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"Effects of TTIP for the German automotive sector: an outlook based on the effects of the Korea-EU FTA (KOREU)"

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List of Abbreviations

AALA	American Automobile Labelling Act
AFE	Average Fuel Efficiency
Art.	Article
AU	African Union
AVE	Ad-valorem (Tariff) Equivalent
Bhp	Brake horsepower
CAFE	Corporate Average Fuel Economy
cc	cubic centimetre
CIF	Cost, Insurance and Freight
CU	Customs Union
ECE (UN-)	Economic Commission for Europe (United Nations)
EPA	Environmental Protection Agency
EU	European Union
EUR	Euro (€)
FMVSS	Federal Motor Vehicle Safety Standards
FTA	Free Trade Agreement
FTP	Federal Test Procedure
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
IGO	Intergovernmental Organization
JV	Joint Venture
KRW	Korean Won (₩)
KOREU FTA	Korea-EU Free Trade Agreement
KORUS FTA	Korea-US Free Trade Agreement
LCR	Local Content Requirement
LEV	Low Emissions Vehicle
NMOG FAS	Non-Methane Organic Gases Fleet Average System
NTB	Non-tariff Barrier to Trade
OAS	Organization of American States
OBD	On-Board Diagnostics
p.a.	per annum
p.p.	percentage point

PTA	Preferential Trade Agreement
R&D	Research and Development
SOE	State-Owned Enterprise
SUV	Sport Utility Vehicle
TB	Tariff Barrier to Trade
TRIPS	Trade-Related Aspects of Intellectual Property
TTIP	Transatlantic Trade and Investment Partnership
UK	United Kingdom
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
US	United States (of America)
WTO	World Trade Organization
WZ	Wirtschaftszweig (Economic Sector)
XRT	Exchange Rate
yoy	year-over-year

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Abstract

This paper addresses the potential outcomes of the proposed TTIP free trade agreement between the EU and US from the perspective of the German automotive industry. The outlook is based on the experiences made with the Korea-EU FTA implemented in 2011. The Korea-EU FTA is the first of its kind to include an automotive sector-specific annex that is aimed at abolishing non-tariff barriers to trade. After a thorough analysis of the German automobile industry's export structure and performance in key export destinations, the paper shows how German diesel automobiles with premium quality have driven their market share in South Korea. An analysis of the non-tariff barriers in existence prior and after the FTA shows that only about one-third of them have successfully been abolished. This is reflected in the marginal price decrease of German vehicles compared between 2009 and 2014. However, also an increase in volume and value of German automobiles traded to South Korea is identified. The reason for this is found to be rooted in the elimination of immeasurable socio-economic non-tariff barriers rather than by those of administrative or procedural nature. This paper discusses the non-tariff barriers that are in place on the US automotive market and suggests improvements for TTIP that should be incorporated based on the experiences with the Korea-EU FTA. The final outlook presents a positive impact of TTIP for the German automotive industry.

1 Introduction

Free trade agreements (FTAs)[1] have become a popular instrument for states to enter into bilateral or plurilateral trade alliances with other countries in order to bypass the WTO's principle of non-discrimination (Griswold, 2003, p. 1) as well as the repeatedly failed and slow multilateral negotiation efforts at the current Doha Round that was launched in 2001 (Erixon & Lee-Makiyama, 2010, p. 2; Berceanu, 2013). Especially East Asian states over the past decades have created an extensive network of FTAs often referred to as "spaghetti bowl" in the literature due to its vastness and complexity (Flamm & Köllner, 2011, pp. 1-2). Although the EU already has more than

[1] It is important to highlight that the usage of the abbreviation "FTA" is being used inconsistently in the literature: Some authors define FTAs as "free trade areas" (August, et al., 2009, p. 37) whilst other sources denominate them "free trade agreements" (Park & Rhee, 2014, p. 2). Ultimately, both cases refer to the same kind of international trade-fostering agreement entered into by states, however, for the purposes of this paper the abbreviation "FTA" will be used to refer to "free trade agreements".

fifty FTAs in force with other states (EC, 2013a, p. 6) the Transatlantic Trade and Investment Partnership (TTIP) which is currently under negotiation with the United States represents an unprecedented scope in trade liberalisation efforts. An FTA between these two parties would unite the world's two largest economies, which together account for about 44% of global economic output, in a common duty-free area (Herrmann, 2014, p. 7). At the same time, no other FTA ever before has been as disputed as TTIP. On the one hand consumer protection groups are warning about the abolition of social and environmental laws, the introduction of unlabelled genetically modified meats and even the annihilation of the democratic order (ATTAC, 2015). On the other hand industry leaders predict a leap in prosperity not only for the negotiating parties but for the entire global economy through abandoned import tariffs as well as harmonised rules and regulations (VDA, 2014).

An example of a FTA that has already been successfully negotiated and entered into force on 1st July 2011 is the Korea-EU FTA (KOREU) between the EU and South Korea (Cooper, et al., 2011, p. 2). At the time, it was the most extensive FTA the EU had ever negotiated (Erixon & Lee-Makiyama, 2010, p. 1) and was the first to include sectoral annexes specifically aimed at the abolition of non-tariff barriers to trade (NTBs) in certain industries including automobiles[2] (EC, 2010, p. 3). Taking into consideration also the Korea-US FTA (KORUS) which became effective on 15th March 2012 (USTR, 2012), South Korea is the first nation to have successfully negotiated FTAs with both the EU and the US. Therefore Korea represents a suiting candidate for an analysis of FTA effects on the German automotive sector in order to forecast the impact of TTIP.

1.1 Objective

This paper's main objective is to utilise the results of a thorough analysis of the effects that the KOREU FTA had on German automotive manufacturers and whether it successfully abolished NTBs in order to find an answer to the question if TTIP can be expected to similarly benefit German importers to the US automotive market. The way of investigation and the underlying additional questions that need to be answered in order to achieve this aim are outlined in the following section.

[2] For the purposes of this paper the terms "automobile" and "vehicle" only incorporate passenger vehicles whereas commercial vehicles are excluded from the analysis.

1.2 Way of Investigation

To find a qualified answer to the objective posed above this paper will be divided as follows. First of all in chapter 2, the relevant fundamentals of free trade will be introduced starting with the demarcation of exports from other market entry modes, to the separation of tariff and non-tariff barriers to trade and how the latter can be quantified, and to the utilisation of different approaches to define FTAs in general as well as the KOREU FTA in specific.

In chapter 3 the focus will be put on the automotive sector beginning with the examination of the German automotive export structure in general and what kinds of vehicles are popular in which key export destinations around the globe. Then follows a detailed analysis of the Korean automotive market from the German point of view that includes a look into the NTBs in place prior to the KOREU FTA and how German vehicles compete against other importers to the Korean market as well as what makes them successful.

Chapter 4 will firstly answer the question whether the KOREU FTA was successful in abolishing the NTBs that were identified to obstruct German automotive imports to Korea. Secondly, it will analyse if the FTA has created growth in the trade volume and trade value of automobiles. Thirdly, a method to quantify the monetary gains of the discovered NTB abolitions will be applied to review if the FTA has actually made German automobiles less expensive in Korea. The last two sections of chapter 4 are then committed to predict the effects of TTIP on the German automotive sector. It includes recommendations of how the US NTBs can potentially be abolished while considering the positive and negative experiences made with the KOREU FTA and afterwards will make a forecast of how German automotive exports to the US can be expected to develop taking into account this paper's previous findings. Finally, chapter 5 will provide a conclusion with an answer to the initially posed objective.

2 The fundamentals of free trade

2.1 Definition of exports

The most basic definition of trade refers to the export and import of goods and services. For the purpose of this paper, only goods are of interest since the products covered are automobiles. *Exporting* is the process of shipping a good abroad to a buyer located in a country other than one's home country, whereas *importing* is the

process of receiving goods into one's home market from a provider located in a country abroad (Schaffer, et al., 2009, pp. 6-7). Amending "trade" with the term "free" implies that exports and imports can leave their countries of origin and enter their countries of destination freely without any hindrance. From a company point-of-view exporting is the first step in the internationalisation process with the aim of seeking new sales markets. Therefore, exporting can be classified as a foreign market entry mode, which coexists with other ones such as licensing, franchising, joint ventures and wholly-owned subsidiaries. The mentioned entry modes differ in the extent of commitment, risk-taking and capital required (Davis, 2006, p. 24) as visualised in table 1. Many authors have thoroughly dealt with the theories of entry mode decisions and developed numerous frameworks that conceptualise the decision-making process (Tykesson & Alserud, 2011, pp. 3-4). However, for the intents of this thesis the focus will only be put on exports as an entry mode.

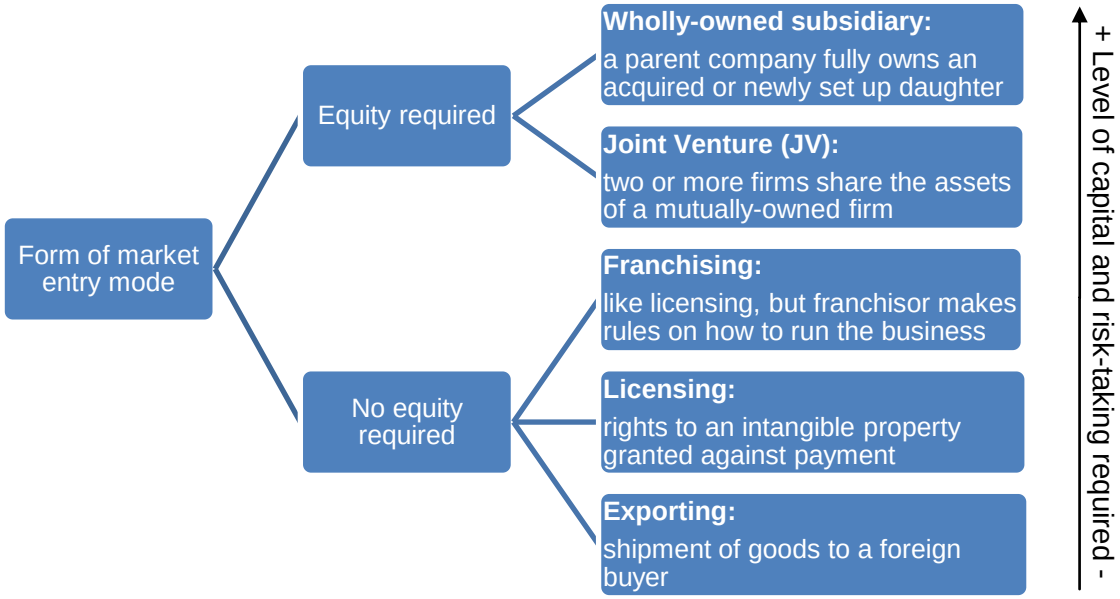

Table 1: Forms of foreign market entry modes (own table based on Pan & Tse, 2000, p. 538)

For the German economy exports are of high importance with 1,133.5 billion Euros worth of goods and services having been shipped abroad in 2014 (DIHK, 2014). Total automobile exports from Germany in 2014 had a value of 202.6 billion Euros which made the German automotive industry the most important contributor to the country's export surplus of 217 billion Euros and means 17.9% of all exports were automobiles. Furthermore, the high export quota in the automotive sector of 76.8% (VDA, 2015b), as compared to an average of 40% across all industries, shows the

export-orientation of German automobile manufacturers (DESTATIS, 2014). This quota still increases if German automobiles assembled in plants outside of Germany are taken into consideration. This is due to the fact that in addition to the 5.604.026 vehicles produced domestically in 2014, 9.338.528 units were manufactured in foreign-based production (VDA, 2015a). Apart from other EU member states the most important foreign production location for German automotive producers is China followed by South America (Schade, et al., 2014, p. 65). The vehicles manufactured by such outsourced production plants are not subject to possible tariff barriers or other export-related obstacles because they are already in vicinity of their target market. Therefore, they do not directly benefit from effects of newly installed FTAs, are not classified as exports in this paper and thus do not represent a relevant market entry mode. However, it is important to keep in mind that in order to enter a market by modes like Joint Ventures (JVs) or wholly-owned subsidiaries, a large resource commitment has to be made prior to the sale of the first produced good. Afterwards, the equity-based JV is likely to offer a higher control of the operation and closer proximity to the market and its culture (Pan & Tse, 2000, p. 538).

2.2 Definition of barriers to trade

For a long time, economists have encouraged the implementation of free trade conditions in the world market. Latest by the time of Adam Smith's absolute advantage theory in his work "The Wealth of Nations" free trade had become the ideal to strive for in the opinions of most economic scholars (Krugman & Obstfeld, 2009, p. 213). However, over the years there have also been critical voices towards free trade such as the reproach that it destroys jobs in the home market through imports (Irwin, 2009, p. 105).

2.2.1 Differentiating tariff and non-tariff barriers to trade

FTAs, by definition, are instruments that agree upon abolishing impediments to free trade between states, namely tariff barriers to trade (TBs) and NTBs. A TB is a percentage that has to be paid upon entry of the good into the country either as a percentage of the good's value (ad valorem tariffs) or as a fixed amount of money per imported good (flat or specific tariffs)[3] (Schaffer, et al., 2009, p. 290). The simplest case of a move towards free trade would be the elimination of a tariff. As becomes

[3] The terms "tariff" and "duty" are used interchangeably in the literature.

evident in table 2, if a tariff was in place in an economy before and is then being abolished, producers and consumers will experience net gains. These net gains amount to the areas of the triangles which represent the production and consumption distortions respectively caused by the tariff.

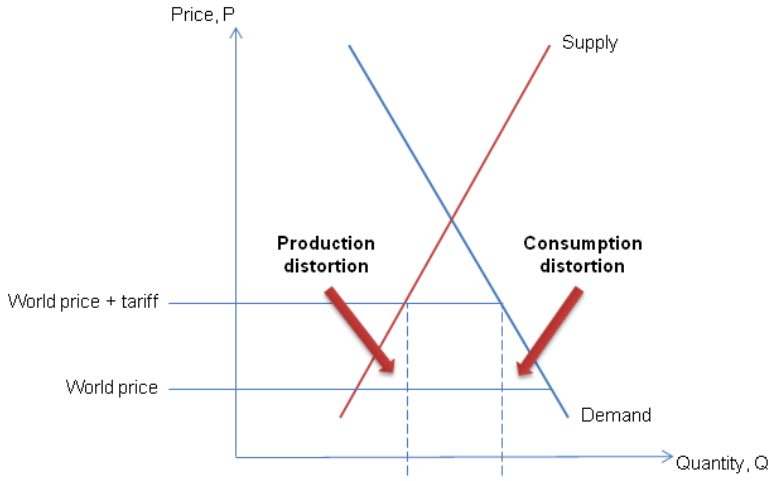

Table 2: Effects of tariff abolition in an economy (own graph based on Krugman & Obstfeld, 2009, p. 213)

Due to the achievements of the Uruguay Round which lasted from 1986 to 1994 and resulted in the creation of the WTO, most tariffs that were in place before were decreased by an average amount of 40%. Computers and other electronic goods experienced tariff reductions of 50 to 100% (Schaffer, et al., 2009, p. 303). This means that the major part of the WTO's work on abolishing TBs has already been successfully concluded and their focus has shifted towards NTBs.

NTBs represent all barriers to trade that are not a tariff and can come in direct or indirect form. "Direct non-tariff trade barriers include those barriers that specifically limit the import of goods and services, such as embargoes and quotas." (Schaffer, et al., 2009, p. 290). Since embargoes ban all trade with one specific state they are considered to be more of a political instrument than an economical one. A quota on the other hand primarily serves an economic purpose by limiting the number of goods of a certain kind allowed to be imported to a country. It is mostly used to protect a state's domestic industry of the good in restriction. However, quotas disturb the market price mechanism by imposing an artificial supply shortage. Thus, consumers may experience rising prices due to the monopolistic position taken by those importers who receive a share of the quota (Schaffer, et al., 2009, p. 291).

Viewed from the outside, indirect non-tariff barriers to trade appear to be completely in line with the WTO's regulations of non-discrimination. However, if they are actually put into action they make the import of certain goods more expensive for the seller. Governmental interference with the volume, the composition and the direction of traded goods, in the broadest definition, are all considered NTB practices (Walter, 1969, p. 1). Important examples are technical barriers to trade (TBTs) and administrative as well as procedural obstacles that discourage or restrict the import of goods (Beghin, 2006, p. 4). In 1995 the WTO recognized the potential harmfulness of TBTs and adopted the Agreement on Technical Barriers to Trade in an attempt to abolish all TBTs that present "unnecessary obstacles to international trade" (WTO, 2015c, p. 1). Since governments frequently use NTBs to control negative effects of vehicles such as road accidents, impacts on human health and environmental pollution they are a common occurrence in the context of the automotive industry (Horj, et al., 2014, p. 4).

2.2.2 Methods of quantifying non-tariff barriers to trade

As far as the systematic identification and catalogisation of NTBs in a globally accepted framework is concerned, the United Nations Conference on Trade and Development (UNCTAD) has successfully developed a nomenclature called the Multi-Agency Support Team which in its latest form was publicised in 2012 and classifies NTBs by product, country and type (Cadot & Gourdon, 2012, pp. 13-14; Dean, et al., 2008, p. 1). However, in order to understand the monetary impact of NTBs it is inevitable to quantify it and make it comparable to other NTBs as well as tariff barriers. Therefore, in this chapter a simple and at the same time reliable method of making those NTBs that are relevant for this paper measurable shall be found.

The issue of developing a measure to quantify NTBs has been elaborated on by many authors over the past decades and two distinctly different approaches have evolved. It is possible to measure NTBs based on traded quantities or based on differences in price levels (Cadot & Gourdon, 2012, p. 7). The first method basically compares the value of the pre-NTB trade flow with that of the post-NTB trade flow on an econometrical basis utilising the fact that NTBs increase the price of a domestic good while decreasing the quantity of imported goods (Ferrantino, 2006, p. 24). This method, in addition to quantifying NTBs, is often used to analyse at a larger scale the

effects of certain trade policies (Ferrantino, 2006, p. 24). For the purposes of this paper, a price-based approach is more appropriate because the declared goal is to evaluate the monetary effect of abolishing a set of NTBs on the price of a single traded automobile. Price-based methods represent a simple comparison of averages-method with possible case-by-case applicability, that measure the monetary value of a NTB as the difference between the price of a good on a market distorted by a NTB and the price of the same good on a similar market without the NTB. The value of the NTB is then expressed as an ad-valorem tariff equivalent (AVE) (Horj, et al., 2014, p. 7) which depicts the price difference, just like an ordinary ad-valorem tariff where the good is subjected to a duty based on its value (Cadot & Gourdon, 2012, p. 8). There are numerous weaknesses of the price-comparison method that should be addressed. The most important one is the fact that the quantifiable price gap between a market with and one without barriers can only ever depict the cumulated monetary value of all NTBs together. The price effect of one single NTB cannot be separated from the others (Ferrantino, 2006, p. 28). Deardorff & Stern also note that it cannot exclude the market conditions of supply and demand which means that “two NTBs in different markets that are in all formal respects identical could have quite different effects on actual prices and quantities in the two markets if supply conditions differ” (Deardorff & Stern, 1997, p. 7). Another distorting factor of comparing prices is that these include the profit margins of the producers which can vary considerably (Ferrantino, 2006, p. 23). However, an advantage of this method is that retail prices are easy to obtain while data on the prices at earlier production stages is harder to come by (Ferrantino, 2006, p. 23).

For the application of the method in the context of this thesis it is therefore of high importance that comparable data in terms of vehicle price segment, point in time, exchange rate and profit margin (mass versus premium producer) is obtained. An aspect that would go beyond the scope of this paper due to the high unreliability of the available data is to calculate a single AVE for each of the numerous NTBs in place. Apart from the fact that the chosen price-comparison method cannot provide such a detailed analysis, even those methods which are theoretically capable to evaluate the effects of single NTBs (e.g. econometric methods that analyse trade flows for numerous countries and apply regression methods to calculate correlations between NTBs among these countries) can only provide insecure results because

the correlation analysis is likely to be distorted by a general tendency of governments to not only use one but multiple restrictive measures at a time (Ferrantino, 2006, p. 28). If all of the above-mentioned factors are considered, the price-comparison method can provide reliable data on the monetary value of the NTBs in the form of a comparable AVE. In an ideal case the AVE would be 0%, however, due to shipping and insurance costs this is almost impossible to achieve in reality. The application of the method will follow in chapter 4.1.2 where the retail prices of German vehicles of different price segments in Korea will be compared at the time before the introduction of the KOREU FTA and the time afterwards. The results will make an evaluation of the effectiveness of the KOREU FTA in terms of possible NTB-abolition.

2.3 Definition of FTAs

FTAs are a WTO-acknowledged way for states to bypass the WTO's General Agreement on Tariffs and Trade's (GATT) basic norms of non-discriminatory most-favoured nations (MFN) treatment and reciprocity found in Art. I GATT (Bagwell & Staiger, 1999, p. 53; Irwin, 2009, p. 262). Unlike multilateral agreements which are closed between a large number of nations like the UN Charter or the WTO's (World Trade Organisation) GATT, FTAs are categorised as bilateral or plurilateral pacts between a limited number of ratifying members (Irwin, 2009, p. 260). They abolish all tariffs and ideally also numerous NTBs. This chapter will provide an introduction to the ideas and intentions that promote the establishment of this tool in the global economy. Most importantly, it will define rules to clearly distinguish it from related forms of economic cooperation in order to find the definition that suits this thesis best.

2.3.1 Legal definition

The attempt to exactly determine what a FTA is from the legal perspective quickly leads to the provisions of the WTO and its three agreements which are generally considered the pillars of WTO trade rules: the GATT for the international trade of goods, the General Agreement on Trade in Services (GATS) for the international trade of services and the Trade-Related Aspects of Intellectual Property Rights (TRIPS) concerning the international protection of intellectual property (WTO, 2015a). Among these the GATT and GATS contain norms regarding the establishment of what the WTO calls "regional trade agreements" (WTO, 2015b). However, as noted by Matsushita, et al., this term can be misleading since one third of all agreements

supervised at the moment are not between countries that are actually in close geographical proximity but further apart. Instead, the usage of the term “preferential trade agreement” (PTA), which was established by the social sciences and can be regarded as the generic term for preferential trade schemes of this nature, is suggested (Matsushita, et al., 2006, pp. 548f.). In this respect, Irwin also takes into account that the preferential and discriminatory character of FTAs makes the denomination “PTA” more suitable (Irwin, 2009, p. 262). Thus, for the purposes of this paper the term “PTA” shall be used as a means to help categorising the different types of PTAs named non-uniformly in the GATT and GATS as will be discussed below. Also, in order for the reader to easily understand the differences between the different types of PTAs, table 3 provides a basic overview:

Name of PTA:	Provisions:	Extent:	Type of trade:
Customs Union (CU)	GATT: Art. XXIV.8 (a)(ii)	Economic integration **with** common external tariff	Goods
Free Trade Agreement (FTA)	GATT: Art. XXIV.8 (b)	Economic integration **without** common external tariff	Goods
Economic Integration	GATS: Art. V.1	Economic integration **without** common external tariff	Services

Table 3: Comparison of PTA types (own table based on WTO, 1986; 1995)

A consultation of Art. XXIV GATT presents a clear distinction between two different types of PTAs for the trade of goods: FTAs and CUs (customs unions). A GATT-conform CU is defined by Art. XXIV.8 (a)(ii) GATT where it states that “A customs union shall be understood to mean the substitution of a single customs territory for two or more customs territories, so that ... substantially the same duties and other regulations of commerce are applied by each of the members of the union to the trade of territories not included in the union” (WTO, 1986, p. 43). As opposed to that, Art. XXIV.8 (b) GATT defines a FTA as “a group of two or more customs territories in which the duties and other restrictive regulations of commerce are eliminated on substantially all the trade between the constituent territories in products originating in such territories” (WTO, 1986, p. 43). This leads to the conclusion that these two forms of PTAs are very similar to each other except that in case of a CU a common

external trading policy is adopted by all contracting parties (Matsushita, et al., 2006, p. 549). Therefore, countries grouping into an FTA uphold the possibility to determine their own individual external tariffs when trading with non-contracting other parties (August, et al., 2009, p. 37). A third type of PTA for the trade of services can be found under Art. V GATS. The PTA in the context of the GATS is called “economic integration” and promotes the abolishment of all discriminatory trading elements among contracting parties as well as the prevention of introducing new trade barriers towards non-contracting parties (Matsushita, et al., 2006, p. 578). With this provision the GATS promotes free trade in the services sector in a similar manner as the GATT does in the goods-trading sector (August, et al., 2009, p. 402).

One rule that applies to all three types of PTAs is that in order to be in conformity with the GATT’s (in case of FTA & CU) or GATS’ (in case of economic integration) provisions the participating nations must promptly attend to the respective council for review and approval as stated in Art. XXIV.7 GATT and Art. V.7 GATS (World Trade Organization, 1986; 1995). For the purpose of this paper only the FTA as defined in Art. XXIV.8 (b) GATT is of relevance. Thus, from here onwards the abbreviation FTA will always describe a free trade agreement in conformity with the above-mentioned GATT clause.

2.3.2 International system definition

After having demarcated FTAs from other forms of economic cooperation on a legal basis this section’s aim is to answer the question of what kind of subject an FTA is in the international system. Merely claiming that an FTA is a signed document ratified by two or more nations does not capture the influence of such an agreement. According to August, et al., it can be classified as a specialized type of intergovernmental organisation (IGO). These specialised IGOs, as opposed to general IGOs such as the African Union (AU) or the Organization of American States (OAS), only act within a specific area of interest and restrict their actions accordingly (August, et al., 2009, pp. 35-37). By treating FTAs as specialised IGOs it can be argued that they have a strong influence on the participating states’ trade policies by enhancing their openness towards international trade from a global level parallel to the government-level policies from within non-participating states (Willets, 2001, p. 15). Ultimately, these two sources of trade policy represent the shaping factors of

global trade flows. This is why, “as a foreign policy tool, FTAs can cement ties with allies and encourage countries to stay on the trail of political and economic reform” (Griswold, 2003, p. 1). Also Irwin attests FTAs a high level of international political relevance such as investor attraction next to their obvious economic benefits (Irwin, 2009, p. 260). One aspect that cannot be taken into account in this paper, but should nonetheless be kept in mind, is the fact that a state’s government in many cases is not acting fully rational so that the decision of entering into an FTA is not only influenced by pure economic welfare aspirations but also by distorting factors such as industry lobbyism or individuals’ political interests (Grossman & Helpman, 1995, p. 667).

2.3.3 Introduction of KOREU FTA

It was established in chapter 2.2.1 that FTAs have the main purpose of eliminating impediments to free trade, namely tariffs and NTBs. Now a detailed look into the provisions of the KOREU FTA will act as an example for the topics covered in such an agreement, provide an understanding of its mechanisms and introduce the FTA itself. Since the full KOREU FTA agreement comprises of 15 chapters, filling more than 1,400 pages and dealing with numerous trade-related topics as well as rules and regulations on a large variety of industry sectors, for the purposes of this paper all non-automotive fields will be touched only briefly to provide an overview of the topics incorporated in the agreement, then followed by a detailed analysis of the automotive sector-related topics of the agreement, especially focusing on NTBs.

As was already mentioned, of all FTAs ever agreed upon by the European Union (EU) the KOREU FTA is the most extensive one covering more trade issues than any other free trade effort before. It is part of the “Global Europe” initiative launched by the European Commission (EC) in 2007 and the first FTA to have developed out of it with the aim of building a framework for future WTO multilateral economic integration efforts (EC, 2007, p. 10; 2010, p. 1). When it came into effect on 1st July 2011, it abolished the largest part of all tariff barriers to trade in place before that time. The remainder of customs duties are planned to be removed by the end of a transitional period of five years. According to the EC, this means that by July 2016 in the trade of industrial and agricultural goods “98.7% of duties in trade value” will have been abolished (EC, 2010, p. 1). Other sectors benefitting from the schedule of tariff

elimination include textiles, leather and fur, footwear, iron and steel, machinery and appliances, optical instruments as well as agricultural and processed foods (EC, 2010, p. 2).

An entire chapter of the agreement is dedicated to the reduction of technical barriers to trade (TBTs), a special type of NTB. TBTs can be defined as an impediment to trade that forces the producer of a certain good “to alter his/her product in order to comply with differing partner country requirements such as for health, safety, environmental and consumer protection issues” (Brenton, et al., 2008, p. 3). The fact that TBTs are mentioned in the KOREU FTA, although all WTO members have already made commitments in this respect due to the WTO Technical Barriers to Trade Agreement resulting from the Uruguay Round negotiations, shows the importance of this issue for EU-Korean trade (WTO, 2015c, p. 1). In addition to this universal agreement between all WTO signatories, the KOREU FTA introduces steps to introduce a good regulatory practice which, among others, includes logically comprehensible regulation drafting, the utilisation of international standards whenever adequate, consultations between both parties ahead of implementation as well as efforts to make labelling and marking rules easier (EC, 2010, p. 5). The agreement also deals with the issue of harmonising customs-related obstacles in the form of required trading documentation and data. Its provisions in this respect are based upon the arguments brought forward in the WTO Trade Facilitation Negotiating Group which aims at improving the “ [...] relevant aspects of Articles V, VIII and X of the GATT 1994 with a view to further expediting the movement, release and clearance of goods, including goods in transit.” (WTO, 2015d) Once again, transparency and openness between the parties have been identified as the key success driver in this respect and inquiries and consultations with the participants of trade are made compulsory.

Furthermore, the KOREU FTA was the first of its kind to include specific sectoral annexes tackling NTBs and preventing the introduction of new ones in the future (Decreux, et al., 2010, p. 74; EC, 2011, p. 2). Its regulations regarding NTBs are based on the foundations of the WTO’s GATT law including national treatment provisions and rules on the market access for traded goods (EC, 2010, p. 2). Furthermore, Art. 1.1 2(a) of the agreement states its intentions to “[…] liberalise and facilitate trade in goods between the Parties, in conformity with Article XXIV of the

General Agreement on Tariffs and Trade 1994 […]" (EU, 2011a, p. 10). The NTB-specific sectors touched by these annexes include consumer electronics, chemicals, pharmaceutical products, medical devices as well as motor vehicles (EC, 2010, pp. 3-4). They rather unilaterally aim at opening the Korean market for EU exporters. This is due to the fact that the Korean negotiators consented to largely use the European regulatory framework on NTBs for the KOREU FTA which has made the need of finding common ground obsolete for most of the industry regulations in question (EC, 2010, p. 3). For the purposes of this paper, annex 2-C to the KOREU agreement is especially relevant since it is concerned with "Motor Vehicles and Parts" (EU, 2011b, p. 1). The detailed collection and analysis of TBs and NTBs that were affected by the introduction of the FTA will be carried out in chapter 4.1.

3 Germany, Korea and the US: the automotive sector in focus

Since the automotive sector is the key focal point of this paper, this chapter will provide detailed analyses of each relevant country's separate automotive market in order to give an understanding of what role the industry plays in each respective country.

3.1 Germany: the export champion

It is an undisputed fact that the German automotive industry is the locomotive of the German economy (Make it in Germany, 2015). Within the German borders, in 2014 5,604,026 automobiles were manufactured (VDA, 2015a). In the same year 4,303,754 of these automobiles were exported which resulted in an export quota of 76.8% (VDA, 2015b). Comparing this to the average export quota of 40% across all industry sectors in Germany, as mentioned before, reemphasises the export focus of the automotive industry (DESTATIS, 2014). Additionally, German manufacturers produced 9.338.528 vehicles in their foreign-based plants for the direct sale in export markets adding up to a total of 14.942.554 produced automobiles (VDA, 2015a) and showing a steep mid-term upwards trend when compared to the 2011's total production of 9.8 million vehicles (Schade, et al., 2014, p. 73). For the objective of this paper and as discussed in chapter 2.1, the foreign-made automobiles will not be considered. Furthermore, a total revenue of 367.9 billion Euros was realised, 236.8 billion Euros of which could be allotted to export trade (VDA, 2015c). A total of 774.891 people were employed in the automotive industry in the same year (VDA,

2015c). However, as Schade, et al. note, the above statistical numbers only take into account automotive suppliers who classify in the German economic sector ("Wirtschaftszweig") of "WZ 29.3 Herstellung von Teilen und Zubehör für Kraftwagen" (Statistisches Bundesamt, 2007). But also companies of the metal, electrical, plastic and rubber industries produce parts for the German automotive industry which leads to a total number of almost 1.8 billion employees in this sector (Schade, et al., 2014, p. 38).

3.1.1 Export structure: premium on the rise

A long-term trend that supports the thesis that exports are of fundamental importance for the German automotive industry is that the share of the total revenue generated abroad has steadily risen from about 40% in 1998 to over 64% in 2014 (VDA, 2011; 2015c). This has led to an increased exposure to and dependency on the world market which on the one hand offers immense growth potential and on the other hand presents high risks due to volatile demand and political uncertainties (Schade, et al., 2014, p. 39). A general trend that is observable is that the German premium automotive producers have higher export quotas than middle class manufacturers. Whereas in 2010 the Volkswagen AG exported 69% of domestic production, Porsche sold 82% abroad (Schade, et al., 2014, p. 74). The average export quota of German premium vehicles amounts to 75% (Di Bitonto, 2014, p. 4). This indicates that foreign buyers value the German automobiles' technological advantages and prestigious images their brands carry. On the global stage, Germany holds about three quarters of the automotive premium segment market and industry analysts forecast a higher growth rate for this market segment over the next decades than for the total automotive market (Di Bitonto, 2014, p. 5). The following chapter will reveal which export markets are responsible for this development by analysing customer preferences and sales volumes of German brands abroad.

3.1.2 Market conditions in key export destinations

The German automotive industry sells its cars to many parts of the world. Naturally, there are some key markets which are of special significance for the success and sustainable growth of German automobile exports. This chapter will briefly outline these major export markets and their relevance for the German automotive industry in order to provide an overview of what type of automobile is exported to which part

of the world. Furthermore, whereas the South Korean and US-American automotive markets will be analysed in detail in the next chapter, this section will give a better understanding of the level of importance that these markets have in comparison to others. Table 4 provides an impression of how strong the Korean market is growing and (after already having overtaken the Russian market) can be expected to soon exceed the Japanese one in terms of sales in the near future:

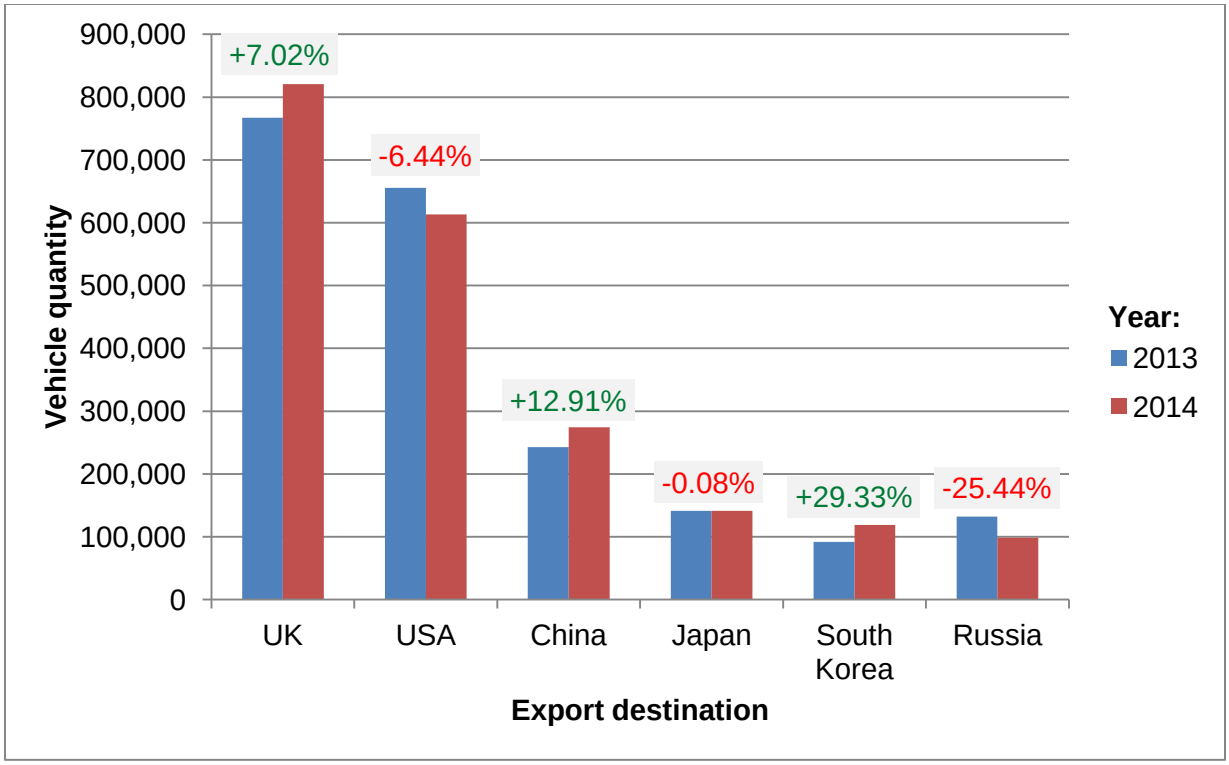

Table 4: German automotive industry: key export markets (own graph based on VDA, 2015e)

A look into table 4 also underlines the importance of the United Kingdom (UK) as an importer of German automobiles. In 2014 a total of 2.47 million vehicles were sold, 820,897 (up from 767.024 in 2013) of which were imports from Germany making the UK the single most-importing country of that year (VDA, 2015e). After experiencing losses from 2008-2011 due to the financial crisis (BBC, 2015), this represented a ten-year sales high in the UK's automotive market caused by economic confidence, newly introduced attractive finance schemes as well as lower running costs of newer vehicles (Sharman, 2015). The UK itself is a major location for automotive production with a high share of foreign manufacturers producing vehicles for the European market here (i.e. Nissan, Toyota, Honda, BMW and Ford) (KPMG, 2014, p. 2). In 2014 78.2% of all automobiles (1,195,196 units) manufactured have been exported with the EU representing the major importer with a share of 53.1% (SMMT, 2015, pp.

12-13). The UK is an importer with an emphasis on the super mini and lower medium vehicle segments with the Ford Fiesta being the bestselling car in 2014 (131,254 units) followed by the Ford Focus (85,140 units) and Vauxhall Corsa (81,783 units) (SMMT, 2015, p. 20). With its entry-level model “i10” Kia dominated the mini segment of small city vehicles, which was the fastest growing segment with a growth rate of 132.89% as compared to the previous year (SMMT, 2015, p. 19). The fact that UK consumers prefer small vehicles over larger and less fuel-efficient sedans is not advantageous for the German automotive industry, which has a strong competitive advantage in the premium upmarket segments. However, as will be discussed in the next sections, markets in Asia compensate for this development. Furthermore, the German manufacturers benefit from their high competencies in economical diesel-engines in the UK just as they do in their home market. This is due to the high share of newly-registered diesel-driven vehicles which increased from 33% in 2004 to over 50% in 2014 (SMMT, 2015, p. 19).

China is generally considered the backbone of the German automotive industry and it is predicted for 2015 that it will, for the first time, become their most important sales market (DW, 2015). Up until recently, German producers benefitted from the strong growth rates of the Chinese automotive market that grew at an average rate of 24% between 2005 and 2011 (Wang, et al., 2012, p. 1). Recently, a slight deceleration in growth could be observed mostly due to political interventions in numerous larger cities attempting to combat ongoing problems with congestion smog and air pollution by capping the number of newly registered vehicles with the help of lottery or auction systems (Beddor, 2015). This might endanger the future growth of the industry which Wang, et al. predict to keep growing at a more moderate 8% p.a. until 2020 (Wang, et al., 2012, p. 1). By 2013, the German market share amounted to 19% being second only to the Chinese domestic producers who reached 40% (EY, 2013, p. 2). On the Chinese market there is a specific reason that inhibits foreign automotive producers to increase their market share at a faster rate as Schade, et al. point out. According to them, in China most of the newly registered foreign vehicles are being assembled in JVs between local and foreign companies (Schade, et al., 2014, p. 57). These are mandatory cooperations because foreign producers are not allowed to enter the Chinese market without fulfilling specific regulations such as local content requirements (LCRs) that limit foreign ownership in automotive companies to 50%

(Hufbauer, et al., 2013, p. 79). This is a typical phenomenon of all Chinese industries where the government seeks to maintain a high level of state-owned enterprises (SOEs) and in this case results in an auto parts procurement market that gives a strong advantage to Chinese suppliers (Hufbauer, et al., 2013, p. 5). The first German automotive producer to enter the Chinese market was Volkswagen entering into a JV with the SOEs “Shanghai Automotive Industry Corporation” and “FAW Group Corporation” in 1985 and 1991 respectively (ChinaAutoWeb, 2015; FAW-VW, 2014). Together Shanghai Volkswagen Automotive Co., Ltd. and FAW-Volkswagen Automobile Co., Ltd. have become the bestselling automotive companies in China with over three million sold units in 2013 (Bay, 2014). Taking a look at the 274.212 directly imported German vehicles shows that this mode of market entry only plays a minor role in the business with China (VDA, 2015b). This is due to the fact that in order to support the desired JVs with local companies, the government has put high import tariffs for foreign vehicles in place causing most of the imported models belonging to the luxury segment where customers have a low price sensitivity (Schade, et al., 2014, p. 57). Another factor driving up sales of large luxury sedans and SUVs are the above-mentioned limitations on the issuance of new license plates in major Chinese cities which have established a tendency among consumers, who actually get the chance to purchase a vehicle, to choose a bigger and more expensive model than originally planned (Aizhu & Rose, 2015). Next to these premium buyers, who like their automobiles to be equipped with the latest gadgets such as refridgerators or backseat entertainment systems, Chinese middle class consumers are constantly gaining purchasing power and their number is predicted to triple by 2022 compared to today (Gassmann, 2014). In this segment the most important aspect of the automotive purchase decision is the price-performance ratio because it is primarily regarded as a means to satisfy mobility needs (Diehlmann & Häcker, 2012, p. 119).

With 8,277,070 produced units in 2014 (1.1% up from 2013) the automobile industry in Japan is one of the core sectors with a workforce of about 5.5 million people (JAMA, 2015, p. 1 & 3). However, Japan’s automotive market is one of the hardest to enter for foreign producers and is dominated by domestic brands. Total automobile sales in Japan amounted to 4,699,591 in 2014 and only 336,764 of these were imported resulting in an imported vehicles quota of 7% (own calculation based on

JAMA, 2015, p. 7 & 9). The reason for this limited access for foreign companies lies in the existence of a variety of NTBs in place on the Japanese automotive market. These, among others, include complex issues with certification and standardisation as well as obstacles to the installation of decent networks for distribution and service (USTR, 2014, p. 14). Naturally in an environment like this the domestic producers are able to dominate the majority of the market with Toyota (1,509,149 units) leading before Honda (848,753 units) and Suzuki (787,361 units) (JADA, 2015). German automotive manufacturers were able to secure a 41.9% market share of all imported vehicles in 2014 with 141,201 sold units (own calculation based on VDA, 2015b; JAMA, 2015). Of the German manufacturers in Japan Mercedes-Benz was most successful selling 21.9% of all imported automobiles in January 2015, closely followed by Volkswagen (18.5%) (Germis, 2015). One important reason for the difficult situation of German car makers in Japan is the popularity of so-called “Kei cars”. These very small vehicles, which are designed specifically for the Japanese market with its dense population as well as limited living and road space, qualify for financial benefits and exemption from the in many areas mandatory proof of an appropriate parking space for a newly registered vehicle (Dralle, 2014). An automobile is considered a Kei car if it does not exceed 3.4 metres in length, 2 metres in height, 1.48 metres in width and its engine capacity is limited to 660 ccm as well as a maximum power output of 64 bhp (Handelsblatt, 2012). These small cars constituted almost 41% of all automobile sales in 2014 (Gasnier, 2015a) and enjoy such a vast popularity in Japan that the government is trying to force the Japanese automotive industry to refocus their development efforts onto larger vehicles which can be exported successfully. The fact that almost none of the Kei cars are exported led the policy makers to the decision to raise the Kei car road tax by 50% almost to the level of ordinary larger automobiles (George, 2014). The government feels that the Japanese automotive industry is in danger of missing out on scale effects realised by the opportunites of today’s globalised trading world (George, 2014). However, Japanese car buyers still appreciate the advantages of this vehicle segment and the Kei car Daihatsu Tanto was the best-selling of all cars in Japan in 2014 (Gasnier, 2015a). For the German manufacturers acting on the Japanese market is difficult because there is not a single brand which has a vehicle qualifying as Kei car in its portfolio. This is why German producers have most success with large premium vehicles sold in limited quantity to buyers who are not deterred by the

high initial and running costs caused by import barriers, higher road tax and inconveniences such as the compulsory provision of evidence of a parking space.

As opposed to the increasing German automotive exports to the UK and China, exports to Russia have sharply decreased by more than a quarter from 2013 to 2014 (see table 4). As Litvinenko points out, during this period of time not only total sales of imported vehicles to Russia dropped from 810,000 to 650,000 units, but also Russian domestic manufacturers sold 15% less automobiles, leading to a decrease in total vehicle sales from 2,600,000 to 2,340,000 units (Litvinenko, 2015, p. 6). The reason for this underperformance can largely be found in the political instability following the Ukraine crisis and the global sanctions against Russia's economy (EU, 2015) that caused the Rubel to drastically devaluate against important currencies such as the US-Dollar, Euro and Yen and consequently drove up automobile prices (Litvinenko, 2015, p. 7). However, in 2015 the situation has become worse due to the ongoing dispute between Russia and the global community triggered by the annexation of Crimea. Automobile sales first experienced a drop of 43% in March as compared to February, only to be followed by another 42% slack in April representing a decrease from 228,372 to 132,456 units (Tanas & Lemeshko, 2015). In the face of these conditions, General Motors even decided to withdraw its entire Opel brand from the Russian market after a 86% year-over-year (yoy) sales loss in early 2015 (Adomanis, 2015). However, it is predicted that the current decrease will level out later in 2015 thanks to government countermeasures such as small vehicle loan subsidies for vehicles costing less than 16,000 Euros (Tanas & Lemeshko, 2015; VDA, 2015f). Only five years ago the Russian automotive market was considered a fast growing one with vast potential for foreign actors (Debord, 2015). Generally, Russia's domestic automotive producers have a relatively weak position in their home market and hold a market share of about 35% (Schade, et al., 2014, p. 57). An important reason for this is the low quality that many Russian-made vehicles suffer from (Diehlmann & Häcker, 2012, p. 114). This even leads Russian citizens to the conclusion that a used imported automobile is the better choice compared to a new one of domestic production (Busse, 2006). German automotive manufacturers benefit from the fact that Russian consumers are prepared to pay substantial premiums for high quality goods and also directly ascribe the connotation of quality to renowned brand names (Diehlmann & Häcker, 2012, p. 114). Schmid sees the reason for this in

the consumers' negative product experiences caused by soviet goods of inferior quality (Schmid, 2004, p. 215). Moreover, Russians like to display their wealth openly which is why especially big German automobiles such as limousines and SUVs with high levels of optional equipment are very popular compared to smaller vehicle segments (Revill & Ciferri, 2008).

As table 4 has shown, in terms of export quantities the UK is the most important market place for German automotive manufacturers. It also represents the demand pattern found in most other European countries where consumers have developed a distinct preference for smaller vehicle segments that are economically friendly, consume less fuel and are adequate for the small and crowded roads that are common in many areas. Here, German producers can successfully sell especially small vehicles whereas in Asian markets the research showed that consumers tend to buy large and luxurious vehicles if they decide for a German brand because status and luxury of an automobile play a bigger role than in Europe. An exception are Japanese autobuyers who face even stricter road and parking space limitations than Europeans and therefore like very small vehicles even though a different picture might be observable should the import duties of foreign automobiles make premium models more affordable. It can be noted that there is a connection between the export success of German automotive manufacturers and the following country-specific aspects: First of all, the existence of import barriers tends to shift demand for German vehicles to expensive luxury models whose buyers are not price sensitive. In China, the growth of automotive sales until recently seemed infinite, however, the government is artificially capping demand which can be predicted to make the already popular premium products of German manufacturers even more successful, albeit decreasing total sales volume. In densely populated areas like Japan the demand is rather focused on small vehicles and therefore the best-selling German vehicle in the first quarter of 2015 was the compact Volkswagen Golf whereas the smaller Polo's sales number rose by 22% yoy (Gasnier, 2015b). Also Russian consumers rather buy expensive German models than small vehicles although the ongoing crisis in Ukraine is heavily impeding the entire economy.

3.2 South Korea: the patriot

Taking a first look onto the South Korean automotive market reveals some undeniable similarities between the German and South Korean automotive industries. Just like in Germany, South Korea's automotive industry in 2012 ranked number one among the manufacturing industries accounting for 11.4% of all manufactured goods and 10.7% of employment in that sector (see chapter 3.1 for details on German automotive industry). In terms of trading, the Korean car manufacturers are almost as export-oriented as their German counterparts. In 2012, 69.5% of Korean automobile production was exported to destinations all over the world and represented a 13.1% share of all national exported goods. As a result South Korea was ranking fifth largest automotive producer directly following Germany (KAMA, 2013, p. 6). Generally it can be observed that South Korea until today has been a successful exporter of mini, small and medium-sized vehicles with small engine capacities showing the high degree of specialisation of Korean manufacturers in these segments (Decreux, et al., 2010, p. 78). An analysis concentrating on the openness towards automotive imports will follow in the next section.

3.2.1 Analysis of trade barriers before the FTA

This chapter will take a look onto the Korean automotive market at the time before the KOREU FTA was ratified in 2011. The provisions in force then presented a very different picture from the importer's point of view than from the successful exporter side's view. South Korea for a long time had been known as a notoriously patriotic and closed automotive market with foreign brand automobiles accounting for only 3% of total sales just 10 years ago (Jin, 2014). Not for nothing did the European Commission (EC) state that the barriers to trade in the Korean automotive industry were the most significant ones among all industries of the country (EC, 2010, p. 3). Whereas this section will describe the NTBs individually and explain their functioning, a detailed analysis focusing on what these NTBs mean for German importers, their quantification and the according economic relief for importers achieved by their abolition with the help of the KOREU FTA will be conducted in chapter 4.1.3.

(1) Korea opened its borders for foreign vehicles only in 1987 with an initial import tax (TB) of 50% that was gradually lowered to 8% (commercial vehicles 10%) (KAIDA, 2015c) before the introduction of the KOREU FTA and has remained a difficult

market for foreign sellers ever since. However, the reason for the difficult importing business of foreign producers in Korea was not only caused by the official import duty, but also by an array of burdensome measures that are considered to be NTBs.

The first category of NTBs deals with those committed to environmental protection issues:

(2) In 2006, the Korean government implemented the Average Fuel Efficiency (AFE) provisions which defined fuel consumption limits for automobiles according to their engine capacity (An & Sauer, 2004, p. 17). It was made mandatory for importers in 2009 (Miller, 2015). The rationale of this was to counteract the development at that time of decreasing average fuel mileage of newly registered vehicles due to the popularity of uneconomical SUVs (An & Sauer, 2004, p. 17). According to the regulations, engines of 1,500cc or smaller were not to consume more than 12.4km/litre[4] while engines larger than 1,500cc were limited to 9.6km/litre (KEMCO, 2011). Fuel consumptions were determined with the help of the US EPA City test cycle (An & Sauer, 2004, p. 17). Additionally, a compensation scheme was installed which granted manufacturers credit if their small engine cars consumed less than the 12.4km/litre limit (Decreux, et al., 2010, p. 81). This credit could then be used to redeem vehicles in the >1,500cc category which exceeded the 9.6km/litre limit (An & Sauer, 2004, p. 17). Any violation of the fuel consumption limits resulted in the issuance of an official order requiring the offending manufacturers to improve their fuel efficiency within a certain period of time (An & Sauer, 2004, p. 17). No fines were imposed but the government would publish a list of all non-complying automobiles aiming to cause a public shaming effect (An & Sauer, 2004, p. 17).

(3) Korea had adopted two separate sets of rules regarding exhaust emissions for petrol and diesel vehicles in 2009 which were summarised under the Korean Ultra-Low Emission Vehicle (KULEV) regulations representing emission limits for motor vehicles (Olivares, 2014). Producers of petrol automobiles were subject to US California's Non-Methane Organic Gases Fleet Average System (NMOG FAS) including the determination of the emission under the US FTP-75 (Federal Test

[4] In South Korea a vehicle's fuel consumption is measured in "km/litre" instead of the unit "litre/100km" which is common in Europe.

Procedure) test cycle (DieselNet, 2014). Under the NMOG FAS provisions a manufacturer could choose to comply with one out of four standards which all included the same types of pollutant gases but differed in the composition of their respective limits (Olivares, 2014). The individual vehicle's emissions were not relevant for the FAS system but the entire manufacturer's fleet on average had to stay below the chosen annual legal limit. The Californian NMOG limits were stricter than in the rest of the US (DieselNet, 2010) and among the most stringent ones in the world (USA Today, 2004). For diesel automobiles European emission standards had been adopted and Euro 4 (2006), Euro 5 (2009) as well as Euro 6 (2014) standards were made compulsory with emission limits for each individual newly registered vehicle (Ministry of Environment, 2015a). The specific exhaust gas limits were classified according to the vehicle's weight (Umweltbundesamt, 2015).

(4) The **"**Special Act on Capital Region Air Quality Improvement" is a major government plan that came into force in 2005 aiming to cut air pollution in the Seoul Capital Area and other urban regions to those of comparable capital cities such as Tokyo and Paris (Ministry of Environment, 2015a). It is currently in its second phase after the "1st Seoul Metropolitan Air Quality Control Master Plan" was concluded in 2014. The special act was formulated in the course of 190 debates that were attended by a "joint task force consisting of associated government ministries, industrial groups, and civil organizations" (Ministry of Environment, 2015b). It was mutually agreed upon that the automotive industry is a key area for the successful implementation of the plan and thus a number of regulations were introduced such as mandatory start/stop systems for vehicles when idling (Ministry of Environment, 2015b), compulsory modification of older vehicles in order to comply with emission regulations and the public sector having to purchase a certain amount of low-emission vehicles (LEVs) into their fleets (APEC VC-Korea, 2004). Furthermore, importers of automobiles were forced to sell a certain amount of LEVs, should they have sold more than 3,000 units on average in the capital area in the last three years (Decreux, et al., 2010, p. 82).

(5) An on-board diagnostics system (OBD) was mandatory for vehicles in Korea based on US standards (Decreux, et al., 2010, p. 81). An OBD automatically provides a warning should a given emission limit within the vehicles exhaust gas filtering system be measured so that a prompt diagnosis and repair can be carried out

(Umweltbundesamt, 2015). The current version in use is OBD-II which was implemented in Korea since 2005. “The OBD II system monitors virtually every component that can affect the emission performance of the vehicle to ensure that the vehicle remains as clean as possible over its entire life” (US EPA, 2015). The European OBD (EOBD) is the European equivalent to OBD-II, which originated in the US. Although both systems are essentially the same apart from their year of incorporation (US in 1996, EU in 2001), only OBD-II was approved in Korea.

(6) In terms of vehicle impact safety in 2003 Korea introduced the self-certification system for motor vehicle safety standards (Decreux, et al., 2010, p. 82). Automotive producers who wanted to import their vehicles could refer to a list issued by the government stating all international safety standards which were considered equal to Korean regulations. The importers then self-certified their vehicles if their conducted safety tests complied with the Motor Vehicle Safety Standards (KMVSS) (KAIDA, 2015d; Ministry of Land, Transport and Marine Affairs, 2011, p. 6). Approved testing procedures used to include US-FMVSS and EU ECE standards, however, the standards were frequently amended (Decreux, et al., 2010, p. 82).

The next type of NTBs is influenced by socio-economic forces that lead to the retention of certain attitudes among consumers and the government alike:

(7) One important reason for foreign manufacturers having had trouble selling their vehicles was the strong Korean national identity which made Korean buyers feel strongly attached to domestic brands and have preconceptions against foreign brands. With regard to imports from surrounding countries in Asia only, the high level of patriotism was caused by the troubled past that Korea shares with them and the persisting reservations against them (esp. Japan). This was underlined by the outcomes of a 2011 study that showed that 77% of Koreans did not trust Japan, 64% thought the Korean-Japanese relations were bad and 14% even predicted a development to the worse for the relationship (Rozman, 2012, p. 143). This is one explanation why European automotive manufacturers in Korea nowadays have managed to be more successful than their Japanese counterparts despite their geographical closeness as will be further discussed later.

(8) All this leads to Korean car buyers today still having an ethnocentric attitude that translates into a form of market protectionism as compared to other automotive markets with a foreign vehicles sales share of 16.4% in April 2015 (see chapter 3.2.2). Only Japan imports less automobiles than Korea with a quota of 7% (see chapter 3.1.2). The US-American sales data reveal a significantly higher foreign vehicles share of over 66.7% in May 2015 (own calculation based on MotorIntelligence, 2015). As for the German automotive market, it is found in the middle between South Korea and the US with 28.3% of all newly registered vehicles being of foreign production (own calculation based on VDA, 2015e). Ogura points out that “Many South Koreans once saw it as their patriotic duty to buy domestic” (Ogura, 2015). The attitude towards foreign automobiles for some time had been so tense that they were vandalised frequently (Jin, 2014).

(9) In addition to this patriotic consumption behaviour of the consumers, the South Korean government for a long period of time had taken a very protectionist approach to the automotive industry. Their policies were targeted at supporting domestic producers on their way to becoming global players by maintaining high tariff levels against imports and even providing cheap electricity to keep the production costs low in order to make exports competitive (Colebatch, 2013). As mentioned above, between 1995 and 2011, automobile producers faced a tariff of 8% when wishing to import their vehicles to Korea (KAIDA, 2015c; Horj, et al., 2014, p. 5). Before trade was facilitated with the ratification of the FTAs South Korea ratified with the EU in 2011 (KOREU) and the US in 2012 (KORUS), the government put great emphasis on protecting the domestic automotive industry (Cooper, et al., 2011, p. 1; USTR, 2012). In addition to the import duties in place, many regulations and provisions for the automotive market put forward by the government were identified to be highly protectionist NTB measures to support the domestic industry and at the same time repel imports from the home market (Colebatch, 2013).

(10) Korea has a long history of currency manipulation and alongside China and Taiwan is one of only three countries that have ever been given an official manipulator status by the US Department of Treasury (Public Citizen, 2011, p. 1). In the 80s and 90s, the country devaluated the Won by an estimated 50 to 60% with the help of global currency market interventions (Public Citizen, 2011, p. 1) and despite international protests continued this policy which was justified as a necessary answer

to the volatility of the international markets (Jun, 2013). By buying foreign currencies institutions like the Bank of Korea supported the government's intention to keep the Won's value low in order to keep Korea's exports competitive (Jun, 2013). Especially the dollar had been targeted with the effect of US imports to Korea facing an import tariff barrier correspondent to the level of Won deflation and affecting the entire US economy (Williford, 2011). There have been cases in the past in which governments devaluated their currencies shortly after entering into FTAs (i.e. Mexico upon entry into the NAFTA) in order to counteract the granted tariff concessions (Public Citizen, 2011, p. 1). In this context, South Korea has already been accused of negating tariff abolitions by deflating its currency after ratifying the KORUS FTA with the US (Brown, 2014).

Apart from the import duty levied on foreign automobiles upon entry, South Korea's extensive vehicle taxation system consisted of an array of eight motor vehicle-specific taxes plus VAT, that, next to common examples like the acquisition and registration taxes, included some specific contributions to public welfare such as education and public transport development (UNEP, 2008, pp. 3-4). The following three of these taxes became due upon purchase of a vehicle:

(11) The special excise tax was levied on consumption goods that were considered luxury products with the highest rate at 20% (e.g. golfing equipment, yachts, cameras) (KIPF, 2011, pp. 149-150). There were four different special excise tax rates for automobiles according to their engine capacity, the first applying for vehicles with 1,500cc or less (5%), the second for vehicles with 2,000cc or less (7.5%) and the third for vehicles with more than 2,000cc (10%). Automobiles with engines with 800cc or smaller were exempted (KIPF, 2011, pp. 150-151). The basis of taxation was the amount of the CIF price, as defined by the ICC (ICC, 2010), of the vehicle in question (UNEP, 2008, p. 3).

(12) The educational tax amounted to 30% of the value of the special excise tax and reflected the high tribute paid to the importance of education in South Korea (KAIDA, 2015c). 7.6% of the country's GDP were spent on education which is only exceeded by Iceland and Denmark (NCEE, 2015). Its main purpose was laid out in Art. 1 of the Education Tax Act: "The purpose of this Act is to secure the source of revenue

required for expanding the education budget in order to improve the quality of education." (Ministry of Government Legislation, 2009, p. 1)

(13) The general VAT amounted to 10% and was also applied at this rate for automobiles (Deloitte, 2013, p. 13; UNEP, 2008, p. 3). The tax amount was based on the vehicle's domestic retail price after the addition of the special excise and educational taxes (UNEP, 2008, p. 3).

Upon registration of a newly purchased automobile three more taxes needed to be paid:

(14) To cover the expenses of the formal registration process as well as the issuance of the vehicle's license plate, a 5% registration tax was levied based on the automobile's domestic retail price before VAT (UNEP, 2008, p. 3).

(15) The acquisition tax was part of the registration process and amounted to 2% based on the automobile's domestic retail price before VAT (KAIDA, 2015c; UNEP, 2008, p. 3).

(16) Each individual wishing to purchase and operate an automobile in Korea had to acquire a share in the government's subway bond which had the purpose of helping to develop and improve urban rail transit in Korea's metropolitan areas (KOTI, 2004). It was calculated based on the retail price of the vehicle depending on its engine capacity. Engines of 1,000cc or less were taxed at 4%, those between 1,001cc and 1,600cc at 9%, those between 1,601cc and 2,000cc at 12% and engines larger than 2,000cc at 20% (UNEP, 2008, p. 4).

(17) A special tax of 5% on SUVs only was levied because these vehicles were generally considered to have higher fuel consumptions than normal-sized vehicles (UNEP, 2008, p. 4).

The following two taxes represented annually recurring taxes that were levied for the duration of the ownership of a vehicle:

(18) A vehicle ownership tax was levied according to the vehicle engine's capacity with a fixed amount per cc. It was collected on a yearly basis and rates at 80 Won/cc for engines of 800cc or smaller, 100 Won/cc for those between 801cc and 1,000cc, 140 Won/cc for those between 1,001cc and 1,500cc, 200 Won/cc for those between 1,501cc and 2,000cc and 220 Won/cc for engines larger than 2,000cc (UNEP, 2008, p. 3).

(19) The annual vehicle educational tax was another source of income taken from vehicle owners for the educational sector in Korea. Like the educational tax levied upon purchase it had the intention to improve and develop the educational system (see (12)). It was a 30% rate of the amount of the annual vehicle ownership tax (KAIDA, 2015c).

Table 5 summarizes the pre-FTA import duty as well as all NTBs that were identified in this chapter into their respective categories. It also includes a numeration corresponding to the one found in the section above.

No.	Category	Tariff Barrier (TB)	Description	Determination (if applicable)	Classification (if applicable)
(1)	**Importation**	Import tax	Tax levied on the import of an automobile from a foreign country	Percentage of CIF price depending on vehicle type	Passenger vehicles = 8%; commercial vehicles = 10%
No.	**Category**	**Non-Tariff Barrier (NTB)**	**Description**	**Determination (if applicable)**	**Classification (if applicable)**
(2)	**Environ-mental**	Average Fuel Efficiency (AFE)	Fuel mileage limits; cars with low consumption can compensate for ones with high consumption	Determination of consumption: US EPA City test cycle	≤1500cc = max. 8.1 litre/100km; >1500cc = max. 10.4 litre/100km
(3)		Korea Ultra-Low Emission Vehicles (KULEV)	CO2 emission limits: Euro 5 for diesel; California's NMOG FAS System for petrol	Diesel: EU NEDC cycle; Petrol: US CVS-75 cycle	Specific g/km-limits frequently subject to change
(4)		Special Act on Capital Region Air Quality Improvement	Producers importing a minimum no. of vehicles in the Seoul area must sell LEVs	Based on amount of sold imported vehicles within 3 years	No. of sold units >3000
(5)	**Safety**	On-Board Diagnostic (OBD)	Korea adopted US on-board diagnostic regulations; EU standards are not recognised	Compliance with US OBD-II standards	
(6)		Self-certification system for motor vehicle safety standards	List of approved crash tests to comply with; EU standards reportedly treated inferior to US ones	Safety tests based on US-FMVSS or EU ECE standards	
(7)	**Socio-economic**	Preconceptions against foreign brands due to history	Esp. Japanese importers suffer from the political tensions between the countries in the area		
(8)		Market protectionism by consumers	Consumers used to feel it was their patriotic duty to buy domestic automobiles		

(9)		Market protectionism by government	High tariff walls (1987: 50%) to support domestic industry and repel imports		
(10)	**Economic**	Currency manipulation	Deflation of the Won to subsidise domestic goods and fight off imports (incl. automobiles)	Government's manipulation must aim at a trade advantage	
(11)	**Taxation upon purchase**	Special excise tax	Levied on individuals' consumption of luxury goods	Percentage of CIF price depending on engine capacity	≤800cc = 0%; ≤1500cc = 5%; ≤2000cc = 7.5% >2000cc = 10%
(12)		Educational tax	Levied to improve the quality of education	30% on amount of special excise tax	
(13)		Value-added tax	Levied on the supply of goods and services	10% of retail price incl. special excise & education tax	
(14)	**Taxation upon registration**	Registration tax	Levied for official registration and receiving of registration plate	5% of retail price (before VAT)	
(15)		Acquisition tax	Levied on purchase of a motor vehicle	2% of retail price (before VAT)	
(16)		Subway bond	Levied to develop subway systems to ease traffic congestion and decrease vehicle emissions	Percentage of retail price depending on engine capacity	≤1000cc = 4%; 1001-1600cc = 9%; 1601-2000cc = 12%; >2000cc = 20%
(17)		Sports utility vehicle tax	Levied to discourage purchase of SUVs due to higher fuel consumption and emissions	5% (fixed) of retail price (only applicable if vehicle is SUV)	
(18)	**Taxation during ownership**	Annual vehicle ownership tax	Levied on the ownership of a motor vehicle	Fixed amount per cc depending on engine capacity	≤800cc = 80₩/cc; 801-1000cc = 100₩/cc; 1001-1500cc = 140₩/cc; 1501-2000cc = 200₩/cc; >2000cc = 220₩/cc
(19)		Annual vehicle educational tax	Levied to improve the quality of education	30% of annual vehicle ownership tax	

Table 5: Tariff barriers in place on the Korean automotive market before KOREU FTA (own table based on UNEP, 2008, pp. 3-4; USITC, 2010, pp. 129-131; WTO, 2008, pp. 120-121; KAIDA, 2015c; KWillets, 2009; Deloitte, 2013; Ministry of Government Legislation, 2009; Public Citizen, 2011; An & Sauer, 2004, p. 17; Olivares, 2014; APEC VC-Korea, 2004; Ministry of Land, Transport and Marine Affairs, 2011, pp. 6-8; Morrison & Labonte, 2013, p. 18; Colebatch, 2013)

3.2.2 The FTA as success driver for European importers

Even after the incorporation of the KOREU FTA, the Korean automotive industry is mainly dominated by the Hyundai Kia Automotive Group (consisting of its two sub-brands “Hyundai Motor Company” and “Kia Motors Corporation”) which is leader in automotive manufacturing with a near 80% share of the overall national automotive production (Hyundai Motor Group, 2015; MarkLines Co.,Ltd., 2015). However, foreign automobile producers are steadily gaining market share on the South Korean domestic market. In 2014 imported automobiles made up over 13% of the total sales in Korea and in 2015 of the same year the Korea Automotive Importers and Distributors Association (KAIDA) announced that in April of that year 18,202 foreign vehicles had been registered (BusinessKorea Co.,Ltd., 2014a; KAIDA, 2015a). KAIDA estimates that in 2015 a total of about 215,000 imported automobiles will be sold in Korea which would be an alltime record (KAIDA, 2015b). If considering the sales data for April 2015 from KAMA in this context (110,862 automobiles total domestic sales) a latest share of foreign cars in the Korean market amounting to 16.4% can be calculated (own calculation based on KAMA, 2015; KAIDA, 2015b). In fact, in 2014 the value of imported vehicles, for the first time since 1990, surpassed that of exported automobiles (The Business Times, 2014).

Upon closer examination, as shown in table 6, the share of foreign automobiles shows an uneven distribution between the geographical regions these vehicles originated from. German importers achieved the biggest share as will be further elaborated in the following chapter 3.2.2. The rest of the import market was divided up between Japanese (2,225 units), North American (1,500 units) and other European manufacturers (1,415 units) (own calculations based on KAIDA, 2015a). This upwards trend shows the potential for strong sales growth rates of foreign automobile manufacturers in the Korean market in the long-run.

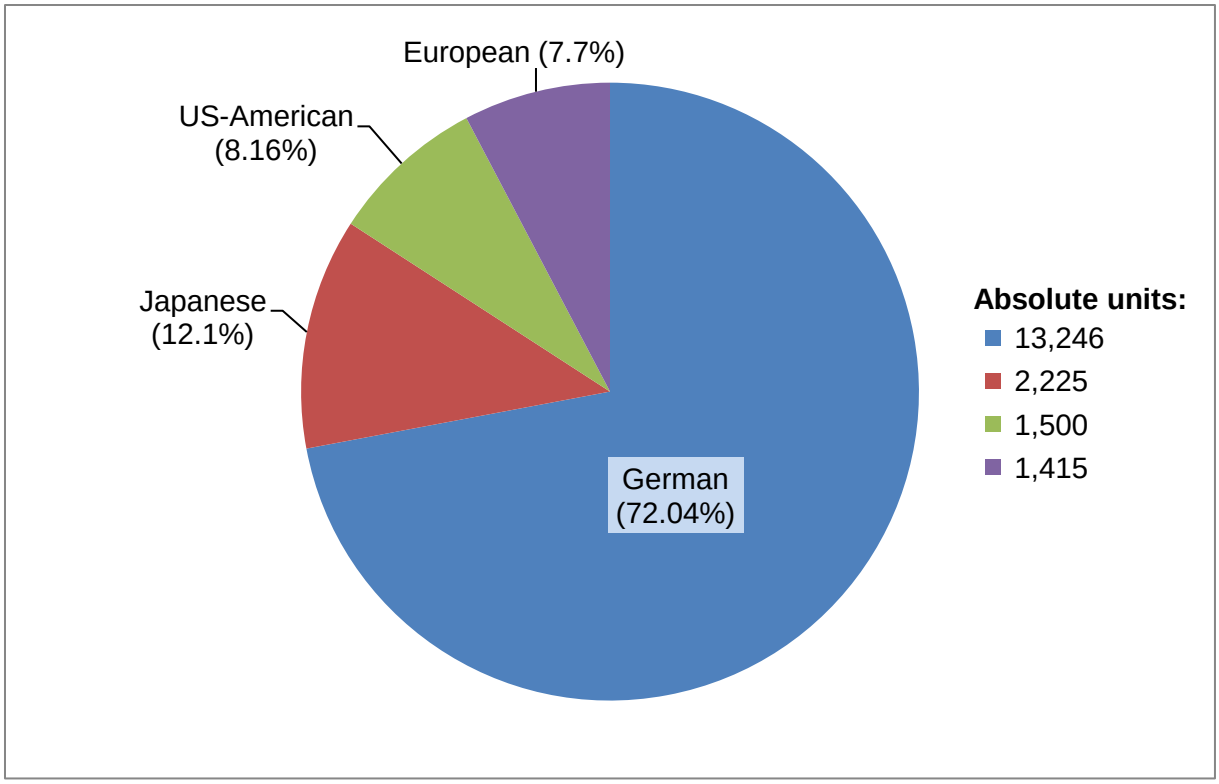

Table 6: Imported automobiles to South Korea by region May 2015 (own graph based on KAIDA, 2015a)

3.2.3 Why German cars dominate the import market

In the section above it was found that the Korean domestic automobile market offers growth opportunities to foreign automobile importers. This paper will now take a more detailed look on the structure of automobile manufacturers acting in this market.

The data of newly registered automobiles for May 2015 demonstrates that German automotive manufacturers are the most successful among all importers to the Korean domestic market. As mentioned above, 18,386 automobiles were imported during this period of time and out of these 13,246 were of German origin. This results in a 72% share for the German producers Audi, BMW, Mercedes-Benz, Mini, Porsche and Volkswagen (own calculation based on KAIDA, 2015a). BMW was the largest seller of automobiles with 4,649 sold units in May 2015 followed by Mercedes-Benz (3,530) and Volkswagen (2,522). The most successful non-German manufacturer was Ford with 941 sold vehicles (KAIDA, 2015b). However, this number comprises of Ford automobiles developed by both Ford US (Mustang, Taurus, Escape and Explorer) and Ford Germany (Focus and Mondeo) divisions which is due to the fact that Ford Korea sells a mixed portfolio of vehicles from those divisions (Ford Korea, 2015; Ford Motor Company, 2015; Ford-Werke GmbH, 2015). This means that actually some of

the cars sold by Ford also came from Germany. But because the majority of Ford vehicles offered in Korea is of US origin, for the purposes of this paper Ford will be treated as US automotive manufacturer.

There are several reasons for the popularity of German vehicles with Korean consumers an important one of which is the ongoing upwards trend of diesel-engine automobiles. Table 7 shows the development of diesel automobiles shares between 2012 and 2015. Furthermore, it is estimated that the diesel car share will surpass the 50% mark towards the end of 2015 (The Korea Economic Daily, 2015). Considering imported automobiles alone, the diesel share had already passed the 50% mark in July 2014 with a share of 67.8% (BusinessKorea Co.,Ltd., 2014b). German imported vehicles were sold with diesel engines in 79% of all cases in the same year (VDA, 2015d).

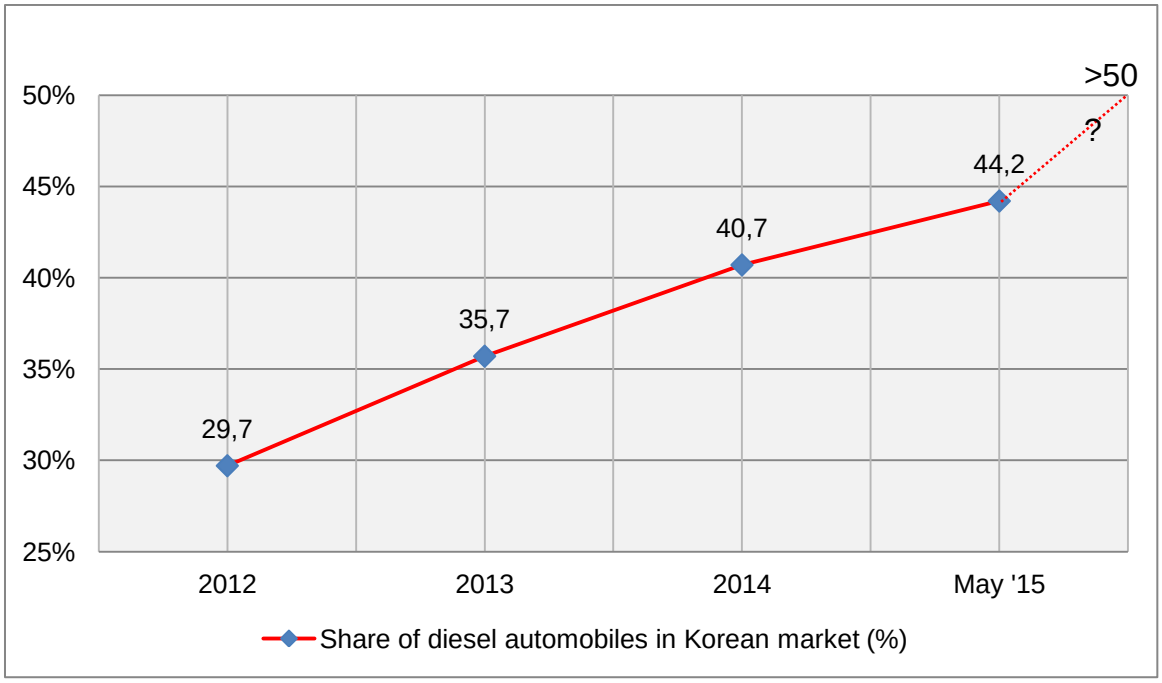

Table 7: Share of diesel automobiles in Korean automotive market (own graph based on The Korea Economic Daily, 2015)

The increasing demand for diesel automobiles is largely due to the heavily increased prices for petrol over the last years which has made diesel comparatively more affordable. As of 8th June 2015, in South Korea one litre of regular petrol cost US-$ 1.42 whereas one litre of diesel cost US-$ 1.22 (GlobalPetrolPrices, 2015a; 2015b). This has created a favourable market environment for German automotive producers since they for a long time have focused on developing fuel-efficient diesel automobiles due to similar petrol prices on the German domestic market. German

mid-size executive diesel automobiles are especially popular resulting in the BMW 520d ranking either most or second most imported car in Korea since 2011 (KAIDA, 2015f; Ogura, 2015). It has a competitive estimated fuel efficiency rating of 16.1 km/l as compared to competitor's models like the Korean Hyundai Grandeur Diesel (14 km/l) or the Japanese Infiniti Q70 3.0D (11.7 km/l) (BMW Korea, 2015; López, 2014; Infiniti Korea, 2015).

Another important factor of the German manufacturers' success is their reputation for premium quality. It is widely known that German automobiles offer a high standard of built quality and premium materials. Since in 2014 70% of all vehicles imported to South Korea were premium automobiles it becomes apparent that consumers who choose a foreign brand there do so to gain access to a premium and upmarket experience that domestic brands cannot offer. After all, South Korea is a market place where consumers like spending their disposable income on luxury branded goods and Kim & Shin for McKinsey & Company found in their survey that luxury spendings have surpassed those of Japanese consumers in 2010 and also predict a lasting positive trend (Kim & Shin, 2011). South Koreans have been identified to be more open towards luxury spending not only than the Japanese but the Chinese, too, with "a love of luxury" and "peer pressure" being the main purchasing drivers (Salsberg & Shin, 2015). Many Koreans see automobiles as status symbols and try to attract attention by buying foreign vehicles. This has been made possible by a change in attitude towards domestic producers over the last years. While in the past consumers purchased automobiles with a patriotic approach to help their country's economy, nowadays young Koreans adopt a more liberal position when it comes to extensive purchasing decisions (Ogura, 2015). Also the VDA confirms this trend of Korean buyers increasingly being open-minded and appreciating the chances and advantages of globalisation such as a greater product variety and thus adding foreign automobiles to their relevant sets (VDA, 2015d).

The development of the Korean Won (KRW) and Euro (EUR) exchange rate also had an impact on the number of imported automobiles to South Korea. Table 8 shows the historic development of the KRW-EUR exchange rate between July 2010 and July 2015. It becomes evident that the Won showed a strong upwards trend versus the EUR parallel to the introduction of the KOREU FTA. While on 1st July 2015 (the date of the KOREU FTA coming into effect) 1,000 Won bought 0.6472 Euros, on 14th April

2015 1,000 Won already bought 0.8643 Euros (ECB, 2015a). Thus, the Korean consumers became increasingly able to buy goods from the Eurozone at more favourable rates which caused European imported automobiles to become relatively cheaper as compared to competing vehicles from domestic production.

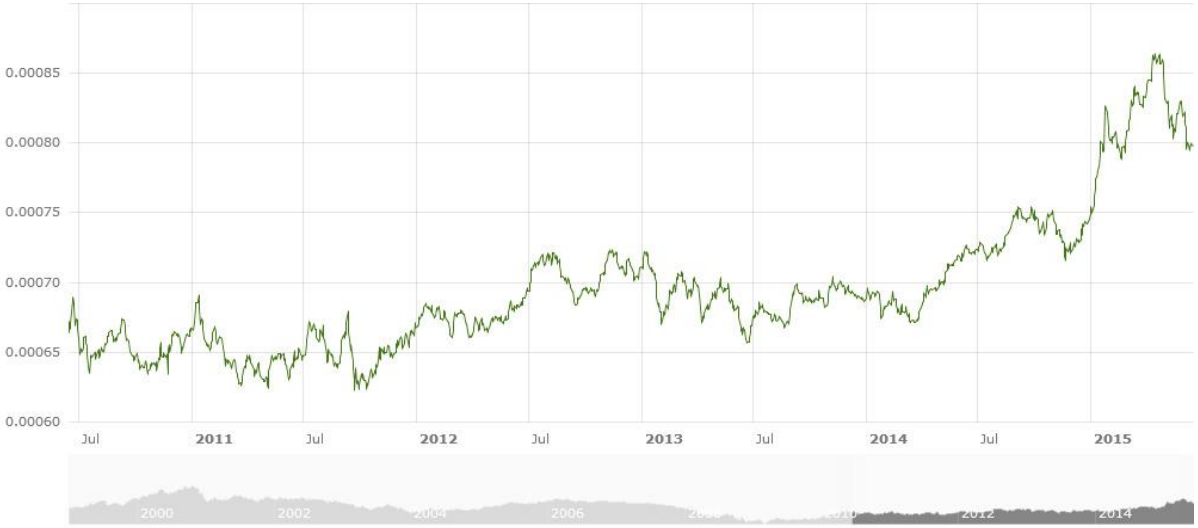

Table 8: KRW vs. EUR exchange rate 15th June 2010 - 16th June 2015 (ECB, 2015a)

3.3 The US: the free trader

Although the automobile was originally invented in Europe its benefits could firstly be enjoyed by the American people thanks to quickly advancing production techniques and means of mass production such as the world's first assembly line invented by Henry Ford for his Model T in 1913 (Foner & Garraty, 1991, p. 741). During the course of the 20th century the US has become an "auto-nation" with vehicles owned per household peaking during the 2000s at 2.05 (Cohn, 2013). Today, the automotive industry in the US is one of the largest industries of the country with 14 different corporations directly employing more than 1.5 million people (Hill & Maranger Menk, 2015, p. 1 & 3). Total automobile sales were strongly affected by the economic crisis and decreased by 47.3% between 2007 and 2009 (Hill & Maranger Menk, 2015, p. 4), however, in 2014 they already amounted to 16,435,286 units again which represents a 5.8% growth as compared to 2013 (Auto Alliance, 2015).

For the EU and Germany the US is a major sales market with 15% of all European automobile exports headed across the Atlantic (ACEA, 2015a). In 2014 Germany exported a total of 613.381 units to the US making it the second most important recipient after the UK (VDA, 2015e). As was outlined before, the number of German

vehicles sold in the US is ultimately higher due to many manufacturers having production facilities already located in the target market. The total market share of European producers in May 2015 amounted to 13.2%, while the German market share was 7.8% (own calculation based on MotorIntelligence, 2015). As can be extracted from table 9, with an overall market share of foreign vehicles of 66.7% (own calculation based on MotorIntelligence, 2015), despite a strong domestic automotive industry, the American market presents itself as one with low trade barriers. This is underlined by the fact that the import duty for vehicles from the EU currently amounts to 2.5% (Border Center, 2015), whereas US imports to the EU face a tariff barrier of 10% (EC, 2013b, p. 44). If US consumers decide to buy a German automobile in most cases it is a premium model and until the end of 2014 the US (overtaken by China in 2015) was actually the most important market in terms of sales volume for German premium brands (Bekker, 2015). The main driver of trade obstacles for European importers must thus lie in NTBs caused by differences in standards and regulations. Remarkably, the biggest share of the US automotive market is currently not held by the domestic industry but by Japanese brands as can be seen in table 9 (MotorIntelligence, 2015).

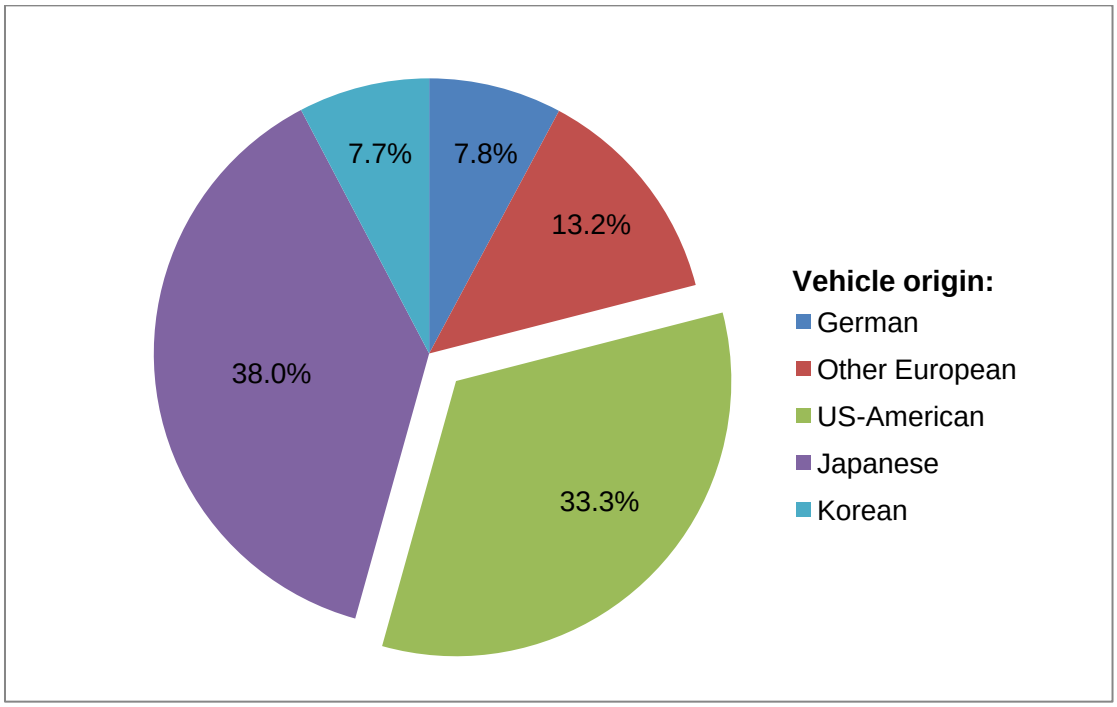

Table 9: US automotive market by vehicle origin May 2015 (own graph based on MotorIntelligence, 2015)

The main reason for the existence of the abovementioned differences in standards is the fact that the US is not a signatory to the 1958 UN-ECE agreement which harmonises technical regulations and facilitates mutual recognition of standards including those applying to the automotive industry, but developed a separate set of rules with the FMVSS in 1967 (EC, 2013b, p. 44; FMVSS, 2015). The first NTB identified results from the existence of these different sets of standards. For non-US automobiles the FMVSS includes 42 different standards that these have to meet. They are formulated as “minimum safety performance requirements for motor vehicles” and importing manufacturers face the expenses of the acquisition of certifications for the compliance with these provisions (FMVSS, 2015). For example, there are differing regulations regarding headlight brightness, the curvature of the rear mirror, the installation of side lights as well as the rear indicators allowed to be red or yellow in the US while a yellow colour is mandatory in the EU (Herrmann, 2014, p. 12, Freund & Oliver, 2015, p. 2).

Regarding safety certification of new automobiles before they can be sold, the US has adopted a self-certification system under which manufacturers are responsible to carry out safety tests by themselves and face penalties in case of later found failure to meet the safety standards set out by the National Highway and Traffic Safety Administration (NHTSA). The EU on the other hand requires each new vehicle to be tested in an official testing facility before market entry and regards a successful test in any member state as valid for all member states (Freund & Oliver, 2015, p. 15).

A reason for the identified moderate German market share is the technological lead German manufacturers have in diesel engines with high efficiency and fuel economy that is not as popular with US customers as it is with European or South Korean ones. Because diesel prices are generally higher than those of petrol in the US and the diesel engine still has a slow and dirty image, diesels account to less than 1% of all sold vehicles (Taub, 2015).

Another factor adding to the difficult standing of diesel automobiles in the US are the differences in fuel quality available in Europe and the US. Since US diesel has a lower cetane rating, importers have to carry out costly modifications in order to make their vehicles compatible with this fuel (Berden, et al., 2009, p. 44).

Moreover, the market for light trucks or pick-up trucks with 870,393 sold units in May 2015 accounts for 53.2% of all automobile sales in the US (own calculation based on MotorIntelligence, 2015). For German manufacturers this means that more than half of the potential market remains unimprenetable because the only German pick-up truck is offered by Volkswagen with the Amarok (Focus Online, 2013).

Furthermore, US Corporate Average Fuel Economy (CAFE) regulations impose a penalty payment on automotive producers whose vehicle line-ups on average do not meet a certain fuel efficiency level (Berden, et al., 2009, p. 44). This system puts small European importers at a disadvantage who have specialised in the sales of premium automobiles because they cannot compensate for uneconomical large vehicles with small ones as easily as integrated American automotive corporations (Berden, et al., 2009, p. 44).

In addition, with the Gas Guzzler Tax another instrument that fines manufacturers for not meeting fuel consumption targets is in place (Berden, et al., 2009, p. 44). Last updated with the Energy Tax Act in 2007, this tax is levied for each individual vehicle and increases with decreasing fuel economy. Since mini-vans, SUVs and pick-up trucks that are mainly manufactured by US companies enjoy exemption from this tax, importers perceive this as a NTB (Berden, et al., 2009, p. 44).

Each new automobile put on sale in the US must be labelled with several items of information according to the American Automobile Labelling Act (AALA). These include the percentage of US/Canadian parts used, the names of any countries other than the US/Canada which individually contribute 15% or more to the parts used, the final assembly location, the country of origin of the engine as well as the country of origin of the transmission (NHTSA, 2015). The AALA is accused of being targeted at influencing consumers' purchasing decisions in favour of automobiles of US/Canadian origin rather than foreign-made ones (Berden, et al., 2009, p. 45).

The US vehicle taxation system is too complex to analyse for potential NTBs within the scope of this paper due to the fact that systems differ between the different federal states. However, many states (e.g. Texas) impose vehicle taxes according to the vehicle's purchase price (Texas CPA, 2015) which, benefit of the low 2.5% import tariff, does not put German importers at a considerable disadvantage like the Korean engine size-based system.

On balance, the US automotive market can be considered to be liberal with some NTBs in place that obstruct further market access for German automotive manufacturers. Chapter 4.2 will provide an outlook on the effects that the proposed TTIP FTA will have on the German automotive industry by tackling these and other NTBs.

4 Effects of FTAs on the automotive sector

4.1 Effects of KOREU FTA on the German automotive sector

This section will firstly analyse whether the abolition of the trade barriers that were identified in chapter 3.2.1 has been successful. Secondly, a look into the sales volumes will show if the effects of the FTA can be identified in the form of trade volume effects. Thirdly, the price-comparison method will be applied to measure the average AVE-relief for German automotive importers to Korea. It should be noted that the developments in automotive trade between South Korea and Germany will most certainly still be influenced by the ongoing transitional phase which abolishes tariffs stepwise as was explained in chapter 2.2.3. However, as of August 2015 this five-year phase, which has begun with the ratification of the FTA in 2011, has almost ended and thus the results of this examination do already give a reliable tendency of developments and can be expected to be further amplified after the complete abolition of tariffs in 2016.

4.1.1 Trade barrier abolition in the automotive sector

In Chapter 3.2.1 the most important barriers to trade for automotive producers wishing to import their vehicles to South Korea were identified and described. It provided an overview of obstacles that were in place before the implementation of the KOREU FTA on 1st July 2011 and showed how extensively foreign producers were put at a disadvantage. Based on these findings, this section will analyse for each of the barriers (using the same numeration as in chapter 3.2.1) in what way they potentially inhibit market access and whether the FTA was successful in abolishing them as well as subsequently further opening the Korean market for German automotive manufacturers. The price-comparison method, as introduced in chapter 2.2.2, will be utilised to measure the cumulative effect of the import duty and NTB abolition comparing a selection of German automobile prices in Korea of 2009 and

July 2015. Subsequently, an average will be calculated to give the overall percentage of the AVE abolished by the FTA.

(1) The abolition of import duties should be the first and foremost achievement of any FTA since they represent the most obvious of all trade barriers. Also the KOREU FTA includes the gradual abolition of the 8% tariff for passenger vehicles over a three year transitional period. Subsequently, since July 2014 all German and other European-made automobiles enjoy duty-free access to the Korean market (Urbach, 2012, p. 11).

(2) As was established above, the AFE provisions in South Korea prior to the implementation of the FTA divided automobiles into two categories of engine capacity (≤1,500cc and >1,500cc). In addition, there was a compensation scheme between the two classes in place. This system did not seem to discriminate against foreign producers per se, however, if the share of large engine vehicles among all sold units in 2005 is compared between Korean domestic and foreign producers is taken into account, it becomes apparent that the AFE provisions de facto did discriminate against importers. The reason for this is that 22% of vehicles sold by domestic producers had engines smaller than 1,600cc, whereas this rate for importers was only 2%. At the same time, 24% of domestic producers' sales included engines larger than 2,000cc, while this category made up more than three-quarters (77%) of importers' sales (USITC, 2010, p. 130). Consequently, foreign manufacturers had little opportunity to build up credit under the compensation scheme since they had few vehicles with small engines. Korean producers, on the other hand, had to worry little about the fuel consumption limit in the >2,000cc category, because their large share of small vehicles compensated for their high fuel consumption. Under the FTA, the AFE system has undergone some changes in 2011 and the classification according to engine capacity has been abolished. The new fuel consumption minimum is 17km/litre translating to CO2 emissions of 140g/km. These provisions apply to all automotive manufacturers and for all vehicle segments. Currently, an introductory transition phase (2012-2015), which gradually phases in the new standard, is in place. Under this transition phase by 2012 30% of all sold vehicles of a manufacturer had to meet the limit, by 2013 60%, by 2014 80% and by 2015 100% (KEMCO, 2011). A new fuel consumption target will be introduced for the time after 2015 (KEMCO, 2014, p. 33) with a 24.1km/litre target proposed for 2020 (ICCT,

2015, p. 1). The updated AFE system will predictably further enhance market penetration of German manufacturers because, thanks to the abolition of the classification system, their expertise in larger premium vehicles will no longer present an obstacle.

(3) The KULEV provisions regarding vehicles' emission standards are based on US Californian (petrol) and European (diesel) standards. The application of these regulations is not stricter than in the countries that they are derived from. However, there are two potential NTBs with respect to the pre-2011 KULEV regulations that can be identified. Firstly, as was discussed above and in chapter 3.2.3, German importers mostly sell premium sedans and SUVs in Korea which have a higher fuel consumption and exhaust gas emission than Korean small cars. This automatically put them at a disadvantage when it came to meeting the KULEV provisions, especially the petrol FAS regulations where Korean producers benefitted from the large amount of small automobiles in their fleets. Moreover, the fact that the domestic producers made up over 85% of all vehicle sales meant that they could more easily distribute the cost of R&D for meeting the emission regulations over a large sales volume. This partially explains why German manufacturers rather import large than small vehicles, where margins are higher and consumer price sensitivity is lower. With the FTA, some of the issues of KULEV were addressed. Importers that have vehicle sales of 4,500 units per year or less are exempted from KULEV provisions, which will most likely have the biggest impact on luxury brands such as Bentley, Rolls-Royce or Bugatti whose fleet emission averages are considerably higher than those of common mass producers. Those importers with sales of 10,000 units or less p.a. will receive reductions in emission targets. The problem with these admissions is that during the first four years of implementation of the FTA unexpected growth rates for imported German automobiles were registered. In the first half of 2015 Porsche already sold 2,120 vehicles up from 1,219 units during the same period the previous year (+57.5%). This shows that if sales keep growing at this rate the NTB issues related to emissions will not permanently have been solved by the FTA.

(4) Regarding the "Special Act on Capital Region Air Quality Improvement" one NTB that only affects luxury vehicle importers can be identified. The fact that automotive producers must sell LEVs if they have exceeded a certain sales volume means that premium brands, which simply have no LEVs in their line-ups, will likely face financial

penalties. The issue is also not part of the KOREU FTA provisions so that a solution cannot be foreseen.

(5) A major issue in terms of NTBs was the fact that Korea did not recognise European OBD systems. This led to extra cost for German producers who wished to sell their vehicles in Korea because any vehicle that was not simultaneously marketed on the US market was required to undergo expensive homologation procedures for approval. Under the FTA, Korea regards all EOBD systems as equivalent to Korean regulations that incorporate the Euro 6 emission standards introduced in 2014. For vehicles fulfilling the Euro 5 norm, a transitional quota is applied which is significantly lower than the cost of homologation. Since the Euro 6 standard equally applies in the EU since 2014, German producers no longer need to show their compliance with US OBD systems and subsequently do not face this NTB anymore.

(6) The Korean self-certification system for motor vehicle safety incorporates a list of equivalent standards that includes safety regulations from different sources such as US and EU-based provisions. This mixture of standards for automotive manufacturers sometimes meant they had to comply with two almost identical standards just because the accepted test procedure did not originate in their home market. What put German and other European manufacturers at a specific disadvantage was that importers who sold 6,500 units or less p.a. were automatically regarded as compliant to US safety standards but exempted only under the Korea-US FTA. Especially the complicated and incomprehensive self-certification procedure where a label of compliance had to be put on each product sold in Korea made this system a substantial NTB. With the introduction of the KOREU FTA, more safety standards of the EU were recognised (e.g. brake testing and impact resistance) but the mixed system of standards still remains. In 2013 the self-certification system for motor vehicle safety standards was extended to include vehicle parts (JSAE, 2014, p. 11). The labelling system is now mandatory for parts, too, and remains a difficult procedure in terms of registration and certification leading to the overall conclusion that the FTA was successful in abolishing this NTB but, on the contrary, the redefined standards will be even less favourable for German manufacturers.

(7) - (8) As far as prejudices and protectionist behaviour towards foreign vehicles on the consumers' behalf are concerned the FTA is obviously not able to simply abolish them with the help of a direct measure. However, it can change the opinions of foreign automobiles through sheer exposure. Especially German vehicles are very popular with Korean consumers and sales have rapidly increased since the FTA introduction in 2011. In this way, the FTA helps to break down the monopoly of domestic brands and facilitates free market conditions. The market power of the consumers has the potential to outweigh other NTBs that remain in place by driving sales volumes and the benefits of economies of scale. Of course a healthy preference for vehicles that are produced in the home country by a local workforce will almost certainly remain. As was shown above, this is the case in most markets with a strong automotive industry (e.g. Germany, US etc.). Although the economic potential is existent, it is hard to measure a direct monetary benefit for importers connected with this socio-economic development, which holds true for the next NTB as well.

(9) Government measures taken out of the motivation that stems from protectionist intentions when it comes to the domestic automotive industry can be considered the sum of all tariff and non-tariff barriers to trade that are in place. Simply by looking at the growth rate of vehicle imports to South Korea since 2011 it becomes obvious that the FTA has been, at least partially, a success. By committing into a treaty that aims at intensifying trade flows mutually, the government has shown its readiness to face global competition, both abroad and locally and thereby set aside resentments.

(10) Korea's practice of manipulating the value of the Won in order to support domestic industries has been pointed out to be a major NTB on numerous occasions. By buying certain foreign currencies (esp. US-Dollars) the government keeps the Won artificially deflated which subsequently leads to exported automobiles being less costly in foreign markets. The local automotive industry in those countries is damaged not only by this effect but, at the same time, can sell less units in Korea because the exported vehicles are connected to the now relatively stronger US-Dollar. This behaviour can potentially neutralise the benefits of the FTA measures and should therefore be taken into account by its regulations. However, no such provision was included in the KOREU FTA, maintaining the possibility of this NTB. At the moment Korea's currency is appreciating as was established in chapter 3.2.3,

making German vehicles in Korea relatively more affordable but the government could reactivate this measure at any given time. The only tax that can de jure discriminate against foreign vehicles is a tariff in the form of an import tax. However, the application of taxes related to the purchase, registration and ownership of an automobile can lead to de facto discrimination.

(11) Korea's special excise tax, which is a luxury consumption tax, used to be levied depending on engine capacity in the case of automobiles. This meant that the mostly large vehicles of importers were subject to up to 10% tax, whereas Korean small cars only faced a 5% rate. In addition, the taxation basis is the CIF price and thus was paid not only for the vehicle itself but also its shipment and insurance costs. However, this is common practice and is therefore not a specific issue with South Korea. In the course of the implementation of the FTA the special excise tax has been revised to now only feature a single 5% tax rate that applies to all automobiles, regardless of engine capacity (KAIDA, 2015c). Imported vehicles now receive the same treatment as domestic ones and therefore this NTB was abolished by the FTA.

(12) Although the educational tax itself has not changed with the FTA and remains a 30% rate of the special excise tax, it is now lower for the majority of imported vehicles due to the abovementioned revision of the latter.

(13) Similarly to the educational tax, the VAT still is 10% but the taxation basis for imported automobiles in most cases has become smaller. This is because the VAT is based on the retail price of the vehicle including the amounts of the special excise and educational taxes.

(14) - (15) As far as the registration (5%) and acquisition taxes (2%) are concerned, no discriminating tendencies could be determined even before the introduction of the FTA. The rates remain untouched and apply equally to all automobiles.

(16) The subway bond is dedicated to improving Seoul's urban transit railway system and vehicle owners are obliged to acquire a share upon vehicle registration. Before the FTA, it constituted a major NTB because automobiles with large engines (>2,000cc) subject to a 20% rate based on the retail price, whereas engines ranging between 1,001cc and 1,600cc were taxed at 9%. In contrast to the special excise tax which received an updated engine size classification system, the subway bond's

categories remain untouched (KAIDA, 2015c). Thus, the opportunity to resolve a major NTB for imported vehicles has been missed out on by the FTA.

(17) The fixed 5% SUV tax strongly discriminated against German manufacturers whose SUV-products were and still are very popular with South Korean consumers. In 2014 Volkwagen's SUV Tiguan 2.0 TDI BlueMotion was the bestselling of all imported vehicles with 8,106 sold units outperforming traditional sedans such as the BMW 520d (6,546 units) or Mercedes-Benz 220 CDI (5,921 units) (KAIDA, 2015f, p. 6). So far in 2015 (January – April) this ranking remains unchanged (Yonhap News Agency, 2015). The FTA resolved this issue with the abolition of the SUV tax (KAIDA, 2015c).

(18) Regarding the annual vehicle ownership tax, as with numerous other taxes discussed above, there used to be discrimination against vehicles with large engines. Whereas engines ranging between 1,001cc and 1,500cc were taxed at 140 Won/cc, those in excess of 2,000cc cost 220 Won/cc. Due to the FTA the classification system received an update so that it no longer puts imports at a disadvantage. The highest rate no longer begins at 2,000cc but at 1,600cc which means more equal treatment for automobiles with large engines (KAIDA, 2015c). The FTA did not completely resolve the issue but has helped to ease the impact of the NTB.

(19) The annual vehicle educational tax is levied based on the annual vehicle ownership tax and remains unchanged at a rate of 30%. However, due to the revised rates of the ownership tax for large engine automobiles, the taxation basis for this tax has become smaller for imported vehicles.

Table 10 summarises the results of this chapter and whether NTBs that were in place before have been resolved by the FTA's provisions. As becomes evident, no full trade liberalisation was achieved by the KOREU FTA. The most important trade obstacle in the form of the import tariff was successfully abolished. However, the combined AVE of the other eighteen identified NTBs could still outweigh this positive development since only six of them were found to be completely eliminated (translated to relative terms only about 33% of the NTBs were tackled), two eliminated partially and the not directly determinable socio-economic ones showed a positive trend. The detailed price-comparison analysis in chapter 4.1.3 will attempt to answer whether an actual AVE reduction for imported automobiles can be confirmed

as opposed to this chapter's theoretical reflection. Beforehand, in the following chapter, the success of the FTA will be measured by the analysis of trade flows between the EU and Korea.

No.	Category	Tariff Barrier (TB)	Discriminating?	Resolved?
(1)	Importation	Import tax	yes	yes
No.	**Category**	**Non-Tariff Barrier (NTB)**	**Discriminating?**	**Resolved?**
(2)	Environmental	Average Fuel Efficiency (AFE)	yes	yes
(3)		Korea Ultra-Low Emission Vehicles (KULEV)	yes	no
(4)		Special Act on Capital Region Air Quality Improvement	partially	no
(5)	Safety	On-Board Diagnostic (OBD)	yes	yes
(6)		Self-certification system for motor vehicle safety standards	yes	no
(7)	Socio-economic	Preconceptions against foreign brands due to history	yes	not directly determinable
(8)		Market protectionism by consumers	yes	not directly determinable
(9)		Market protectionism by government	yes	not directly determinable
(10)	Economic	Currency manipulation	yes	no
(11)	Taxation upon purchase	Special excise tax	yes	yes
(12)		Educational tax	yes	yes
(13)		Value-added tax	yes	yes
(14)	Taxation upon registration	Registration tax	no	n/a
(15)		Acquisition tax	no	n/a
(16)		Subway bond	yes	no
(17)		Sports utility vehicle tax	yes	partially
(18)	Taxation during ownership	Annual vehicle ownership tax	yes	partially
(19)		Annual vehicle educational tax	yes	yes

Table 10: Determination of trade barrier abolition successfulness (own table based on Urbach, 2012, p. 11; KEMCO, 2011; KEMCO, 2014, p. 33; ICCT, 2015, p. 1; JSAE, 2014, p. 11; KAIDA, 2015c; KAIDA, 2015f, p. 6; Yonhap News Agency, 2015)

4.1.2 Trade volume effects of KOREU FTA

This chapter will analyse if effects on the trade volume, value and direction between the contracting parties can be found. In terms of volume of traded automobiles Korea experienced a steep increase of imports from the EU caused by the FTA. As indicated in table 11, in the year before the FTA introduction 2010 total imports

amounted to 59,242 vehicles, whereas in 2014 they already reached 157,801 units representing a remarkable rise of over 166.4% (own calculation based on KAIDA, 2015e). The fact that the growth rates increased exponentially with each year of implementation (EC, 2015, p. 5) can be explained by the transitional period which only gradually opened the Korean automotive market for imports. In terms of trade direction, the imbalance in automotive trade, despite the FTA, between the two partners persists. Korea is still shipping more vehicles to the EU than vice versa with exports having grown by 36.1% (own calculation based on ACEA, 2015c) from 297,744 to 405,137 units between 2010 and 2013 (ACEA, 2015b; 2015c). In 2014 the number has dropped to 347,256 units which, for the most part, is due to the appreciation of the Won that started in that year (see chapter 3.2.3). This led to Korean automobiles exported to the EU having become relatively more expensive than their EU-made counterparts. This also explains the contrary developments of the Korea to EU volume and value graphs in tables 11 and 12 respectively. While the total number of vehicles exported to the EU has fallen, the value of these vehicles in Euro terms has increased because one Euro is now able to buy a smaller amount of Won only.

The EU, despite stronger trade gains, was only able to slightly decrease imbalance in the balance of trade in the automotive sector which was in favour of South Korea at +189,455 in 2014 (versus +238,502 in 2010) (own calculation based on ACEA, 2015b; 2015c). The growth of Korean imports to the EU occurred almost entirely during the first year of implementation (EC, 2015, p. 5), showing the EU's willingness to grant full FTA advantages to Korean producers immediately. Furthermore, tariff utilisation in the automotive sector for exports from the EU to Korea amounted to 94% (EC, 2015, p. 6) testifying the effectiveness of the FTA's provisions in this industry.

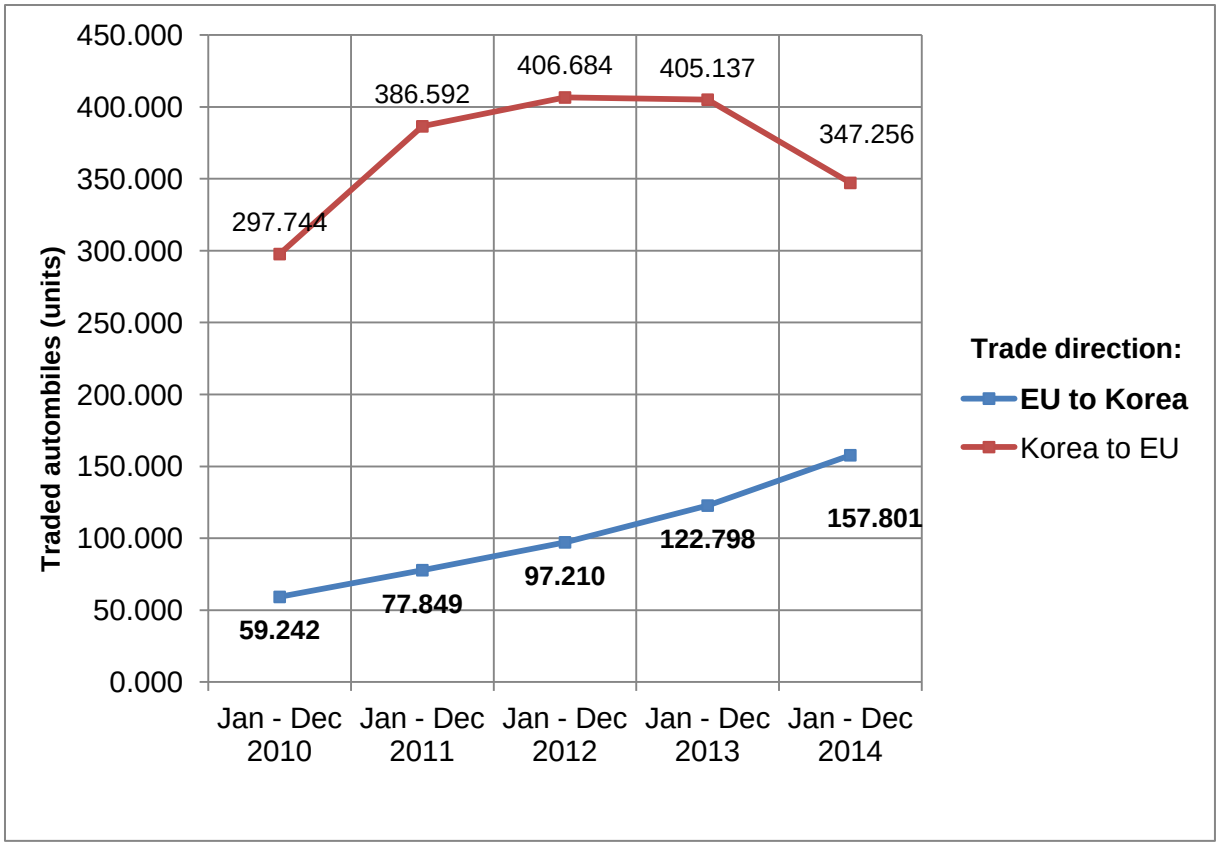

Table 11: EU Korea: volume of automotive trade 2010-2014 (own graph based on ACEA, 2015b, p. 12; ACEA, 2015c; ACEA, 2015d; KAIDA, 2015e)

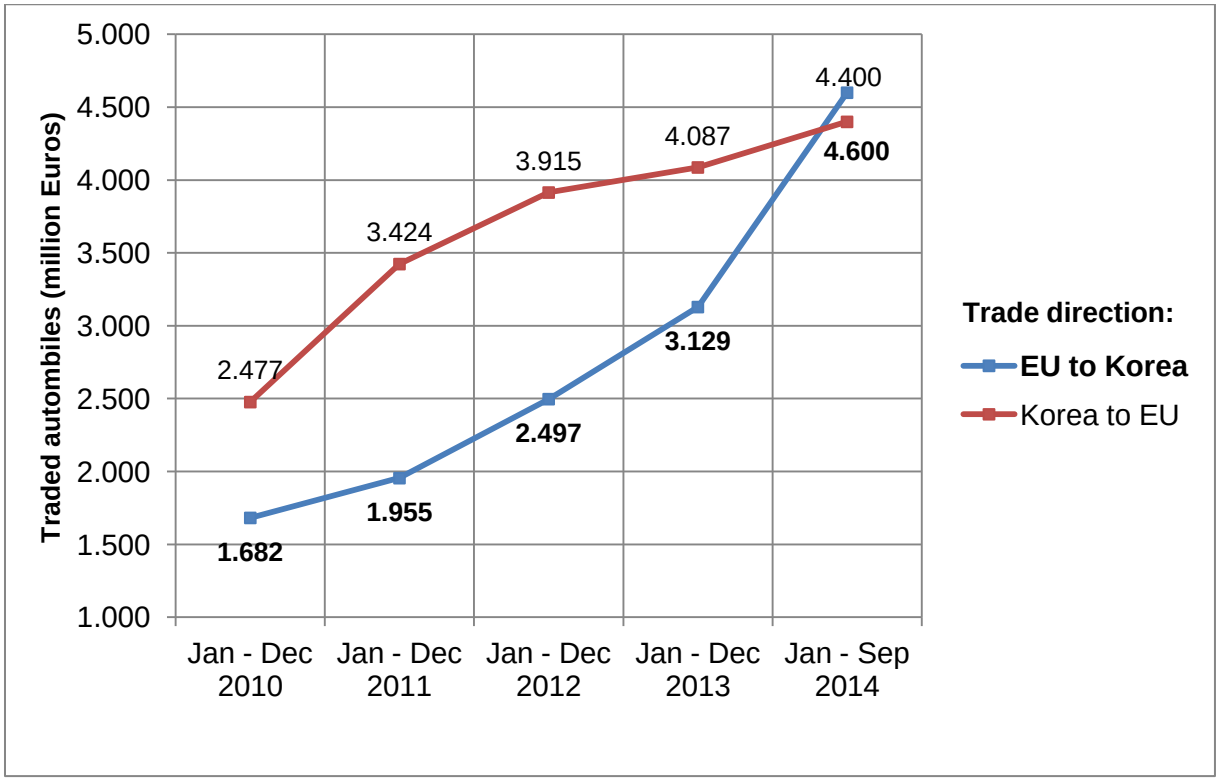

Table 12: EU Korea: value of automotive trade 2010-2014 (own graph based on ACEA, 2015c; ACEA, 2015d; Jin, 2014)

In value terms the development of traded automobiles shows for the first time that the EU was able to export more vehicles to Korea than importing from it, as was already mentioned in chapter 3.2.2. Table 12 depicts how, at a value of 4,600 million Euros, vehicles imported to Korea surpassed exports of Korea (4,400 million Euros) in 2014 (Jin, 2014)[5]. The comparison of both tables shows that European automotive exports to Korea have risen equally strong in terms of value (161.6%) and volume (166.4%) (own calculations based on KAIDA, 2015d). All in all, these graphs display that both partners have benefitted from the FTA in terms of trade stimulation.

4.1.3 Application of the price-comparison method

In order to quantify the effects of the trade barrier abolitions identified in chapter 4.1.2 the price-comparison method introduced in chapter 2.2.2 will be applied in this section. As mentioned above, this is a relatively simple method which can only give rough estimates when it comes to calculating AVE percentages. For the purposes of this paper, it will be used as a tool to analyse general price tendencies of German automobiles imported to Korea by comparing the retail prices of several vehicles sold in both markets in 2009 prior to the implementation of the FTA and in 2014 after it. Of course variable factors such as marginal differences in vehicle standard equipments, different profit margins of the same producer in the two countries, granted discounts as well as macro-economical effects (e.g. exchange rate fluctuations) cannot be isolated by this method and the resulting data must thus be used with this in mind. Finally, the ten chosen automobiles are not representative for the entirety of German vehicles offered on the Korean market and are therefore only a small-size sample. If all of the above is reasonably considered, the results should in the best case present an AVE for the pre-FTA period which is higher than that after the FTA's introduction.

As for the practical application of the price-comparison method, ten German-made automobiles (five petrol and five diesel) were selected primarily for the availability of corresponding and consistent price data which was identified to be the most important factor for obtaining conclusive results earlier. Furthermore, a number of the selected vehicles (e.g. Volkswagen Tiguan, BMW 5 Series) can also be found in the top ten ranking of bestselling imported vehicles in 2014 provided by KAIDA in order to secure the relevance of the comparison (KAIDA, 2015f, p. 6). The automobiles

[5] The 2014 data used in table 12 only accounts for January to September and not to December.

also present a wide price range so that no bias is incorporated either towards inexpensive or costly premium ones. In addition, the calculations were carried out utilising one single average Won-Euro exchange rate (1 Won = 0.0008139 Euros between 1st January 2015 and 21st July 2015) to help minimising exchange rate-related distortions (ECB, 2015b). In order to maintain data consistency, German prices in 2009 were sourced from renowned domestic motoring magazines (e.g. Auto Motor und Sport, Auto Zeitung, ADAC) that have conducted tests of the automobiles in question. Korean prices in 2009 were taken from the web portal “Daum” that offers a large variety of services including an online motoring magazine that collects all test data on Daum’s online auto platform (Daum, 2015). As for 2014, German prices were again taken from the large variety of motoring magazines available in Germany, whereas Korean prices were taken from the August 2014 issue of Top Gear motoring magazine’s Korean edition which features a detailed compilation of all new vehicles available on the Korean market including their prices (Top Gear Korea, 2014, pp. 187-203). All prices used represent base model prices of the respective vehicles to minimise distortions caused by differences in vehicle equipment.

Table 13 summarises the results for all ten vehicles that were analysed with the help of the price-comparison method with the left half of the table containing the 2009 price data and the right half the 2014 data. The left-hand orange column specifies whether a vehicle is diesel or petrol driven while the prices of the vehicles on the German market in 2009 and 2014 are collected in the respective green columns (e.g. 99,104.00 Euros for a Porsche Panamera S in 2009 and 107,196.00 Euros in 2014). The Korean Won prices of the same Porsche can be found in the left light-blue columns (2009: 157,300,000 Won; 2014: 153,500,000 Won). At this point the import tax is deducted from the 2009 Korean price because it is already included in the retail price.

	Fuel Type	Price 2009 (GER)	₩-Price 2009 (KOR)	₩-Price 2009 (KOR)-8% Duty	XRT (Ø1.1.-21.7.15)	€-Price 2009 (KOR)	AVE 2009	Price 2014 (GER)	₩-Price 2014 (KOR)	XRT (Ø1.1.-21.7.15)	€-Price 2014 (KOR)	AVE 2014	Δ-AVE
Volkswagen Tiguan 2.0 TDI 4Motion	D	29,300.00 €	₩ 43,300,000	₩ 40,092,593	0.0008139	32,631.36 €	10.21%	32,700.00 €	₩ 38,400,000	0.0008139	31,253.76 €	-4.63%	-14.84 p.p.
Porsche Panamera S	P	99,104.00 €	₩157,300,000	₩145,648,148	0.0008139	118,543.03 €	16.40%	107,196.00 €	₩153,500,000	0.0008139	124,933.65 €	14.20%	-2.20 p.p.
Mercedes-Benz GLK 220CDI 4Matic	D	40,341.00 €	₩ 58,600,000	₩ 54,259,259	0.0008139	44,161.61 €	8.65%	42,721.00 €	₩ 56,600,000	0.0008139	46,066.74 €	7.26%	-1.39 p.p.
BMW 520d	D	39,950.00 €	₩ 64,500,000	₩ 59,722,222	0.0008139	48,607.92 €	17.81%	42,600.00 €	₩ 62,900,000	0.0008139	51,194.31 €	16.79%	-1.02 p.p.
Audi Q5 2.0 TDI quattro	D	40,500.00 €	₩ 58,800,000	₩ 54,444,444	0.0008139	44,312.33 €	8.60%	44,280.00 €	₩ 59,000,000	0.0008139	48,020.10 €	7.79%	-0.81 p.p.
Volkswagen Passat CC 2.0 TDI	D	34,825.00 €	₩ 50,400,000	₩ 46,666,667	0.0008139	37,982.00 €	8.31%	35,750.00 €	₩ 48,500,000	0.0008139	39,474.15 €	9.43%	1.12 p.p.
BMW 328i	P	37,400.00 €	₩ 61,700,000	₩ 57,129,630	0.0008139	46,497.81 €	19.57%	32,370.00 €	₩ 51,800,000	0.0008139	42,160.02 €	23.22%	3.66 p.p.
BMW 528i	P	45,400.00 €	₩ 68,900,000	₩ 63,796,296	0.0008139	51,923.81 €	12.56%	46,000.00 €	₩ 67,900,000	0.0008139	55,263.81 €	16.76%	4.20 p.p.
BMW Z4 28i	P	42,900.00 €	₩ 80,400,000	₩ 74,444,444	0.0008139	60,590.33 €	29.20%	43,950.00 €	₩ 81,100,000	0.0008139	66,007.29 €	33.42%	4.22 p.p.
Mercedes-Benz ML63 AMG	P	101,805.00 €	₩139,900,000	₩129,537,037	0.0008139	105,430.19 €	3.44%	110,254.00 €	₩149,500,000	0.0008139	121,678.05 €	9.39%	5.95 p.p.
Ø-AVEs:		Ø-Pre-FTA AVE:					12.25%	Ø-FTA AVE:				12.15%	-0.10 p.p.

Table 13: Calculation of AVEs with price-comparison method (own table based on Auto Zeitung, 2009a, 2009b, 2014a, 2014b, 2014c; Daum, 2009a, 2009b, 2009c, 2009d, 2009e, 2009f, 2009g, 2009h, 2009i, 2009j; ECB, 2015b; Auto.de, 2014; Top Gear Korea, 2014, pp. 192, 193, 199, 200, 201, 203; Peters, 2009; Anker, 2014; Santer, 2009; Heise Autos, 2009; Autobild, 2012; Bloch, 2009; Stegmaier, 2009a, 2009b; BMW Group PressClub Korea, 2009; Pander, 2009; Mechnich, 2014; ADAC, 2009a, 2009b; Autokostencheck.de, 2014; Schwarz, 2014; Schmidt, 2014; Dralle, 2012)

This is necessary to exclude the effect of the 8% tariff since the desired AVEs shall only depict the expenses of NTBs. Otherwise the 2009 AVEs would not be comparable to the respective 2014 AVEs because retail prices in 2014 did not include a tariff anymore. The corresponding formula for this calculation is:

$$\textit{Pre-duty Price}_{2009} = \frac{\textit{Post-duty Price}_{2009}}{(1 + 0.08)}$$

Accordingly for the Porsche the pre-duty price is 145,648,148 Won. The exchange rate (dark-blue columns) is then used to calculate the equivalent Korean price in Euros which can be found in the right light-blue columns (2009: 118,453.03 Euros; 2014: 124,933.65 Euros). The AVEs for both years are then calculated with these formulas:

$$AVE_{2009}\ (\%) = 1 - (\text{Vehicle Price Germany}_{2009} / \text{Vehicle Price Korea}_{2009})$$
$$\text{and } AVE_{2014}\ (\%) = 1 - (\text{Vehicle Price Germany}_{2014} / \text{Vehicle Price Korea}_{2014})$$

The results can be found in the light-purple columns. For the Porsche the 2009 AVE amounted to 16.4%, whereas it had dropped to 14.2% in 2014. The difference in AVE is recorded in the yellow column on the right-hand side of the table (-2.2% for the Porsche) and translates to the monetary amount saved due to lower NTBs caused by the KOREU FTA for this vehicle. The bottom row displays the average level of AVE for 2009 (12.25%) and 2014 (12.15%) taking into account the findings for all ten vehicles. The difference (Δ) is the effect of the FTA on the average AVE level regarding all vehicles (-0.1 p.p.) found in the yellow column. The data is also sorted by the Δ-AVE from lowest to highest.

Interpreting the findings of the price-comparison method, the first important result is that the average AVE for German automobiles imported to Korea has only marginally decreased from 12.25% before the FTA to 12.15% with the FTA. This means that the NTB level has remained almost unchanged despite the admissions made by Korea and identified in chapter 3.2.1. It can be observed that there is no constant minimal decrease in AVE-levels across the vehicle selection, but some of them exhibit a

decrease (e.g. the Volkswagen Tiguan 2.0 TDI 4Motion) whereas others' AVEs increased (e.g. Mercedes-Benz ML63 AMG). One reason for this could be that the German importers have not yet been able to even exploit the few NTB admissions granted by Korea. For example the annual vehicle ownership tax and subway bond are still based on engine capacity and almost all German automobiles on sale in Korea have engines larger than 2,000cc, automatically burdening them with the highest rate for these taxes. What can also be extracted from table 13 is the fact that petrol automobile AVEs on average have increased (+2.64 p.p.) while they decreased for diesel ones (-3.39 p.p.) (own calculations based on own table 13). A possible explanation is that the German producers' import volumes are exceeding the exemption and reduction limits introduced by the FTA regarding exhaust gas emissions under the KULEV regulations. As was touched on above, for petrol vehicles KULEV is based on a fleet average system (FAS) that fines those manufacturers with a high share of large engine capacity vehicles in their fleet. Only Porsche has not yet exceeded the 4,500 units exemption limit which explains why the petrol-driven Panamera S has seen a decrease in AVE of 2.2 p.p. Since the FAS emission limits have been lowered between 2009 and 2014, all other petrol vehicles' AVEs subsequently increased. The diesel vehicles' lower AVEs are likely to have been caused by the fact that the annual vehicle ownership tax now does not tax vehicles above 2,000cc at a higher rate than those with 1,600cc engines anymore which as has led to more equal treatment. In addition, the special excise tax has been changed to a 5% tax not differentiating between engines sizes anymore. As for the significant AVE decrease for the Volkswagen Tiguan 2.0 TDI 4Motion, it has benefitted from the abolition of the SUV tax eliminating the disadvantage it had as opposed to diesel sedans such as the BMW 520d. However, this does not fully explain the Tiguan's unproportionally high price decrease making it actually cheaper than in Germany. Distorting factors are likely to have played a role, i.e. because it was the bestselling imported vehicle in 2014 it is likely that Volkswagen was granting further price reductions at the time in order to increase sales.

Considering the low 0.1 p.p. AVE decrease caused by NTB abolition there seems to be a discrepancy in relation to the steeply rising sales figures of foreign and especially German importers which rose by over 166% between 2010 and 2014 (see chapter 4.1.2). A possible explanation for this unequal development can be found in

the socio-economic NTBs (7) to (9). They can be utilised as another factor that caused diesel vehicles' AVEs to have decreased whereas petrol vehicles' have not. In chapter 3.2.3 it was outlined how German automobiles with diesel engines have gained popularity with Korean consumers for their fuel efficiency propelled by rising fuel prices. Since German offerings generally offer better fuel economy than those from other countries, the NTB has been lowered in the sense that consumers increasingly favour the advantages and monetary savings of German automobiles while abandoning their previous patriotic preconceptions against non-Korean brands. In addition, it was found that Koreans appreciate the premium quality and status of German automobiles that brands from other countries cannot offer. Korean consumers were found to be more liberal and welcoming towards the advantages of being part of a globalised economy.

Briefly concluding the findings of this chapter, the FTA can be considered as a trigger development because German importers saw their chance to properly market their vehicles Korea utilising the abolition of the 8% import duty. Korean consumers quickly began to see the above-mentioned superiority of the German offerings and paved the way for the steep increase in vehicle imports. The reason for the persistent growth rates, despite the unchanged level of measurable AVE protection, is therefore rooted in the immeasurable social NTBs that have permanently been abolished in people's minds. Koreans' attitudes towards German automobiles have sustainably been reformed by the exposure to them triggered by the FTA. The question whether Korea's government intentionally neutralises the effect of import duty abolition by increasing hidden NTBs is one that cannot be answered within the scope of this paper. However, the socio-economic NTBs cannot directly be influenced by any government action so that the growth of German vehicle sales can be predicted to be of a persistent nature.

4.2 Outlook on TTIP: drawing conclusions from KOREU FTA

In the course of this chapter the findings of this paper regarding the effects of the KOREU FTA on the German automotive industry will be used as a basis for an outlook of the effects of the proposed TTIP on the industry. A comparison of the NTB abolition efforts under the KOREU FTA with the NTBs on the US automotive market will help to determine whether KOREU can be taken as a role model for a transatlantic partnership.

4.2.1 Abolishing NTBs in the US under consideration of KOREU FTA

Considering the in chapter 3.3 mentioned fundamental regulatory disparities between the EU and the US, the automotive sector has been identified as a key trial of harmonising standards between the two (Freund & Oliver, 2015, p. 1). Standards in need of harmonisation are safety and environmental ones. Safety levels for automobiles in both areas are on equally high levels already and well enforced with similarly low fatality rates (15.8 per 100,000 vehicles in the EU versus 13.6 in the US) (Freund & Oliver, 2015, p. 2). Environmental protection provisions concerning exhaust gas emissions are on a high level as well with a 95g/km greenhouse gas emissions limit for 2020 in the EU and 101g/km for 2025 in the US (Freund & Oliver, 2015, p. 2).

It becomes obvious that both regulatory systems pursue the same targets and it is either a question of negotiating a fully harmonised new set of shared certifications and testing procedures or mutual recognition of the ones in existence to eliminate the present double development of parts that is necessary to make one and the same automobile marketable in the EU and US. The KOREU FTA's negotiators saw themselves confronted with a very similar starting situation. Korean automotive regulations were based on US ones for a large part in regard to fuel consumption limits (based on US EPA test cycle), exhaust gas emission limits (US FAS for petrol vehicles), on-board diagnostics (EU systems not recognised) and safety standards (US standards prioritised to EU ones) (see chapter 3.2.1). This means that EU importers to Korea had to undertake similar redesigns and changes to their EU-conform vehicles that they would have made for the US market. Therefore the NTBs in place on the Korean and US automotive markets can be considered to be similar.

However, as was found by this paper, the abolition of NTBs needs to be carefully executed since protective behaviour by the Korean government has shown to nullify the efforts undertaken to liberalise trade. Taking into consideration that the import duty for EU vehicles shipped to the US is only 2.5% (as opposed to pre-FTA 8% in Korea), the focus of TTIP in respect to the automotive industry is even more on NTBs. The KOREU FTA had good intentions with its special automotive trade-related annex but the analysis of each and every single NTB and its mechanisms was not thorough enough. In order to enforce a successful NTB abolition sanctions for intentionally blocking the liberalisation process need to be installed. Such an opportunity was missed out on in the KOREU FTA and should be incorporated in TTIP. Therefore the identified NTBs (see chapter 3.3) in place on the US market for German automotive importers will now be addressed and recommendations made while minding the experiences of the KOREU FTA.

As mentioned above, for German importers the fact that many components need to be developed twice over in order to comply with EU and US regulations is a major cost driver. The KOREU FTA has shown that mutual recognition (as opposed to negotiating new rules from scratch) of the trading partner's existing standards is a simple and efficient way of eliminating such costs. For example the two different EU and US OBD standards, only the US one of which was previously recognised by Korea, are now both equally recognised. This was easily negotiable because both systems have almost identical functions of monitoring a vehicle's exhaust gas emissions. Between the EU and US there are comparable issues like the differing vehicle lighting or mirror regulations which can potentially be solved in a similar uncomplicated manner by recognition. After all, the differences between regulations regarding rear mirrors are only minor and having automobiles with US mirrors in the EU and vice versa is unlikely to pose an unjustifiable safety hazard.

It is a similar yet more complex issue with respect to the safety certification of vehicles. Since the EU and US crash safety testing is fundamentally different (official crash test facilities versus manufacturer self certification), a mutual recognition of successfully completed tests under either regulation would prevent the necessary installation of either a government testing facility network in the US or testing facilities by each individual manufacturer in the EU. Of course, opting for recognition instead of harmonisation in the matter of safety would involve making compromises on both

sides, but since both the EU and US safety regulations have turned out to be at comparably high levels this seems to be a reasonable trade-off.

The fuel efficiency limits in the US are adhered in the US CAFE regulations on a fleet average level basis. There are no classifications in place according to engine size like in Korea but the fleet average system is discriminating against German premium importers with small import volumes who cannot compensate for their vehicles with high fuel consumptions and therefore face penalties. It is likely that the TTIP FTA will include exemption regulations for these vulnerable companies like it was seen in the KOREU FTA. However, the sales number limits defining which importers are eligible for exemption should be specified with future growth in mind. The KULEV regulations update under the KOREU FTA has shown that importers who initially benefit from such an exemption can quickly grow out of this protection zone which effectively negates the FTA efforts.

An issue that should be easily solvable is the Gas Guzzler Tax that imposes tax rates increasing with lower vehicle fuel efficiency. Vehicle types that especially US manufacturers produce in high quantities are exempted. This NTB should thus be abolished by removal of the exemption rules. As was seen with the Korean SUV tax the abolition of such NTBs can be expected to be unproblematic.

The US AALA labelling system for automobiles must be updated to no longer intentionally deter US consumers from buying foreign products. The individual labelling of different vehicle components displaying their country of origin itself does not imply any discrimination, however, the information of how many of all used parts are of US/Canadian origin should be omitted because a low percentage could potentially discourage US consumers from buying vehicles with a low share of domestic parts.

As for the differing US consumer preferences regarding petrol and diesel automobiles German manufacturers are unlikely to observe a positive trend soon. Diesel prices are largely influenced by the government through taxation and in the case of the US remain higher than those for petrol. Although German vehicles offer greater fuel mileage than US petrol ones this cannot outweigh the higher diesel price in combination with the general preconceptions against it. At the same time, large engine pick-up trucks that are popular in the US are frowned upon in the EU for their

high fuel consumption because in Europe petrol is pricier than diesel. So in order to create fair market conditions the taxation levels of petrol and diesel would have to be aligned in both markets. This is an unlikely scenario because it would be potentially harmful for EU diesel vehicle and US pick-up truck producers in their respective domestic markets. The only possible compromise on behalf of the US would be the adjustment of diesel fuel quality to European standards so that producers no longer face the NTB of having to modify their engines accordingly. The petrol versus diesel issue can thus be considered to be more of a socio-economic trade barrier that is driven by consumer preferences and results in government taxation patterns that subsequently nullify comparative advantages of imported vehicles. In order to make diesel vehicles popular in the US like it has happened in Korea, a major trend reversal would have to take place. As was mentioned when discussing the socio-economic NTBs on the Korean market, such a development is difficult to plan and control with the help of an FTA clause. However, also like in Korea the TTIP FTA might be a trigger event to expose US consumers to the advantages of German economical automobiles due to lower purchasing prices.

4.2.2 German-US automotive trade under TTIP: an outlook

All in all, it can be assumed that the trade liberalisation between the EU and US automotive markets will be more transparent and smoother than is the case with Korea. After all, due to the fact that the regulations have developed to almost identical levels of safety and environmental protection in many cases it is, as was stressed before, a question of mutually recognising these not so different standards rather than having to deal with hidden NTBs such as the engine-capacity categories many of Korea's regulations used to be based on. In the best case, future standards should be developed in a jointly manner which would make recognition obsolete and be based on the UN-ECE framework since it is common in more countries than US FMVSS standards. Furthermore, due the fact that the US automotive market has been identified as one of the most liberal ones worldwide the chances are high that the US government will not attempt to incorporate any concealed measures that inhibit the FTAs effectiveness. Unlike Korea, the US has no overly patriotic tendencies to protect its automotive industry and put it at an advantage against foreign brands. Nonetheless, in this respect it is important to install a functioning enforcement mechanism that can effectively intervene should any developments

such as hidden NTBs endangering the efforts of the TTIP FTA arise. This has turned out to be a major flaw of the KOREU FTA because even though NTBs have clearly not been fully abolished as of yet, the only instrument to counteract this are lengthy and inflexible renegotiations.

Quantities of German vehicles exported to the US will most likely see a strong upwards trend with especially the premium brands benefitting from the increased competitiveness of their offerings. Just like in other overseas markets that were analysed (e.g. Korea, China and Russia), the German brands will be purchased for their premium quality and status. Thanks to the abolition of the already low import tariff and the NTBs currently in place more people in the US will be able to upgrade to an imported vehicle. Due to the less pronounced preference and dominance of domestic vehicles compared to the Korean automotive market, the US market offers more growth potential in terms of open-mindedness of consumers towards non-domestically produced products. At the same time when acting on the US market, German manufacturers have less opportunity to exploit their technological advantages with regard to fuel economy of their diesel offerings than they typically have on the Korean market which simply offers friendlier framework conditions for such vehicles due to higher cost of fuel. Nonetheless, the cost savings realised by the no longer necessary double development of almost identical vehicle components will almost certainly lead to increased sales and a wider product variety of German automobiles on the US market. Vehicles that are already only sold in small quantities in Europe now get the chance to be marketed in the US at little extra cost. The same development can be predicted for the introduction of new technologies which can now be enjoyed by both EU and US customers likewise because only one certification approval needs to be completed to gain access to both markets. Finally, no impressive growth in sales of German automobiles like it was witnessed in Korea over the past years (+166%) can be expected since the US market already is a much more saturated market in terms of imported vehicles (66% versus 16.4% penetration rate), however, the share of German brands among these importers will see an increase.

5 Conclusion

Summarising the findings of this paper, this section will firstly recapitulate the individual results of the different chapters and then pick up on the main objective established in chapter 1.

It was determined in chapter 2.1 that the basic form of free trade is an unimpeded flow of goods between countries called imports and exports. Being the easiest choice of a foreign market entry exporting on the one hand carries a low level of risk-taking and capital required but on the other hand does not offer as much control of the operation as a JV or wholly-owned subsidiary. Impediments to the free flow of imports and exports were defined as barriers to trade in chapter 2.2 and were grouped into tariffs and NTBs. It was found that the abolition of tariffs in global trade has already advanced to a high level thanks to the achievements of the WTO created in 1994 and that the main issue today are NTBs which include indirect measures such as technical or administrative obstacles faced by importers. The automotive industry in particular requires stringent safety and environmental provisions and has therefore been identified to be a sector presenting a variety of NTBs. While tariffs come in either ad valorem or flat form and thus can be easily measured and compared, NTBs need to be estimated with the help of indirect methods such as analysing the trade flows between countries or the price differences before and after trade liberalisation. After weighing the advantages and disadvantages of it, the price-comparison method was chosen for the purposes of this paper because it offers a reasonable trade-off between easy applicability and reliability of results. In addition, the concept of AVEs was introduced to help make the outcome of the analysis more comprehensive and comparable to import duties. A definition from both the WTO law and international system perspectives in chapter 2.3 showed that FTAs firstly only are of relevance for this paper if they accord to Art. XXIV.8 (b) GATT and secondly can be defined as IGOs which are not only used by governments to facilitate free trade but as foreign policy tools to build allies with other states. After having concluded this general introduction of FTAs, a detailed look into the aims and provisions of the KOREU FTA was taken and it was shown that NTBs in the automotive industry are addressed in a sector-specific annex.

Chapter 3 shifted the focus towards the automotive industries of all participating states of the KOREU and TTIP FTAs, namely Germany, South Korea and the US. Germany's automobile manufacturers were identified to be a cornerstone of the country's economy especially due to their high export quota of over 75% which is significantly higher than the average quota across all industries. Moreover, premium brands displayed a generally higher export quota than their mass-producing counterparts which was a first indicator of the export structure of German automotive producers. Foreign buyers were found to value the high level of quality, status and technology causing them to have a tendency of buying vehicles of the upper segments. The analysis of the key export markets UK, China, Japan and Russia showed that the UK is the only one of them to prefer small-sized economical vehicles when it comes to German vehicles. Japanese consumers would show a similar behaviour if high trade barriers did not make imported vehicles very expensive compared to domestic ones and thus leading to an imported vehicle quota of only 7%. Chinese consumers, who have become the backbone of German manufacturers in terms of sales volume, together with Russians are typically open-minded when it comes to displaying wealth and status leading to a strong preference of German high-end luxury automobiles in these markets. Other important developments discussed were the sales number drop in Russia due to the ongoing political tensions caused by the annexation of Crimea as well as the Chinese government's newly introduced cap of new vehicle registrations both of which have affected German manufacturers in terms of export volume.

The next automotive industry analysed was the South Korean one which, with an export quota of nearly 70%, has shown be to be a driving force of the country's economy like in Germany. These exports to a large extent consisted of Korea's successful small and medium-sized vehicles making it the fifth-largest automotive producer in the world directly following Germany as fourth. The review of the trade barriers that were in place prior to the implementation of the FTA showed that in addition to an 8% import tariff a variety of NTBs were inhibiting the import of foreign vehicles. These were categorised into ones relating to environmental, safety, socio-economic economic as well as taxation issues. Although the Korean domestic producers are still dominating their home market, it was clearly shown that imported brands have begun to increasingly take over market shares from them. Of all foreign

producers on the Korean automotive market German brands turned out to be the most successful ones by a long way with a 72% share in total imported vehicles. The main reasons for this German lead were identified to be their competitive advantage in efficient and clean diesel automobiles, the premium quality and status they enjoy among Korean consumers as well as a favourable exchange rate development.

Regarding the US automotive market liberal conditions with a low import duty were established. Korean and German importers hold similar market shares of 7.7% and 7.8% respectively whereas Japanese models account for 33% of all newly registered vehicles. The main trade barrier was found to be rooted in the fact that European UN-ECE and US FMVSS standards had developed independently from each other over decades. Although both sets of rules are at a similarly highly evolved level regarding safety and environmental protection, they substantially differ in detail. Additional NTBs found for German importers were the popularity of pick-up trucks in the US as well as the prevailing preconceptions against diesel automobiles.

Chapter 4.1.1 was dedicated to answering the question whether the KOREU FTA was successful in abolishing the previously identified NTBs and led to mixed results. For example, not all of the NTBs that were in place and utilised an engine capacity-based system for determining numerous taxes and vehicle efficiency limits putting German importers at a disadvantage were solved by the FTA. All in all, it was found that only about 33% of NTBs were fully abolished. Despite these results chapter 4.1.2 attested increases of trade volumes and values for both FTA partners since its incorporation in July 2011. However, the results of the application of the price-comparison method in chapter 4.1.3 showed that these increases in automotive trade and sales were not primarily caused by lower retail prices of foreign vehicles for consumers. The average AVE level had only dropped by 0.1 p.p. and a detailed interpretation of the results showed that only diesel automobiles seemed to have benefitted from the FTA's measures such as more favourable taxation systems, whereas petrol vehicles faced higher average AVEs. The source for this discrepancy between strong sales growth and marginal price advantages was found in the elimination of socio-economic NTBs triggered by the FTA and leading to a predictably long-lasting popularity of German vehicles' qualities among Korean consumers.

Chapter 4.2.1 discussed the NTBs in existence on the US automotive market today with the experiences made with the KOREU FTA in mind and showed that German automotive producers cannot hope to see a sales plus due to the abolition of socio-economic NTBs like in Korea. The American market was found to be already much more saturated in terms of imported vehicles than the Korean one and consumer preferences therefore already much more diverse and pronounced. With TTIP, a much higher reliance on successful and measurable NTB abolitions that would actually lower the retail prices of German automobiles was predicted. Therefore, the importance of a functioning enforcement mechanism that can solve issues with NTB abolition was recommended to be incorporated into TTIP. In addition, the key to a successful trade liberalisation of the automotive sector for most issues was identified to be a mutual recognition of standards rather than developing new common ones from scratch. This is due to the fact that standards and procedures are already very mature in both markets, meaning that the full adoption of one set of rules on behalf of one party would mean a disproportionate effort.

Picking up on the main objective laid out in chapter 1.1, the last chapter 4.2.2 provided an outlook on the effects of TTIP on the German automotive sector which can indeed expect to benefit from its introduction. If shaped with the above-discussed issues in mind, the FTA between the EU and US will make German automobiles more affordable to US consumers, benefit from their less patriotic attitude towards foreign vehicles and thus increase sales like is the case in Korea. US consumers will also benefit from a wider variety of available imported vehicles and technologies due to the savings in R&D that are realised with the no longer necessary double development of components and easier certification for both markets. In the end, the magic words with regard to the TTIP negotiations seem to be “*mutual recognition*” because whilst future regulations should be elaborated together, the best way to efficiently handle the existing ones in both markets is to simply recognise them.

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I hereby declare that I have authored this thesis independently myself, that I have not used other than the declared sources/resources, and that I have explicitly marked all material which has been quoted either literally or by content from the used sources.

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