the external tariff for Turkey.

In addition, the simulation indicates an expected reduction in Turkish GDP in all of the seven scenarios. If the EU signs all six free trade agreements, this would lead to a fall in Turkish GDP amounting to USD 220 million, which equates to a reduction in Turkish GDP per capita in the magnitude of USD 2.79. However, there is an expectation that Turkish wages would increase in all of the scenarios.

Scenario 1B) Elimination of tariffs and non-tariff barriers

If scenario 1A) is now expanded to include the elimination of non-tariff barriers (NTBs), then a drop in the volume of Turkish imports from the EU is observed across all of the scenarios. In most of the scenarios, a fall in the volume of Turkish exports to the EU is also expected.

As a result of the EU's entry into the markets of the respective FTA partner countries and the asymmetrical treatment of Turkey (problem of asymmetry in the customs union), Turkey loses its market share in these countries. This can be seen in the fall in Turkish exports to these countries.[10] Imports from these countries, however, are expanding – sometimes considerably – due to the asymmetrical removal of tariffs and barriers vis-à-vis Turkey. In the event of a free trade agreement between the EU and Japan, for example, there would be a 2.82 percent reduction in the volume of Turkish exports to Japan but a considerable increase in the volume of Turkish imports from Japan amounting to 13.05 percent.

Compared with the outright elimination of tariffs in scenario 1A), the reduction in Turkish GDP and welfare is smaller here. In the case of the TTIP and the CETA, there is even the possibility of a welfare gain for Turkey. The aggregated welfare effects derived here are considerably less significant compared with Felbermayr et al. (2015), since an alignment in the industrial structure is initially excluded in the medium term. In the aggregated estimate made by Felbermayr et al. (2015), substantially more

comprehensive unobserved alignments (structure, capital, innovation alignments) can be accounted for. By retaining the disaggregated data structure one does obtain more detailed information on sector-specific alignments, however further-reaching alignments are foregone as a result.

Table 8b) summarizes the main economic results for Germany which can result after a successful implementation of the considered free trade agreements. Accordingly, with the TTIP Germany can expect a welfare gain of 0.35 percent. Across all considered FTAs Germany can expect a positive welfare effect. An equivalent picture emerges in Table 8c) for the EU. Strikingly, all FTAs come along both in Germany and in the EU with trade-diversion effects. Trade with Turkey is reduced both in exports as well as in imports.

While the aggregated effects of the EU's new free trade agreements which have been outlined do not appear to be particularly large, it becomes clear when taking into consideration the sectoral effects that very large and sometimes opposing alignments take place that are not visible in the aggregate.

Figure 29 illustrates, for example, the expected sectoral changes in terms of Turkey's exports to the EU after the TTIP and an FTA with MERCOSUR. It becomes clear, for example, that in the case of the TTIP, a very strong decline in Turkish exports will occur in those sectors that until now have had high export volumes to the EU. In both the metal and transport-equipment industries, Turkish exports to the EU will fall by almost 2.5 percent. A significant reason for these declines is to be found in the asymmetrical customs agreement between the EU and Turkey. On the one hand competition on the EU market will intensify as a result of the TTIP, since US firms will experience considerable cost easing. Moreover, Turkish companies that supply intermediate goods to the EU may not benefit from the increased volume of finished products exported from the EU to the USA, since goods with a large share of Turkish added value will be disadvantaged as a result of the rules of origin. Furthermore, Figure 29 shows that the effects occurring in the case of the TTIP are not necessarily to be expected for Turkish companies for all of the EU's FTAs. Since MERCOSUR states generally do not have strong export industries, an FTA with the EU would not lead to an intensification of competition on the EU market to the same extent as the TTIP. Turkish companies may, by contrast, even increase their sales in the event of such an agreement, since EU budgets can make savings in their revenue as a result of the FTA and increase their con-

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10   Table 36 in the appendix lists the changes in Turkish exports to selected countries, while Table 37 shows the changes in Turkish imports.

Table 8: Findings for scenario 1B)

a) Results for Turkey

Scenario 1B) TUR	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
ΔGDP (USD billions)	0.04	− 0.03	0.01	− 0.03	− 0.02	− 0.07	− 0.08
ΔGDP per capita (USD)	0.51	− 0.36	0.09	− 0.33	− 0.22	− 0.89	− 1.08
ΔWages (%)	0.02	0.01	0.00	− 0.01	0.01	0.00	0.02
ΔWelfare (%)	0.01	0.00	0.00	0.00	0.00	− 0.01	− 0.01
ΔExports TUR – EU28 (%)	-0.27	− 0.50	0.10	− 0.11	0.43	− 0.19	− 0.51
ΔExports TUR – RoW (%)	-0.15	0.23	− 0.10	− 0.14	− 0.28	0.15	− 0.29
ΔExports TUR – FTA (%)	-1.28	− 2.82	− 1.20	− 7.04	− 8.05	− 0.72	− 2.56
ΔImports TUR – EU28 (%)	-0.77	− 0.59	− 0.14	− 0.24	− 0.26	− 0.33	− 2.27
ΔImports TUR – RoW (%)	0.10	0.12	0.08	0.02	0.23	0.13	0.66
ΔImports TUR – FTA (%)	5.05	13.05	2.72	0.86	3.86	8.42	5.17

b) Results for Germany

Scenario 1B) DEU	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
ΔGDP (USD billions)	11,78	3,24	1,60	2,19	3,75	3,58	25,88
ΔGDP per capita (USD)	144,16	39,69	19,63	26,83	45,93	43,85	316,83
ΔWelfare (%)	0,35	0,10	0,05	0,07	0,11	0,11	0,77
ΔExports DEU – TUR (%)	-0,69	− 0,53	− 0,15	− 0,34	− 0,40	− 0,40	− 2,45
ΔExports DEU – FTA (%)	43,06	49,45	54,69	72,46	79,55	47,63	48,53
ΔImports DEU – TUR (%)	-0,46	− 0,53	0,18	− 0,07	0,58	− 0,30	− 0,58
ΔImports DEU – FTA (%)	46,59	51,40	47,96	40,22	34,79	31,71	43,35

c) Results for the EU

Scenario 1B) EU28	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1-6)
ΔGDP (USD billions)	51,51	15,12	8,76	8,72	12,21	13,96	109,04
ΔWelfare (%)	0,32	0,09	0,05	0,05	0,08	0,09	0,67
ΔExports EU28 – TUR (%)	-0,77	− 0,59	− 0,14	− 0,24	− 0,26	− 0,33	− 2,29
ΔExports EU28 – FTA (%)	41,38	59,50	55,64	63,92	68,28	45,86	46,75
ΔImports EU28 – TUR (%)	-0,27	− 0,50	0,10	− 0,11	0,42	− 0,19	− 0,51
ΔImports EU28 – FTA (%)	41,36	56,16	45,81	37,70	40,19	33,11	41,61

Source: author's own calculations, RoW = all countries in the world except EU28

Figure 29: **Changes in Turkish industrial exports to the EU28**

	TTIP	MERCOSUR
textiles	−0.04	0.50
clothes	0.28	0.23
leather	0.86	−0.13
wood	0.58	0.34
paper, publishing	0.90	0.44
petroleum, coal products	−2.69	0.38
chemicals, rubber, plastics	−2.44	0.57
mineral products nec	0.44	0.43
ferrous metals	0.44	0.63
metals nec	−2.44	0.51
metal products	0.33	0.66
automobile vehicles and parts	−0.82	0.73
transport equipment	−2.39	0.21
electronic equipment	−1.04	0.28
machinery and equipment nec	−0.69	0.55
manufacturing nec	−0.28	0.35

■ TTIP ■ MERCOSUR

Source: WITS – TRAINS Tariff Data and author's own illustration

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Figure 30: **Changes in Turkish exports to the EU28**
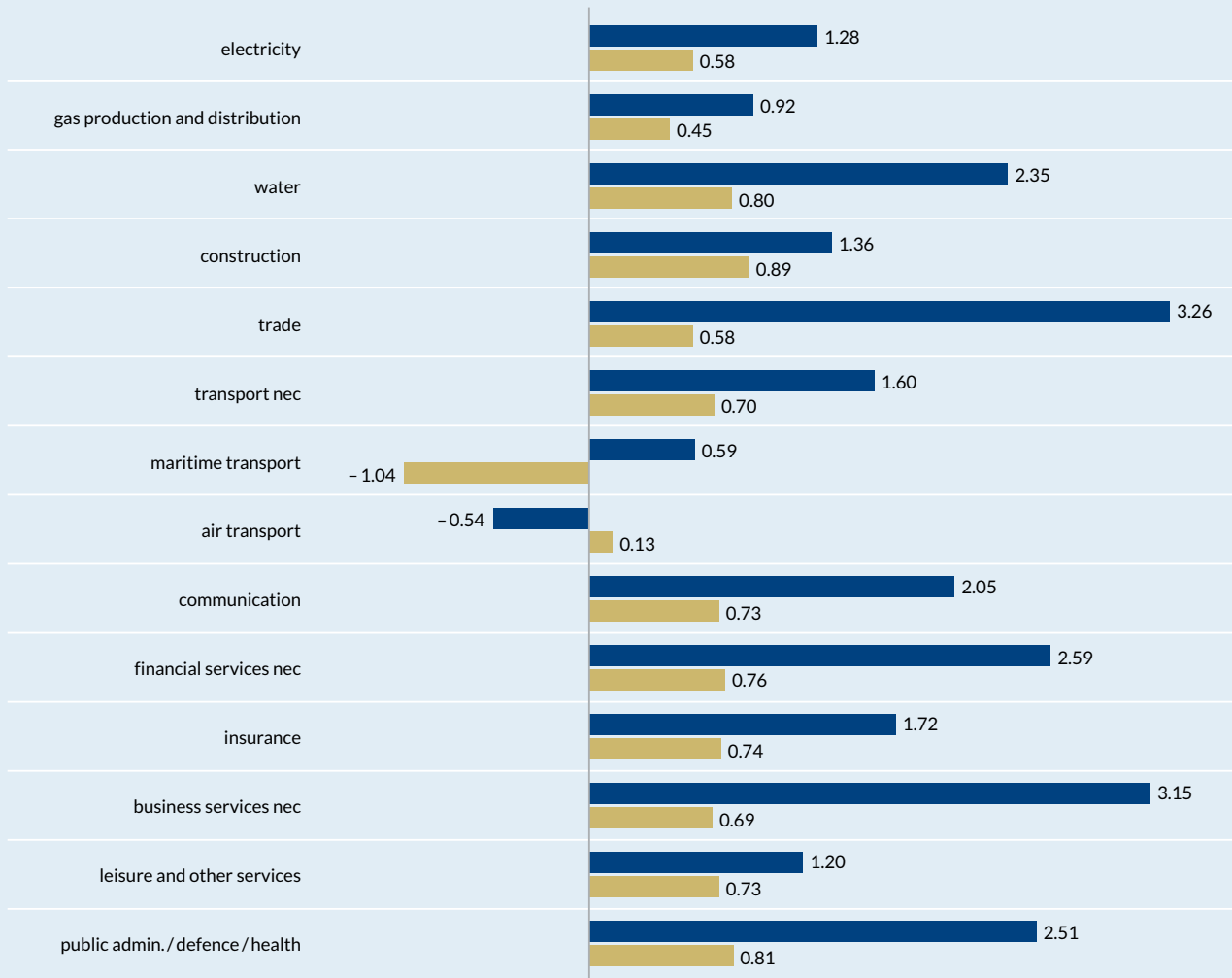
Sector	TTIP	MERCOSUR
electricity	1.28	0.58
gas production and distribution	0.92	0.45
water	2.35	0.80
construction	1.36	0.89
trade	3.26	0.58
transport nec	1.60	0.70
maritime transport	0.59	– 1.04
air transport	– 0.54	0.13
communication	2.05	0.73
financial services nec	2.59	0.76
insurance	1.72	0.74
business services nec	3.15	0.69
leisure and other services	1.20	0.73
public admin./defence/health	2.51	0.81

■ TTIP ■ MERCOSUR
Source: WITS – TRAINS Tariff Data and author's own illustration

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sumption of industrial goods from Turkey. The opposite is true for exports of agricultural goods. In the case of MER-COSUR, Turkish exporters in the primary sector experience above-average decreases in exports, since the partner countries already have an established export structure in these sectors. Table 38 in the appendix, however, illustrates that, when considering all six FTAs, Turkey will suffer large export losses to the EU and the respective free-trade partner countries across almost all sectors. Especially in important industrial sectors, such as the automotive or machinery-construction sectors, falls of 10 percent and 4 percent, respectively, are to be expected for Turkish exports to the EU's new partner countries. The main cause

of this dramatic decline in exports is the problem of asymmetry in the customs union.

Finally, Figure 30 uses the service sector to illustrate to what extent the negative effects in the secondary sector, which have been outlined, are driven by the problem of asymmetry. Since there are no tariffs in the service sector, there are no systematic disadvantages for Turkish companies in the corresponding sectors. It becomes clear from Figure 30 that Turkish companies in nearly all sectors can increase exports to the EU. The sales of Turkish service providers also increase in most sectors in the EU's respective new partner countries.

Intermediate findings:

The EU's new free trade agreements have negative consequences for Turkish welfare. Although the cumulative negative effects are not too great at first, it becomes clear at a sectoral level that important export sectors in Turkey are experiencing a significant drop in trade. The asymmetrical customs agreement, which disadvantages Turkish exporters on the markets of the EU's new trading partners, is the cause of this sharp sectoral fall in exports. The negative effects for Turkish companies are particularly substantial if the EU's new partner countries already have a strong industry in the respective sectors. The TTIP therefore implies a considerable decrease in exports for Turkish companies, especially in industrial sectors.

5.2 Deepening the EU-Turkey Customs Union

Scenarios 1A) and 1B) form the basis for the following simulations. Based on the status quo of Turkish-European trade relations, possible alternative trade-policy positions for Turkey in its dealings with the EU are analyzed.

As a first step, an expansion of the EU-Turkey Customs Union to include other economic sectors is simulated. A partial deepening in the agricultural sector and a partial deepening in the services sectors are analyzed, followed by comprehensive deepening across all sectors. In all these scenarios, Turkey undergoes expansion of trade with the EU as a result of deepening the customs union. This demonstrates the importance of the service sector in particular, which accounts for a large share of Turkish exports. If the customs union is deepened to form a comprehensive customs union, Turkish exports to the EU rise by 69.86 percent, whereas Turkish exports to the rest of the world fall by -7.83 percent. By comparing deepening the customs union in the agricultural sector with deepening the customs union in the services sector, it can be shown that this shift in Turkish exports to the EU is driven by the services sector.

Turkish imports increase on average; however, imports from the EU show a notably greater increase. The dominance of the service sector is also demonstrated here. Whereas imports from the rest of the world fall when the customs union expands to include the agricultural sector, they increase when the service sector is included.

Due to the rise in GDP, wages and welfare in general, the positive effect for Turkey of deepening the customs union is shown once more. In the case of a complete deepening, Turkish GDP rises by USD 13.3 billion, which corresponds to a per capita rise of 171.1 USD. Average wages in Turkey would also increase by 2.4 percent as a result of complete deepening.

Table 9b) summarizes the main economic results for Germany and the EU. Both Germany and the EU will benefit from deepening the customs union with Turkey. Respective bilateral trade increases significantly. It is striking that across all scenarios the rise in German exports to Turkey is less than the EU average, while German imports from Turkey increase relatively stronger. This can be explained by the fact that Turkey is an important supplier of upgraded intermediate goods for the German industry.

Table 10 shows the growth in Turkish output by sector, classified by the three basic economic sectors. At first glance it may seem surprising that, if the customs union is expanded to include the agricultural and service sectors, both the agricultural sector and the manufacturing trade show a decline in output. In this case, however, the following point has to be considered: the simulation model assumes full employment. Deepening the customs union makes production in the Turkish service sector more attractive, thus causing resources to be reallocated to the service sector. This results in lower production in the primary and secondary sectors. It should also be considered that it is already the case that the EU does not apply tariffs for Turkey in the agricultural sector. Therefore, competition in the Turkish agricultural sector becomes more intense.

A look at export changes by sector in Turkey according to Table 11 confirms what is expected if the EU-Turkey customs union is deepened. Turkey reduces its exports to countries outside the EU in all sectors and increases its export volumes to the EU in the primary and tertiary sectors. At the same time, it reduces its exports to the rest of the world. There is a striking decline in Turkish exports in the secondary sector both to the EU and to the rest of the world.

In summary, a very positive trend for the Turkish economy continues as a result of deepening the EU-Turkey customs union. In a further step, the effects of the EU's new free trade agreements on the Turkish economy will be analyzed, in a similar way to scenario 1.

Table 9: Findings for scenario 2

a) Results for Turkey

Scenario 2)	2A) Agricultural	2B) Services	2C) Agricultural and services
ΔGDP (USD BN)	4.91	8.16	13.30
ΔGDP per capita (USD)	63.17	104.97	171.10
Δwages (%)	0.86	1.48	2.40
Δwelfare (%)	0.68	1.13	1.84
Δexports TUR – EU28 (%)	10.90	57.58	69.86
Δexports TUR – RoW (%)	2.62	– 9.98	−7.83
Δimports TUR – EU28 (%)	13.17	26.36	40.12
Δimports TUR – RoW (%)	– 2.55	8.22	5.60

b) Results for Germany and the EU

Scenario 2)	DEU			EU28		
	2A) Agriculture	2B) Services	2C) Agriculture and services	2A) Agricultural	2B) Services	2C) Agriculture and services
ΔGDP (USD BN)	1,08	1,07	2,02	3,76	5,76	9,51
Δwelfare (%)	0,03	0,03	0,06	0,02	0,04	0,06
ΔExports – TUR (%)	8,21	15,43	24,26	14,51	26,55	41,79
ΔImports – TUR (%)	12,43	69,24	83,19	10,75	57,49	69,63

Source: author's own calculations, RoW = all countries in the world except EU28

Table 10: Findings for scenario 2C): sectoral changes in output

Scenario 2C)	Primary	Secondary	Tertiary
Output growth (in %)	– 3.86	–2.78	7.70
Output growth (USD M)	– 7 358.00	– 12 912.00	62 973.00

Source: author's own calculations

Table 11: Findings for scenario 2C): sectoral changes in exports

Scenario 2C)	Primary	Secondary	Tertiary
Δexports TUR – RoW (%)	– 3.82	– 6.72	– 14.93
Δexports TUR – RoW (M USD)	– 552.00	– 3 960.00	– 2 602.00
Δexports TUR – EU28 (%)	94.51	– 7.33	429.13
Δexports TUR – EU28 (M USD)	6 090.00	– 4 647.00	56 544.00

Source: author's own calculations, RoW = all countries in the world except EU28

Intermediate findings:

Expansion of the EU-Turkey customs union to include the agricultural and service sectors has a strong positive welfare effect on the Turkish economy. Gross domestic product rises by an additional 1.84 percent. Turkish exports to the EU increase by almost 70 percent. However, this rise in exports varies across sectors. Whereas exports to the EU increase by 95 percent for the agricultural sector and 430 percent for the service sector, in the industrial sector a fall in exports is observed. Deepening the customs union leads to a reallocation of resources from industry to the service sector. Furthermore, the rise in exports to the EU is made possible by a fall in Turkish exports to other countries. Deepening the customs union leads to per capita income growth of 171 USD.

5.3 Comprehensive customs union between the EU and Turkey plus EU free trade agreements

Scenario 3.1A) Comprehensive EU-Turkey Customs Union and asymmetrical free trade agreements

The effects of the EU's known new free trade agreements are analyzed on the basis of a comprehensive deepening of the customs union between the EU and Turkey. In this case, (and also in the following scenarios) both tariffs and NTBs are eliminated.

In all the scenarios under consideration, Turkey undergoes a very substantial expansion of its trade with the EU. Turkish exports to the EU increase in the scenarios by roughly 70 percent. Deepening the customs union increases Turkish exports to the EU by 69.86 percent (see scenario 2). The EU's new free trade agreements thus lead to an expansion of Turkish exports to the EU, except in the case of the free trade agreement with Japan. Compared with scenario 1B) (status quo), the new free trade agreements do not lead to a reduction in Turkish exports to the EU.

At the same time, European free trade agreements reduce the volume of Turkish exports to the rest of the world more than deepening the customs union would do alone. The sharp decline in Turkish exports to each of the EU's free trade agreement partners is particularly striking. As shown earlier in scenario 1B), the structure of the customs union

leads to asymmetry in Turkey's external tariffs. Under the free trade agreement, European companies are able to obtain a large market share in the free trade agreement countries, whereas merely due to tariffs being eliminated under the FTA, Turkish companies become less competitive and withdraw from the market.

As in scenario 1B), these imports fall if there are new EU free trade agreements, compared with a 40.12 percent increase in Turkish imports from the EU as a result of deepening the customs union outright. Here too, this can be explained by the competitiveness argument. Under the EU's new free trade agreements, tariffs for Turkish imports from each country involved are eliminated. Therefore, these countries become more competitive on the Turkish market. This is shown by the rise in Turkish imports from the rest of the world, which is driven in particular by imports from the free trade agreement partners involved.

To assess the effect of free trade agreements on Turkish imports, the figures have to be compared with the effect of deepening the customs union, which is 5.6 percent. It is shown that Turkish imports from the rest of the world rise in all scenarios.

The additional gain for Turkey if new EU free trade agreements are concluded with the individual countries in the scenario is shown by the welfare measures in the table. For example, an increase in Turkish GDP of USD 13.7 billion – if all free trade agreements are concluded – is compared with the results for an outright deepening of the customs union (scenario 2C). This results in an increase of USD 13.3 billion. Only eliminating the tariffs results in a loss of USD -0.08 billion (see scenario 1B)). Consequently, Turkey benefits in particular from deepening the customs union with the EU (see scenario 2) whereby, unlike under the status quo (scenario 1B)), it then benefits from new EU free trade agreements due to its greater integration in the European economy.

Analogous to Scenario 1B) Germany benefits in this scenario again from the completion of new free trade agreements. In Scenario 1B) Germany can expect a welfare increase amounting to 0.77 percent after all FTAs are completed, in scenario 2C) welfare increases by 0.06 percent and finally, here welfare is increasing by 0.83 percent. However, Germany does not experience additional higher welfare gains in this scenario compared to a situation with an asymmetric tariff agreement with Turkey. Like Germany, the EU benefits in the aggregate from new FTA in this scenario. In Scenario 1B), the European welfare increased by 0.67 percent in the case that all FTAs are

Table 12: Findings for scenario 3.1A)

a) Results for Turkey

Scenario 3.1A)	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
ΔGDP (BN USD)	13.48	13.32	13.34	13.31	13.49	13.25	13.66
ΔGDP per capita (USD)	173.36	171.38	171.58	171.22	173.50	170.43	175.70
Δwages (%)	2.49	2.42	2.41	2.40	2.46	2.42	2.61
Δwelfare (%)	1.87	1.84	1.85	1.84	1.87	1.83	1.89
Δexports TUR – EU28 (%)	70.45	69.70	70.16	69.95	70.96	69.87	71.77
Δexports TUR – RoW (%)	– 7.94	– 7.74	– 7.96	– 8.05	– 7.90	– 7.62	– 8.06
Δexports TUR – FTA (%)	– 10.61	– 13.47	– 9.76	– 15.72	– 15.82	– 11.28	– 11.93
Δimports TUR – EU28 (%)	38.61	39.22	39.91	39.86	38.99	39.26	35.59
Δimports TUR – RoW (%)	6.44	6.02	5.79	5.70	6.71	6.15	8.59
Δimports TUR – FTA (%)	16.77	18.91	15.42	10.90	43.81	26.53	18.95

b) Results for Germany

Scenario 3.1A) DEU	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
ΔGDP (BN USD)	13,77	5,26	3,65	4,32	5,84	5,58	27,89
ΔGDP per capita (USD)	168,63	64,43	44,63	52,83	71,48	68,35	341,45
Δwelfare (%)	0,41	0,16	0,11	0,13	0,17	0,17	0,83
ΔExports DEU – TUR (%)	23,08	23,64	24,08	23,90	23,34	23,53	20,47
ΔExports DEU – FTA (%)	43,51	49,97	55,15	73,04	80,35	48,12	49,05
ΔImports DEU – TUR (%)	83,90	82,81	83,53	83,56	84,88	83,20	85,95
ΔImports DEU – FTA (%)	45,67	51,11	46,89	39,84	34,02	30,76	42,54

c) Results for the EU

Scenario 3.1A) EU28	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
ΔGDP (BN USD)	60,77	24,57	18,21	18,23	21,89	23,59	118,50
Δwelfare (%)	0,37	0,15	0,11	0,11	0,13	0,15	0,73
ΔExports EU28 – TUR (%)	40,25	40,88	41,57	41,53	40,64	40,92	37,20
ΔExports EU28 – FTA (%)	41,65	59,78	55,94	64,27	68,81	46,13	47,08
ΔImports EU28 – TUR (%)	70,22	69,47	69,93	69,72	70,73	69,65	71,54
ΔImports EU28 – FTA (%)	40,77	55,90	45,28	37,25	39,48	32,39	41,02

Source: author's own calculations, RoW = all countries in the world except EU28

signed, in scenario 2C) by 0.06 percent and by 0.73 percent in this scenario. Again, as in the case of Germany the EU does not experience additional welfare effects compared to a situation with an asymmetric customs union situation. The situation is different with trade flows. German and European imports show a significant increase, which can be attributed to the production networks.

Scenario 3.1A) above represents one of Turkey's realistic options for realigning its trade-policy position with the EU. Therefore, it is worth taking a detailed look at the results from this simulation.

Table 13 shows Turkey's export growth by sector in the whole world upon concluding each of the free trade agreements. The primary sector covers sector numbers 1 to 26 (except 15, 16, 17, and 18). The secondary sector covers sectors 15, 16, 17, 18, and 27 to 42. The final sectors belong to the tertiary sector.

This demonstrates strong growth in Turkish exports, especially in the primary and tertiary sectors, i.e. the sectors which the customs union would expand to include. Turkish

exports in the secondary sector declined in all scenarios, sharply in some, with the exception of leather products. This picture corresponds with the export-growth figures for scenario 1B). Consequently, the expansion of the customs union to include the primary and tertiary sectors compensates for the decline in exports in the secondary sector in the case of each new free trade agreement.

The metal, transport, and textile industries figure strongly in the decline in Turkish exports. Strong growth in the tertiary sector is driven in particular by the provision of services in the transport and tourism industries. In the primary sector, trade in livestock and cereals benefits the most.

In a further step, growth in Turkey's exports and imports in bilateral trade with selected countries and regions is considered. Here, it should be borne in mind that these effects do not result only from the EU concluding various free trade agreements, but also from deepening the EU-Turkey Customs Union.

Thereby, growth in Turkey's exports is particularly high in small economies in Western Europe. Luxembourg is a

Table 13: Findings for scenario 3.1A): sectoral changes in exports (in percent)

Scenario 3.1A) Turkish exports to the entire world	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1-6)
Primary	27.26	27.02	26.45	26.38	26.52	26.62	27.75
Secondary	– 7.52	– 7.47	– 7.08	– 7.31	– 6.80	– 7.02	– 8.01
Tertiary	178.93	177.43	176.88	177.01	178.07	176.75	183.78

Source: author's own calculations

Table 14: Findings for scenario 3.1A) compared to scenario 2C) (in percent)

		Germany	Great Britain	France	Italy	Spain
Scenario 2) Agriculture and services, Combined (1–6)	Δexports TUR – (%)	83.45	103.52	44.61	39.82	46.67
Scenario 3.1A)	Δexports TUR – (%)	86.22	104.77	44.64	42.20	46.57

Source: author's own calculations

Table 15: Findings for scenario 3.1A) compared to scenario 2C)

		USA	Canada	Japan	India	ASEAN
Scenario 2) Agriculture and services, Combined (1–6)	Δexports TUR – (%)	– 9.38	– 8.60	– 10.70	– 9.26	– 10.69
Scenario 3.1A)	Δexports TUR – (%)	– 10.76	– 10.13	– 13.98	– 15.79	– 11.54

Source: author's own calculations

Table 16: **Findings for scenario 3.1A): list of countries with changes to exports**

Scenario 3.1A) Export growth for Turkey	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
EU28	70.45	69.70	70.16	69.95	70.96	69.87	71.77
Luxembourg	213.16	214.16	209.45	210.20	212.38	211.30	221.32
Portugal	141.33	139.09	138.80	138.09	141.70	138.23	144.56
Ireland	141.31	130.05	130.51	130.38	131.53	130.88	144.17
Netherlands	134.96	134.65	134.04	133.46	133.32	133.46	136.62
Austria	126.50	124.12	124.10	124.13	125.64	123.86	130.38
Sweden	111.32	110.64	110.23	110.47	111.78	110.68	115.25
Denmark	103.61	106.28	102.62	100.98	102.99	101.18	107.11
Great Britain	103.81	103.24	103.65	103.56	104.52	103.52	104.77
Bulgaria	87.70	87.05	87.20	86.99	87.28	86.99	88.93
Germany	84.17	83.08	83.80	83.82	85.15	83.47	86.22
Latvia	73.65	74.35	73.10	74.33	73.79	71.34	73.57
Poland	67.31	66.28	67.32	67.06	67.88	67.11	67.65
Finland	62.09	62.21	60.37	61.24	62.16	61.28	64.80
Belgium	58.65	58.70	59.23	59.64	59.26	58.64	59.91
Greece	49.02	51.03	50.72	49.80	50.97	51.02	50.66
Lithuania	48.92	49.66	49.56	49.40	49.60	49.19	49.60
Hungary	46.22	45.84	46.13	46.29	46.83	45.77	47.22
Spain	46.43	46.34	46.73	46.28	47.85	46.29	46.57
France	44.39	43.79	44.93	44.36	45.60	44.62	44.64
Italy	41.12	39.71	40.29	39.73	40.71	39.84	42.20
Estonia	32.54	32.10	32.22	31.83	32.63	31.84	32.91
Croatia	24.08	23.64	23.83	23.62	24.44	23.85	24.99
Czech Republic	20.18	19.36	20.34	20.59	21.20	20.31	20.54
Cyprus	18.15	18.36	18.58	18.08	18.44	18.14	19.00
Slovakia	15.84	14.96	15.91	16.87	16.50	15.55	17.37
Romania	8.89	8.27	8.89	8.82	9.11	8.77	9.17
Slovenia	5.96	5.78	6.99	6.94	7.49	6.86	5.77
Malta	2.08	2.11	2.92	2.99	3.32	3.31	1.60
Central Asia	– 6.95	– 6.96	– 6.93	– 7.02	-6.80	– 6.75	– 6.99
Canada	– 9.37	– 8.54	– 9.76	– 8.56	-8.61	– 8.35	– 10.13
USA	– 10.61	– 9.39	– 9.73	– 9.47	-9.40	– 9.15	– 10.76
ASEAN	– 10.68	– 10.81	– 10.83	– 10.93	-10.57	– 11.28	– 11.54
Japan	– 10.91	– 13.47	– 10.92	– 10.86	-10.63	– 10.76	– 13.98
India	– 9.42	– 9.12	– 9.45	– 15.72	-9.24	– 9.05	– 15.79
MERCOSUR	– 8.75	– 8.58	– 8.89	– 8.83	-15.82	– 8.56	– 15.79

Source: author's own calculations

key example, with export growth of 221 percent for Turkey in the simulation. However, Luxembourg is not one of Turkey's main trading partners (see Table 35), which means that this high percentage growth accounts for only a small amount in real terms. The five largest European export partners for Turkey in 2011 were Germany, Great Britain, France, Italy, and Spain. In 2011 Turkey exported between USD 5 and 20 billion to each of these countries. The simulation resulted in export growth for these countries of 40 percent to 100 percent. Germany (+86 percent) and Great Britain (+104 percent) in particular, which are the largest recipients of Turkish exports, stand out here.

To determine the effect of the free trade agreement, export growth rates are given here which are to be expected if the customs union is deepened but there are no new free trade agreements with selected countries. This shows that a large proportion of the increase in trade already arises if the customs union is deepened. However, it is not only that the potential negative effects on Turkey of new EU free trade agreements are compensated for, but that Turkey benefits much more from these free trade agreements as well.

On the other hand, many countries in Eastern Europe will experience a rise in Turkish exports of 1 percent to 32 percent. These are also countries in which Turkey does not have high export volumes. Hence, Turkey undergoes very high nominal export growth in countries to which it already exports a great deal as part of the status quo.

The lower section of Table 16 lists the countries and regions of each of the EU's free trade agreement scenarios. This shows the increased competitiveness in these markets following the free trade agreement between each country and the EU. This would mean that Turkey experiences a decline in exports to these countries as it would then be less competitive. The decline in exports in the six regions is most apparent where the EU initiates a free trade agreement with the region.

However, it is apparent here that Turkish exports also fall in every other potential free trade agreement partner country, even if there is no existing free trade agreement. This is linked with deepening the customs union, which increasingly channels the export flow of Turkish goods to EU countries. Still, it can be inferred from Table 16 that the conclusion of European free trade agreements, despite a deepening of the customs union, will continue to have a negative effect on Turkish exports to many countries – especially in countries that are potential free trade agreement partners.

Table 17 makes it possible to quantify the changes in the effects on Turkey under two scenarios. First, export changes for the EU's most important free trade agreement partners are shown for the status quo. As with the corresponding scenario 1B), it is clear that Turkish exports in all of the EU's new partner countries will decrease as a result of the problem of asymmetry. The second line now quantifies the same free-trade effect after the customs union

Table 17: Net free trade agreement effects on Turkish exports under various scenarios

Combined (1–6)		USA	Canada	Japan	India	ASEAN
Scenario 1B)	Δexports TUR – (%)	– 1.42	– 1.68	– 3.54	– 7.08	– 1.00
Scenario 3.1A)	Δexports TUR – (%)	– 1.38	– 1.59	– 3.28	– 6.59	– 0.96

Table 18: Sectoral net FTA effects of a free trade agreement on Turkish exports

		USA	Canada	Japan	India	ASEAN	EU28
Primary	Status quo	– 0.73	– 2.35	– 7.03	– 9.00	– 1.65	– 0.11
	Net 31A	0.59	– 1.82	– 6.07	– 8.00	– 0.11	1.84
Secondary	Status quo	– 2.83	– 1.75	– 3.22	– 7.06	– 1.94	– 1.28
	Net 31A	– 2.70	– 1.74	– 3.06	– 6.62	– 1.87	– 1.30
Tertiary	Status quo	1.29	– 1.09	– 2.70	– 3.53	– 0.36	3.01
	Net 31A	0.80	– 0.76	– 2.59	– 3.26	– 0.61	17.39

Table 19: Findings for scenario 3.1A) compared to scenario 2C)

		Germany	Great Britain	France	Italy	Spain
Scenario 2) Agriculture and services, Combined (1–6)	Δimports TUR – (%)	23.47	66.42	40.85	29.49	41.49
Scenario 3.1A)	Δimports TUR – (%)	19.70	62.80	36.60	22.99	37.87

Source: author's own calculations

Table 20: Findings for scenario 3.1A) compared to scenario 2C)

		USA	Canada	Japan	India	ASEAN
Scenario 2) Agriculture and services, Combined (1–6)	Δimports TUR – (%)	5.72	6.90	5.02	9.88	5.52
Scenario 3.1A)	Δimports TUR – (%)	15.89	13.69	18.41	15.20	23.88

Source: author's own calculations

has been deepened. By doing so, those trade effects resulting only from deepening the customs union are calculated. This makes it clear from Table 17 that, if there is a comprehensive customs union, the negative trade effects in the EU's partner countries for Turkish companies will be lower. The deepening of the customs union compensates Turkish exports in the disadvantaged third countries.

Table 18, like Table 17, compares the trade effects for Turkey from the free trade agreement only, under the two scenarios. It is clear that deepening the customs union in third countries initially compensates for the problem of asymmetry. In both the primary and tertiary sectors, the negative trade effects are predominantly lower. However, it is important to note that, in direct trade between Turkey and the new EU partner countries, a decline in exports is mostly observed. However, Table 18 also shows that Turkey is fully compensated for being disadvantaged in third countries, by an indirect effect arising from deeper customs union. With the EU's new free trade agreements, Turkish exports in the primary and particularly the tertiary sectors rise. Consequently, deepening the customs union leads to greater integration with the services sector in the EU. Increasing EU exports to new partner states also benefits Turkish service providers via production integration with the EU and compensates for the problem of asymmetry.

Basically there is scope for Turkey to optimize its situation, as long as unilateral tariffs in the primary and secondary sectors remain in place in the EU's new partner states.

As already shown in the overview table for scenario 3.1A), the picture presented is different when considering the change in Turkish exports. In this case, Table 21 is headed not by Luxembourg but by Lithuania and Latvia. These are both countries that do not deliver large quantities of goods to Turkey in real terms in the status quo.

Important suppliers to Turkey are the same as its largest export partners: Germany, Great Britain, France, Italy and Spain. While Turkish exports to Germany have risen sharply as the customs union and free trade agreements have been deepened, Turkish imports from Germany have not increased substantially. A 20 percent growth rate is expected, which corresponds to nominal growth of around USD 5.6 billion.

Among Turkey's largest import partners, Great Britain in particular shows an expected import growth of over 60 percent in all scenarios. As shown previously for export growth, the following Table 19 shows the extrapolated free trade agreement effects for Turkey's largest import partners. It should be noted that there is a negative effect on Turkish imports from the European counties shown.

This decline is related to the fact that the introduction of new free trade agreements would bring new competitors onto the Turkish market. Table 20 below shows a sharp rise in Turkish imports from the various free trade agreement countries. An increase of 5.72 percent in Turkish imports from the USA is therefore expected if the customs union is deepened only, whereas if all the EU's potential free trade agreements are concluded, this increase would be 15.64 percent.

Table 21: **Findings for scenario 3.1A): list of countries with import changes**

Scenario 3.1A) Import growth for Turkey	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
EU28	38.61	39.22	39.91	39.86	38.99	39.26	35.59
Lithuania	189.34	201.82	201.64	202.10	195.31	201.86	180.83
Latvia	162.22	172.06	172.61	172.38	166.81	172.50	153.85
Cyprus	157.12	157.95	157.99	158.70	156.80	157.34	151.10
Luxembourg	128.92	130.00	131.28	131.65	130.33	131.59	125.78
Bulgaria	91.51	93.40	93.99	94.05	92.93	93.07	87.99
Denmark	93.19	92.60	95.52	96.13	95.24	95.16	86.23
Malta	90.12	90.69	91.40	92.91	91.38	90.69	82.77
Poland	73.09	73.89	74.25	74.23	72.50	73.86	69.76
Netherlands	70.83	71.83	72.64	72.67	71.82	72.17	67.50
Ireland	71.07	78.24	79.14	79.01	77.51	78.30	66.44
Great Britain	64.97	65.69	66.82	66.20	65.70	65.45	62.80
Austria	65.18	66.86	67.42	67.32	65.96	66.75	60.93
Hungary	64.76	65.29	65.81	65.62	61.79	65.37	59.46
Greece	50.46	51.41	52.09	52.72	51.29	51.42	45.98
Spain	40.47	40.59	41.41	41.40	40.51	40.75	37.87
France	39.72	40.12	40.54	40.72	39.45	40.21	36.60
Portugal	36.38	37.21	38.04	38.27	37.06	37.62	33.53
Belgium	26.28	25.67	26.02	25.52	25.75	25.75	24.21
Italy	27.11	27.59	29.03	29.39	28.15	27.74	22.99
Romania	24.62	25.07	25.50	25.56	24.97	25.00	22.28
Slovenia	22.85	23.32	23.50	23.50	23.23	23.29	21.28
Sweden	23.79	24.40	24.96	24.73	24.35	24.43	21.20
Czech Republic	22.44	22.98	23.10	22.89	22.52	22.78	20.71
Germany	22.29	22.86	23.29	23.11	22.56	22.74	19.70
Estonia	19.74	19.80	20.28	20.22	19.47	20.35	18.18
Slovakia	14.53	15.21	15.22	14.76	14.85	15.11	12.86
Finland	13.59	13.71	14.60	14.52	14.08	14.30	11.11
Croatia	10.16	10.47	10.81	10.92	10.83	10.76	9.07
MERCOSUR	−4.68	−3.88	−3.36	−3.40	43.81	−4.56	38.23
ASEAN	4.92	5.07	5.65	5.63	5.33	26.53	23.88
Japan	4.33	18.91	5.15	5.15	5.11	4.97	18.41
USA	16.77	5.47	5.96	5.74	5.57	5.31	15.89
India	8.64	17.06	9.97	10.90	9.92	9.29	15.20
Canada	6.36	6.43	15.42	6.87	6.86	6.60	13.69
Central Asia	5.68	6.48	6.56	6.71	6.49	6.21	5.48

Source: author's own calculations

MERCOSUR stands out among the free trade agreement countries and regions. If Turkish imports from all of the listed countries increase, then growth in Turkish imports from MERCOSUR is only to be expected if there is a free trade agreement in place between the EU and MERCOSUR.

Intermediate findings:

Following deepening of the customs union, Turkish exporters can compensate for the problem of asymmetry in the case of new EU free trade agreements. Concluding the six EU free trade agreements being negotiated would result in a 1.89 percent growth in GDP for Turkey, which is higher than for deepening of the customs union alone, were the EU not to conclude new free trade agreements. It is the growth in exports in the service sector in the EU in particular that would compensate for the decrease in Turkish exports to the EU's new partner countries. Although deepening the customs union will offer medium-term compensation for the problem of asymmetry, there is still the option for Turkey to improve welfare over the long term, by eliminating tariff asymmetry via free trade agreements with the EU's new partner countries.

Scenario 3.2A) Turkey follows suit with respect to EU free trade agreements

In scenario 3.1A), there was asymmetry regarding tariffs between Turkey and the EU's new free trade agreement partner countries. Turkey can overcome this asymmetry via separate free trade agreements with the EU's new free-trade partners. Its competitiveness on the various foreign markets will increase accordingly.

Scenario 3.2A) simulates a situation in which Turkey concludes *basic* free trade agreements with each of the countries (regions). The EU has comprehensive free trade agreements with the USA (TTIP), Japan, and Canada. Although this would mean that there is no asymmetry in external tariffs, there would continue to be asymmetry for contractual arrangements and therefore for trade potential.

As in scenario 3.1A), the status quo is compared with a situation in which the EU signs these new free trade agreements while at the same time Turkey deepens the customs union with the EU. The resulting changes are shown in Table 22. By dismantling the asymmetry in tariffs, a rise in

Turkish GDP of USD 15.41 billion is expected if all free trade agreements are concluded. Deepening the customs union alone leads to an expected rise in GDP of USD 13.3 billion. When considering individual free trade agreements, it can be seen that this gain is achieved mainly from concluding a free trade agreement with the USA.

The other welfare measures (per capita GDP, wages and welfare) also show that Turkey could benefit, in some respects substantially, from concluding its own free trade agreements. As a consequence, overall welfare increases further compared with scenario 3.1A) by over 0.2 percentage points.

When considering trade flows, the picture clearly differs from that of scenario 3.1A). While the change in trade between the EU and Turkey was hardly noticeable, changes in trade flows with each of the free trade partners are clear here.[11]

In scenario 3.1A), Turkish exports to the USA fall when TTIP is concluded, due to asymmetry in American external tariffs for Turkey. If a basic free trade agreement is concluded, these exports increase. Turkish imports from each free trade agreement country also rise sharply.

In the considered scenario, Germany continues to benefit from the FTAs listed (welfare increases by 0.82 percent). Compared to scenario 3.1A) Germany will not experience additional higher growth if Turkey follows the FTAs. There are no significant welfare differences for the EU in the scenarios 3.1A) and 3.2A).

Scenario 3.2B) Turkey concludes equivalent FTAs with the EU

In the end scenario in a hypothetical world where there is a comprehensive customs union between the EU and Turkey, a situation is simulated in which Turkey concludes a new, equivalent free trade agreement with the EU's trading partners. This differs from scenario 3.2A) to the effect that now a *comprehensive* free trade agreement between Turkey and the USA, Japan and Canada is simulated instead of a basic one.

Table 23 shows the benefit which arises for Turkey from deepening the free trade agreements. Thus deepening the

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11 Table 41 in the appendix lists the changes in Turkish exports to selected countries, and Table 42 shows the changes in Turkish imports.

Table 22: **Findings for scenario 3.2A)**

a) Results for Turkey

Scenario 3.2A)	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
ΔGDP (USD BN)	14.45	13.58	13.44	13.34	13.63	13.50	15.41
ΔGDP per capita (USD)	185.82	174.67	172.94	171.59	175.31	173.62	198.23
Δwages (%)	2.64	2.45	2.43	2.42	2.50	2.45	2.88
Δwelfare (%)	2.00	1.88	1.86	1.85	1.89	1.87	2.13
Δexports TUR – EU28 (%)	70.41	69.58	70.12	69.94	70.60	69.72	70.95
Δexports TUR – RoW (%)	– 4.79	– 7.28	– 7.50	– 7.46	– 6.59	– 6.50	– 1.02
Δexports TUR – FTA (%)	25.22	33.96	25.81	36.29	62.78	26.48	30.26
Δimports TUR – EU28 (%)	37.96	39.16	39.90	39.70	39.32	39.15	35.02
Δimports TUR – RoW (%)	8.77	6.35	6.06	6.09	7.08	6.82	12.79
Δimports TUR – FTA (%)	37.88	44.56	37.23	18.49	50.91	40.89	33.98

b) Results for Germany

Scenario 3.2A) DEU	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
ΔGDP (USD BN)	13,66	5,13	3,58	4,21	5,81	5,48	27,77
ΔGDP per capita (USD)	167,24	62,82	43,86	51,53	71,14	67,11	339,93
Δwelfare (%)	0,41	0,15	0,11	0,12	0,17	0,16	0,82
ΔExports DEU – TUR (%)	22,44	23,36	24,07	23,84	23,67	23,39	19,74
ΔExports DEU – FTA (%)	43,55	50,02	55,20	72,98	79,88	48,07	49,00
ΔImports DEU – TUR (%)	83,80	82,67	83,49	83,55	84,47	83,02	84,95
ΔImports DEU – FTA (%)	45,60	51,04	46,95	39,79	34,13	30,78	42,50

c) Results for the EU

Scenario 3.2A) EU28	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
ΔGDP (USD BN)	60,64	24,28	17,93	17,98	21,77	23,16	118,11
Δwelfare (%)	0,37	0,15	0,11	0,11	0,13	0,14	0,73
ΔExports EU28 – TUR (%)	39,60	40,81	41,56	41,36	40,98	40,80	36,63
ΔExports EU28 – FTA (%)	41,69	59,86	55,93	64,24	68,48	46,09	47,04
ΔImports EU28 – TUR (%)	70,18	69,36	69,90	69,71	70,37	69,49	70,72
ΔImports EU28 – FTA (%)	40,70	55,83	45,37	37,21	39,59	32,41	40,99

Source: author's own calculations, RoW = all countries in the world except EU28

customs union leads to a rise in GDP of USD 13.3 billion, the implementation of TTIP in scenario 3.1A) leads to a rise of USD 13.5 billion, and in scenario 3.2A) it leads to a rise of USD 14.45 billion. Deepening the free trade agreement between Turkey and the USA leads to an increase in Turkish GDP of USD 16.43 billion in scenario 3.2B). The same picture applies to changes in per capita GDP, wages and overall welfare measures.

Compared with the status quo, Turkey's situation improves initially by deepening the customs union. However, Turkey should follow the EU's lead as far as possible on potential free trade agreements, in order to avoid asymmetrical external tariffs for the EU's new free trade agreement partners, arising from the customs union.[12]

When considering trade flows between Turkey and the EU, not much has changed in this scenario compared with previous scenarios. However, it should be noted that trade with the EU does not increase very much for Turkey when it deepens the free trade agreements. Rather the increase in trade between Turkey and the various free trade agreement countries already observed in scenario 3.2A) is greater. Deepening the free trade agreement between Turkey and, for example, TTIP not only dismantles the asymmetry of foreign trade tariffs, but allows increased trade opportunities in these markets.

The signing of equivalent FTAs by Turkey has compared to scenario 3.2A) not additional welfare effects. The same applies to the EU.

Intermediate findings:

Concluding free trade agreements between Turkey and the EU's new trading partners results in a 2.13 percent welfare gain for Turkey. Such a trade policy could increase per capita income in Turkey by almost USD 200. If Turkey is able to conclude free trade agreements with the third countries in question to the same depth as the EU has, this will result in potential GDP growth of 2.5 percent. This would currently correspond to a nominal GDP increase of USD 18 billion.

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12 Table 43 in the appendix lists the changes in Turkish exports to selected countries and Table 44 shows the changes in Turkish imports.

5.4 Rolling back the customs union and implementing a free trade agreement between the EU and Turkey

Scenario 4A) Rolling back the customs union and implementing a free trade agreement between the EU and Turkey

An alternative to deepening the customs union between the EU and Turkey is to roll back this customs union to a free trade agreement. This would result in greater flexibility for Turkey when determining external tariffs. The existing tariff asymmetry would also be eliminated for Turkey, if the EU were to conclude a new free trade agreement.

In scenarios 4.1A) to 4.3A), different levels of free trade agreement between Turkey and the EU are discussed instead of the customs union. Scenario 4.1A) establishes a *comprehensive* free trade agreement in manufacturing industries. In scenario 4.2A), *basic* free trade agreements in the agricultural and service sectors are considered. Scenario 4.3A) changes these *basic* free trade agreements to *comprehensive* free trade agreements.

Table 24 shows that a free trade agreement between the EU and Turkey is not a profitable alternative to the customs union for Turkey. In all three scenarios, Turkey's welfare decreases and overall trade with the EU falls sharply. This would be accompanied by a slight increase in Turkish trade with the rest of the world. However, since about 50 percent of Turkish trade is with the EU, a slight increase in Turkish trade with the rest of the world cannot compensate for the loss of trade volume with the EU. This is also shown in the expected changes in GDP, wages, and welfare.

Compared with scenario 2, in which the customs union between Turkey and the EU is deepened, scenario 4 leads to a welfare loss of -0.81 percent versus a rise of 1.84 percent.

It should also be noted that replacing the customs union of the status quo with a free trade agreement leads to a clear welfare loss for Turkey. Although this is improved by expanding the free trade agreement to other sectors, Turkey is still better off under the status quo.

A rollback of the customs union between the EU and Turkey leads both in Germany and in the EU to a welfare loss. In addition to a decline in welfare by -0.03 percent to -0.05 percent, a strong drop in bilateral total foreign-trade with Turkey is observable.

Table 23: **Findings for scenario 3.2B)**

a) Results for Turkey

Scenario 3.2B)	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
ΔGDP (USD BN)	16.43	13.80	13.66	13.34	13.63	13.50	17.84
ΔGDP per capita (USD)	211.37	177.55	175.69	171.59	175.31	173.62	229.52
Δwages (%)	2.95	2.48	2.46	2.42	2.50	2.45	3.25
Δwelfare (%)	2.28	1.91	1.89	1.85	1.89	1.87	2.47
Δexports TUR – EU28 (%)	71.10	69.77	70.15	69.94	70.60	69.72	71.77
Δexports TUR – RoW (%)	– 2.53	– 7.18	– 7.08	– 7.46	– 6.59	– 6.50	1.76
Δexports TUR – FTA (%)	44.54	32.88	53.42	36.29	62.78	26.48	42.75
Δimports TUR – EU28 (%)	36.61	38.69	39.84	39.70	39.32	39.15	33.29
Δimports TUR – RoW (%)	11.37	6.83	6.37	6.09	7.08	6.82	16.07
Δimports TUR – FTA (%)	62.97	68.03	67.43	18.49	50.91	40.89	47.37

b) Results for Germany

Scenario 3.2B) DEU	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
ΔGDP (USD BN)	13,67	5,13	3,62	4,21	5,81	5,48	27,79
ΔGDP per capita (USD)	167,33	62,80	44,29	51,53	71,14	67,11	340,22
Δwelfare (%)	0,41	0,15	0,11	0,12	0,17	0,16	0,82
ΔExports DEU – TUR (%)	21,11	22,74	24,00	23,84	23,67	23,39	17,87
ΔExports DEU – FHA (%)	43,66	50,18	55,23	72,98	79,88	48,07	49,09
ΔImports DEU – TUR (%)	84,52	82,85	83,52	83,55	84,47	83,02	85,80
ΔImports DEU – FHA (%)	45,44	50,94	46,90	39,79	34,13	30,78	42,38

c) Results for the EU

Scenario 3.2B) EU28	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
ΔGDP (USD BN)	60,74	24,33	18,07	17,98	21,77	23,16	118,13
Δwelfare (%)	0,37	0,15	0,11	0,11	0,13	0,14	0,73
ΔExports EU28 – TUR (%)	38,24	40,34	41,50	41,36	40,98	40,80	34,87
ΔExports EU28 – FHA (%)	41,82	60,00	55,97	64,24	68,48	46,09	47,13
ΔImports EU28 – TUR (%)	70,87	69,54	69,93	69,71	70,37	69,49	71,55
ΔImports EU28 – FHA (%)	40,55	55,73	45,33	37,21	39,59	32,41	40,88

Source: author's own calculations, RoW = all countries in the world except EU28

Table 24: **Findings for scenario 4A)**

a) Results for Turkey

Scenario 4A)	Industry, comprehensive	Additional agricultural and services, basic	All sectors, comprehensive
ΔGDP (USD BN)	– 8.73	– 7.08	– 5.85
ΔGDP per capita (USD)	– 112.33	– 91.13	– 75.26
Δwages (%)	– 1.35	– 0.96	– 0.77
Δwelfare (%)	– 1.21	– 0.98	– 0.81
Δexports TUR – EU28 (%)	– 25.76	– 16.96	– 16.16
Δexports TUR – RoW (%)	0.31	1.22	1.58
Δimports TUR – EU28 (%)	– 23.02	– 14.94	– 13.42
Δimports TUR – RoW (%)	1.61	0.58	0.10

b) Results for Germany and the EU

Scenario 4A)	DEU			EU28		
	Industry, comprehensive	Additional agricultural and services, basic	All sectors, comprehensive	Industry, comprehensive	Additional agricultural and services, basic	All sectors, comprehensive
ΔGDP (USD BN)	– 1,76	– 1,49	– 1,16	– 7,16	– 5,57	– 4,74
Δwelfare (%)	– 0,05	– 0,04	– 0,03	– 0,04	– 0,03	– 0,03
ΔExports – TUR (%)	– 23,27	– 18,22	– 17,09	– 23,26	– 13,93	– 12,39
ΔImports – TUR (%)	– 24,60	– 15,56	– 14,08	– 25,72	– 17,07	– 16,27

Source: author's own calculations, RoW = all countries in the world except EU28

Scenario 4B) Implementing a free trade agreement between the EU and Turkey and an asymmetrical free trade agreement

Rolling back the EU–Turkey Customs Union and replacing it with a free trade agreement gives Turkey more freedom to determine external tariffs. This would mean that Turkey would no longer be obliged to grant the EU's new trade partners a tariff-free market access.

The extent to which this freedom to determine external trade tariffs, if Turkey concluded a new EU free trade agreement, would have an impact is simulated in the following scenario. First the existing customs union is rolled back and replaced with a comprehensive free trade agreement in manufacturing industries and a basic free trade agreement in the agricultural and services sectors. The usual potential new EU free trade agreement scenarios then follow, in which Turkey does not take part.

Compared with scenario 4A) there is a further deterioration in Turkey's economic situation in the event of a new EU free trade agreement. GDP would fall by a further billion

on conclusion of all new free trade agreements, and welfare loss would be an additional 0.1 percentage point.

While, as a full member of the customs union, Turkey could expect a 1.87 percent welfare gain as a result of TTIP, this would fall to –0.96 percent if there were only a free trade agreement between the EU and Turkey. Compared with scenario 1B), which assumes the status quo in relations between Turkey and the EU, it becomes clear that Turkey would be in a considerably worse position in the event of a new EU free trade agreement compared with the status quo.

However, when assessing the welfare effect in the case of the TTIP it can be seen that Turkish welfare with TTIP is higher than the status quo if there is a free trade agreement between the EU and Turkey. Welfare growth for Turkey with TTIP compared with scenario 1B) is: 0.01 percent; with the corresponding figures extrapolated from scenario 4B): (–0.96 percent – (–1.21 percent)) = 0.25 percent (these figures have been rounded up, but the ranking remains the same even if the exact figures are used). Here too, it can be seen that Turkish–European trade decreases

Table 25: **Findings for scenario 4B)**

a) Results for Turkey

Scenario 4B)	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
ΔGDP (USD BN)	– 6.95	– 7.06	– 7.07	– 7.10	– 7.08	– 7.09	– 6.93
ΔGDP per capita (USD)	– 89.45	– 90.85	– 90.89	– 91.30	– 91.14	– 91.19	– 89.13
Δwages (%)	– 0.96	– 0.96	– 0.95	– 0.96	– 0.96	– 0.96	– 0.97
Δwelfare (%)	– 0.96	– 0.98	– 0.98	– 0.98	– 0.98	– 0.98	– 0.96
Δexports TUR – EU28 (%)	– 17.29	– 17.11	– 16.84	– 17.00	– 16.65	– 17.34	– 17.48
Δexports TUR – RoW (%)	0.83	1.08	1.10	1.07	0.95	1.24	0.20
Δexports TUR – FTA (%)	0.36	1.88	– 0.95	– 7.22	– 7.84	3.79	– 1.18
Δimports TUR – EU28 (%)	– 15.22	– 15.27	– 15.06	– 15.16	– 15.16	– 15.09	– 16.20
Δimports TUR – RoW (%)	0.34	0.64	0.66	0.61	0.74	0.48	0.53
Δimports TUR – FTA (%)	0.15	10.18	– 0.05	– 0.16	– 4.27	– 0.62	0.61

b) Results for Germany

Scenario 4B) DEU	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1– 6)
ΔGDP (USD BN)	10,24	1,65	0,17	0,83	2,34	2,03	24,42
ΔGDP per capita (USD)	125,33	20,23	2,02	10,11	28,61	24,85	298,99
Δwelfare (%)	0,30	0,05	0,00	0,02	0,07	0,06	0,72
ΔExports DEU – TUR (%)	– 18,43	– 18,16	– 18,35	– 18,52	– 18,55	– 18,42	– 19,26
ΔExports DEU – FHA (%)	43,08	49,78	54,77	72,63	79,64	47,70	48,48
ΔImports DEU – TUR (%)	– 16,03	– 15,97	– 15,42	– 15,54	– 15,09	– 16,03	– 16,33
ΔImports DEU – FHA (%)	46,61	51,51	47,73	40,84	34,80	31,83	43,63

c) Results for the EU

Scenario 4B) EU28	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1– 6)
ΔGDP (USD BN)	45,77	11,98	3,08	3,19	6,75	8,34	106,02
Δwelfare (%)	0,28	0,07	0,02	0,02	0,04	0,05	0,65
ΔExports EU28 – TUR (%)	– 14,22	– 14,27	– 14,05	– 14,15	– 14,15	– 14,08	– 15,20
ΔExports EU28 – FHA (%)	41,39	83,83	55,73	64,05	68,31	45,88	48,98
ΔImports EU28 – TUR (%)	– 17,40	– 17,22	– 16,95	– 17,11	– 16,76	– 17,45	– 17,59
ΔImports EU28 – FHA (%)	41,38	56,60	45,85	37,99	40,19	33,18	42,12

Source: author's own calculations, RoW = all countries in the world except EU28

under all scenarios. The fact that the effects on welfare are so negative in the simulation can be explained by the importance of Turkish–European trade to the Turkish economy.

Table 26 below shows Turkey's sectoral global export growth if the respective free trade agreements are concluded. The primary sector covers sector numbers 1 to 26 (except 15, 16, 17, and 18). The secondary sector covers sectors 15, 16, 17, 18, and 27 to 42. The remaining sectors belong under the tertiary sector.

Strong growth is shown in Turkish exports, especially in the primary and tertiary sectors; these are the sectors for which there is now a basic free trade agreement between the EU and Turkey. Turkish exports in the secondary sector declined in all scenarios, sharply in some cases. The metal, transport, and textile industries figure strongly in the decline in Turkish exports. Strong growth in the tertiary sector is driven especially by the provision of services in the transport and communications industries. In the primary sector, animal and cereals trade benefits the most.

Table 26: **Findings for scenario 4B): sectoral changes in exports**

Scenario 4B) Turkish exports to the entire world	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1– 6)
Primary	16.28	17.68	16.79	16.96	15.89	16.33	16.11
Secondary	– 34.59	– 34.50	– 33.96	– 34.22	– 33.65	– 34.23	– 35.14
Tertiary	49.50	49.49	49.04	49.22	49.25	47.48	51.03

Source: author's own calculations

Table 27: **Findings for scenario 4B) compared to scenario 4A)**

		Germany	Great Britain	France	Italy	Spain
Scenario 4A) Industry, comprehensive Agricultural and services, simple, Combined (1–6)	Δexports TUR – (%)	– 15.43	– 12.02	– 23.57	– 19.47	– 24.63
Scenario 4B)	Δexports TUR – (%)	– 7.18	– 15.34	– 13.79	– 18.43	– 10.09

Source: author's own calculations

In a further step, Turkey's export and import growth in bilateral trade with selected countries and regions is considered. Here, it should be noted that these effects do not result only from concluding the EU's various free trade agreements, but also from implementing a free trade agreement between Turkey and the EU.

The expected growth in Turkish exports drops for all EU countries except Austria and Belgium. Sharp declines in export growth are recorded for East European countries in particular. For example, for Poland a fall of -25.8 percent in the case of TTIP would be expected. With USD 2.4 billion in Turkish exports to Poland, this corresponds to about USD 600 million. The two largest recipients of Turkish exports in 2011 were Germany (USD 20 billion) and Great Britain (USD 11 billion). The simulated decrease in the case of TTIP would be -7.23 percent for Germany and -15.48 percent for Great Britain. This would mean a decline in Turkish exports of approximately USD 1.9 billion in these two countries alone.

To extrapolate the effect of a new EU free trade agreement, the expected export growth rates are shown here where the customs union is rolled back and a free trade agreement implemented between Turkey and the EU, without new free trade agreements being concluded with selected countries. It can be seen that a large share of the decrease in trade was the result of rolling back the customs union. However, compared with the status quo, Turkey would benefit in this case from the new EU free trade agreement in terms of its

exports to some countries. This can be explained by the strong industrial network that Turkey shares with many EU countries. As an important supplier of intermediate goods, Turkey benefits from the fact that European countries send improved final goods to these countries as a result of the new free trade agreement. However, any rules of origin will limit the potential benefit to Turkey.

In the lower section of Table 29, the countries and regions of each of the free trade agreement scenarios are listed. It is interesting to note that export growth in the various free trade agreement partner countries varies greatly. While growth in exports to Canada, India and Japan is positive, it tends to decrease for other countries. In scenario 3.1A) (deeper customs union and asymmetrical free trade agreement), Turkish exports to all countries fell sharply. However, due to the expansion of the customs union, there was a greater shift in the Turkish exports towards other European countries. This is not the case here, since a free trade agreement, whether basic or comprehensive, represents a considerably lower level of integration and trade stimulus than a customs union.

Table 28 below aims to illustrate the free trade agreement effect from the EU's new free trade agreement. It is expected that concluding this new free trade agreement will lead to an increase in Turkish exports to Canada and India, while exports to other countries decrease. In the case of four of the five countries shown, export growth changes from positive to negative.

Table 28: **Findings for scenario 4B) compared to scenario 4A)**

		USA	Canada	Japan	India	ASEAN
Scenario 4A) Industry, comprehensive Agricultural and services, simple, Combined (1–6)	Δexports TUR – (%)	1.93	0.40	4.79	– 0.29	4.69
Scenario 4B)	Δexports TUR – (%)	– 1.27	2.82	– 0.28	0.57	– 7.89

Source: author's own calculations

Table 29: **Findings for scenario 4B): list of countries with export changes**

Scenario 4B) Import growth for Turkey	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
EU28	– 17.29	– 17.11	– 16.84	– 17.00	– 16.65	– 17.34	– 17.48
Austria	37.30	37.35	36.41	36.54	36.95	36.22	39.58
Belgium	4.30	0.07	0.43	0.34	0.62	0.14	4.52
Bulgaria	– 3.70	– 3.08	– 3.06	– 3.37	– 3.26	– 3.43	– 3.14
Cyprus	– 5.52	– 5.89	– 5.80	– 5.75	– 5.45	– 6.29	– 4.76
Czech Republic	– 4.49	– 3.84	– 4.35	– 3.75	– 4.17	– 5.82	– 5.37
Germany	– 7.23	– 5.94	– 7.19	– 8.14	– 7.24	– 8.43	– 7.18
Denmark	– 8.49	– 9.07	– 8.74	– 9.18	– 8.23	– 9.69	– 8.71
Spain	– 10.80	– 8.90	– 9.16	– 9.81	– 9.18	– 9.18	– 10.09
Estonia	– 9.81	– 9.21	– 9.25	– 9.53	– 9.86	– 9.99	– 10.51
Finland	– 12.10	– 12.14	– 12.19	– 12.29	– 12.23	– 12.56	– 11.67
France	– 12.76	– 12.54	– 12.13	– 12.12	– 11.81	– 12.59	– 13.79
Great Britain	– 15.48	– 15.50	– 15.20	– 15.10	– 14.94	– 15.70	– 15.34
Greece	– 16.14	– 16.09	– 16.01	– 16.03	– 15.62	– 16.21	– 15.68
Croatia	– 15.91	– 15.84	– 15.30	– 15.42	– 14.97	– 15.91	– 16.21
Hungary	– 16.22	– 15.36	– 15.43	– 15.68	– 15.53	– 16.00	– 16.41
Ireland	– 19.07	– 18.47	– 19.19	– 19.50	– 19.12	– 19.67	– 17.89
Italy	– 18.67	– 18.34	– 19.22	– 18.54	– 18.37	– 18.80	– 18.43
Lithuania	– 18.93	– 19.08	– 18.42	– 18.65	– 18.35	– 18.86	– 19.55
Luxembourg	– 20.27	– 19.97	– 19.27	– 19.10	– 19.03	– 19.06	– 20.94
Latvia	– 20.62	– 20.07	– 19.49	– 19.48	– 19.63	– 20.13	– 21.26
Malta	– 24.10	– 24.26	– 23.42	– 23.72	– 23.22	– 23.86	– 24.78
Netherlands	– 25.87	– 26.11	– 25.54	– 24.94	– 25.32	– 25.94	– 25.17
Poland	– 25.81	– 25.93	– 25.64	– 25.66	– 25.59	– 25.87	– 25.66
Portugal	– 25.14	– 24.78	– 24.57	– 24.89	– 24.21	– 25.19	– 25.67
Romania	– 26.93	– 27.00	– 26.69	– 27.06	– 26.63	– 27.25	– 27.51
Slovakia	– 28.06	– 28.23	– 27.57	– 27.42	– 27.25	– 27.78	– 28.21
Slovenia	– 29.17	– 28.94	– 29.01	– 29.16	– 28.75	– 29.20	– 28.79
Sweden	– 31.16	– 30.75	– 29.99	– 30.04	– 29.77	– 30.25	– 31.48
Canada	4.28	4.38	4.56	4.53	4.53	3.79	2.82
India	4.12	1.88	4.57	4.72	4.60	4.41	0.57
Japan	0.36	1.69	1.58	1.93	1.72	1.96	– 0.28
USA	– 0.77	– 0.57	– 0.38	– 0.41	– 0.48	– 0.38	– 1.27
Central Asia	– 0.63	0.07	– 0.95	0.53	0.18	0.45	– 2.24
ASEAN	– 0.62	– 0.39	– 0.46	– 7.22	– 0.43	– 0.24	– 7.89
MERCOSUR	– 0.30	– 0.19	– 0.21	– 0.09	– 7.84	– 0.09	– 8.25

Source: author's own calculations

The USA is selected as an example. In scenario 4A) the relative attractiveness of the USA for Turkish exports increases, since the EU-Turkey Customs Union has now been rolled back. Turkish exports to the USA therefore increase. In this scenario, however, all the EU's new free trade agreements enter into effect and the competitiveness of European exports on the American market increases sharply due to the removal of tariffs. Turkish exports to the USA therefore drop.

Here, it is clear that Turkish exports to free trade agreement countries behave similarly in the various scenarios. In all scenarios, the results of the simulation for Turkish exports to Japan are less than in scenario 4A), which means that the conclusion a new European free trade agreement will lead to a decline in Turkish exports to Japan.

If the EU-Turkey customs Union is modified to become a comprehensive free trade agreement, the level of Turkey's integration in the European economy would be reduced. Rules of Origin would also apply, hampering trade between Turkey and the EU. Since it is an important market for Turkish exports, this decline implies a drop in Turkish economic output and Turkish GDP decreases. This leads to Turkey producing less on average across all sectors and Turkish exports decreasing in all countries.

Due to trade-diversion effects, it may also then be the case that these effects exceed those mentioned above. Turkish exports to Japan therefore rise and those to India fall. This results in different trade flows, depending on which effects are dominant in the various countries.

A new EU free trade agreement, such as CETA, then enters into force and export trade between the EU and Turkey decreases further. But Turkey also exports less to Japan, due to several effects in this complex simulation model. Among other things, the reduction in Turkish GDP also plays an important role.

Below, import growth for Turkey will now be considered in various scenarios with individual countries and regions. As shown in Table 25 for scenario 4B), the trends for Turkey's exports and imports are similar in each scenario.

As before with exports, imports from Austria and Belgium also increase. It can be seen across the entire table that the ranking is similar for European countries. The important suppliers to Turkey are the same as its largest export partners: Germany, Great Britain, France, Italy, and Spain. While Turkish imports from Germany barely fall (–1 percent), the simulated findings point to a reduction in Turkish imports from Great Britain of –12.57 percent.

As shown before for export growth, Table 30 quantifies the FTA effects for Turkey's largest import partners. Even though Turkey's imports from Germany fell sharply due to the rolling-back of the customs union, this decline is considerably diminished due to the EU's new free trade agreements. Table 25 for scenario 4B) shows that Turkish imports from the EU as a whole fall in the scenarios. Due to the EU's

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Table 30: **Findings for scenario 4B) compared to scenario 4A)**

		Germany	Great Britain	France	Italy	Spain
Scenario 4A) Industry, comprehensive Agricultural and services, simple, Combined (1–6)	Δimports TUR – (%)	– 18.74	– 15.95	– 10.91	– 13.83	– 20.97
Scenario 4B)	Δimports TUR – (%)	– 1.00	– 12.57	– 11.83	– 19.14	– 7.50
Source: author's own calculations						

Table 31: **Findings for scenario 4B) compared to scenario 4A)**

		USA	Canada	Japan	India	ASEAN
Scenario 4A) Industry, comprehensive Agricultural and services, simple, Combined (1–6)	Δimports TUR – (%)	0.56	– 0.63	9.03	– 1.06	– 1.39
Scenario 4B)	Δimports TUR – (%)	– 0.30	10.53	– 0.21	0.30	– 3.76
Source: author's own calculations						

Table 32: **Findings for scenario 4B): list of countries with import changes**

Szenario 4B) Import Growth for Turkey	TTIP	Japan	CETA	Indien	MERCOSUR	ASEAN	Combined (1–6)
EU28	− 15,22	− 15,27	− 15,06	− 15,16	− 15,16	− 15,09	− 16,20
Austria	19,62	20,03	19,83	19,73	19,88	19,86	19,22
Belgium	12,40	12,50	12,58	12,47	12,80	12,64	11,98
Bulgaria	5,51	5,56	5,88	5,55	5,88	5,83	4,74
Cyprus	2,40	1,86	2,20	2,53	2,28	2,02	0,33
Czech Republic	0,78	0,89	0,76	0,93	1,01	0,78	− 0,35
Germany	− 0,29	0,07	0,31	0,36	0,15	0,87	− 1,00
Denmark	− 3,25	− 3,05	− 3,01	− 3,18	− 3,04	− 3,02	− 3,63
Spain	− 6,91	− 6,60	− 6,48	− 6,56	− 6,39	− 6,52	− 7,50
Estonia	− 7,29	− 4,05	− 3,92	− 4,10	− 4,08	− 4,09	− 8,58
Finland	− 9,87	− 9,96	− 9,81	− 9,89	− 9,62	− 9,80	− 10,48
France	− 10,99	− 11,03	− 11,10	− 11,06	− 11,16	− 11,10	− 11,83
Great Britain	− 11,28	− 10,73	− 10,67	− 10,79	− 10,92	− 10,73	− 12,57
Greece	− 10,47	− 10,81	− 9,91	− 9,75	− 9,75	− 9,79	− 12,59
Croatia	− 15,96	− 15,88	− 15,59	− 16,12	− 16,06	− 16,16	− 16,03
Hungary	− 14,78	− 15,83	− 14,15	− 13,97	− 14,12	− 13,97	− 17,39
Ireland	− 17,09	− 16,81	− 16,54	− 16,46	− 16,89	− 16,51	− 18,23
Italy	− 17,15	− 17,21	− 17,15	− 16,69	− 17,02	− 17,10	− 19,14
Lithuania	− 18,95	− 19,06	− 19,03	− 19,05	− 18,95	− 18,95	− 19,43
Luxembourg	− 18,95	− 18,68	− 18,87	− 19,04	− 19,07	− 18,94	− 19,77
Latvia	− 20,97	− 21,23	− 21,02	− 21,07	− 21,19	− 21,05	− 21,66
Malta	− 21,12	− 21,03	− 20,99	− 21,04	− 21,03	− 20,93	− 21,85
Netherlands	− 22,69	− 23,40	− 23,51	− 23,83	− 23,48	− 23,48	− 23,17
Poland	− 23,30	− 22,95	− 23,26	− 23,42	− 23,44	− 23,22	− 23,68
Portugal	− 25,75	− 25,42	− 25,32	− 25,50	− 25,54	− 25,46	− 26,88
Romania	− 25,72	− 25,66	− 25,30	− 25,41	− 25,47	− 25,34	− 26,92
Slovakia	− 29,09	− 28,71	− 28,94	− 29,26	− 29,05	− 28,84	− 29,72
Slovenia	− 33,14	− 33,10	− 32,97	− 33,03	− 32,97	− 32,85	− 33,34
Sweden	− 35,16	− 35,18	− 34,98	− 34,95	− 34,92	− 34,94	− 35,66
Canada	8,99	10,18	9,15	9,08	9,22	9,19	10,53
India	0,15	0,64	0,78	0,50	0,71	0,43	0,30
Japan	− 0,74	− 0,54	− 0,05	− 0,73	− 0,48	− 0,74	− 0,21
USA	− 1,46	− 1,19	− 1,28	− 1,35	− 1,20	− 0,62	− 0,30
Central Asia	− 1,34	− 0,99	− 0,98	− 0,16	− 0,89	− 1,27	− 0,41
ASEAN	− 4,09	− 4,04	− 4,21	− 4,16	− 4,01	− 4,29	− 3,76
MERCOSUR	− 6,10	− 5,87	− 5,80	− 5,91	− 4,27	− 5,96	− 4,62

Source: author's own calculations

Table 33: **Findings for scenario 4C)**

a) **Results for Turkey**

Scenario 4C)	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
ΔGDP (USD BN)	0.71	− 0.13	− 0.25	− 3.98	− 3.68	− 3.80	0.29
ΔGDP per capita (USD)	9.09	− 1.66	− 3.25	− 51.22	− 47.34	− 48.88	3.74
Δwages (%)	0.30	0.11	0.10	− 0.47	− 0.39	− 0.43	0.31
Δwelfare (%)	0.10	− 0.02	− 0.03	− 0.55	− 0.51	− 0.53	0.04
Δexports TUR – EU28 (%)	5.48	5.01	5.61	− 6.91	− 6.28	− 7.05	− 1.42
Δexports TUR – RoW (%)	4.92	1.99	1.68	1.77	2.81	2.83	10.28
Δexports TUR – FTA (%)	41.69	55.83	38.30	48.42	77.64	46.21	48.74
Δimports TUR – EU28 (%)	5.68	6.60	7.24	− 4.96	− 5.24	− 5.30	− 0.66
Δimports TUR – RoW (%)	0.67	− 1.60	− 1.84	− 0.42	0.56	0.28	3.85
Δimports TUR – FTA (%)	27.26	38.18	27.36	4.89	49.79	30.65	22.71

b) **Results for Germany**

Scenario 4C) DEU	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
ΔGDP (USD BN)	11,72	3,07	1,59	1,44	2,94	2,71	25,51
ΔGDP per capita (USD)	143,49	37,57	19,52	17,65	35,97	33,24	312,33
Δwelfare (%)	0,35	0,09	0,05	0,04	0,09	0,08	0,76
ΔExports DEU – TUR (%)	2,35	3,04	3,70	− 8,25	− 8,39	− 8,55	− 2,53
ΔExports DEU – FHA (%)	43,04	49,45	54,57	72,41	79,36	47,63	48,45
ΔImports DEU – TUR (%)	6,07	5,68	6,44	− 5,71	− 4,96	− 6,00	− 0,89
ΔImports DEU – FHA (%)	46,51	51,39	47,86	40,61	34,56	31,74	43,35

c) **Results for the EU**

Scenario 4C) EU28	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
ΔGDP (USD BN)	50,97	14,62	8,33	5,53	9,06	10,74	107,50
Δwelfare (%)	0,31	0,09	0,05	0,03	0,06	0,07	0,66
ΔExports EU28 – TUR (%)	6,93	7,86	8,51	− 3,83	− 4,12	− 4,17	0,52
ΔExports EU28 – FHA (%)	41,36	59,50	55,54	63,89	68,23	45,84	46,69
ΔImports EU28 – TUR (%)	5,34	4,88	5,47	− 7,04	− 6,41	− 7,17	− 1,55
ΔImports EU28 – FHA (%)	41,28	56,20	45,84	37,86	39,95	33,10	41,61

Source: author's own calculations, RoW = all countries in the world except EU28

new free trade agreements, Turkey increasingly seeks trading partners within the EU.

Table 31 illustrates the import changes for each free trade agreement country in the scenarios. It can be seen that, by concluding new EU free trade agreements with some of these countries, Turkey's imports are reduced, whereas with others they increase. The same logic applies here as for the exports.

Canada stands out among the free trade agreement countries and regions. With the exception of India, Turkish imports from all countries fall, yet those from Canada increase.

Scenario 4C) Implementing a free trade agreement between the EU and Turkey – Turkey concludes a basic free trade agreement

As for scenario 3.2A) (comprehensive deepening of the customs union), a *basic* free trade agreement between Turkey and the EU's new free-trade partners is concluded. Compared with scenario 4B), Turkey's welfare increases upon concluding its own free trade agreement, but welfare is expected to increase only by 0.04 percent upon signing up to all the EU's new trade partnerships.

In scenario 3.2A) this expected increase in welfare amounts to 2.13 percent. Compared with scenario 4B), a compensating effect from Turkey's own free trade agreement with each scenario country is observed. Welfare in scenario 4B) fell by –0.96 percent and rose in scenario 4C) by 0.04 percent. Furthermore, it is very clear that, in this scenario compared with scenario 4B), Turkey increases its exports and imports with each scenario country. Turkish GDP also does not drop as sharply as in scenario 4. This makes an important contribution to preventing Turkish external trade from collapsing.[13]

However, welfare gains for Turkey are mostly driven by TTIP. In the other scenarios, welfare losses for Turkey arise despite the country concluding its own free trade agreements. No single free trade agreement, except for TTIP, would sufficiently compensate for the welfare losses arising for Turkey as a result of rolling back the customs union.

Germany's welfare rises in this scenario, more than in Scenario 4B). Thus Germany experiences now benefits if Turkey completes its own basic FTAs with the listed

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13 Table 45 in the appendix lists the changes in Turkish exports to selected countries, and Table 46 shows the changes in Turkish imports.

third parties. While in scenario 4B) a welfare increase of 0.72 percent is expected, in this scenario welfare gains amount to 0.76 percent. Analogous developments are observed in European welfare, as well as in the EU's external trade with Turkey.

Intermediate findings:

By rolling back the EU-Turkey customs union to a bilateral free trade agreement, Turkey regains full sovereignty over its trade policy and does not have to grant unilateral trade facilitation to any of the EU's new free-trade partners. However, this rollback of Turkish integration in the EU leads to a significant welfare loss. In this case, Turkey would undergo a drop in GDP of 0.81 percent. If the EU's new free trade agreements are taken into account, Turkey undergoes a further decrease in welfare in this scenario (-0.96 percent). Although the problem of asymmetry for Turkey no longer exists, a free trade agreement with the EU puts Turkish exports at a disadvantage on the European market if the EU concludes new free trade agreements. The decline in Turkish-European manufacturing networks plays a role here and the need for certificates of origin is a deciding factor. Even if Turkey concludes free trade agreements with the EU's new partner countries, this will not lead to better welfare effects than all the other scenarios under consideration (deeper customs union). Turkish exports increase in third countries since the problem of asymmetry no longer exists. However, trade with the EU will decrease, which has a more serious impact due to current trade volume. Rolling back the customs union to a free trade agreement is not a wise trade policy for Turkey, if there is the option of deepening the customs union.

6. Comparison of welfare effects in all scenarios

In Figure 31, changes in Turkish exports to the EU and the rest of the world, as well as Turkish welfare, are compared for all scenarios. The positive effect of deepening the EU-Turkey customs union can be seen in scenarios 2 and 3. It is also shown across all scenarios that Turkey will benefit if it follows suit with the EU free trade agreements.

The graph also shows that trends for Turkish exports to the EU run counter to those in the rest of the world in most scenarios. This is explained by the deeper or – as the case may be – reduced integration of Turkey in the European economy and by changes in trade flows of goods to which this leads (e.g. implementation of rules of origin).

Figure 32 shows the changes in Turkish welfare in each scenario. The deepening of the customs union in particular is desirable for Turkey in terms of welfare changes. Rolling back the customs union and subsequently concluding a free trade agreement with the EU is not an attractive option for Turkey based on overall changes to welfare. In addition, the welfare effects for Germany and the EU are reported. Both regions have the highest welfare effects, if the customs union with Turkey is deepened and at the same time FTA with third countries (including Turkey) are completed (scenarios 3).

Depending on Turkey's trade-policy position towards the EU (status quo, deeper customs union or free trade agreement), the Turkish economy reacts differently to the EU's

Figure 31: **Comparison of all scenarios for welfare and trade changes**

■ ΔExport TUR – EU28 (%) ■ ΔExport TUR – RoW (%) —— ΔWelfare (%) (right)

Source: author's own calculations and illustration

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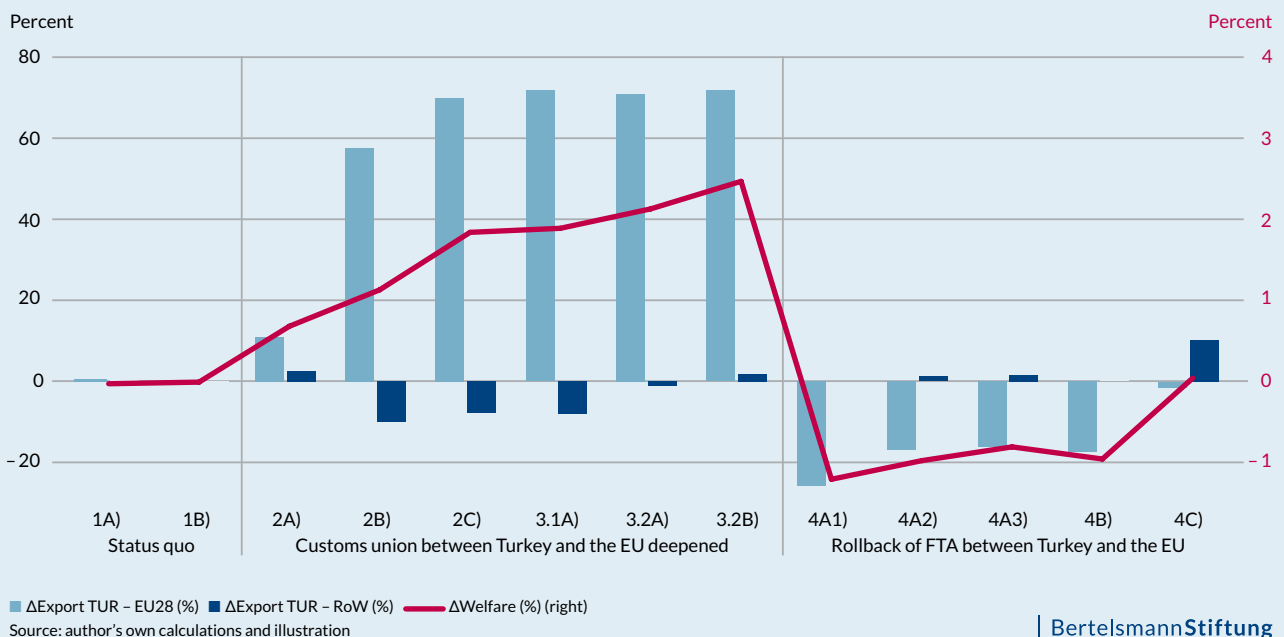
Figure 32: **Comparison of welfare changes across all scenarios**

∆ welfare – Turkey
percent

	1A)	1B)	2A)	2B)	2C)	3.1A)	3.2A)	3.2B)	4A1)	4A2)	4A3)	4B)	4C)
	Status quo		Customs union between Turkey and the EU deepened						Rollback of FTA between Turkey and the EU				

∆ welfare – EU28
percent

	1A)	1B)	2A)	2B)	2C)	3.1A)	3.2A)	3.2B)	4A1)	4A2)	4A3)	4B)	4C)
	Status quo		Customs union between Turkey and the EU deepened						Rollback of FTA between Turkey and the EU				

∆ welfare – DEU
percent

	1A)	1B)	2A)	2B)	2C)	3.1A)	3.2A)	3.2B)	4A1)	4A2)	4A3)	4B)	4C)
	Status quo		Customs union between Turkey and the EU deepened						Rollback of FTA between Turkey and the EU				

Source: author's own calculations and illustration

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new FTAs. However, in the simulations the isolated effect of a new EU free trade agreement on Turkish welfare is not provided. This effect is approximately the difference between the various scenario results.

Figure 33 compares scenario 3.1A) (expansion of Turkish Customs Union plus new EU free trade agreements) with 2C) (expansion of Turkish Customs Union) and 4B) (comprehensive free trade agreement in secondary sector and basic free trade agreement in primary and secondary sectors plus new EU free trade agreements) with 4A2) (comprehensive free trade agreement in the secondary sector and basic free trade agreement in the primary and secondary sectors). Therefore the differences observed can be compared with the simulated welfare effects in scenario 1B).

Under the status quo, Turkey benefits only from the EU's new free trade agreements with the USA and Canada. With a free trade agreement between the EU and Turkey, Turkey would also benefit from an EU free trade agreement with Japan and in the event that the EU signs all other FTAs.

However, if the EU-Turkey customs union is deepened, Turkey would benefit from the EU's new free trade agreements except in the case of ASEAN.

As the comparison of all scenarios for changes in Turkish welfare shows, Figure 34 represents the changes in Turkish exports to the EU.

Based on the welfare results, the trade-policy recommendations for Turkey are clear. Due to the increasing number of free trade agreements being sought by the EU, Turkey should correct the disadvantages resulting from the Ankara Agreement by adapting the EU-Turkey customs union. The simulations in this study come to the clear conclusion that Turkey should seek to deepen the customs union by including the agricultural and service sectors.

Full integration of Turkish industry in the EU customs union in itself offers the chance of substantial welfare growth. It is also clear from the simulation that the existing problem of asymmetry can be compensated for by strong bilateral trade.

Additionally, in the long term, efforts should be made to eliminate the problem of asymmetry. This can, for example, be achieved by expanding the Ankara Agreement, in which tariff-easing for European firms in third countries could also be taken into account for Turkish companies.

Figure 33: **Comparison of welfare changes in scenarios 1B), 3.1A) and 4B)**
Δ welfare
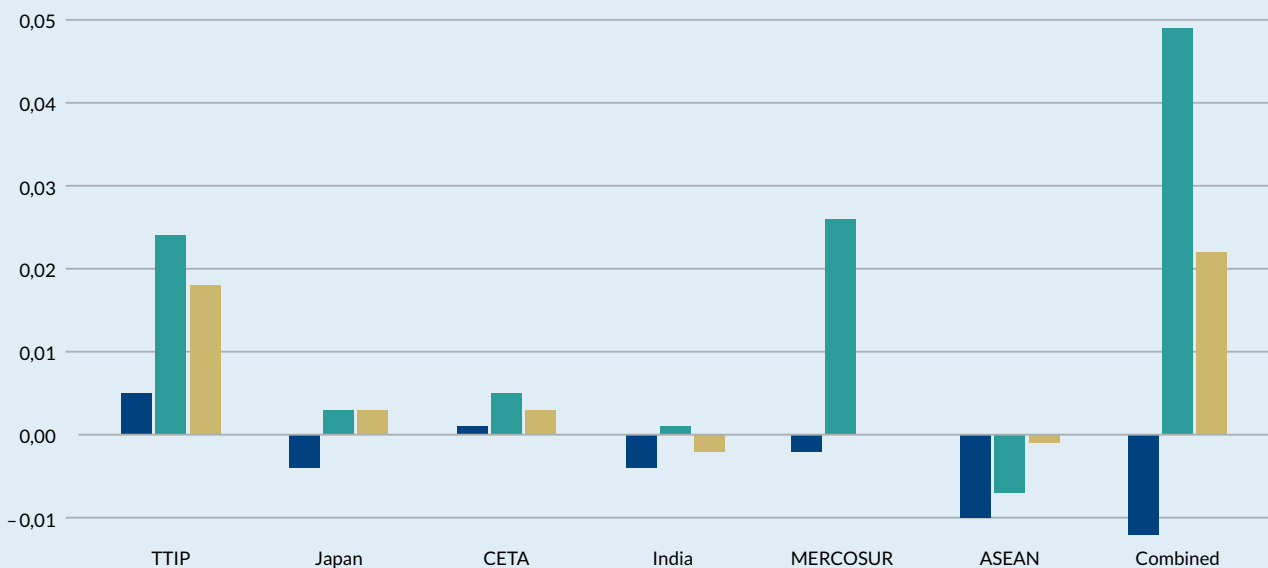
Source: author's own calculations and illustration

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Figure 34: **Comparison of export changes in scenarios 1B), 3.1A) and 4B)**
ΔExport TUR – EU28

■ Status quo ■ Deepening the customs union ■ Rollback to FTA
Source: author's own calculations and illustration

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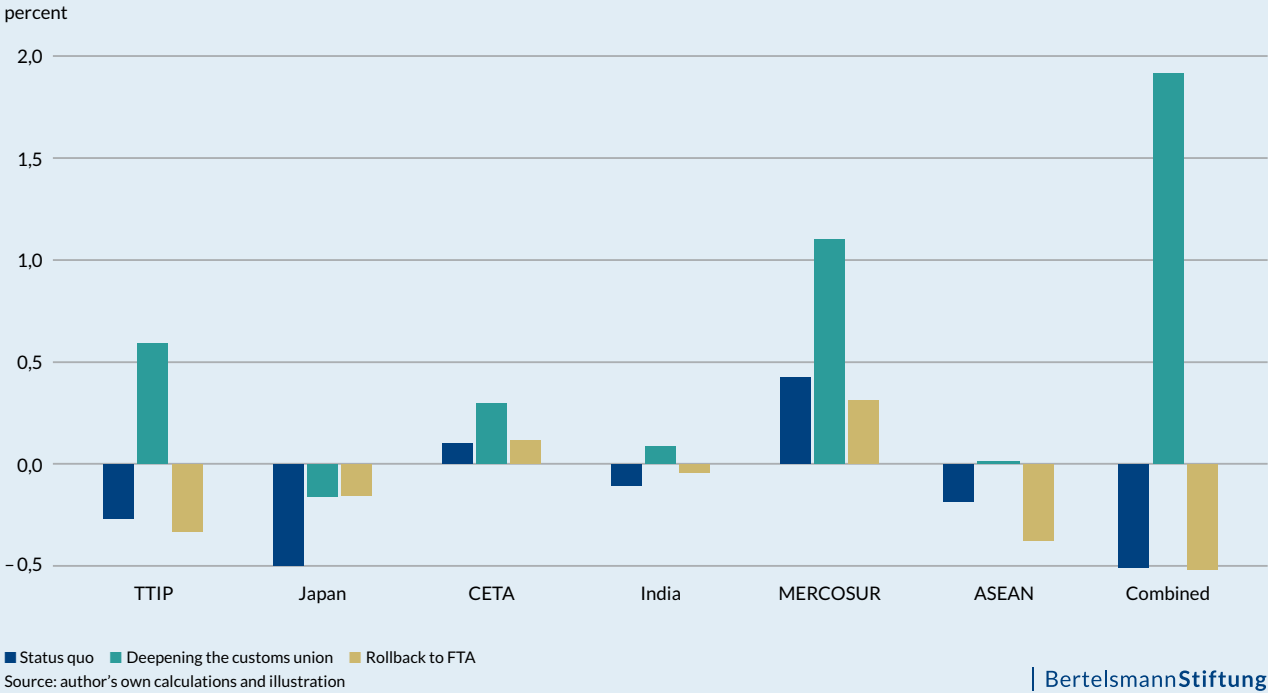
Figure 35: **Comparison of import changes in scenarios 1B), 3.1A) and 4B)**
ΔImport TUR – EU28

■ Status quo ■ Deepening the customs union ■ Rollback to FTA
Source: author's own calculations and illustration

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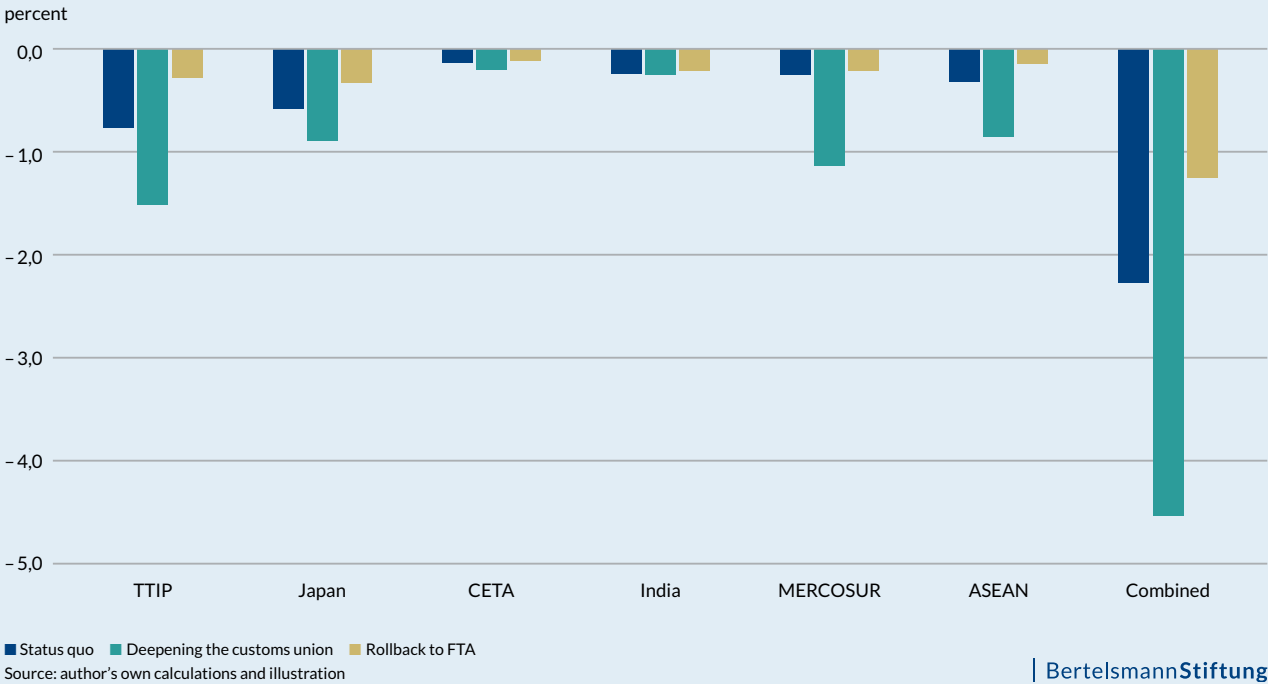
7. Summary and conclusions

The integration of Turkish industry into the European Customs Union has led to a steady increase in bilateral economic relations between the EU and Turkey. Particularly since 2002, Turkish industry has been increasingly integrated in European production networks. The EU is by far Turkey's most important trading partner and, in turn, Turkey is the EU's sixth largest trading partner. Germany in particular has fostered enduring economic relations with Turkey. While 9 percent of Turkish exports go to Germany, approximately 10 percent of all Turkish imports are from Germany.

This study has shown that the economic integration of Turkey via the EU Customs Union has so far had very positive effects. The success of this economic integration has been at risk for some time, since institutional weaknesses in the way the European customs union is organized in Turkey's case bring about increasingly negative consequences for Turkish industry.

The existing customs agreement was designed and agreed upon as an intermediate step in Turkey's integration process into the EU. However, today this trade agreement – initially designed as a temporary agreement – provides the basis for European-Turkish economic relations and the economic integration of the two regions. The fact that the Ankara Agreement contains some flaws (especially because it was conceived as a temporary solution) has had no significant impact on European-Turkish economic relations in the past.

However, this picture has recently changed due to the EU's new free trade agreements. This study shows that the structure of the EU-Turkey customs union, in conjunction with the EU's new free trade agreements with third countries, has weaknesses that will lead to significant negative consequences for Turkey.

As a result of the customs union agreed with the EU and the corresponding principle of joint customs harmonization for third countries, Turkey is obliged to open its market to these third countries if the EU signs a free trade agreement with them. In return, Turkish companies can establish free commodity trade with the EU28 states, but cannot receive any of the benefits that were negotiated for European exporters to third countries. Discrimination against Turkish exports arises technically where there are free trade agreements with third countries, since EU trade agreements are negotiated at EU level and Turkey has no right to participate in drawing up these agreements, even when their effects – as in the case of the customs union – have dramatic economic implications for the country.

In this respect, the Ankara Agreement is a flawed trade agreement, since its original intention of deepening bilateral economic relations between the EU and Turkey is being undermined by the problem of asymmetry presented here.

This study shows that Turkish exports will suffer significant setbacks after every new EU free trade agreement with a third country. If no measures are taken in the short term, there is the risk of a marked deterioration in European-Turkish economic relations. It is also clear based on other, external factors that there is an urgent need for political change. The Russian president, Vladimir Putin, has offered Turkey membership of the Eurasian Customs Union. Turkish politicians are increasingly discussing this option as an alternative to the European Customs Union.

Alternatively, conservative politicians in Turkey are calling to be released from the unilateral customs union with the EU and to establish a European-Turkish free trade agreement instead. However, the results of this study clearly show that, if Turkey turns away from the EU, such as by rolling back the customs union to a free trade agreement, this will be accompanied by considerable welfare losses for the country.

Due to the structure of free trade agreements, this kind of trade policy would lead to a steady decrease in Turkey's economic integration in the EU. In particular, according to these results, previously successful integration of Turkish industry into European production networks would no longer progress under a free trade agreement, but would decline instead. Theoretically, a free trade agreement between Turkey and the EU offers the Turkish government the opportunity to regain sovereignty over trade policy, but if the economic disintegration from the EU were so substantial, such a political step is to be carefully scrutinized, at least according to the results of this study.

On the other hand, deeper economic integration in the customs union is a realistic policy option for Turkey, first of all because the country could expect a clear gain in welfare and also because the negative trade effects caused by the problem of asymmetry would be compensated for. The study findings project possible gains in welfare of up to 1.8 percent or USD 13 billion for GDP.

Basically, by deepening the customs union, Turkey has the opportunity to correct the problem relating to third countries arising from the Ankara Agreement. Inclusion of the Turkish agricultural and services sectors in the European Customs Union also offers economic opportunities for EU states, as it provides an incentive to remove the problem of asymmetry in the Ankara Agreement. The agreement should be formally expanded in conjunction with free trade agreements between the EU and third countries, so that tariff-easing negotiated for European firms in third countries can also apply to Turkish firms. With a deepening of the customs union Germany and the EU would experience also a significant GDP growth.

The study demonstrates that such an adaptation of the Ankara Agreement can be expected to boost Turkish welfare by up to 2.5 percent. This would correspond to a USD 17 billion rise in GDP. This growth would compare with a decrease in GDP of USD 20 billion if the EU and Turkey take no action. These challenges to the EU-Turkey Customs Union, which is barely discussed in public, show that Turkey is caught between the European and Asian economies and at risk of drifting away from the EU, if the country is not offered any realistic adaptation of the customs agreement by the EU.

The institutional weaknesses shown above in the EU-Turkey Customs Union are ultimately a symptom of more serious and fundamental problems in Turkey's integration process into the EU. The main goal of this process is defined as Turkey's full membership of the EU, which can be achieved by implementing the *acquis communautaire.* In Turkey in particular, this politically charted route to integration – in which all reforms in a candidate country are evaluated with the aim of eventually ratifying full membership – leads to conflict with intermediate reform goals, which have not been explicitly defined by the EU and Turkey. The mutually agreed, partial integration of Turkey in the European Customs Union contains structural institutional weaknesses that may have negative consequences – for instance with TTIP and other pending free trade agreements. This is an example which is having particularly drastic economic repercussions.

The most recent agreement between the EU and Turkey in the context of the current refugee crisis has given the country the perspective of five new chapters in the EU membership negotiations being opened. Setting aside the question of whether and when Turkey can become a full EU member – a question which is not assessed in this study, since a comprehensive analysis would be required – it is clear from current policy decisions that long-term agreements with unknown consequences have been entered into by representatives both from the EU and from Turkey, and that very real and serious economic challenges also remain unaddressed in the short term.

Expressed in more general terms, this study shows indirectly that negotiations on Turkey's *long-term full membership* of the EU on the one hand, and the simultaneously initiated discussion regarding a possible *economic connection for the country* with Europe on the other hand, represent increasingly incompatible policy options in the light of EU trade policy.

In both Europe and Turkey, the focus on initiating full political EU membership for the country without addressing the urgent need for reforms to the customs union in the short term threatens not only the economic integration of Turkey in the EU achieved so far, but also the country's long-term political integration as a full EU member. One implication of this study is that the EU should concentrate in the coming years on consolidating and then expanding Turkey's economic integration in the EU. Considering the EU's current trade policy and the related economic and political new order, not only in Europe but around the world, such an economic and political goal is a great challenge in itself.

Establishing a lasting and functioning customs agreement between the EU and Turkey has a clear goal: namely

to prepare for the next step in European integration. This bottom-up approach in which there is no comprehensive reform package (e.g. the *acquis communautaire*) to be implemented also represents an achievable economic and political goal. The integration process adopted during the refugee crisis is increasingly confronting Turkey with the requirement to balance very different conflicts between reforms. An agreement on liberalizing visa regulations between the EU and Turkey which is, for example, urgently required for the integrated economy for smooth exchange of managers, has been linked with further EU *acquis* chapters and the refugee crisis by the EU. Consequently, the long-term political reforms that have been called for are threatening to roll back the economic integration achieved so far.

The complexity of the European integration process is a problem not only for Turkey but is increasingly observed in other countries in various ways. The most recent developments and the position of the EU and its member states show a tendency towards "differentiated integration" based on a new Europe. It can also be referred to as a multi-speed Europe. For current members, such a political change would partly mean rolling back integration reforms. For example, the announcement of a referendum on Britain's continued membership of the EU could be the first serious development. For candidate countries such as Turkey, a multi-speed EU means that integration is promoted primarily in the economic or political spheres first of all, which is meaningful and achievable both from a national and from a European point of view. Based on this logic, therefore, Turkey should aim to deepen the customs union. The advantages of this policy are not only economic: if implemented successfully, it offers politicians room for manoeuvre for further reforms in the future, in addition to the welfare effects.

Appendix

Figure 36: **Average trade effects of integration policies (agricultural sector)**

	basic	comprehensive	customs union
Rice	0.12	0.36	1.05
Wheat	0,00	1.09	1.55
Cereals	0.05	0.55	0.97
Vegetables, fruits, nuts	0.04	0.29	0.38
Oilseed	0,00	0.39	0.57
Sugar cane, sugar beet	0,00	0.21	0.14
Plant-based fibres	0.11	0.35	0.32
Agricultural crops	0.09	0.12	0.28
Cattle, sheep, goats, horses	0.11	0.31	0.72
Animal products nec	0.06	0.36	0.94
Raw milk	0.11	0.31	0.72
Wool, silk	0.11	0.31	0.99
Forestry	0.11	0.39	0,00
Fishing	0,00	0.08	0.64
Coal	0.23	0.43	0.37
Oil	0.26	0.76	0.03
Gas	0.26	1.21	0,00
Minerals nec	0.04	0.37	0.81
Meat: cattle, sheep, goats, horses	0.24	0.22	0.49
Meat products nec	0.05	0.45	0.79
Plant-based oils and fats	0.19	0.66	0.81
Dairy products	0.02	0.38	1.23
Processed rice	0.11	0.35	0.34
Sugar	0.23	0.61	0.27
Food products	0.19	0.47	0.97
Beverages and tobacco	0.11	0.43	0.89

■ basic ■ comprehensive ■ customs union
Source: author's own calculations and illustration

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Figure 37: **Average trade effects of integration policies (service sector)**

Sector	basic	comprehensive	customs union
Electricity	0.54	0.51	0.85
Gas manufacturing, distribution	0.14	0.37	0.77
Water	0.54	0.26	0.00
Construction	0.54	0.00	0.00
Trade	0.04	0.35	1.46
Transport	0.04	0.13	2.12
Marine transport	0.65	0.51	1.57
Air transport	0.65	0.27	1.38
Communications	0.65	0.26	1.66
Financial services	0.38	0.01	1.21
Insurance	0.38	0.16	0.67
Business services	0.38	0.17	0.91
Leisure and other services	0.20	0.44	2.29
Public administration / defence / education	0.20	0.01	1.93

■ basic ■ comprehensive ■ customs union
Source: author's own calculations and illustration

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Table 34: Simple average MFN tariffs for selected countries (in percent)

MFN tariff vs. WTO (2013)	Simple average					
GTAP sector	EU	Turkey	India	Japan	USA	Canada
1 Rice	7.70	33.78		0.00		0.00
3 Clothing	0.00	70.00	25.00	1.30	0.37	0.00
4 Vegetables, fruit, nuts	6.62	37.02	31.80	5.59	5.54	1.75
5 Oilseed	0.00	7.93	28.89	0.00	0.00	0.00
6 Sugar cane, sugar beet	5.10	19.30	30.00	0.00	0.00	0.00
7 Plant-based fibers	0.00	0.00	9.50	0.00	0.00	0.00
8 Agricultural crops	3.14	25.66	33.99	1.36	5.33	2.17
9 Cattle, sheep, goats, horses	2.82	54.48	30.00	0.00	0.75	0.00
10 Animal products	1.00	7.05	19.53	2.79	1.02	9.84
12 Wool, silkworm cocoons	0.00	0.00	5.00	0.00	0.04	0.00
13 Forestry	0.00	0.06	15.61	1.73	0.39	0.00
14 Fishing	9.18	25.41	24.38	3.59	0.13	0.57
15 Coal	0.00	0.00	5.87	0.65	0.00	0.00
16 Oil	0.00		0.00	0.00	0.00	0.00
17 Gas	0.00		5.00	2.05	0.00	0.00
18 Minerals	0.02	0.07	5.06	0.03	0.23	0.09
19 Meat: cattle, sheep, goats, horses	1.00	87.86	27.86	10.28	5.81	3.35
20 Meat products	7.86	75.66	33.68	6.65	3.09	40.97
21 Plant-based oils and fats	4.71	19.25	42.05	2.60	3.66	4.89
22 Dairy products	6.42	101.46	30.78	23.40	12.25	164.18
23 Processed rice		45.00	70.00	0.00	11.20	0.00
24 Sugar	8.00	83.25	38.33	0.50	4.91	3.13
25 Food products	11.63	32.56	32.49	12.02	4.83	5.38
26 Beverages and tobacco	10.72	20.03	96.90	4.83	45.11	4.63
27 Textiles	6.65	6.70	9.88	5.66	8.09	3.18
28 Clothing	10.82	10.83	9.73	9.27	10.68	15.68
29 Leather products	6.24	6.30	10.00	12.82	6.73	6.23
30 Wood products	2.52	2.57	9.90	2.32	1.49	2.52
31 Paper products, publishing	0.10	0.10	8.56	0.04	0.03	0.07
32 Petroleum, coal products	0.72	0.77	5.26	1.23	0.80	1.28
33 Chemicals, rubber, plastic products	4.43	4.45	8.41	2.04	2.57	1.05
34 Mineral products	3.53	3.59	9.36	1.15	3.05	1.63
35 Ferrous metals	0.41	4.47	6.65	0.23	0.34	0.02
36 Metals	2.75	2.97	5.75	1.77	2.17	0.01
37 Metal processing	2.73	2.83	9.80	1.13	2.00	2.47
38 Automobiles and parts	6.41	6.40	24.94	0.00	2.05	4.20
39 Transport equipment	2.30	2.66	18.38	0.00	2.08	5.62
40 Electronic equipment	2.32	2.39	4.34	0.00	0.72	0.64
41 Machinery and equipment	2.03	2.08	7.85	0.19	1.38	0.93
42 Manufacturing	2.74	2.77	9.66	1.89	2.72	3.98

Source: WITS – TRAINS Tariff Data

Turkey's EU integration at a crossroads

Table 35: Key basic data for relevant countries

	GDP (WEO) 2015)	Exports (2011)	Imports (2011)	Most important export sectors			Most important import sectors		
	(USD billions)	(USD millions)	(USD millions)	Prim.	Sec.	Tert.	Prim.	Sec.	Tert.
All	73 192	173 540	251 002	38	41	27	33	41	38
EU28	16 266	82 811	101 678	38	27	41	41	33	38
RoW	56 927	90 729	149 324	41	35	33	33	16	32
Germany	3 371	20 293	28 309	38	27	28	41	38	33
Great Britain	2 865	11 189	6 787	41	27	38	33	41	38
France	2 423	9 817	10 162	38	41	27	38	33	41
Italy	1 819	9 492	13 288	38	27	35	41	33	38
Spain	1 221	4 995	6 981	28	27	38	38	33	41
Belgium	459	3 855	5 537	38	41	27	33	41	35
Romania	175	2 729	3 855	38	33	41	35	33	38
Poland	481	2 423	3 385	27	38	41	38	33	19
Netherlands	751	2 265	3 810	28	48	27	33	35	41
Bulgaria	47	2 199	2 769	27	41	33	36	32	35
Greece	193	1 940	1 786	32	33	27	32	33	7
Sweden	484	1 871	2 681	41	38	27	41	33	35
Austria	373	1 721	2 028	38	48	41	41	33	27
Denmark	291	1 287	1 060	28	27	50	41	33	35
Czech Republic	182	1 176	1 623	38	33	35	41	38	33
Slovenia	43	710	370	38	33	41	41	33	31
Ireland	227	691	874	47	54	41	33	41	53
Cyprus	19	680	50	32	33	41	35	36	50
Hungary	118	605	2 080	41	37	27	40	38	9
Finland	231	489	1 175	18	41	27	31	41	33
Slovakia	86	474	947	41	38	37	41	40	38
Portugal	198	447	565	38	55	27	33	41	31
Malta	9	430	56	39	32	41	35	27	39
Croatia	49	322	392	33	41	38	35	33	41
Luxembourg	58	241	328	52	55	33	52	35	53
Lithuania	42	199	234	27	41	38	35	2	26
Estonia	23	160	401	27	28	41	35	40	9
Latvia	28	109	145	41	27	50	35	2	30
Canada (CETA)	1 573	1 182	2 129	36	55	4	15	35	4
ASEAN	2 394	2 817	6 899	48	50	25	27	33	41
India	2 183	1 022	7 791	36	18	41	32	33	27
Japan	4 116	927	4 246	50	48	27	41	38	33
MERCOSUR	2 594	1 662	3 779	38	35	41	18	5	2
USA (TTIP)	17 968	7 779	20 996	27	38	50	35	39	33

Source: IMF World Economic Outlook, GTAP9 and own illustration, RoW = all countries in the world except EU28

Table 35 contains key data on Turkish trade with the countries included in this study. The figures are reported by Turkey so figures in the exports column give the trade flows from Turkey to the various countries in the table. The last six columns concern trade flows for the three most important sectors. The sector classifications can be seen in Table 39.

Table 36: Findings for scenario 1B): list of countries with export changes (in percent)

Scenario 1B) Export growth for Turkey	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
EU28	− 0.27	− 0.50	0.10	− 0.11	0.43	− 0.19	− 0.51
Austria	0.61	− 0.15	0.24	0.26	0.59	− 0.01	1.50
Belgium	− 1.18	− 0.82	0.10	0.10	0.25	− 0.36	− 1.81
Bulgaria	0.49	0.12	0.19	0.11	0.20	0.01	1.12
Cyprus	− 0.12	0.15	0.29	0.00	0.14	0.05	0.54
Czech Republic	− 0.38	− 0.91	0.12	0.29	0.55	− 0.06	− 0.40
Germany	− 0.46	− 0.53	0.18	− 0.07	0.58	− 0.30	− 0.58
Denmark	0.45	1.33	0.26	− 1.25	0.25	− 0.60	0.36
Spain	− 0.40	− 0.54	0.06	− 0.41	0.60	− 0.46	− 1.15
Estonia	0.07	− 0.24	0.19	− 0.35	0.25	− 0.27	− 0.37
Finland	0.18	0.45	− 0.80	0.23	0.42	0.14	0.54
France	− 0.39	− 1.12	0.18	− 0.24	0.52	− 0.13	− 1.20
Great Britain	− 0.88	− 0.73	− 0.36	− 0.17	0.27	− 0.29	− 2.00
Greece	− 1.02	0.42	0.26	− 0.35	0.24	0.36	− 0.05
Croatia	− 0.05	− 0.26	− 0.01	− 0.21	0.35	− 0.13	0.33
Hungary	0.08	− 0.51	0.15	0.28	0.50	− 0.08	0.39
Ireland	3.79	− 0.06	0.15	0.05	0.39	0.05	4.20
Italy	0.67	− 0.28	0.29	− 0.06	0.47	0.04	1.06
Lithuania	− 0.68	0.20	0.17	− 0.16	0.10	− 0.25	− 0.62
Luxembourg	0.64	1.05	0.15	0.30	0.52	0.11	2.69
Latvia	− 0.03	0.34	− 0.04	0.45	0.12	− 0.80	− 0.02
Malta	− 0.90	− 1.04	− 0.17	0.09	0.14	0.28	− 1.62
Netherlands	− 0.45	0.19	0.14	− 0.25	− 0.30	− 0.46	− 1.05
Poland	− 0.31	− 0.84	0.15	− 0.15	0.28	− 0.16	− 1.01
Portugal	0.79	− 0.37	0.23	− 0.26	0.80	− 0.26	0.87
Romania	0.19	− 0.39	0.20	0.18	0.28	0.03	0.48
Slovakia	0.01	− 0.61	0.26	1.14	0.56	− 0.12	1.21
Slovenia	− 1.00	− 1.06	0.18	0.14	0.50	0.04	− 1.28
Sweden	0.01	− 0.02	0.08	− 0.02	0.57	0.09	0.66
Canada	− 0.82	0.22	− 1.20	0.15	− 0.22	0.19	− 1.68
India	− 0.09	0.26	− 0.16	− 7.04	− 0.14	0.17	− 7.08
Japan	− 0.23	− 2.82	− 0.19	− 0.04	− 0.20	− 0.20	− 3.54
USA	− 1.28	0.13	− 0.34	0.02	− 0.22	0.18	− 1.42
ASEAN	− 0.05	0.04	− 0.11	− 0.13	− 0.17	− 0.72	− 1.00
Central Asia	− 0.22	0.04	− 0.02	− 0.05	− 0.15	0.06	− 0.35
MERCOSUR	0.03	0.28	− 0.14	− 0.01	− 8.05	0.11	− 7.74

Source: author's own calculations

Table 37: Findings for scenario 1B): list of countries with import changes (in percent)

Scenario 1B) Import growth for Turkey	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
EU28	– 0.77	– 0.59	– 0.14	– 0.24	– 0.26	– 0.33	– 2.27
Austria	– 1.25	– 0.61	– 0.21	– 0.34	– 0.44	– 0.49	– 3.22
Belgium	0.53	– 0.34	– 0.10	– 0.47	– 0.06	– 0.18	– 0.63
Bulgaria	– 0.94	– 0.45	– 0.06	– 0.18	0.01	– 0.20	– 1.82
Cyprus	– 0.65	– 0.53	– 0.34	– 0.14	– 0.09	– 0.35	– 2.06
Czech Republic	– 0.57	– 0.28	– 0.12	– 0.30	– 0.33	– 0.25	– 1.80
Germany	– 0.69	– 0.53	– 0.15	– 0.34	– 0.39	– 0.40	– 2.45
Denmark	– 1.31	– 1.66	– 0.39	– 0.20	– 0.19	– 0.37	– 3.95
Spain	– 0.54	– 0.67	– 0.08	– 0.11	– 0.28	– 0.28	– 1.94
Estonia	– 0.44	– 0.45	– 0.09	– 0.10	– 0.03	0.03	– 1.05
Finland	– 1.06	– 1.00	– 0.17	– 0.30	– 0.36	– 0.34	– 3.08
France	– 0.68	– 0.63	– 0.23	– 0.16	– 0.29	– 0.35	– 2.31
Great Britain	– 0.27	– 0.45	0.55	– 0.18	– 0.10	– 0.37	– 0.89
Greece	– 1.02	– 0.92	– 0.43	– 0.09	– 0.30	– 0.66	– 3.38
Croatia	– 0.68	– 0.49	– 0.18	– 0.08	– 0.04	– 0.14	– 1.49
Hungary	– 0.57	– 0.34	– 0.02	– 0.20	– 0.11	– 0.15	– 1.40
Ireland	– 4.11	– 0.74	– 0.21	– 0.39	– 0.35	– 0.52	– 6.01
Italy	– 1.51	– 0.75	– 0.36	– 0.14	– 0.30	– 0.33	– 3.30
Lithuania	– 0.44	– 0.42	– 0.13	– 0.20	0.13	– 0.10	– 1.14
Luxembourg	– 0.96	– 0.79	– 0.21	– 0.19	– 0.30	0.03	– 2.31
Latvia	– 0.53	– 0.56	– 0.06	– 0.27	0.02	– 0.08	– 1.44
Malta	– 1.24	– 0.95	– 0.63	– 0.11	– 0.46	– 0.92	– 4.07
Netherlands	– 0.59	– 0.67	– 0.15	– 0.20	0.05	– 0.23	– 1.77
Poland	– 0.77	– 0.54	– 0.14	– 0.20	– 0.11	– 0.27	– 2.01
Portugal	– 1.35	– 0.84	– 0.18	– 0.07	– 0.60	– 0.35	– 3.28
Romania	– 0.79	– 0.51	– 0.17	– 0.15	– 0.04	– 0.14	– 1.78
Slovakia	– 0.68	– 0.23	– 0.14	– 0.55	– 0.27	– 0.15	– 2.01
Slovenia	– 0.81	– 0.43	– 0.21	– 0.25	– 0.24	– 0.26	– 2.06
Sweden	– 1.03	– 0.64	– 0.16	– 0.37	– 0.43	– 0.42	– 2.92
Canada	– 0.49	– 0.58	2.72	– 0.11	0.16	– 0.20	1.45
India	– 1.15	3.06	0.05	0.86	0.18	– 0.40	2.57
Japan	– 0.67	13.05	0.10	0.06	0.19	0.01	12.60
USA	5.05	– 0.35	0.20	– 0.07	0.18	– 0.23	4.68
Central Asia	– 0.83	– 0.22	– 0.03	0.02	0.23	– 0.23	– 1.04
MERCOSUR	– 0.62	– 0.41	0.07	– 0.05	3.86	– 0.20	2.52
ASEAN	– 0.50	– 0.44	0.09	0.01	0.21	8.42	7.61

Source: author's own calculations

Table 38: Findings for scenario 1B): export growth in Turkey by sector (in percent)

Scenario 1B) Export growth for Turkey (in %)		TTIP			CETA			Combined		
Sector	Target country	EU28	RoW	USA	EU28	RoW	CAN	EU28	RoW	All FTA partners
Rice		– 5.26	0.29	3.66	0.69	– 0.10	– 3.13	– 24.45	20.37	0.93
Wheat		– 7.34	– 0.13	0.89	– 10.41	– 0.10	4.29	– 15.06	0.63	0.83
Cereals		0.08	– 0.09	0.61	0.92	– 0.04	– 5.09	1.30	– 0.08	0.37
Vegetables, fruit, nuts		– 0.34	– 0.05	0.40	0.16	– 0.03	– 0.62	0.21	0.39	– 0.13
Oilseed		– 0.82	– 0.26	0.09	– 0.26	– 0.11	0.53	– 1.52	– 0.78	– 1.68
Sugar cane, sugar beet		0.44	– 0.17	1.18	0.05	– 0.08	– 0.06	– 7.25	– 0.46	1.46
Plant– based fibers		– 0.58	0.71	2.09	0.40	– 0.30	– 4.83	1.81	5.62	1.90
Agricultural crops		0.44	– 0.12	– 0.30	0.53	– 0.08	– 5.08	0.09	9.97	– 1.47
Cattle, sheep, goats, horses		0.21	– 0.08	1.56	0.13	– 0.07	– 1.92	0.15	0.55	1.86
Animal products		0.34	0.16	0.27	– 0.03	– 0.07	– 3.79	6.31	0.45	– 7.44
Raw milk		0.91	– 0.11	0.12	2.46	– 0.14	– 53.42	6.53	1.11	– 1.80
Wool, silk		1.38	– 0.14	– 1.01	0.18	– 0.06	– 0.80	1.10	0.29	– 0.10
Forestry		0.32	– 0.03	0.94	0.23	– 0.12	– 0.38	2.36	0.68	2.54
Fishing		0.65	0.29	1.42	0.45	– 0.03	– 1.06	2.69	0.78	– 0.14
Coal		– 4.29	0.22	2.58	– 0.41	– 0.18	1.05	– 1.84	1.22	1.10
Oil		2.12	1.21	7.88	0.11	– 0.49	–	7.24	4.85	4.70
Gas		2.00	1.33	7.17	– 0.01	– 0.40	2.50	6.81	4.12	8.34
Minerals		0.75	– 0.29	1.16	– 1.28	– 0.18	6.54	0.83	– 0.85	– 6.66
Meat: cattle, sheep, goats, horses		– 2.41	– 0.18	0.78	0.06	– 0.10	– 0.84	– 17.07	– 0.45	0.45
Meat products		0.10	0.03	0.31	0.14	– 0.06	– 1.87	– 0.14	– 0.18	– 3.54
Plant– based oils and fats		– 2.71	– 0.08	– 3.03	– 0.95	– 0.11	– 5.63	– 8.11	0.01	– 4.93
Dairy products		0.63	0.09	– 0.93	1.49	– 0.20	– 70.47	4.04	0.16	– 2.23
Processed rice		– 15.91	– 0.16	– 0.45	0.60	– 0.24	– 5.57	– 46.81	2.53	– 2.19
Sugar		– 0.17	0.05	0.76	– 0.15	– 0.06	– 5.33	– 12.96	– 0.25	– 0.47
Food products		– 0.34	0.06	– 0.45	0.07	– 0.09	– 9.55	– 0.89	0.22	– 2.68
Beverages and tobacco		0.06	– 0.06	– 4.50	0.18	– 0.04	– 5.27	0.77	– 0.03	– 4.78
Textiles		– 0.04	0.05	– 2.96	0.30	– 0.07	– 5.80	– 2.38	0.48	– 2.90
Clothing		0.28	– 0.05	– 1.07	0.15	– 0.04	– 3.27	– 1.11	0.24	– 1.39
Leather		0.86	– 0.04	– 7.53	0.25	– 0.05	– 13.87	– 2.01	– 0.16	– 7.71
Wood		0.58	0.05	– 0.36	0.17	– 0.02	– 2.19	1.81	0.31	– 1.80
Paper, publishing		0.90	0.26	0.81	0.45	– 0.01	– 1.27	3.27	0.79	– 2.25
Petroleum, coal products		– 2.69	0.31	0.20	0.22	– 0.03	– 0.67	– 1.57	0.51	2.49
Chemicals, rubber, plastic		– 2.44	– 0.08	– 5.69	0.10	– 0.05	– 4.62	– 2.03	0.20	– 5.74
Mineral products		0.44	0.01	– 1.07	0.21	– 0.07	– 1.47	1.86	0.36	– 1.44
Ferrous metals		0.44	– 0.21	– 1.41	0.17	– 0.05	– 1.40	1.50	– 0.35	– 2.61
Metals		– 2.44	– 0.76	– 1.64	– 2.66	– 0.40	4.55	– 3.19	– 1.84	– 3.20
Metal products		0.33	– 0.08	– 0.75	0.12	– 0.04	– 1.45	1.56	0.03	– 2.22
Automobiles and parts		– 0.82	– 0.23	– 4.47	0.16	– 0.16	– 5.11	– 2.24	– 0.31	– 9.46
Transport equipment		– 2.39	– 0.12	– 3.03	– 0.30	– 0.17	– 5.68	– 2.99	– 0.06	– 3.91
Electronic equipment		– 1.04	– 0.14	0.06	0.00	– 0.04	– 0.62	– 2.33	– 0.28	– 0.88
Machinery and equipment		– 0.69	– 0.03	– 1.71	0.08	– 0.04	– 2.67	– 0.35	0.20	– 4.00
Manufacturing		– 0.28	– 0.08	– 2.87	0.09	– 0.06	– 1.82	0.21	– 0.28	– 2.58

Scenario 1B) Export growth for Turkey (in %)		TTIP			CETA			Combined		
Sector	Target country	EU28	RoW	USA	EU28	RoW	CAN	EU28	RoW	All FTA partners
Electricity		1.28	0.24	2.24	0.52	− 0.08	2.09	4.20	0.59	− 1.99
Gas manufacturing, distribution		0.92	0.06	2.28	0.29	− 0.05	2.06	3.05	0.49	2.33
Water		2.35	0.00	2.02	0.67	− 0.15	− 1.58	6.23	0.49	3.37
Construction		1.36	0.22	1.41	0.40	− 0.02	− 1.31	4.23	1.02	− 2.04
Trade		3.26	0.01	2.33	0.49	− 0.15	− 1.52	5.86	0.57	2.72
Transport		1.60	0.07	1.60	0.53	− 0.13	− 0.38	4.87	0.43	1.96
Marine transport		0.59	− 0.03	1.64	− 0.31	− 0.14	− 6.56	− 3.62	0.02	− 3.45
Air transport		− 0.54	0.37	− 0.61	0.12	− 0.10	− 5.39	− 2.43	1.13	− 4.05
Communications		2.05	0.16	2.24	0.62	− 0.16	− 0.16	4.84	1.42	1.45
Financial services		2.59	0.20	2.91	0.57	− 0.15	0.56	6.12	1.14	3.07
Insurance		1.72	− 0.02	1.80	0.45	− 0.17	− 0.29	4.72	0.19	0.70
Business services		3.15	0.24	2.29	0.52	− 0.12	− 0.16	5.81	0.92	0.42
Leisure and other services		1.20	0.12	0.99	0.41	− 0.13	− 2.70	4.37	0.55	0.13
Public administration / law / health / education		2.51	0.33	2.44	0.67	− 0.23	0.17	6.40	3.25	2.55

Source: author's own calculations

Table 39: Findings for scenario 2C): output growth for Turkey by sector (in percent)

GTAP sector-number	Sector	Scenario 2C) Output growth for Turkey (in %)	GTAP sector-number	Sector	Scenario 2C) Output growth for Turkey (in %)
1	Rice	– 53.52	30	Wood	– 2.93
2	Wheat	– 19.72	31	Paper, publishing	– 1.67
3	Cereals	– 27.05	32	Petroleum, coal products	6.86
4	Vegetables, fruit, nuts	4.18	33	Chemicals, rubber, plastic	– 5.56
5	Oilseed	– 10.93	34	Mineral products	– 1.21
6	Sugar cane, sugar beet	1.30	35	Ferrous metals	– 3.19
7	Plant–based fibers	– 16.84	36	Metals	– 7.77
8	Agricultural crops	– 6.01	37	Metal products	– 1.59
9	Cattle, sheep, goats, horses	– 51.17	38	Automobiles and parts	– 4.93
10	Animal products	– 7.13	39	Transport equipment	– 4.10
11	Raw milk	– 3.97	40	Electronic equipment	0.91
12	Wool, silk	– 8.88	41	Machinery and equipment	– 4.70
13	Forestry	– 0.19	42	Manufacturing	1.97
14	Fishing	9.29	43	Electricity	0.31
15	Coal	– 17.98	44	Gas manufacturing, distribution	– 11.91
16	Oil	– 52.42	45	Water	3.64
17	Gas	– 58.47	46	Construction	2.89
18	Minerals	– 6.79	47	Trade	2.45
19	Meat: cattle, sheep, goats, horses	– 20.55	48	Transport	26.33
20	Meat products	2.85	49	Marine transport	15.51
21	Plant–based oils and fats	1.03	50	Air transport	35.60
22	Dairy products	– 23.17	51	Communications	4.07
23	Processed rice	– 52.11	52	Financial services	3.46
24	Sugar	– 0.05	53	Insurance	– 10.49
25	Food products	5.73	54	Business services	– 1.09
26	Beverages and tobacco	– 3.53	55	Leisure and other services	21.64
27	Textiles	– 4.83	56	Public administration/ law/health/education	1.05
28	Clothing	0.59			
29	Leather	2.35	57	Housing	3.15

Source: author's own calculations

Table 40: Findings for scenario 2C): changes in Turkish exports by sector

GTAP sector number	Sector	Scenario 2C) Δexports TUR – RoW (%)	Scenario 2C) Δexports TUR – EU28 (%)	GTAP sector number	Sector	Scenario 2C) Δexports TUR – RoW (%)	Scenario 2C) Δexports TUR – EU28 (%)
1	Rice	-14.91	588.21	29	Leather	0.72	0.70
2	Wheat	2.60	415.58	30	Wood	-6.69	-7.90
3	Cereals	-1.74	161.77	31	Paper, publishing	-10.68	-11.17
4	Vegetables, fruit, nuts	-4.53	45.76	32	Petroleum, coal products	-4.88	-5.33
5	Oilseed	-3.29	72.69	33	Chemicals, rubber, plastic	-8.64	-8.87
6	Sugar cane, sugar beet	-3.99	12.31	34	Mineral products	-8.23	-8.67
7	Plant-based fibers	-28.68	-1.20	35	Ferrous metals	-2.74	-2.99
8	Agricultural crops	-5.89	25.36	36	Metals	-8.80	-8.85
9	Cattle, sheep, goats, horses	-0.36	387.54	37	Metal products	-4.73	-5.21
10	Animal products	1.97	162.30	38	Automobiles and parts	-7.39	-7.39
11	Raw milk	-0.74	107.71	39	Transport equipment	-9.68	-9.62
12	Wool, silk	5.23	183.93	40	Electronic equipment	-4.57	-4.60
13	Forestry	-11.57	-11.56	41	Machinery and equipment	-7.25	-7.47
14	Fishing	-9.92	70.14	42	Manufacturing	-4.54	-4.71
15	Coal	-27.51	-27.54	43	Electricity	-11.06	108.74
16	Oil	-58.65	-58.91	44	Gas manufacturing, distribution	-12.92	88.57
17	Gas	-58.54	-58.47				
18	Minerals	-11.57	-11.58	45	Water	-18.00	-17.89
19	Meat: cattle, sheep, goats, horses	19.09	126.55	46	Construction	-15.00	-15.19
				47	Trade	-16.61	260.07
20	Meat products	3.66	145.13	48	Transport	-15.60	573.64
21	Plant-based oils and fats	0.39	210.65	49	Marine transport	-15.56	288.77
22	Dairy products	-6.53	880.93	50	Air transport	-12.88	233.94
23	Processed rice	15.61	1032.23	51	Communications	-16.36	337.54
24	Sugar	-5.05	141.35	52	Financial services	-17.95	174.57
25	Food products	0.59	190.35	53	Insurance	-16.92	62.83
26	Beverages and tobacco	-1.33	143.48	54	Business services	-16.14	109.45
27	Textiles	-10.04	-10.24	55	Leisure and other services	-12.45	736.42
28	Clothing	-4.42	-4.42	56	Public administration / law / health / education	-16.54	478.67

Source: author's own calculations

Table 41: Findings for scenario 3.2A): list of countries with export changes (in percent)

Scenario 3.2A) Export growth for Turkey	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
EU28	70.41	69.58	70.12	69.94	70.60	69.72	70.95
Austria	126.31	123.93	124.02	124.09	125.12	123.58	128.95
Belgium	58.64	58.61	59.20	59.64	58.93	58.51	59.20
Bulgaria	87.58	86.95	87.17	86.96	86.96	86.83	88.08
Cyprus	18.40	18.31	18.60	18.09	18.32	18.07	18.99
Czech Republic	20.28	19.32	20.34	20.61	21.03	20.26	20.33
Germany	84.06	82.93	83.76	83.81	84.74	83.29	85.22
Denmark	103.52	106.10	102.56	100.97	102.52	100.98	105.94
Spain	46.42	46.22	46.71	46.30	47.56	46.19	45.96
Estonia	32.51	31.96	32.19	31.87	32.38	31.78	32.38
Finland	61.97	62.08	60.32	61.23	61.79	61.10	63.85
France	44.43	43.74	44.91	44.37	45.32	44.52	44.15
Great Britain	103.72	103.08	103.59	103.53	104.04	103.29	103.60
Greece	49.06	50.93	50.73	49.80	50.70	50.89	50.09
Croatia	24.13	23.58	23.82	23.62	24.24	23.78	24.65
Hungary	46.30	45.76	46.11	46.29	46.54	45.66	46.72
Ireland	140.81	129.63	130.34	130.30	130.83	130.48	141.93
Italy	41.21	39.66	40.27	39.72	40.44	39.75	41.79
Lithuania	48.86	49.52	49.53	49.43	49.30	49.09	48.94
Luxembourg	212.11	213.71	209.24	210.08	211.37	210.68	217.56
Latvia	73.77	74.27	73.08	74.33	73.44	71.19	72.96
Malta	2.51	2.14	2.93	2.98	3.13	3.23	1.71
Netherlands	134.65	134.39	133.96	133.42	132.77	133.16	134.98
Poland	67.23	66.16	67.29	67.05	67.52	66.95	66.81
Portugal	141.10	138.87	138.72	138.06	141.09	137.93	142.92
Romania	9.01	8.25	8.89	8.83	8.97	8.73	9.06
Slovakia	15.95	14.92	15.91	16.88	16.32	15.50	17.18
Slovenia	6.15	5.85	7.01	6.94	7.34	6.83	5.79
Sweden	111.10	110.46	110.15	110.43	111.26	110.42	113.85
Canada	− 9.24	− 8.55	25.81	− 8.55	− 8.78	− 8.42	25.07
India	− 9.30	− 9.19	− 9.45	36.29	− 9.41	− 9.12	35.98
Japan	− 10.79	33.96	− 10.93	− 10.87	− 10.83	− 10.83	33.04
Austria	25.22	− 9.41	− 9.74	− 9.47	− 9.57	− 9.20	24.62
ASEAN	− 10.70	− 10.85	− 10.85	− 10.94	− 10.77	26.48	25.53
MERCOSUR	− 8.65	− 8.57	− 8.89	− 8.83	62.78	− 8.61	63.02
Central Asia	− 6.83	− 6.96	− 6.92	− 7.02	− 6.94	− 6.81	− 7.11

Source: author's own calculations

Table 42: Findings for scenario 3.2A): list of countries with import changes (in percent)

Scenario 3.2A) Import growth for Turkey	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
EU28	37.96	39.16	39.90	39.70	39.32	39.15	35.02
Austria	64.70	66.76	67.43	67.29	66.39	66.71	60.82
Belgium	25.59	25.52	26.03	25.53	26.07	25.64	23.65
Bulgaria	91.08	93.72	94.00	93.86	93.23	93.19	88.27
Cyprus	156.13	157.32	157.76	158.80	157.48	156.74	149.69
Czech Republic	22.03	22.68	23.10	22.89	22.87	22.67	20.31
Germany	21.66	22.58	23.28	23.05	22.88	22.61	18.98
Denmark	92.49	92.36	95.49	96.19	95.80	95.01	85.73
Spain	39.87	40.38	41.39	41.33	40.92	40.60	37.35
Estonia	19.31	19.72	20.28	20.32	19.77	20.34	18.11
Finland	13.03	13.59	14.56	14.54	14.33	14.28	10.67
France	38.82	39.74	40.50	40.73	39.79	40.05	35.63
Great Britain	64.32	65.45	66.80	66.24	66.20	65.35	62.42
Greece	48.85	51.51	52.05	52.63	51.44	51.43	44.70
Croatia	9.56	10.36	10.82	11.01	11.15	10.74	8.80
Hungary	64.37	65.16	65.80	65.58	62.07	65.28	59.36
Ireland	69.91	78.24	79.14	79.01	77.93	78.17	65.53
Italy	26.45	28.43	29.02	28.33	28.42	27.56	22.34
Lithuania	189.35	201.90	201.63	202.07	195.54	201.98	181.71
Luxembourg	127.93	130.12	131.29	131.69	131.11	131.67	125.97
Latvia	162.09	172.09	172.62	172.42	167.14	172.63	154.64
Malta	89.43	90.60	91.40	92.86	91.96	90.51	82.37
Netherlands	70.27	71.79	72.66	72.69	72.22	72.17	67.38
Poland	72.69	73.61	74.22	74.20	72.85	73.77	69.62
Portugal	35.62	36.91	37.96	38.24	37.38	37.27	32.43
Romania	24.03	25.07	25.50	25.47	25.16	24.97	21.85
Slovakia	14.19	14.99	15.22	14.78	15.14	15.02	12.56
Slovenia	22.21	23.05	23.45	23.51	23.54	23.15	20.55
Sweden	23.31	24.22	24.95	24.78	24.67	24.36	20.85
Canada	3.87	6.32	37.23	6.91	7.08	6.63	32.53
India	7.42	9.62	9.94	18.49	9.95	9.25	14.00
Japan	3.28	44.56	5.11	5.17	5.38	4.81	42.78
Austria	37.88	5.32	5.73	5.74	5.77	5.31	36.79
Central Asia	2.51	6.21	5.62	6.72	6.69	6.16	1.45
MERCOSUR	– 5.34	– 3.76	– 3.36	– 3.52	50.91	– 4.54	44.38
ASEAN	4.24	5.18	5.48	5.41	5.52	40.89	37.33

Source: author's own calculations

Table 43: Findings for scenario 3.2B): list of countries with export changes (in percent)

Scenario 3.2B) Export growthfor Turkey	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1– 6)
EU28	71.10	69.77	70.15	69.94	70.60	69.72	71.77
Austria	127.21	124.11	124.05	124.09	125.12	123.58	129.96
Belgium	59.50	58.81	59.25	59.64	58.93	58.51	60.17
Bulgaria	87.90	87.08	87.19	86.96	86.96	86.83	88.50
Cyprus	19.36	18.39	18.70	18.09	18.32	18.07	20.07
Czech Republic	21.57	19.50	20.45	20.61	21.03	20.26	21.85
Germany	84.79	83.12	83.78	83.81	84.74	83.29	86.07
Denmark	103.91	106.25	102.54	100.97	102.52	100.98	106.39
Spain	47.09	46.38	46.75	46.30	47.56	46.19	46.76
Estonia	32.91	32.07	32.20	31.87	32.38	31.78	32.85
Finland	62.89	62.23	60.37	61.23	61.79	61.10	64.89
France	45.20	43.99	44.96	44.37	45.32	44.52	45.15
Great Britain	104.24	103.27	103.60	103.53	104.04	103.29	104.18
Greece	49.75	51.06	50.79	49.80	50.70	50.89	50.91
Croatia	24.78	23.73	23.87	23.62	24.24	23.78	25.48
Hungary	47.00	45.94	46.17	46.29	46.54	45.66	47.58
Ireland	140.69	129.81	130.28	130.30	130.83	130.48	141.81
Italy	41.89	39.86	40.31	39.72	40.44	39.75	42.66
Lithuania	49.52	49.67	49.56	49.43	49.30	49.09	49.72
Luxembourg	211.61	213.82	209.12	210.08	211.37	210.68	216.86
Latvia	74.26	74.45	73.10	74.33	73.44	71.19	73.61
Malta	3.23	2.31	2.98	2.98	3.13	3.23	2.60
Netherlands	135.47	134.53	133.97	133.42	132.77	133.16	135.79
Poland	67.98	66.34	67.33	67.05	67.52	66.95	67.70
Portugal	141.89	139.10	138.75	138.06	141.09	137.93	143.85
Romania	9.83	8.42	8.97	8.83	8.97	8.73	10.10
Slovakia	17.05	15.11	16.01	16.88	16.32	15.50	18.54
Slovenia	6.88	6.19	7.08	6.94	7.34	6.83	6.91
Sweden	111.52	110.66	110.15	110.43	111.26	110.42	114.37
Canada	− 8.35	− 8.42	53.42	− 8.55	− 8.78	− 8.42	54.26
India	− 8.56	− 9.03	− 9.36	36.29	− 9.41	− 9.12	37.67
Japan	− 10.37	32.88	− 10.93	− 10.87	− 10.83	− 10.83	32.80
USA	44.54	− 9.29	− 9.71	− 9.47	− 9.57	− 9.20	44.09
Central Asia	− 5.52	− 6.82	− 6.80	− 10.94	− 10.77	26.48	− 5.60
MERCOSUR	− 8.11	− 8.37	− 8.84	− 8.83	62.78	− 8.61	64.57
ASEAN	− 10.13	− 10.78	− 10.82	− 7.02	− 6.94	− 6.81	26.32

Source: author's own calculations

Table 44: Findings for scenario 3.2B): list of countries with import changes (in percent)

Scenario 3.2B) Import growth for Turkey	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
EU28	36.61	38.69	39.84	39.70	39.32	39.15	33.29
Austria	64.10	66.45	67.43	67.29	66.39	66.71	60.01
Belgium	24.46	25.17	25.97	25.53	26.07	25.64	22.19
Bulgaria	88.43	93.57	93.86	93.86	93.23	93.19	85.59
Cyprus	155.38	157.58	157.88	158.80	157.48	156.74	149.45
Czech Republic	21.39	22.05	23.08	22.89	22.87	22.67	19.09
Germany	20.34	21.96	23.21	23.05	22.88	22.61	17.12
Denmark	92.17	92.25	95.56	96.19	95.80	95.01	85.46
Spain	38.92	39.82	41.37	41.33	40.92	40.60	35.94
Estonia	17.73	19.45	20.11	20.32	19.77	20.34	16.17
Finland	12.26	13.36	14.45	14.54	14.33	14.28	9.63
France	37.29	39.18	40.44	40.73	39.79	40.05	33.63
Great Britain	63.56	65.04	66.81	66.24	66.20	65.35	61.36
Greece	45.65	51.36	51.94	52.63	51.44	51.43	41.52
Croatia	7.72	10.03	10.63	11.01	11.15	10.74	6.52
Hungary	63.52	64.77	65.78	65.58	62.07	65.28	58.25
Ireland	68.89	78.05	79.15	79.01	77.93	78.17	64.48
Italy	25.51	28.04	28.98	28.33	28.42	27.56	21.12
Lithuania	152.26	201.83	199.35	202.07	195.54	201.98	145.35
Luxembourg	129.13	130.01	131.48	131.69	131.11	131.67	127.36
Latvia	132.98	171.92	170.77	172.42	167.14	172.63	125.99
Malta	88.68	90.45	91.46	92.86	91.96	90.51	81.63
Netherlands	68.61	71.45	72.55	72.69	72.22	72.17	65.40
Poland	71.56	72.92	74.16	74.20	72.85	73.77	67.87
Portugal	34.96	36.74	37.98	38.24	37.38	37.27	31.68
Romania	22.28	24.67	25.36	25.47	25.16	24.97	19.70
Slovakia	13.33	14.52	15.16	14.78	15.14	15.02	11.26
Slovenia	21.51	22.74	23.42	23.51	23.54	23.15	19.58
Sweden	22.72	23.99	24.90	24.78	24.67	24.36	20.04
Canada	1.17	6.19	67.43	6.91	7.08	6.63	57.05
India	6.40	9.46	9.91	18.49	9.95	9.25	12.79
Japan	2.23	68.03	5.07	5.17	5.38	4.81	64.48
USA	62.97	5.03	5.43	5.74	5.77	5.31	60.80
MERCOSUR	– 7.80	– 3.88	– 3.46	6.72	6.69	6.16	40.35
ASEAN	3.37	4.99	5.31	– 3.52	50.91	– 4.54	35.97
Central Asia	– 0.33	6.02	4.75	5.41	5.52	40.89	– 2.09

Source: author's own calculations

Table 45: Findings for scenario 4C): list of countries with export changes (in percent)

Scenario 4C) Export growth for Turkey	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
EU28	5.48	5.01	5.61	− 6.91	− 6.28	− 7.05	− 1.42
Austria	12.32	11.17	11.55	2.07	2.67	1.72	2.22
Belgium	2.90	3.13	4.02	− 8.95	− 8.80	− 9.43	− 3.11
Bulgaria	9.11	8.42	8.59	− 2.91	− 2.65	− 3.03	4.28
Cyprus	41.05	40.84	41.02	16.28	16.64	16.36	41.11
Czech Republic	− 2.80	− 3.63	− 2.61	− 16.20	− 15.80	− 16.45	− 5.10
Germany	6.22	5.83	6.59	− 5.57	− 4.82	− 5.87	− 0.74
Denmark	10.06	10.91	9.57	− 0.68	0.62	− 0.61	− 4.89
Spain	− 1.05	− 1.35	− 0.75	− 14.22	− 13.22	− 14.31	− 6.63
Estonia	− 1.24	− 1.84	− 1.29	− 15.55	− 14.88	− 15.50	− 4.00
Finland	1.47	1.41	0.40	− 9.64	− 9.19	− 9.71	− 2.26
France	0.46	− 0.37	0.83	− 12.83	− 12.06	− 12.77	− 4.64
Great Britain	6.43	6.32	6.69	− 3.55	− 2.98	− 3.81	− 4.90
Greece	23.37	25.43	25.17	5.23	6.24	6.22	20.78
Croatia	− 28.19	− 28.54	− 28.37	− 28.82	− 28.29	− 28.72	− 48.80
Hungary	10.60	9.75	10.37	− 3.54	− 3.22	− 3.99	4.12
Ireland	16.45	11.91	12.15	5.65	6.22	5.66	3.65
Italy	5.65	4.39	4.96	− 8.71	− 8.08	− 8.68	− 0.72
Lithuania	9.40	9.85	9.94	− 4.23	− 3.81	− 4.30	6.03
Luxembourg	42.12	42.42	41.33	38.71	39.49	38.62	9.95
Latvia	17.62	17.71	17.19	6.03	5.78	4.11	4.88
Malta	12.86	12.35	13.26	− 4.26	− 4.05	− 4.08	11.31
Netherlands	4.84	5.17	5.20	− 2.99	− 3.01	− 3.27	− 4.63
Poland	6.15	5.33	6.34	− 7.57	− 7.01	− 7.58	1.50
Portugal	12.40	10.90	11.47	− 0.18	1.14	− 0.41	1.31
Romania	2.78	1.93	2.52	− 13.01	− 12.79	− 13.10	2.33
Slovakia	1.55	0.63	1.49	− 12.63	− 12.91	− 13.62	0.98
Slovenia	− 0.43	− 0.24	0.88	− 16.22	− 15.76	− 16.26	− 1.93
Sweden	3.06	2.77	2.87	− 7.50	− 6.80	− 7.46	− 2.94
Canada	− 0.33	0.28	38.30	0.47	0.34	0.57	39.35
India	0.05	0.08	− 0.24	48.42	− 0.11	0.06	50.42
Japan	3.52	55.83	3.19	4.14	4.32	4.10	57.16
USA	41.69	1.85	1.44	1.94	1.93	2.18	42.80
MERCOSUR	1.09	1.09	0.70	0.39	77.64	0.58	81.39
ASEAN	3.32	3.02	2.97	3.84	4.18	46.21	46.31
Central Asia	0.39	0.12	0.13	− 0.13	0.07	0.05	1.06

Source: author's own calculations

Table 46: **Findings for scenario 4C): list of countries with import changes (in percent)**

Scenario 4C) Import growth for Turkey	TTIP	Japan	CETA	India	MERCOSUR	ASEAN	Combined (1–6)
EU28	5.68	6.60	7.24	– 4.96	– 5.24	– 5.30	– 0.66
Austria	8.18	9.49	10.01	– 1.24	– 1.89	– 1.56	– 0.80
Belgium	0.43	0.14	0.51	– 12.71	– 12.40	– 12.65	– 2.88
Bulgaria	16.77	18.79	19.06	4.69	4.21	4.37	8.64
Cyprus	14.72	15.55	15.92	7.84	7.14	7.02	– 4.91
Czech Republic	– 2.54	– 2.02	– 1.59	– 13.30	– 13.36	– 13.46	– 5.96
Germany	1.70	2.38	3.04	– 8.83	– 8.97	– 9.14	– 3.15
Denmark	5.76	5.96	7.58	– 1.57	– 1.80	– 2.08	– 7.75
Spain	1.47	1.91	2.74	– 10.13	– 10.35	– 10.57	– 3.65
Estonia	– 21.32	– 21.00	– 20.63	– 27.18	– 27.69	– 27.14	– 23.57
Finland	– 4.30	– 3.76	– 2.88	– 14.91	– 15.09	– 15.07	– 7.79
France	9.67	10.44	11.12	– 0.65	– 1.40	– 1.09	2.74
Great Britain	3.00	3.49	4.67	– 6.75	– 6.80	– 7.20	– 5.13
Greece	37.77	40.15	40.61	19.91	18.99	19.09	28.94
Croatia	– 37.52	– 37.04	– 36.76	– 35.80	– 35.72	– 35.95	– 57.73
Hungary	13.57	14.29	14.79	5.08	2.12	4.92	6.02
Ireland	14.48	19.96	20.64	7.22	6.72	6.77	3.04
Italy	9.46	11.37	11.91	– 2.92	– 2.78	– 3.48	2.86
Lithuania	15.42	19.85	19.91	15.95	13.12	15.95	8.84
Luxembourg	14.22	15.46	16.09	7.54	7.23	7.63	– 8.89
Latvia	11.04	14.62	15.02	9.94	7.63	10.05	5.17
Malta	2.83	3.92	4.30	– 6.97	– 7.35	– 7.96	– 10.90
Netherlands	10.18	11.07	11.72	0.09	– 0.10	– 0.18	3.57
Poland	37.30	38.13	38.73	28.57	27.10	28.27	23.73
Portugal	7.72	8.89	9.73	– 4.32	– 4.93	– 4.89	– 0.23
Romania	0.44	1.31	1.68	– 9.52	– 9.69	– 9.81	– 2.63
Slovakia	– 10.83	– 10.20	– 9.91	– 20.34	– 20.12	– 20.16	– 13.85
Slovenia	1.34	2.16	2.56	– 10.07	– 10.11	– 10.28	– 3.12
Sweden	– 8.32	– 7.55	– 6.96	– 16.89	– 17.00	– 17.12	– 13.58
Canada	– 3.61	– 1.55	27.36	– 0.94	– 0.87	– 1.19	22.36
India	– 7.82	– 6.15	– 5.82	4.89	– 3.36	– 3.90	– 2.69
Japan	– 1.15	38.18	0.58	4.87	5.02	4.53	36.03
USA	27.26	– 2.98	– 2.53	– 1.05	– 1.16	– 1.42	25.12
ASEAN	– 5.41	– 4.57	– 4.23	– 2.97	– 2.98	30.65	24.89
Central Asia	– 7.28	– 4.13	– 4.49	– 4.03	– 4.18	– 4.50	– 9.01
MERCOSUR	– 8.74	– 7.06	– 6.66	– 6.53	49.79	– 7.49	42.89

Source: author's own calculations

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List of figures

List of tables

List of abbreviations

ASEAN	Association of Southeast Asian Nations	MFN	Most Favoured Nation
AUT	Republic of Austria	MLT	Republic of Malta
BEL	Kingdom of Belgium	NAFTA	North American Free Trade Agreement
BGR	Republic of Bulgaria	NLD	Kingdom of the Netherlands
CAN	Canada	POL	Republic of Poland
CETA	Comprehensive Economic and Trade Agreement (EU–Canada)	PRT	Republic of Portugal
		ROU	Republic of Romania
CU	Customs Union	RoW	Rest of the World
CYP	Republic of Cyprus	SVK	Slovak Republic
CZE	Czech Republic	SVN	Republic of Slovenia
DEU	Federal Republic of Germany	SWE	Kingdom of Sweden
DNK	Kingdom of Denmark	TTIP	Transatlantic Trade and Investment Partnership (EU–USA)
EEA	European Economic Area		
EFTA	European Free Trade Association	UAE	United Arab Emirates
ESP	Kingdom of Spain	USA	United States of America
EST	Republic of Estonia	USD	United States Dollar
EU	European Union		
EU28	European Union 28		
FIN	Republic of Finland		
FRA	Republic of France		
FTA	Free Trade Agreement		
GBR	United Kingdom of Great Britain and Northern Ireland		
GDP	Gross Domestic Product		
GL–Index	Grubel Lloyd Index		
GRC	Hellenic Republic		
HRV	Republic of Croatia		
HUN	Republic of Hungary		
IMF	International Monetary Fund		
IND	Republic of India		
IRL	Republic of Ireland		
ITA	Republic of Italy		
JPN	Japan		
LTU	Republic of Lithuania		
LUX	Grand Duchy of Luxembourg		
LVA	Republic of Latvia		
MERCOSUR	Southern Common Market		

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