

T.C.
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AVRUPA TOPLULUĞU ENSTİTÜSÜ
AVRUPA BİRLİĞİ İKTİSADI ANABİLİM DALI

**STANDARDS AS A FACILITATOR AND AN OBSTACLE TO TRADE: THE CASE
OF EUROPEAN UNION STANDARDIZATION**

Yüksek Lisans Tezi

FATMA MUGE ÖZAYDIN

İstanbul – 2007

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Tez Danışmanı: Doç. Dr. Murat Çokgezen

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ACKNOWLEDGEMENTS

I wish to thank to advisor of this thesis, Assoc. Prof. Dr. Murat Çokgezen who kept an eye on the progress of my work and gave suggestions in this thesis. I also want to thank to each member of my Thesis Committee: Prof. Dr. Osman Küçükahmetođlu and Assist. Prof. Dr. Cengiz Bahçekapılı for their effort in reading and providing me with their valuable comments.

I am deeply grateful to Prof. Dr. Eriřah Arıcan. Her wide knowledge, logical way of thinking, encouragement and personal guidance have been a great value for me.

I wish to express my warm thanks to my friend Özlem Yılmaz for her kind support, advice and sharing her valuable experience with me. Her guidance has provided a good basis for my thesis.

I am also grateful to my dear friend Alim Serhat Uslu for his excellent support, understanding and great help in my difficult times. I learned to believe in my future, my work and myself. Thank you Serhat.

Especially, I would like to give my special gratitude to my parents, Mehmet Mahmut Özaydın and Mehdiye Özaydın whose love enabled me to achieve my goals. I am deeply indebted to my family for everything in my life. During my educational life and this work they gave me the confidence and support. Without their encouragement, patience and understanding, it would have been impossible for me to finish this work. I love you so much and your presence is so precious for me. My sincere thanks are also due to my brother Murat Özaydın, my sisters Mutlu Bostancı, Gamze Özaydın and their families for their loving support. I am glad being one of them.

SUMMARY

Standards are apart of our life, in the sense that they define quality, safety and performance of goods and services are really important for society and the economy. In my thesis, I analyzed European Union Standardization, its negative and positive effects of EU trade in internal and external markets. Special attention was given to the different strategies for internal trade, pursued by European Union, in order to reduce technical trade barriers. According to the results of the analysis; it is possible to say member states satisfy European Standards. They gain competitive edge and export their products easily to the EU. However; the effect of EU Standardization is quite different for various industries from various countries. The general impact is positive. They are fully harmonized in general and take the advantage of the harmonization with the policy being in place.

Another important issue was the effects of EU standardization on external EU trade. As an example; the effects of EU Standardization on trade between EU and CEECs before accession were analyzed. The countries which can not afford the costs of sensitive high quality product sectors, are not able to export their goods to the concerning sectors in the EU market. The large proportion of EU trade is in sectors subject to full harmonization. Therefore, they could not fulfill the requirements of the EU standardization completely. The external trade policy of the EU and the point of view of the WTO were also discussed with many cases in the thesis. The EU relies on WTO and Technical Barriers to Trade Agreement. But WTO recognizes the protection of human, animal or plant life or health, protection of environment, public safety WTO is also aims to prevent these objectives to be used as a protectionism tool in foreign trade. To conclude, the EU is one of the biggest trade players in the world and wants to harmonize its rules with international rules. However; protectionist tendencies of the EU continue in foreign trade.

ÖZET

Kalitenin, güvenliğin, mal ve hizmetlerin performansının ifadesi olması açısından standartlar yaşamımızın bir parçasıdır. Sosyal yaşam ve ekonomi için çok önemlidir. Tezimde Avrupa Birliği Standardizasyonunun ve bunun iç ve dış pazarlardaki Avrupa Birliği ticaretine pozitif ve negatif etkilerini inceledim. Ticaretteki teknik bariyerleri azaltmak amacıyla Avrupa Birliği tarafından izlenen farklı stratejilerin özellikle üzerinde durdum. Yaptığım analizlerin sonuçlarına göre üye ülkelerin AB standartlarından memnun oldukları söylenebilir. Rekabet avantajı kazanıp, mallarını kolaylıkla AB pazarına ihraç edebilmektedirler. AB standardizasyonunun etkileri çeşitli ülkelerde çeşitli endüstriler için farklı etkiler yaratmasına rağmen genel etki pozitifdir ve genel olarak tamamiyle harmonize olmuştur. Aynı zamanda bu politikaların da avantajlarını kullanmışlardır.

Tezimdeki diğer önemli bir konu da Avrupa Birliği standardizasyonunun Avrupa Birliği'nin dış ticaretine etkileridir. Avrupa Birliği ve Orta Doğu Avrupa ülkelerinin (üyelik öncesi) aralarındaki ticaretinin etkileri örnek olarak incelenmiştir. Hassas ve yüksek kaliteli ürünler içeren sektörlerin maliyetlerine katlanamayan ülkeler Avrupa Birliği pazarında ilgili sektörlerde mallarını ihraç edememişlerdir. Avrupa Birliği ticaretinin büyük bir payı tümüyle harmonize olmuş sektörlerden oluştuğu için diğer ülkeler Avrupa Birliği standardizasyonun gereklerini tam olarak yerine getirememişlerdir. Avrupa Birliği'nin dış ticaret politikası ve Dünya Ticaret Örgütü'nün bu konudaki bakış açısı da çeşitli örnek vakalarla tartışılmıştır. Avrupa Birliği, Dünya Ticaret Örgütü ve Teknik Bariyerler Antlaşmasına bağlıdır. Dünya Ticaret Örgütü insan ve hayvani bitki sağlığına, çevrenin korunması ve halkın güvenliği konularında hassastır. Ancak aynı zamanda bu ilkelerin ticaret adına korumacılık vasıtası olarak kullanılmasını engellemeyi amaçlamaktadır. Sonuç olarak Avrupa Birliği dünyadaki en büyük ticaret liderlerinden biridir ve tüm direktiflerini uluslararası direktiflerle uyumlaştırmak istemektedir. Ancak yine de Avrupa Birliği'nin dış ticarete korumacılık eğilimleri devam etmektedir.

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LIST OF ABBREVIATIONS

| | |
|----------------|--|
| AIST | : National Institute of Advanced Industrial Science and Technology |
| APMP | : Asia Pacific Metrology Programme |
| BSI | : British Standards Institute |
| BSRIA | : Building Services Research and Information Association |
| CCP | : Common Commercial Policy |
| CE | : Conformité Européene |
| CEECs | : Central and Eastern European Countries |
| CEN | : The European Committee for Standardization (Comité européen de normalisation) |
| CENELEC | : The European Committee for Electro technical Standardization (Comité européen de normalization électronique) |
| CET | : Common External Tariff |
| CM | : Common Market |
| CU | : Customs Union |
| DES | : Diethylstilbestrol |
| DIN | : German National Standards Body |
| DTI | : Department of Trade and Industry |
| DTM | : Dış Ticaret Müsteşarlığı |
| EC | : European Community |
| ECE | : Economic Commission for Europe |
| EEA | : European Economic Area |
| EEC | : European Economic Community |
| ECJ | : European Court of Justice |
| EN | : European |
| ETSI | : European Telecommunications Standards Institute |

| | |
|----------------|---|
| EU | : European Union |
| EUROMET | : European Collaboration in Measurement Standards |
| FAO | : Food and Agriculture Organization |
| FDI | : Foreign Direct Investment |
| GATT | : General Agreement on Tariffs and Trade |
| GDP | : Gross domestic product |
| ICS | : International Classification for Standards |
| ICT | : Information and Communication Technologies |
| IEC | : International Electrotechnical Commission |
| IFAN | : The International Federation of Standards Users |
| IKV | : İktisadi Kalkınma Vakfı |
| ISO | : International Organization for Standardization |
| ITU | : International Telecommunication Union |
| LVD | : Low voltage directive |
| MR | : Mutual Recognition |
| MRA | : Mutual Recognition Agreement |
| NA | : New Approach |
| NACE | : Classification of Economic Activities in the European Community |
| NGO | : Non-Governmental Organizations |
| NICs | : Newly industrialized countries |
| NIST | : National Institute of Standards and Technology |
| OA | : Old Approach |
| OECD | : Organization of Economic Cooperation and Development |
| OJ | : Official Journal of the E (E) C |
| ON | : Australian National Standards Body |
| PPM's | : Process and Production Methods Standards |
| R&D | : Research and Development |
| RVA | : Revealed Comparative Advantage |

| | |
|--------------|---|
| SDOs | : Standards Development Organizations |
| SEA | : Single European Act |
| SEM | : Single European Market |
| SMP | : Single Market Program |
| SMSEs | : Small and medium-sized enterprises |
| SNV | : Swiss National Standards Body |
| SPS | : Sanitary and Phytosanitary |
| TBT | : Technical Barriers to trade |
| TED | : Trade & Environment Database |
| TEEC | : Treaty establishing the European Economic Community (Treaty of Rome) |
| TEU | : Treaty on European Union (Maastricht Treaty) |
| TBT | : Technical Barriers to Trade |
| TSE | : Turkish Standards Institution |
| UNECE | : The United Nations Economic Commission for Europe |
| VAT | : Value Added Tax |
| WHO | : World Health Organization |
| WTO | : World Trade Organization |

INTRODUCTION

We live in a world reliant on standards at home, at work or in the street etc.; besides all business activities are associated with standards. Standards that define safety, quality and performance of goods and services are really important for society and the economy. They contain information, create compatibility, decrease risk and prove and show quality. They play an important role in the manufacture and service industries and provide a common language for trade in national and international markets. In that respect, they are facilitators to trade. European and International Standards converge the market, facilitates commercial exchange; therefore encourage competition globally.

Standards are also used by governments to promote its social goals such as consumer protection, conserving environment, protecting health and safety of the population. All governments make regulations. If these national regulations and standards are divergent, they can constitute serious distortions in commercial markets. Foreign suppliers will need to comply with the importing country's technical regulations; thereby regulations and standards could be used as an excuse by domestic producers for protectionism. So, standards become technical barriers to free trade. There are many efforts to eliminate these barriers in the world. International standards are seen as the way of eliminating these barriers and opening new markets between the countries. International accepted product standards can facilitate international trade however; international diversity of standards can lead to technical barriers to trade. In that respect standards are discussed as obstacles and facilitators to trade.

European Union Standardization is taken as a model to look at the relation between standards and trade. This thesis deals with European Standardization and its negative and positive effects of EU trade in internal and external markets. It effectively evaluates the impact of European Union Standards on trade in relation to some studies and cases.

The objective of a single common market in Europe originated with the EEC Treaty. The primary goal of the Treaty was to create an effective common market, to ensure the emergence of the four freedoms.

The European Union has been actively working towards the removal of technical barriers to trade and prevent new ones from emerging, as well as it wants to ensure the necessary protections of health, safety and environments within the EU and its trading partners.

Since 1970s, the European Union has used different strategies for internal trade in order to reduce technical barriers. Especially adoption of new approach and mutual recognition constituted radical changes. Thus; the changes gave rise to quite effective impacts in removing technical barriers to intra- EU trade. However; the European Standardization could impede external trade. There are many disputes occurring from the requirements of EU standardization policy.

The important aim of GATT/ WTO TBT Agreement has been to ensure that technical regulations and standards as well as testing- certification procedures, do not create unnecessary obstacles to trade. However, it recognizes countries' rights to adopt standards for human, animal or plant life or health, for the protection of the environment or to meet other consumer interests.

First chapter gives information about the standards and standardization process. It explains the importance of standards and stimulus behind it. The types of standards and their economic effects are explained. In accordance with the subject of this thesis; the relationship between standards and trade is analyzed in depth. In that respect; firstly, positive impacts of standards on international trade are summarized. Secondly; the concept

of technical barriers to trade and reasons behind it are stated besides, negative effects of standards relate to trade.

Second chapter examines the standardization policy in European Union. First task of the EU was to remove technical barriers to trade and complete the single market. In this chapter firstly, the development of standardization activities and the EU approach to technical barriers to trade were analyzed. Secondly, European strategies for eliminating the technical barriers are explained. It gives information in theory about the technical harmonization directives and mutual recognition.

The third chapter looks at the effects of EU standardization on intra and extra EU trade. In that respect, the importance of technical barriers to trade is discussed according to the sectors. The dominant approaches used by the EU are explained. Two European Union countries are presented as an example to explain the effects of EU standardization on their trade. Then, the effects of EU standardization on trade between EU and CEECs before accession are analyzed. In the last section of this chapter, the external trade policy of the EU and the point of view of the WTO are discussed. Lastly, the practical examples show the tendencies of the countries to protect the public health and the environment of the countries which sometimes are necessary or sometimes used as a disguised protectionism. Some cases brought to the WTO and some examples are also summarized.

Finally, some conclusions will be presented at the end of this study.

1. STANDARDS AND STANDARDIZATION PROCESS

1.1. The Emergence of Standards

The need for products standards is not a new phenomenon. There are many assumptions through history of standards. As WTO (2005a) states;

“In biblical times, the lack of a common (standardized) language wreaked havoc at the Tower of Babel” (p: 1).

According to Boulin (1992, p: 24), Romans formed the first ‘original’ standard. When Romans create standards in order to regulate the length of the ways, inevitably they identified the measure between the two tires of the horse cart. The distinctive mark of the standards which identifies the relationship between environment and production matters, showed itself firstly by the name of ‘dimensions’ as in the given example above.

One of the features of standard is seen as an imperative factor to regulate the relationship of production. The need of identify of the specification of products also causes standards to arise.

As other resources mention there are different examples about the emergence of standards. Some of them were an outgrowth of man’s need and demand for regulating the activities and solving the problems arising from complexity. Some of them are about harmonizing activities according to nature and environment. But, in the global world the need of standards arise for numerous reasons. In that respect, the history of standards can be analyzed in three periods:¹

¹ This knowledge is taken from ANSI and Standards Australia.

Ancient World

As far as is known; standards have existed since the beginning of the recorded history. Relics from the ancient civilizations such as Babylon and early Egypt presented evidence from seven thousand years ago.

The earliest standards were seemed as the physical standards existing for weight and measures. Thus, when they used, there existed a single reference point for the all weights and measures in that society.

One of the earliest examples is the creation of a calendar. This standard is the conclusion of the people demands for harmonizing their activities according to the changes in the environment. Ancient civilizations followed the apparent motion of the sun, moon and stars in order to set time to plant and harvest crops or celebrate holidays and remember significant events.

Ice-age hunters in Europe scratched lines and gouged holes in sticks and bones over 20,000 years ago. It was due to the fact that to follow days between phases of the moon. But then, agricultural activities increased and precise ways for predicting seasonal changes were required by the civilizations.

Five thousand years ago, the Sumerians in the Tigris-Euphrates valley designed a calendar similar to the one we use today that divided the year into 30 day months, divided the day into 12 hours (each hour enclosed the two of our hours), and divided these periods into 30 minutes.

The Egyptians were the first to devise the 365 day calendar. They found that every 365 days Dog Star or Sirius rose next to the sun. It was the same time when the annual inundation of the Nile began. Thus they made 365 day calendar.

After the Industrial Revolution

After the rapid industrialization in the 19th century, there had been an increase demand for countries to transport products to different places. It caused new developments of transportation models. The most fast and economic one was railroad for sending goods across countries. This was provided by the standardization of the railroad gauge. They fixed the distance between two rails on a track.

Another example could be the one U.S. government gained military and economic advantages by standardized track gauge during the Civil War. They worked to promote the most common railroad gauge in the U.S. which measured 4 feet, 8 ½ inches, a track size that originated in England. And this gauge used in the Transcontinental Railroad in 1884 and had become the U.S. Standard in 1886.

20th Century

In 1904 a fire broke out in Baltimore. It affected 80 block area of the city. Fire fighters called in from New York, Philadelphia and Washington DC. But, they could not help because their fire hoses could not fit the fire hydrants in Baltimore. Each municipality had its own unique set of standards for fire fighting equipment. Despite, the fire destroyed approximately 2500 buildings and burned for more than 30 hours. After this event, it was certain that there was a need for a new national standard to prevent the events like that in the future. One year later, they fixed 600 fire hose couplings from around the country and formed uniform national standard for fire safety equipment. It was apparent that a unique set of national standards were necessary for safety of citizens.

Besides to these events, the world and desires of people changed significantly. After the industrial revolution production, transportation and trading activities enhanced. As time going, people desired quality and safety products. Standards became the indicator of these values. The desire of companies to decrease costs, develop their markets, achieve public goods and increase the competition also is the reasons of the need of standards. The request and expectation of consumers for quality is another reason for setting standards.

It was believed that standards help the industries to grow rapidly and at that point they are occurred to respond to the market requirements (Weston, 2002, p: 1).

1.2.Economic and Social Objectives of Standards

Standardization is an important economic part of the whole world. In the length of time, the concept of standardization has become more important. Standards are the tools to organize our technical world. Computer files can be shared because computers use standardized formats such as hardware and software programs. Standardization has been crucial for the development of the industrial society as well.

Quality and Protection of human safety or health

Nowadays, the level of quality forms the significant part of the standards. The characteristics of products are not solely sufficient to define the standards. Every country thinks that goods and services have to be produced in a certain level of quality and security. For instance; the requirement of vegetables and fruits to reach a certain size is necessary for being marketable. This is a very common quality regulation of developed countries.

Every government believes that their own societies deserve the best quality. It makes the countries to take some requirements in order to protect their economy and consumers; however the world trade goes to globalization rapidly (Öktem, 1998, p: 28). The public would benefit from a standard which increased quality and improved safety of a product or service.

Products can be a reason of death or injury if they are poorly designed or manufactured. For instance, electrical products can cause shock or fire if they are not safely wired or properly installed. There have also been a number of cases of medical devices causing injury or death to patients (Australian Government 2005, p: 7).

The largest number of technical regulations and standards are adopted to aim at protecting human safety or health. There are many examples from the life. In order to minimize injury events of road accidents national regulations those require that motor vehicles be equipped with seat belts. Or, avoiding electric shocks, sockets are manufactured to protect users. There is also a common example about the objective of standards to protect human health is labeling of cigarettes to indicate that they are harmful to health (WTO). Man's life is more protected by standards. Seatbelts, smoke alarms, traffic lights all of them are for the safer world.

Recently, quality has become the most important qualification of the goods that is owned. In order to survive in the world market, companies realized that they have to invest in new technologies and increase the level of quality. As it is mentioned above; the request of countries to provide and supply the goods with better quality, differentiates the standards and regulations between countries. For the reason stated above; governments develop legislation to protect their citizens from unsafe products. Every country identifies own standards and regulations.

In Maskus's opinion (2000);

“Adherence to recognized standards provides incentives for firms to upgrade the quality and reliability of their products to required levels” (p: 19).

On the one hand; every company wants to guarantee quality for consumers, on the other hand they have to produce efficiently, decrease the value of costs and choose the rational solution. Standards aim to increase productivity, quality and safety. In this respect, there has to be some measures, uses, sizes or rules. In general all of them constitute the standards.

Protection of animal and plant life or health

There are also many regulations that aims to protect animal and plant life or health are very common. These regulations intended to reduce the dangers posed to animal and plant. They provide that animal or plant species endangered by water, air and soil pollution do not become extinct.

Protection of the environment

Increasing levels of air, water and soil pollution generates environmental concerns among consumers, thus it have led many governments to adopt regulations aimed at protecting the environment. Regulations of this type cover for example, the re-cycling of paper and plastic products, and levels of motor vehicle emissions (WTO).

Prevention of deceptive practices

Most of these regulations aim to protect consumers through information, mainly in the form of labeling requirements. Standards also aim to reduce information externalities.

Other regulations also cover the other characteristics of products in consequence of development supply of goods. Such as; functions, performance, mechanical characteristics,

symbols, measurements (size, weight etc.) packaging and labeling or production methods, so as to avoid deceptive practices.

Trade facilitation

It is possible to think the origin of standardization comes up to the ancient periods when the concept of trade had started. The qualification of goods subject to trade started to be defined in detail. It is for the purpose that trading of goods and services has increased by the time. There has been a progressive use of standards as instruments of commercial policy in national, regional and international trade. Globalization and the growth of the world market, increase in the number of consumers, exacerbated the need of standards (Boulin, 1992, p: 23-24).

Standards can help to develop the market for products and services by the newest technologies also. In the length of time the world markets have come closer, the request for international trade has increased. And it caused to arise of standards for converging markets and facilitating international trade.

As increases in trade volumes increased the need of standards, standards also aim to harmonize products and sectors within a nation or in economically integrated areas. Standards prove the quality of products and also identify the requirements and characteristics of products. When these are ensured trading activities can simplify. In essence, international standards aim to facilitate trade. In the context of international trade the significant differences in product quality or price between producers determine the competitiveness. Thus, international trade can be raised.

1.3. Definition of Standards

Technical standards define product specification detailing the shape, structure, material, size, functions and how raw materials interfaces with other components or the way it is labeled or packaged before it is put on sale (Adolph, 1995, p: 2 and WTO). And a standard can be described as a specification which is about the qualification of a product or its manufacture.

Krechmer (2000) characterizes that; “A standard is an accepted or approved characteristic of an issue or item facilitating; repeated use, conventions, guiding principles, activities, or results. Therefore; a standard is designed to accomplish a certain degree of performance and stability” (Weston, 2002, p: 1).

According to International Standards Organization;

“Standards are documented agreements containing technical specifications or other precise criteria to be used consistently as rules, guidelines or definitions of characteristics to ensure that materials, products, processes and services are fit for their purpose” (International Standards Organization, 2003, in Hanson, 2005, p:5).

An on-line search for the word “standard” in the Compact Oxford English Dictionary makes two definitions for the word called standards as ;

“a (required or agreed) level of quality or attainment” and “something used as a measure, norm, or model in comparative evaluations”.

In order to explain this definition, WTO gives two examples in the World Trade Report (2005, p: 31-32):

The first one is about the feature of chocolate. The requirement for a chocolate is that it can not contain more than 5 per cent vegetable fat (instead of cacao butter). This characteristic could probably fall under both definitions of a standard.

The second is about the requirement of a traffic light. It has three colors red yellow and green in order to regulate the traffic. And this example is seen to fall under the second definition, but not necessarily under the first one. The difference between the two examples is stated in the paper that in the former case “norm” refers to something that can be measured (lower or higher percentage of vegetable fat), while the latter one does not. For an economic analysis of standards the difference between the norms with reference to features can be measured and the ones can not be measured is quite important.

It explains that standards sometimes can be norm measured. And people believe its quality and characteristics as is the case in chocolate. Consumers may depend only on the quality or quantity of product itself. But, sometimes standards are defined as norms that can not be measured. In that case norm is associated with the system. The number of people uses the system and it regulated the activities like traffic light. Here the system is more important than the product. As it will be mentioned in compatibility standards in some cases standards are measured by the number of people using the same product or availability of complementary goods.

1.4. Types of Standards

Standards are classified in different ways. According to academics and authors there are categories of standards.

1.4.1. According to the Ways of Application

Standards and technical regulations seem as similar types of specifications. But there is a major difference between them. And this difference makes a classification.

Agreement on Technical Barriers to Trade defines that:

1. Technical Regulations:

Document which lays down product characteristics or their related processes and protection methods, including the applicable administrative provisions, with which compliance is mandatory.

2. Standards:

Document approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory.

From an institutional and supply side perspective Blind (2004, p: 2) differentiates three kinds of standards. He also adds another kind of standard to this classification:

Mandatory Standards

Mandatory Standards are called as “Technical Regulations” in the TBT Agreement. As it is apparent from the term of regulation, mandatory standards are determined by Cabinet decision and compliance with these standards is mandatory. For instance about the health, security and product requirements about these subject.

Voluntary Standards

Voluntary Standards are the ones, named “Standards” in the TBT Agreement. They are regulated by national standard institutes – standards development organizations regarding the needs and demands of the country. The application of these standards is arbitrary.²

They have different implications for international trade also. In consequence of that technical regulations are mandatory, if an imported product does not carry out the requirements of a technical regulation then it will not be authorized to be put on sale, whereas; the products which do not comply with standards, can be sold in the market. But in this case there is a risk if consumers can prefer the products meet local standards to others (WTO, p: 2).

For example; in 1990, the United States imposed an embargo on imports of tuna caught by dolphin-unfriendly methods, whereas most other countries did not impose any restriction on the import or sale of such tuna. This example also explains that voluntary standards occur because of the consumers who are interested in for example eco labeling programs, carpets made by child labor, etc. However there are others who do not pay attention to these issues (Mattoo, 1997, p: 6).

De facto standards

De facto standards can be set by individual companies or small group of companies. They are not legally and officially recognized as formal standards.

² In 1991, it was estimated that in the United States, there were around 52,000 government standards, and about 41,500 private standards set by technical and professional societies, industry associations, and other organizations, pertaining to virtually all branches of industry (National Research Council, 1995). It shows that in some countries the number of voluntary standards can approach the ones introduced by the governments

Weston (2002, p: 11) stated that

“The competitive incentives to adopt formal standards were limited and companies try to provide competitive advantage. The way to do is to establish their product as a de facto standard”.

Some company standards can attain market dominance and popularity within a market without any legal implications. Therefore, companies represent their special or in other words “proprietary designs” to reach their acceptance and a market dominant position, thus, earn the title of de facto (Blind, 2004, p: 17).

It is obvious that these proprietary designs cause companies to create new technologies. Additionally, the research and development (R&D) departments of companies invest in this policy and lately the expenditures of R&D show an increase.

Some of the economists compare positive and negative impacts of de facto (informal) standards which emerging from market races and formal standards set by institutions. They stated that formal standards are superior in quality but they take time to produce whereas the de facto standards are quicker to define but inferior in several respects and generates many losers. Owner of the companies of proprietary designs can abuse their monopoly power (Weston, 2002, p: 12).³

Nevertheless, there are examples which can not be denied that some industries have developed on the back of proprietary standards. Namely; MS -Dos and Windows.

When formal standards and de facto standards are run side by side, then the quality of formal standards will be presented with increased speed (Weston, 2002, p: 12).

³ See also compatibility and interface standards regarding de facto standards.

1.4.2. According to Characteristics of Structure

Product Standards

Product standards form the technical characteristics such as physical and chemical: performance, dimensions, product solidity, and product safety and requirements for labeling and packaging. For example this kind of standards required goods to have some characteristics such as minimum nutrition content, maximum toxicity or noxious emissions, performance requirements

Process and Production Methods Standards (PPM's)

PPM standards identify how goods are to be produced. Such standards deal with manufacturing process before they put on sale. In spite of the fact that PPM standards are related to the production stages of goods, the activities on this stage can affect environment, human and animal health. Therefore, there existed many disputes in the WTO. GATT allows countries to impose requirements for protecting the environment or the health and safety of its people or animals. And some countries have the right to insist that the imported products should comply with the stringent requirements. But this leads higher costs to the producers. The current GATT rules do not allow a country to impose restrictions on imports and hinder trade due to the reason that the production is not subject to PPM standards. The disputes between the EU and the foreign countries which analyzed in the WTO dispute settlement body will be mentioned in Chapter 3 in detail.

Service (Usage) Standards

It demonstrates how, where some necessities can be consumed by people and which ways can be utilized for their usage.

1.4.3. According to the Scope of Application

Company Standards

The order of making 10000 muskets which is for the necessity of USA army, is the first example of standardization at the company level (Kovan, 1995, p: 6). In 1798 an entrepreneur called Eli Whitney demonstrated that machine tools could produce standardized parts to exact specifications, and that any part could be used as a component of any musket. And then he started serial production. Thus he achieved savings in labor costs and time. He is one of the first to use mass (serial) production methods.⁴

Production conforms to a standard and this will make the number of products to increase. The benefits arising from these standards will be mentioned in the subsection called economic effects of standardization.

Industrial Standards

In company standards case, companies state a standard for their products or projects. Likewise, industry standards occur when the majority of products produced conform to a given standard. Owing to the benefits arising from complying with the industry standards, make the whole industry to comply with these standards (Weston, 2002, p: 1 and p: 11). Thus industry standards facilitating production enhance efficiency and increase productivity.

Another point that has to be emphasized about the company and industry standards is the role of industry standards as de facto standards.

⁴ This information is searched from <http://www.whitneygen.org>

National (Government) Standards

National standards are arising from the need of response to a national requirement (Weston, 2002, p: 1). Company standardization can be thought as the foundation of industry standardization. And national standardization bodies can be seen the foundation of regional and global standardization systems. This point also explains the important role of national standards for supporting or hindering international standardization.

Standardization at the national level occurs by national standards bodies that established in countries. For example; the German Institute for Standardization (DIN), the Turkish Standards Institution (TSE), the Austrian Standards Institute (ON), the British Standards Institute (BSI) e.g.⁵

These institutes are seen as assistants and guiding to companies for forming the level of quality. And also they are the guarantee of reliability of goods (Kovan, 1995, p: 7). In the analysis of the company survey⁶ that is published by DIN German Institute for Standardization, it is expressed that the companies can involve and have an effect on international standardization by attending the activities of institutes. Thus; the companies have more of a say in the adoption of a standard as European or International Standards (Verlag, 2000, p: 10).

⁵ In comparison to other countries in the world, in US there are not national standards bodies. Their standards are produced through bodies that specialize along sector lines (Weston, 2002, p :41)

⁶ For this survey over 4000 companies were selected and sent a printed questionnaire. This survey is carried out in Germany, Austria and Switzerland. The response rate was over 17%. This study concentrates particularly on the effects of standards on a company and company's business environment. In principle, this report focuses on the implications of standards on costs, on research and development and safety.

Regional Standards

Standardization activities at the regional level have been motivated by different objectives, Generally they arranged by agreement with neighboring nations designed to meet the specific economic needs. Some of them are established by countries in geographical dimensions, and others can consist of countries which share common political or economic interests, ethnic ties. CEN, CENELEC, EUROMET, APMP are some of the regional organizations.

If an example is given CEN, the European Committee for Standardization, was founded in 1961 by the national standards bodies in the European Economic Community and EFTA countries.

CEN is contributing to the objectives of the European Union and European Economic Area with voluntary technical standards which promote free trade, environmental protection, and exploitation of research and development programs and so on.

International Standards

In the context of globalization, standards are seen as the way of opening new markets worldwide and eliminating trade barriers between the countries.

For a long time, the world has witnessed a significant tendency of the countries intending to form economic unions at the regional level. According to Weston (2002);

“International standards occur where government influence is confined to the determination of requirements, and harmonisation of targets, at a global or regional level” (p: 2).

There are three principal organizations in international standardization such as ISO, IEC, ITU.

The International Organization for Standardization (ISO) is an international standard-setting body composed of representatives from national standards bodies. It is formed in 1947. ISO defines itself as a non-governmental organization. The organization produces world-wide industrial and commercial standards. These standards are used widely in the world. In 1987, it established ISO 9000 Quality Management and Assurance System in order to facilitate international trade.

ISO cooperates with its partners in international standardization. International Electrotechnical Commission (IEC) which is responsible for standardization of electrical equipment and ITU (International Telecommunication Union) in the domain of information and technology. And another important partnership is with WTO for promoting a free and fair trade.

It is obvious that ISO standards became more common by the growth world market. ISO make transparent the requirements that countries have to comply with likewise conformity assessment procedures. Thus it attempts to create same conditions for the suppliers of developing and developed countries.

ISO reveals the increasing demand for international standards as follows:

- Globalization of trade in products and services
- Global supply chain
- Delocalization of procurement and investment
- Public demand for consumer and environmental protection
- International solidarity to face terrorism, epidemics and natural disasters and climate change
- Pervasive information and communication technologies (McKinley, 2005).

1.4.4. Classification Based on Their Economic Effects

According to Blind (2005, p: 14), there are many disciplines which categorizes the standards and also he states in his book that Hesser and Inklaar (1997) provide an overview of the role of standards and standardization in various disciplines.

In many resources like Blind (2004)⁷, Swann (2000) etc., it is emphasized that there is a categorization based on the economic effect of a standard, in order to explain the economic problems they solve.

Indeed there are many standards which contain many purposes. But each purpose of standardization is different from each other because they have different economic effects. In this respect, four categories of standards will be explained.

Compatibility and Interface Standards

The importance of compatibility and interface standards started firstly to grow with the development of the first network industry, namely railways. And it increased significantly by the rapid progress in communication and information technologies.

Today network industries changed fairly. There are many products which constitute value when consumed together with other products. For example a computer can not be thought without a monitor or a Cd player is active and useful with speakers, CDs etc. These are the complementary products and they have to be compatible.

Other products form a value when they are used together with other users. Especially today communication technologies advance and are used by people. For example, a network of

⁷ Blind (2004) *The Economics of Standards: Theory, Evidence, Policy* is can be seem the newest resource about this classification; therefore this section will be written by referring to Blind's book mainly.

electronic-mail users or a network of mobile phone users. To communicate by this networks require that people buy compatible mobile phones or subscribe a compatible network.

Modern economic theory emphasizes that there is two particular phenomena which influence producer and customer decisions in network industries. First the producers and customers face 'switching costs' and second 'network effects or network externalities' which influence the choices of the producers and customers (Blind, 2004, p: 15).

When a customer has purchased a particular product, s (he) faces switching costs to change it to an alternative configuration. After the decision to choose a product the consumers and producers invest in the particular system. And the longer they stay in this standard or specific system, the more expensive they find it to change to another.

In order to explain this cost in depth the credit card users could be given an example. Many consumers get their first credit card through the bank by opening an account firstly. Changing to a new card requires new costs to have an account in another bank and also implies to have information about the new one's conditions (Cabral, 2000, p: 205). All of them make customers to face switching costs.

The second phenomena that influence user and producer choices are network effects. It is illustrated as "desirable system to choose which is widely used by others. When network externalities (the benefits arising from being apart of a large network of users) and switching costs exist simultaneously, then consequently customers and producers can be locked in⁸ to using this certain products (inferior designs), it is because of the fact that both

⁸In Krechmer's opinion (2000, p:70) "Lock-in occurs when the self reinforcing effects increase demand for a specific product or service and make it difficult for innovative alternatives to be considered. Lock-in is very desirable for the manufacturer who achieves it, but is at best a mixed blessing for the public."

sides will be reluctant to change it to something better because of undue expense. A well known example is that of the commonly used QWERTY keyboard configuration.

Swann (2000, p: 9) gives an example lock-in to an inferior standard with the ‘Qwerty’ layout on a typewriter keyboard. It has remained the ‘standard’ layout for typewriter, and then for computer keyboards, although this is not the most efficient design ergonomically. The new technology “Dvorak configuration” was 20 per cent faster. However this new configuration was not taken up by the market as the switching costs for producers and consumers were considered to high, and locked them to use this inferior technology.

In spite of this prevalence of lock-in to a standard has been disputed, the reluctance of users to elevate to another standard has been defined as a rational decision (Swann, 2000, p: 9). Next to the cost of switching, people also can get locked into these products unless they see that all others will to (Farrell and Saloner, 1985; In: Blind, 2004, p: 15).⁹

Compatibility and interface standards seem as a solution to this lock in. It can be one of the positive effects of this kind of standards.

And also another benefit of these standards is to expand the market opportunities. It is because of the fact that these standards foster the network externalities (Blind, 2004, p: 15).

There are two broad category of network externality called ‘direct’ and ‘indirect’. Gandall (2000, p: 4) call these categories as actual (physical) and virtual networks.

⁹ Swann states that “The economics profession are divided in their views about the empirical importance of lock-in, and some authors describe these problems as "an uncommon tragedy". However there is more general agreement that prompt definition of high quality standards would help to overcome these problems.” Blind also agrees with Swann and emphasizes that the empirical importance of lock in is not clear, because there are various incentives to change to superior technologies even taking switching costs (Blind, 2004, p: 15).

In the case of direct network externalities, telephone network is a good example. The value of the network depends on the number of subscribers who have access to a telephone network. If there are few then the utility of the network will be limited. Every new participant brings about positive network externalities to other participants.

Indirect network externalities (virtual) are linked to the positive feedback from complementary goods. In the case of computer operating systems the consumer buys the hardware firstly and every consumer like that generates expectations for software packages, the complementary goods are the application software programs, while in the case of CD players the complementary goods are the compact discs. And for DVD players, the complementary products are DVD discs (Gandal, 2000, p: 4).

In contrast to the other network externality, the indirect ones are formed in a paradigm where each user must have two or more components to obtain benefits from the system (Blind, 2004, p: 16). Although a popular car owner does not care about the large size of the network, (s) he expects to derive benefit from broad repair maintenance network and a sufficient supply of spare parts (Swann, 2000, p: 5).

Additionally, Gandal who explains that virtual networks that are indirect network effects arises from positive feedback from complementary goods, reveals the positive feedback mechanism as follows: the value of the base product is enhanced as the variety of complementary products increases (Gandal, 2000, p: 4). Therefore consumers will be more likely to buy a base product with many compatible products. Gandal (2000) says that;

“There is positive feedback in such a system: an increase in the sales of the base product leads to more compatible complementary products, which further increases (the value of and) sales of the base product” (p: 4-5).

It is obvious that benefiting from the network is really important for consumers as in car example. But also with positive feedback, the economy also benefits from this system. Every car owner's benefit from the consequence of a good (maintenance network, spare parts market) and every base product create its new complementary products and industries. As the number of the consumers that purchase the base product increases it creates greater demand for the compatible goods also.

As Gandal (2000) notes that;

“These system markets are often characterized by tipping: once a system has gained an initial lead, there is a snowball effect” (p: 5).

In all these cases it is obvious that compatibility standards promote network effects by increasing the network users adopting same goods and compatible ones. It allows consumer to “mix and match” components from different manufacturers. In conclusion, consumers may face and enjoy variety of available systems. For instance, home HiFi stereos is a classic example that all components of this system is compatible and purchaser can combine components from different brands freely. Producers can create most preferable ones. As a conclusion, demand for both systems and components may increase. To the extent that compatibility standards lessen the costs of consumers when they switch between interfaces and thus promote competition (WTO, 2005a, p: 36).

In this atmosphere everyone wants to win the game. Some of them create new technologies and some try to build network of followers. And the winning one is not always the creators of new technologies as it is thought.

If the network externalities which is explained above are important for the buyer, then the suppliers; it is rational for the producers to comply with industry standards. Generally

producers do it in order to optimally benefit from network externalities. Because when they focus on conforming the company standards, the buyer will not find it attractive (Blind, 2004, p: 17).

And having share of a large market is really important. In many of the standards races regarding network technologies (e.g. personal computers, audio recording media and so forth) the winner is not the 'best technology'. The owner of the winning technology is the one that has been most effective and building a wide network of followers and complementary products from third part producers (e.g. software) that conforms to his standard (Blind, 2004 and Swann, 2000).

Standards arising from such processes (virtual networks) are often not standards in formal sense. They are not identified by a committee. They represent proprietary designs and earn the title of de facto (or informal) standards. And a single technology may dominate the whole market if it has affected large number of people. For example, today no one choose Betamax recorder over VHS, it is because of the fact that they can not find prerecorded cassettes in Beta format. In this case the owners of the technologies will try to convince people to choose their technology. The dominant firm the owner of the proprietary designs (linked to compatibility standards), can abuse his monopoly power. Also, sometimes, there is a risk for market failure and natural monopoly, as in case of Microsoft.

Network externalities may lead to economic inefficiencies: excess inertia and excess momentum. To switch to the new technology may lead to "excess inertia" (users delay adopting a new technology or choosing among several technologies) or excess momentum (consumers rush to an inferior technology) for fear becoming stranded (WTO, 2005a, p: 37). If the cost of new technology exceeds the benefit arising from new technology or there are too low network effects namely few following users of new one, then it is possible to a firm continue to use old technology. Because it is effective to stuck in old technology if

there are sufficiently large number of followers for the old one. For the excess momentum, the users of the old technology must bear costs and use the inefficient adoption of the new technology due to the fact that new users choose the new one (Blind, 2004, p: 33). In both cases, there is an inefficient economic consequence.

The effects of compatibility and interface standards regarding competition and technology will be explained in the subsection - economic effects of standards.

Minimum Quality and Safety Standards

In the standard neoclassical model of product markets and it is well known that the perfectly competitive market lies in the assumption of supplying one homogeneous product and customers that are fully informed about the characteristic of this product.

By the time the varieties of products has increased and the consumers found it difficult to match the goods with their purposes. The Engineering Standards Committee (pioneering to the BSI), constituted in 1901, aimed to reduce increases of different shapes, qualities and sizes of alloyed steel sections in the market (Swann, 2000, p: 6).

The assumption of full consumer information became much more complex on these grounds. First one is the proliferation of the sorts and the second one is consumers are not fully informed and in lack of such information, the consumers suffer from information asymmetries¹⁰ (Blind, 2004, p: 18).

¹⁰ “In economics, information asymmetry occurs when one party to a transaction has more or better information than the other party (It has also been called asymmetrical information). Typically it is the seller that knows more about the product than the buyer, however, it is possible for the reverse to be true: for the buyer to know more than the seller. Examples of situations where the seller usually has better information than the buyer are numerous but include used-car salespeople, mortgage brokers and loan originators, stockbrokers, real estate agents, and life insurance transactions”
(available at http://en.wikipedia.org/wiki/Information_asymmetry).

It is stated that confusion of these varieties can lead to market failure and reduce the amount of trade taking place. Akerlof (1970) showed that “In such circumstances the information asymmetries between buyers and sellers could lead to adverse selection¹¹ and severe market failures” (Blind, 2004, p: 6).

As it is explained in insurance case adverse selection means that if there is an unbalanced information case between buyers and sellers. If buyers can not distinguish the high quality from low quality before buying then exists a problem for high quality seller to sustain a price premium. As it is the same in the case of insurance (which is explained below in footnote) that the premiums set according to average risk also is a problem because of the fact that the premiums identified according to average risk will not be sufficient to cover the claims that eventually arise. Likewise; in the absence of the price premium for high and low quality sellers and buyers, if the high quality seller’s costs exceed those of the low quality seller, then it is obvious that the one with high quality may not be able to survive.

George Akerlof, A. Michael Spence and Joseph Stiglitz focused on the complications a market economy faces when information is "asymmetric" — that is, when sellers know something buyers do not, or vice versa (available at <http://www.pkarchive.org/column/101401.html>).

¹¹ The consequence of these kinds of information asymmetries are stated in some resources as adverse selection and moral hazard. In order to explain adverse selection it will be helpful to explain the two main sorts of market failure often associated with the classical example namely ‘insurance’. These are Moral Hazard and Adverse Selection. Concerning the minimal quality and safety standards, in this explanation the adverse selection will be discussed with a classical example. Adverse selection can be a problem when there is asymmetric information between the seller of insurance and the buyer. Especially in cases that buyer have more and better information about the risk of claiming than does the seller. In practice, average risk will be identified. When there is adverse selection, people who gave below average risk can find it too expensive to be worth buying on the other hand people who know they have higher risk of claiming than the average will buy the insurance. And premiums set according to the average risk will not be enough to respond to the claims that eventually arise. And it seems that increasing the premiums will not solve the problem. It is due to the fact that when the premiums rise the insurance policy will become unattractive to more of the people who know they have a lower risk of claiming. Because the ones have above average is more than below average risk. The way for reducing adverse selection seem making the purchase of insurance compulsory. So that the ones for whom insurance priced at average risk are not able to give up <http://www.economist.com/research>.

In a mutual recognition case (in lack of such information) the consumer may not be able to analyze and realize the differences between the products of different regulations. Because, the producer A which manufactures the products with looser regulations will be able to produce with lower costs and it will be an advantage for A. On the other hand, A's products will be in the same market with B's which is a higher cost product of another state (Şensoy, 1991, p: 6).

In this case it is obvious that the country with lower costs is not to change the situation under more costly regulations.

Next to the quality of products, the levels of safety are a major issue covered by standards. Health and safety issues are the main areas which compliance with standards is really important and mandatory. In lack of full consumer information, it is also difficult to evaluate how much the price differential between the two products reflects the difference in quality and safety factors.

In the circumstances; if the producer within the system involving stringently ruled, starts to reduce the provisions due to the high costs, both of the producers and the customers of high quality goods reduce. When the products with high quality are eliminated, the customers prefer these products will have no chance to use high quality products.

To sum up; bad sellers who sell low quality goods crowd out good quality sellers by undercutting them (Blind, 2004, p: 18). Gresham's Law ¹² "bad drives out good", points just how much damage can be done to trading when customers are confused and unable to assess quality before trading (Swann, 2000, p: 6). This proposition explains this situation explicitly.

¹² Named after the sixteenth century financier, Sir Thomas Gresham

Under more restrictive regulations producers can produce with higher costs and assessing the quality before trading is really difficult in deceptive information cases. The consumer pays more money to believe that this high quality deserve it. Otherwise, the consumer who is rightly informed can choose the cheaper product. Within the safety and health issues, the subject is more delicate (Şensoy, 1991, p: 7). Şensoy explains it;

“-Buying the loosely regulated, low-cost product he cannot know whether the product is sufficiently safe and healthy. - Buying the tighter regulated, more costly product he can not fully know whether the extra costs he pays due to precautions taken with the product truly matches his value of safety. Another question is that whether the consumer’s value of safety reflects the real level of safety he actually needs. This question becomes more complex when inherency or non-inherency of risks in the product are concerned” (p: 7).

So then it makes people to consider whether the information externalities can be dealt with in a system where no standards, such as bans on the importation of imported goods or supra-national regulatory system exist (Şensoy, 1991, p: 8).

There are several solutions in order to eliminate information asymmetry problem and adverse selection. One of them is that the demand side can try to reduce this asymmetry by screening the quality of the supplied goods and services. The suppliers can try to show the quality by building a long term reputation or by guaranteeing a certain level of good quality (Blind, 2004, p: 18).

At this point advertisements come to the mind. But in general advertisements give superficial knowledge to the consumers.

Şensoy(1991, p: 11) indicates that sometimes advertisements can also be misleading.

Image or physical qualifications of products shade performance and standards of products. Products manufactured within the different regulations can use advertisements in deceptive ways. For instance; it does not reflect the right qualifications of product or looser regulation product can be presented as it is same with others. Besides these market solutions there are governmental interventions.

Minimum quality or quality discrimination standards can help to overcome Gresham's Law and can solve the phenomenon of adverse selection (Swann, 2000, p:6).¹³ If these quality standards exist and will accepted then the buyer can confidently discriminate high quality from low quality before purchase. After that high quality producer can set a price for his superior product. And the consumer believes that spending extra money for this product will bring him more quality.

Standards do not seem as the only way that can solve adverse selection problems, but it is one of the most effective one. Because it is not used for suppliers and users separately. They represent a public good and can be used for both sides without additional cost. Besides they reduce transaction costs, and also enable economies of scale with an increasing number of transactions (Blind, 2004, p: 19).

Minimum quality or quality discrimination standards do not only enable a market for high quality of standards, but also can reduce what economists call 'transaction costs' and 'search costs' (Swann, 2001, p: 6).

If a standard limits the spectrum of product characteristics and defines the product, then it reduces buyer uncertainty. First the risk to the buyer is reduced and second there is less need for the consumer to spend time and to see if the product meets the specification of standards and if there is complete confidence about the characteristics (Blind, 2004, p: 19).

¹³ Minimal quality standards are seen as an advantage in markets with greater sensitivity to quality variations, low elasticity of demand, low marginal cost of providing quality (Blind, 2004, p:18).

In the absence of standards the trade is really difficult. It is because of the fact that traders can not sell and buy the goods without viewing them. And for a big party it means wasting time and money.

The standards and approved bodies are also important for reducing the risk of the products. The Consumer Protection Act (1987) makes the producer of a product liable¹⁴ for any imperfections. In order to control and certify it by an approved body, industry characteristics which are suited can be as a helpful tool. Then, quality control and self or independent testing can be worked to produce rules to suit the already working standards (Weston, 2002, p: 15).

ISO defines that international standardization is achieved through consensus agreements between national delegations representing all the economic stakeholders concerned - suppliers, users, government regulators and other interest groups, such as consumers. They agree on specifications and criteria to be applied consistently in the classification of materials, in the manufacture and supply of products, in testing and analysis, in terminology and in the provision of services. In this way, International Standards provide a reference framework, or a common technological language, between suppliers and their customers - which facilitates trade and the transfer of technology.¹⁵

Next to the benefits of minimum quality of standards; such as solving adverse selection problems, reducing transaction costs and enabling a market with quality and safety standards, on the other hand it has negative effects by raising rival costs.

It means that high quality producers can misuse the situation and lobby for an unnecessarily high minimum quality standard. This will cause to exclude lower quality rivals from the market (Blind, 2004, p: 22).

¹⁴ In order to examine product liability rules in depth, look “Şensoy (1991)”.

¹⁵ See also <http://www.dtm.gov.tr/dts/SOZLUK/menu3.htm>

Variety Reducing Standards

As it is well known standards identifies the characteristics of products and limit a product to a certain range. For example paper format standard “A4” is same overall the world. From the viewpoint of some writers such as Blind (2004), Swann (2000) and Weston (2002) variety reduction performs two different functions. These are the reasons of variety reducing.

First one is economies of scale. It will be attained by reducing the wasteful proliferation of product models or even technology. By this way the number of standards for which the producer must be concerned, will lessen. Reducing number of standards can allow the mass sourcing input materials, mass production and even advantages via mass distribution. Consequently it can decrease the costs per unit. It allows economies of scale.

On the other hand, there is a risk that variety reduction standards may not meet the needs of some customers. It can make a distance between supplied production and the customer’s most preferred specification. Therefore, the company has to think the trade-off (between choice and price or cost) and the reaction of its competitors.

The reduction of types of product available in the market reduces the consumers’ choice, as well as it reduces the costs inherent in searching for a certain product. Weston (2002, p: 17) gives an example for the reduction of choice through standardization. It is “McDonald’s Big Mac” case. As it is well known, Big Mac is a standard product which all the consumers can see the consistent quality in the worldwide. McDonald’s is a global company and its products have the certain quality regardless of where it is purchased. It puts the importance of information and product descriptions standards for the confidence of customers and need of a uniform product. Reduction of types of products also increases the buyer confidence and lessens transaction costs for consumers.

Second role of variety reducing standards is that the standards can reduce the risks faced by suppliers and increase the competition for suppliers. Standards when applied early in the product's life cycle can play an important role for developing technology and facilitating the focus. It will be available by the consequence of reduction of variety. Some technologies do not develop and get locked in the first stage but these standards concentrate focus and aid technology development by reducing variety (Blind, 2004, p: 20).

There is an argument of these kind of standards reduce the varieties of goods. Standard limit the choices of consumers. It is a negative effect of variety reducing standards. Through this reduction, it also negatively effects technical change by preventing possible new products and the risk customers' needs not being met.

Larger product volumes reduce the number of suppliers because of the capital intensive technologies that have to be used to produce more. Small firms may exclude from the market (Blind, 2004, p: 21).

Information and Measurement Standards

Information and measurement standards make sure that the product is what it is supposed to be. If a manufacturer can prove or show that its products provide expectations of the consumer, than the consumer can be certain that the product is the correct one. Product description standard facilitates the position of producer because the manufacturer can prove that his products are indeed what it should be.

This reduces the risks (compensation and litigation) for manufacturer and lessens risks for consumers (Blind, 2004, p: 21).

Therefore consumer can buy with confident, and do not make his own test and spend time and money for it. As noted by several authors such as Swann, Blind this sort of certified measurement can help to reduce transaction costs and improve market efficiency.

Swann (2000, p: 7) refers to the example of different grades petrol: four-star, unleaded, leaded. These describe the products. And most car driver is confident one type of petrol star is compatible with another. So; people can fill up from Shell one day or BP another day. It is noted by Swann (2000, p: 7), and Blind (2004, p: 21) that these grades satisfy certain quality standards and distribution from the limited range of petrol grades can provide economies of scale.

As it is demonstrated in Table 1.1; negative effects of standards is seen as regulatory capture. It is risk of the case that producers can lobby and influences SDOs to define regulations in the interests of the producers.

According to the categorization of Blind (2004), the general effects of standards will be summarized and demonstrated in Table 1.

Table 1.1 General Effects of Standards

| | <i>Positive Effects</i> | <i>Negative Effects</i> |
|--|--|--|
| <i>Compatibility / Interface</i> | <ul style="list-style-type: none">• Network Externalities• Avoiding lock-ins• Increased variety of systems | <ul style="list-style-type: none">• Monopoly |
| <i>Minimum Quality/ Quality Discrimination</i> | <ul style="list-style-type: none">• Correction for adverse selection• Reduced Transaction Costs• Correction for negative externalities | <ul style="list-style-type: none">• Regulatory Capture 'Raising rival's costs' |
| <i>Variety Reduction</i> | <ul style="list-style-type: none">• Economies of Scale• Building focus and critical mass | <ul style="list-style-type: none">• Reduced Choice• Market Concentration |
| <i>Information Standards</i> | <ul style="list-style-type: none">• Facilitates Trade• Reduced Transaction Costs | <ul style="list-style-type: none">• Regulatory Capture |

Source: Blind, 2004, p: 22

1.5. Economic Effects of Standards

The effects of standards will be analyzed based on the types of standards. Every type of standards has economic important impacts. According to the subject of the thesis, especially the relationship between standards and foreign trade will be explained in depth.

1.5.1. Standards and Cost Effect

The cost effect of standards is directly related to economies of scale. Standardization can decrease costs both on the producer and ultimately consumer side.

Producer side:

Standardization of parts gives the producers a number of choices of low cost supplies. It enables industries to reduce cost by hindering unnecessary and inefficient parallel types, sizes and styles of items. Thus; companies – producers may improve productive efficiency. And also with a standardized market, the producer can benefit unified market with a unified product line. It means that the producers do not have to change the way they produce according to every country. In this way they can cut their costs.

Controlling amount of raw materials that is necessary for production can prevent unnecessary stocking or the difficulty for providing material. It is because of the fact that the good will be derived from a standard (Kovan, 1995, p: 7).

As technology develops, further developments of process technologies make mass production more attractive and allow the realization of economies of scale (Blind, 2004, p: 1). Stephenson (1998) claims that;

“Thus, without the direct purchase of a patent, the purchase of a product with embodied technology and a specific, traceable standard can help a firm to develop a similarly sophisticated product. This contributes to raising productive efficiency and industrial competitiveness as firms are able to adopt standardized approaches to production, which facilitates economies of scale”.

The majority of standards perform the function of economies of scale; in particular, variety reducing standards. The main positive effect of this, is to enable low costs. It is realized that the efficient manufacture can be provided by the lessening in variety of products and creating increases in standardized product.

When the essential characteristics are standardized and quality are guaranteed then the products will become closer substitutes. It is also provided by minimum quality standards. Thus with these limited characteristics or standards, economies of scale can be promoted.

Consumer Side:

Standards ultimately decrease costs for consumers. Standardization also exists as a tool for reducing the information costs of the customers, additionally the asymmetry of information. Standards provide understandable information to the buyers. Thus they can increase reliability among products for consumers as it is mentioned above. Consumers reduce the costs of uncertainty about quality. And also their researching costs concerning time and effort may decrease significantly.

Due to the role of standards that make information available and accessible to all interested parties, standardization can provide reduction in transaction costs¹⁶ also (Verlag, 2000, p: 13). According to the survey that is published by DIN (2000), the businesses surveyed rate the effects of standardization on transaction costs as positive (mean value of +21, 8 on a scale of -50 =very negative to +50=very positive). It explains that transaction costs are lessened considerably by standards.

¹⁶ In a market context, transaction cost means that the cost of gathering information, negotiating, market positioning, etc.

As the role of information and measurement standards is to make the customers certain about the purchased products, customers can believe the products without resorting to independent testing. So that, it reduces transaction costs and search costs again.

1.5.2. Standards and Technology

Intense global competition and rapid rates of innovation have lead to ever- shorter product life cycles. This has created a competitive compulsory reason to define the standards.

The industries or companies are observing that they have to use the wasting resources in an effective way. Companies are to provide and produce maximum output with minimum input by using the progressive technologies.

In addition, open and well organized and developed technological infrastructure is seen as one of the aim of standardization. Standards, like innovations develops and progresses as technology develops (Weston, 2002, p: 1). Each of these concepts affect each other and so they are interconnected.

Global trade, developments in information industries and communications technologies and convergence of these advance technologies have demonstrated the major economic importance of standards for compatibility and interface standards. The rapid technical progress in information and communication technologies since 1970s made many changes regarding social and economic situations. For instance; IBM standards in 1980s, office programs provided by Microsoft. Nowadays, internet users and telecommunication network participants can be a good example. All of these progresses accelerated the need for the compatibility and interface standards.

These technological developments and use of compatibility and interface standards extended possible product assortment. For example, to use a video recorder as a base product enhances the other complementary products such as video cassettes. The more one system is accepted, the more recorders and cassettes have been sold, and trade and market opportunities have expanded.

With the compatibility standards which content new technologies will be used by more people and markets. This will increase the probability of the new technologies being accepted (Blind, 2004, p: 31). Thereby, innovation also will be encouraged by companies and they will focus on technological development.

Competitiveness can not be achieved by innovation alone. Standardization assists in the diffusion of innovation. And competitiveness requires efficient diffusion of innovation and it is possible with standardization (Swann, 2000, p: 16).

Standards can provide a system for diffusion of advanced technology and its transfer. Compatibility and interface standards enhance market opportunities as well as the distribution of innovation and new technology products within the market. It is provided by both the indirect and direct network externalities (Weston, 2002, p: 22). According to the WTO (2005a, p: 41) the information included in standards can also facilitate the diffusion of technology. If the new technology products are non-proprietary designs, firms can access the knowledge and standards and can consequently serve as a vehicle for technology diffusion within or across country. And WTO (2005a) adds that;

“To the extent that standards incorporate information about a particular technology, they create a means of diffusing know-how internationally” (p: 41).

In that respect; safety and quality standards also assist the diffusion of new technologies, because they identify the product characteristics with greater transparency (Blind, 2004, p: 31). It gives clues to the producers and followers of new technologies.

But there is a topic of discussion if standardization acts more to constrain innovation or to enable innovation (Swann, 2000, p: 3).

Blind (2004, p: 24) also agree with Swann and say that existing standards may create problems for new technologies and products. It is due to the fact that they compete with existing technologies and products which the users are accustomed.

Technology develops every day and the new products emerge and enhance in that respect. However, characteristics of the old products also exist in standardization process. So that, consumers can be familiar by these products and it can be a hurdle for new products arising new technologies. Maybe, this is an interesting point of view that explains how standardization can restrict innovation.

Standards can support the innovation by disseminating it. On the other hand, standardization may lessen variety of products by setting their characteristics, measures, quality e.g. Thereby, it decreases even technology and innovation by standardized models of products. It caused to companies to concentrate on a limited model of range (Blind, 2004, p: 20).

Blind (2004, p: 20) also states that variety reducing standards is the most difficult category to analyze. Because it provides economies of scale and promote more capital intensive technologies, while it inhibits innovation by eliminating the small potentially innovative firms from entry due to their in efficient position to produce large volumes.

1.5.3. Standards and Competition

Standards have important effects on competition also. As it is mentioned before, gateway technologies of compatibility standards also decrease switching costs for the customers and lower switching costs will increase the threat of losing customers even in network industries and hence, the competitive pressure will enhance (Blind , 2004, p: 42).

Technical information contained in any type of standards reduces asymmetries in the costs of access to information. It will increase the competition between firms. In addition, the technologies will be accessible by compatibility standards. Then, the convergence of technologies provides customers enjoy with a wider range of products with equal quality. And customers will find the substitution products of based and component products in the market easily.

In essence standards are seemed as the least restrictive factor of competition. For example; higher standards which are faced by the companies that want to enter the transportation industry, may create barriers for entrance (Öktem, 1998, p: 24). Or the owner of a proprietary standard may want to be monopoly in the market where network externalities are important. It may want to raise its rival costs.

Positive network externalities tend to strengthen the demand for the good, than the firms with the expectation to become dominant can decrease the prices to the expectation take over the sales volume of the competitors as well as volume arising from market growth. By this pricing strategy concerning firm will try to keep out entrants (Blind, 2004, p: 44).

1.5.4. Standards and Economic Growth

Technical change, competition and trade are beneficial for growth. Standards are public goods and their technical knowledge is available. They are seemed as a form of technical infrastructure.

A recent study has found that standards are really important to diffuse the technology; as a consequence they make a contribution to the growth. According to a study including 700 companies one per cent of Germany's gross domestic product and one third of its economic growth may seem as the result of standards (WTO, 2005a, p: 41).

As it is stressed before, this effect is mainly provided by compatibility and interface standards. Transport systems, network supplying gas, water and electricity, all of them are created by these standards. All of them are for the people, and increases the growth. When they are open and less proprietary, they are beneficial for social welfare also. On the other hand; there is a risk of these kind standards used by a single company for monopolistic behavior. It lessens the consumer surplus, hinder innovation and in conclusion it negatively influences the economic growth (Blind, 2004, p: 50).

As Blind (2004, p: 50) emphasizes, there are many impacts of standards on growth. For example minimum quality and safety standards can increase the quality and safety of products. It enables innovation and also decreases transaction costs. Therefore, the new quality markets exist and it enhance the economic growth. In addition, safety standards eliminate the negative externalities damaging health and environment. Then, the resources saved and allocated efficiently. On the other hand there exists a risk when these standards are used by small groups of high quality and high costs producers. Maybe they can try to raise the costs unnecessarily.

Variety reducing standards also have positive effects for economic growth as enabling economies of scale, technological focus and critical mass. Because of it lessens variety. It is believed that an increase in variety is a necessary requirement for long term development. Growth in variety of products within an endogenous growth model can be explained by the output of R&D efforts. This is most important for growing economies. In addition, market concentration effect of variety reducing standards may effect the economic growth negatively (Blind, 2004, p: 51- 54).

1.5.5. Standards and Foreign Trade

1.5.5.1. Positive Effects of Standards on International Trade

Standards and technical rules can facilitate trade advantages by boosting and guaranteeing quality or generating economies of scale which make price advantages (Blind, 2004, p: 47). When a foreign consumer knows about a standard and its requirements for products, the concerning consumer is able to assess and see the specifications and quality of the products easily. As a result; the amount of world trade will increase and consumer welfare will increase.

In addition, if international standards become a part of a single and coherent set of standards they can have a positive and maximum effect in trade facilitation (Weston, 2002, p: 40).

To the extent that standards have market building impacts, they promote trade significantly. In case of compatibility standards it occurs mainly. By these standards network externalities to be captured, the information of technologies can be shared globally.

Compatibility and interface standards can enhance trade by the virtual network effect arises from the positive feedback from complementary goods. In a compatible market, the goods can be extended across countries. Many network industries such as telecommunications, car industries can exchange goods, service or information easily when they apply common standards. Therefore standards can facilitate the trade of standardized inputs or ensure the compatibility of components. It helps suppliers to find components or base products (WTO, 2005a, p: 40).

Standards have trade promoting effects which derive from the characteristics of intra industry trade such as scale economics, product diversity.

As it is mentioned in compatibility and interface standards, they increase the diversity of product specification in one product class and cause higher variety of system goods which is positive for intra industry trade and import (Blind, 2004, p: 48).

As a matter of fact; the more that standards are developed on the basis of internationally harmonized principles and producers, the greater that national exporters will become close to each other with regard to compatibility (Stephenson, 1998). In consequence; the convergence of the countries will facilitate trade and amount of trade will increase significantly. As it is known explicitly, the main problem of international trade arises from the differences between national standards and regulations of the countries. National standards can play a major role in distorting trade. But it is thought that international standardization can seek to prevent this problem over the entire world.

In addition; international standards are useful to hinder unfair trade. If international harmonized standards do not exist, countries bear high costs arising from high standards should compete with the ones that have low standards in the same market. This generates unfair trade (ASO, 1998, p: 39).

The fact that national standards can be used as non tariff barriers to trade, it increases demand for a world system of standards that becomes with the idea of the globalization of the world market as a whole. And this demand is met by European Standards at a European level. In addition the harmonization of European and International Standards brings out significant benefits in lowering trade costs and lowering trade barriers. Thus, the negative use of national standards can be eliminated.

1.5.5.2. Negative Effects of Standards on International Trade

1.5.5.2.1. Technical Barriers to Trade

Technical barriers to trade can arise because of the fact that standards and technical regulations which are concerned with the free movement of goods and requirements for testing certification differ from country to country.

Whenever a producer wants to exports its goods to concerning country, it may have to change his/her product in order to comply with differing partner country requirements such as for health, safety, environmental and consumer protection issues.

These requirements show an advance in recent years. The increase developed by the need of presenting quality and safety products to the consumers, growing problems of environment and demand of people for improvement of the living conditions (Şensoy, 2001, p: 29).

In addition these requirements differ from one country to another. When these standards are inconsistent or incompatible across member states, then technical barriers occur in trade. A manufacturer who wants to sell a product in different countries must meet the various rules in each market and prove that the product conforms to the technical requirements of those

markets. This necessitates the product has to be modified and re-tested to meet different approval procedures for each country. It brings a matter that there are technical barriers to trade between member countries.

There are many reasons which reveal technical barriers to trade. The reasons can be gathered in to three headings:

- The barriers to trade resulting from domestic policies especially about health and safety of community, protection of environment issues. There are different thoughts between countries with respect to these issues. Consequently as it is mentioned above every country forms own standards.
- Standards are introduced by opinions of various sections like producers, sellers or insurers. And the national standards of goods could be accepted by forming habit in society and as a result could be dismissed the imported goods.¹⁷
- Tendency of member countries “protecting home industry” (Gençay, 1993 p: 64).

These headings, especially the last one occurs when the standards are misused by some countries or national governments. It means that standards can be used as a technical barrier to trade. And this can be a significant negative effect to trade.

¹⁷ And also it can be thought that there are preferences of consumers. These preferences turn out to be custom by the time. The import goods could be thought as insufficient to present national tradition, culture or identity. Maybe this point of view also can form a barrier to trade or countries can use it as a tool.

There are kinds of technical barriers which can be classified as:

The first one is about purchasing and selling of goods namely industrial standards (shape and quality of good). These goods have standards which changes from country to country. And they are not legally binding. But denial of these goods impedes trade between member countries. Stephenson (1998) gives examples about the case that voluntary standards may establish trade barriers. For example, differences between voltage standards for electrical appliances.

It also demonstrates the significance of compatibility standards in international trade.

Second one is national legislation which is binding. In general, these regulatory provisions are arranged such as for health, safety, environmental and consumer protection issues. The facts that, component of substances are identified by legislation, the incompatible ones are restricted to import to the other country. This constitutes an example for technical barriers. Therefore, it is obvious that national regulations are the main reasons of hindering trade activities.

The last barrier is testing and certification requirements which investigate if the concerning product is compatible with standards and legislation or not. It relates to either technical specifications or testing and certification requirements (conformity assessment). Foreign products have to be facing several level of testing before being the same position with domestic products and to be sold. According to Stephenson (1998);

“Foreign products can be refused market entry either through lack of recognition of the equivalency of the product or of the testing procedures used to evaluate its characteristics. They can also face barriers at the stage of certification and/or accreditation when such bodies in one country are not recognized for their technical competence in

being able to confer a stamp of approval for the testing entities in that country for the sale of products to third markets”(p: 2).

It explains the fact that such barriers occur as a result of heterogeneity across national markets constitutes trade barriers regarding the type of product, process standards, technical regulations or certification systems.

1.5.5.2.2. Disadvantages of TBTs and Trade Problems

While standards facilitates the international trade, presents healthy foods to the consumers, protects the environment; they can also be a barrier to trade if they differ from one country to another and are used for protecting home industry.

There are some negative effects of standards such as: reducing varieties of goods, constraining innovation¹⁸. But it is obvious that the most important negative effect of standardization is the use of standards and technical regulations as a technical barrier to trade.

Trade could be improved by the impact of standards; however standards also can act as a barrier to trade if standards and technical regulations impose costs due to the differentiations between the country’s regulations. The companies or industries can reduce their cost through standardization, but when they are regulated by every nation it impedes international trade significantly. WTO (2005a, p: 62) states that one of the biggest complaints against product standards is the costs that faced by exporters which has to comply with importing country’s necessities.

¹⁸ It is also another dispute that some believe standardization constrains innovation and other believe that it enables innovation (Swann, 2000, p: 3). It is analyzed in the subsection called Standards and Technology in depth.

Such procedures are often both complex and time consuming. They increase the cost of products, delay their introduction to market and generally restrain the free movement of goods (Australian Government (2005, p: 7).

When the technical regulations are used for hindering international trade, they induce many disadvantages for exporters, producers and free trade. According to many resources¹⁹, the costs incurred are many as given below.

-Losing the advantage of economies of scale

Every producer from every country has to produce with different standards for each country. Therefore, exporters can not use the advantage of the economies of scale. They produce on a limited scale with variant types of products.

The main problem is that when a firm adjusts its products to every foreign firm's requirements, it will increase the costs per unit. It forms handicap especially on small and medium enterprises (WTO, p: 3). As it is known standards emerge in a first stage mainly in companies. The impact of standards enabling economies of scale may sometimes exclude small firms in a country as the case in international market. Because, small firms may not compete with big firms regarding promote capital intensive technologies for large production volumes.

If the domestic and imported products are not good substitutes or the national regulations of countries differ than adjustments are essential (WTO, 2005a, p: 62).

¹⁹ For example; Şensoy (2001), WTO.

-The cost of procedures for requirement of conformity assessments

Another kind of cost can be called as Conformity assessment cost. This cost occurs when the import country refuses market entry of goods performed by exporting firms (Stephenson, 1998, p: 2).

-The cost of information for every country's foreign technical regulations

It makes each firm to bear extra cost. It is apparent that firms have to examine national regulations of the governments as well as to educate experts in order to understand these regulations.

These are information costs for firms translating, disseminating information and training of experts, etc (WTO, p: 4).

-Other costs develop when the exporters bear against local producers in every modification

WTO (p: 4,) call this cost as “surprise cost” which occurs due to disparities between domestic firms and exporters. This disparity appears because of confronting new regulations. The cost will be higher for foreign firms than for domestic firms.

According to a study by OECD explains that technical regulations and standards that are different in assorted national markets and the costs that exist verifying that these regulations are met can form between 2 and 10 percent of overall production costs. Industry representatives and economic studies see conformity assessment and certification requirements as a major factor for impeding trade (Stephenson, 1998, p: 3).

The study by Wilson and Otsuki (2004) is based on company survey data conducted of 689 firms in about 25 industries in 17 developing countries. In essence the most of the firms

surveyed says that the costs for complying with the countries and certifying and testing are the main reason for not exporting to the Quad countries (Canada, the EU, The US and Japan) (WTO, 2005a, p: 63).

It is thought that the negative effects of standards and technical regulations can be eliminated by international standardization. But it is not a solution sometimes. In that respect, Stephenson (1998) stressed that;

“.....even where countries rely on internationally harmonized rules or accept as equivalent another country’s standards, reliance on the exporting country’s tests and conformity certificates is rarely practiced. In this situation barriers result from the duplication of effort associated with separate conformity assessment procedures in differing national markets due to unnecessarily costly testing requirements”.

Wilson and Otsuki also studied the costs about the duplication of testing procedures for meeting foreign requirements despite domestic requirements have been met. It is stated that for some countries, most of the firms surveyed needed two tests. For instance, in Senegal for example over 60 per cent of companies had to make a complete second test (WTO, 2005a, p: 63).

WTO (2005a, p: 64) arrive at a conclusion in a different way about the study. It states that the study covered a series of case studies associated with low income countries like Ethiopia, India, Jamaica, Kenya, Morocco, Nicaragua, Senegal, Thailand, etc. It indicated that the compliance costs differ largely between countries, industries and firms within the same industry. The ones which have ‘proactive’ stance are able to adopt the product standards. So it depends on their performance and point of view. Besides, the capacities of firms and industries are different. Some of them have to comply with standards with only minor changes whereas others have to make radical changes. Some industries or goods can

be more sensitive about health or safe issues. So, the consumers may be willing to pay a premium for the safer ones.

But in some cases the problem is that the cost of compliance by firms is mixed and difficult to bear in developing countries. Developing countries face higher costs when they try to comply with a foreign regulation by developing equal standards for the other national market requirements.

From the view point of trade policy, protection of the human health and environment has raised a question as to whether these regulations impede trade or not. In other words, it means that the probability of using these regulations as a protection tool. In the length of time there have been many examples which verify this possibility. Increases in technical barriers to trade cause decreases in international trade flows.

These results explain that in some cases conformity assessment requirements and standard can negate and reduce benefits from international trade.

2. STANDARDIZATION POLICY IN EU

2.1. The Development of Standardization Activities in EU

The European Economic Community was founded in 1957 with the ratification of the Treaty of Rome. And the objective of a Single Common Market in Europe originated with this treaty.

Since its foundations, in order to reach its objectives, the Community has gone through three legal stages of integration: Customs Union (CU, founded by the TEEC, 1958), common market (CM, established by the SEA, 1985) and economic union (EU, established by the TEU, 1992). The primary goal of the Treaty was to create an effective common market and to ensure the emergence of the 'four freedoms' the free movement of goods, persons, services and capital. EEC has decided to reach its objectives by opening and liberalizing the markets for four fundamental freedoms.

The six original signatories to the Treaty of Rome were pledged to the development of policies to guarantee the emergence of these freedoms. These comprised the elimination of internal tariff, removing customs duties and quantitative restrictions on their trade adopting a common commercial policy (CCP) with common external tariffs (CET) on imports from non-member countries and the coordination of national tax policies around the principles of VAT. Intra community tariffs were gradually reduced and finally eliminated on 1 July 1968 (Hanson, 2005, p: 29).

Elimination of direct trade barriers could not suffice for the free movement of goods. After that the struggle over non-tariff trade barriers within the European Community became

more intense.²⁰ Every member state had its own technical regulations. Consequently; different regulations gave rise to technical trade barriers within the EU.

Article 30 of the Treaty of Rome sets out the principle that;

“Quantitative restrictions on imports and all measures having equivalent effect, such as technical barriers to trade, shall be prohibited between Member States”.

The Court ruled that the prohibition in this article applied to all measures that had the potential to restrict intra community trade.

This is for liberalizing the free movement of goods. In general, the Treaty of Rome forbids restrictions in trade between the member states. And single market is defined as;

“an area without internal frontiers in which free movement of goods, persons, services and capital is ensured ”(TEEC, II, 14).

On the other hand; there is an exceptional case in Article 36 of the Treaty of Rome that allows;

“Member States to place restrictions and prohibitions on imports and exports for protection of health and life of humans, animals or plants.”

The member states started to use this exception from the Treaty of Rome for the purpose of protecting their domestic industries.

²⁰ According to Breton A. and Salmon P. (2000, p: 135), In general; barriers to trade which are the product of government policies exist between countries and sub central jurisdictions within countries. For the international barriers to trade like in world it is same in EU that; the emphasis has shifted recently from “border” barriers (namely tariffs and quotas), to “nonborder” or “behind-the border” barriers (namely impediments to trade resulting from differences in domestic policies)

The method was the hidden protection which means each country enhances their own standards and prohibits the import of goods without these standards (Öktem, 1998, p: 18).

Especially these protectionist pressures caused increases in new trade barriers. In order to remove technical barriers to trade arising from differences in legal and administrative provisions in Member States relevant to product quality, the Community put into force General Program in 1969.

The economic climate of the 1970s- the recession following the oil price shocks of 1973-1979 affected the countries to protect their own industries. The Community has tended to evolve during crises. Hanson (2005, p: 31-2) states that;

“The oil crises of the early 1970s provided a major shock of the European economies. Between 1968 and 1973, world oil prices went from an average of \$2.15 per barrel to a high of \$40 per barrel. This increase had a major inflationary impact in Europe, which is heavily dependent on imported oil for energy”.

The oil crises in mid-1970s brought about severe balance of payment problems. In order to reduce the rate of inflation that followed the price increases in the oil market in 1973/74 and to obtain balance in foreign commercial relations, a “deflationary economic policy” was introduced in the United States and many other industrialized countries (Hansson, 1990, p: 3). It was the same for EU countries also. Economic conditions changed in the EU due to the crisis. Some details can be seen from in Table 2.1.

Table 2.1 Economic Conditions in the EU

GDP: percentage change from previous year at constant market prices.

Year 1961 1973 1981 1986 1995

| | | | | | |
|---------|-----|-----|-----|-----|-----|
| France | 5.5 | 5.4 | 1.2 | 2.4 | 1.8 |
| Germany | 4.6 | 4.6 | 0.1 | 2.4 | 0.6 |
| Italy | 8.2 | 6.5 | 0.8 | 2.5 | 1.8 |

Source: Hanson, 2005

Unemployment rate:

Year 1958 1973 1981 1986 1995

| | | | | | |
|---------|-----|-----|-----|-----|------|
| France | 1.0 | 2.7 | 7.4 | 9.9 | 11.3 |
| Germany | 3.0 | 1.0 | 4.5 | 6.4 | 8.0 |
| Italy | 7.5 | 6.2 | 7.8 | 8.9 | 11.5 |

Source: Hanson, 2005

The economic activity declined, rate of inflation and unemployment increased to a very high levels. There was a dramatic drop in growth rates also.

These problems have forced Member States to introduce technical barriers to trade and initiated restrictive economic policies. These policies gave rise to losing amount of production, trade as well as increases in unemployment. All member states were in bad situations.

The high rates of inflation and unemployment caused the member states to focus on domestic economic problems rather than market liberalization (Hitiris, 2002, p: 63). This made the protectionism on trade start.

2.2. The EU Approach to Technical Barriers to Trade

The products imported to the EU has to comply with the concerning country's relevant regulations about health safety and environmental objectives. As it is defined in first chapter technical regulations are mandatory rules. And these regulations are laid down by the EU or the member states; whereas standards are laid down by a recognized body and compliance with them are voluntary.

Regulations may prescribe products characteristics or related production and process standards or they may deal with the terminology, symbols, packaging and labeling requirements applying to a product and production methods. Labeling requirements such as health warnings on tobacco products or energy consumption levels of household appliances can be examples for this (El –Agraa, 2004, p: 15).

All of the requirements that exporting country has to meet raise their costs and thus demonstrates a barrier to trade.

As a consequence; when the technical standards caused the greatest trade distortions, the Community started to think about the solutions to lessen the negative effects of technical standards. Thus, international harmonization of technical standards has been a very important issue.

The European Union has been actively working towards the removal of technical trade barriers. The European Union has used two different strategies to eliminate technical barriers to trade: Technical Harmonization Directives and Mutual Recognition.

On the other hand the EU's use of standards and technical regulations has to comply with its obligations under the WTO Agreement on Technical Barriers to Trade (TBT

Agreement). It has also been ensured protection of health, safety and environment within the EU and with its trading partners. For food and safety measures EU's standards must comply with the WTO Agreement on the application of Sanitary and Phytosanitary Measures (SPS Agreement).²¹

As El- Agra (2004) say;

“These obligations generally require the EU to use international standards where they exist unless they can be shown to be inappropriate, to avoid discrimination against imported products and to avoid creating unnecessary obstacles to trade” (p: 16).

In 2000 and 2001, the EU and its member states notified the WTO of 148 and 110 measures under the TBT Agreement, respectively; while additional measures were notified to the SPS Committee (WTO, 2002, p: 20).

The results of the EU approach to remove the technical barriers to trade within the EU and some of the trade disputes between the EU and other developed and developing countries will be analyzed in depth in Chapter 3.

2.3. The concept of Harmonization

Prior to explaining the different approaches to harmonization in EU, it will be beneficial to study and analyze about the concept of harmonization explicitly.

Hakobyan (2005) says that;

“Harmonization is often defined as a process of making the regulations, requirements or governmental policies of different jurisdictions uniform or at least more

²¹ The more knowledge and examples will be given in chapter 3.

similar. Harmonization is regarded as means of achieving greater efficiency or fairness in inter-state trade relationships. Some consider it as consequence of trade liberalization, others – as its prerequisite” (p: 1).

The principle of free movement of goods is the main element of the internal market. And the creation of a common market in European Community is provided by following motivations.

-increasing the volume of trade among member states by abolishing all existing barriers to trade and providing free movement goods along the community.

-increasing choices of the consumers via the variety of goods with better quality. So that increasing the welfare of the Community citizen as a consumer of these freely moving goods which finds its roots in Article 2 of the Rome Treaty stated as “an accelerated standard of living”(Şensoy, 1991, p: 1).

From the point of view of Barnard (2004, p:3), the benefits of free trade can be summarized as follows: free trade allows for specialization, specialization leads to comparative advantage, comparative advantage leads to economies of scale which maximizes consumer welfare and ensure the most efficient use of worldwide resources.

According to Hansson (1990);

“One way to reduce the negative effects on global resource allocation that can arise out of domestic policy formation is to reach agreements on international policy coordination, harmonization, in those fields of economic policy and legislation that can be expected to affect international competitiveness and have a negative effect on the efficiency of the international resource allocation.” Hansson defines that “harmonization is “the

coordination of economic policy actions and measures in order to reduce international differences in such actions”²²(p: 1).

As it will be mentioned below, there were different approaches to harmonization in the Community. For instance; total harmonization, optional harmonization and minimum-standards harmonization.

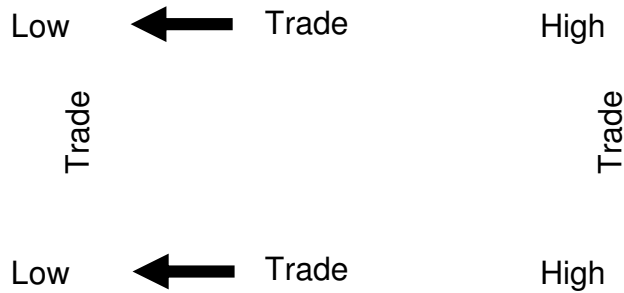
In the theoretical framework Hansson (1990, p: 79) describes the effects of harmonization of technical standards with an analysis of trade flows that are affected by various types of harmonization agreements.

In his assumption, the countries of the world can be divided into two groups, one with low standard requirements (Low) and the other one with high standard requirements (High). Under this analysis it is assumed that producers in low requirement countries only produce goods that satisfy the lower but not the higher ones; while products produced in high requirement countries satisfy the higher standards and thereby also the lower standards applied in low-requirement countries. In addition, it is assumed that there exist countries that have no production of the commodities under analysis. And the varieties of goods are similar; accordingly the goods are close substitutes for the consumers as well.

²² Hansson (1990) emphasizes also the harmonization does not mean that the total unification of economic policy. The aim behind proposals for international harmonization is assumed to be increased efficiency in the global allocation of resources.

Given these assumptions Hansson describes pre-harmonization trade flows by Figure 2.1.

Figure 2.1 Pre- Harmonization Trade Flows

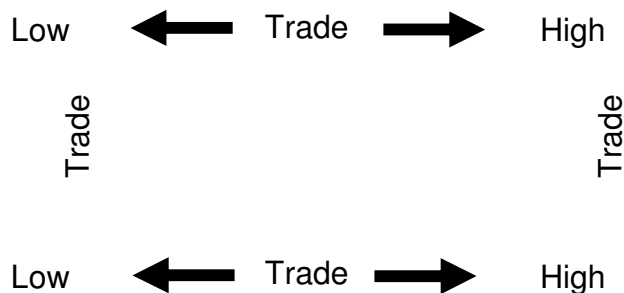


Source: Hansson, 1999

As the figure shows; the producers of low requirement countries can only produce for domestic market and for the other low requirement countries. But they cannot export their products to high requirement countries due to the fact that they can not provide the requirements that high countries want. On the other hand high requirement countries can export to both high and low requirement countries easily.

In the case when technical standards are harmonized internationally (likewise, they are harmonized in the community between the member states), the trade flows will change in the ways showed in figure 2.2, 2.3, 2.4. These figures present the case for post-harmonization trade flows.

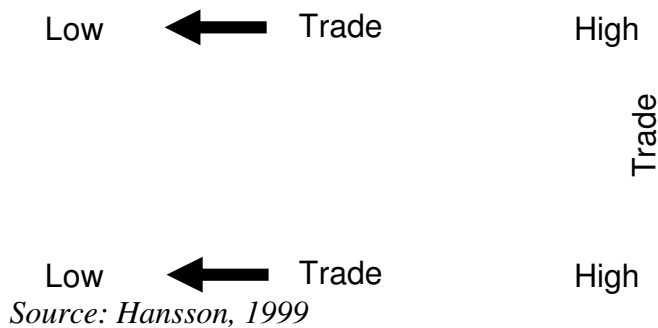
Figure 2.2 Minimum-Standards Harmonization



Source: Hansson, 1999

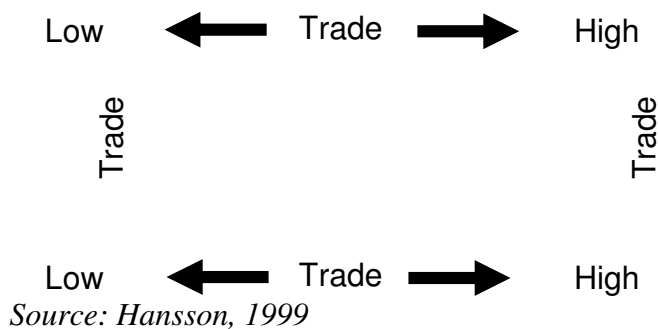
Minimum requirements have become universal and low and high requirement countries can export to each other. As a result; this type of harmonization represents trade liberalization clearly. But in this case, it should be noted that this case is not related whether the harmonization is optional or total.

Figure 2.3 Optional Harmonization



In the case of optional harmonization, low requirement countries no longer allowed to export their products. They can just produce domestically and have to meet domestic standards but they can not export the goods that have domestic standards. The ones, who can not produce have to import from high requirement countries or will be forced to domestic production. This type will prohibit trade between low requirement countries.

Figure 2.4 Total Harmonization



In this case national standards can not exist. There is no difference between the requirements low requirement countries and high requirements countries after they have concluded total-maximum agreements. Consumption possibilities of the consumers will be restricted by the agreements.

2.3.1. Advantages of Harmonization referring to Rationale of Harmonization

The first reason behind the emergence of harmonization can be seen “economies of scale”. If a manufacturer wants to export its goods, it has to comply with the other country’s standards and national legislation. It makes the manufacturer to change the good for each country. Harmonization is thought to reduce this cost. So that cost reducing benefits might be observed.

Motor vehicles case in EC is an example for this. If a member state called A applies one set of standards and member state B another vehicle producer will have to manufacture specially adopted models for sale in each of them. In this way the producer might benefit from a unified market. Cost of it will reduce due to more uniform production line (Şensoy, 1991, p: 3).

Hakobyan (2005, p:2) also agrees that “If a manufacturer faces significantly different requirements in each jurisdiction for which it manufactures, it will not be able to achieve economies of scale beyond its market share for one jurisdiction. If there would be harmonization of the regulatory requirements in different jurisdictions then further economies could be achieved by increasing the scale of production”.

If there are more international transactions than there are a greater need for uniform and binding legislation. Some consider that in general, international transactions does not itself

create any necessity for harmonization. But the elimination of the restrictive practices in trade will be easier by this way.

Political economies of scale is thought another advantage by Hakobyan (2005, p: 2). If member states can coordinate the resources and use them together. Testing new drugs for example is an expensive process. If there is one optimal standard for all jurisdictions, then determining that standard jointly rather than separately reduces costs. The governments can share the responsibility by assigning and each of them can test each drug for the citizens' benefits.

Another advantage can be “fair competition”. The idea behind it, lesser regulatory burdens will give producers an unfair advantage in international trade. These requirements affect the prices of goods.

For instance there is a steel manufacturer faces no pollution –control in its country and another one located in a jurisdiction which imposes severe limitations on emissions. Then it is obviously seemed that former will sell the steel cheaper than the latter (Hakobyan, 2005 p: 2).

The interests of consumer can be protected more efficiently with more stringent legislation. Quality, health and safety will be important in production.

2.3.2. Disadvantages of Harmonization

Harmonization of national legislations is a really difficult process to be arrived at. As it will be discussed in following pages, EU was to harmonize adopt the national legislation's harmonization directives (old approach) which had to be unanimously decided by the European Council. This is a really slow and difficult process because of the bureaucratic

work of harmonizing detailed national technical legislations and its decision makes process take times.

According to Hakobyan (2005);

“Free trade and Harmonization lead to costs being incurred, and they can be seen as distributional costs or as net cost to the economy as a whole. They should be seen as an investment project, similar to costs incurred to take effect of new technologies. They are productive costs and not a good enough reason to delay or postpone harmonization” (p: 3).

It means that the social and economic cost of non-compliance has to be estimated carefully when to go through harmonization. The system has its own costs for producers and consumers also. It hurts some people most particularly shareholders and employees of industries who lose money and jobs. As they lose sale over against the imported goods. In addition there is a fact that compliance with other country’s technical requirements cause costs and impede free trade in the market.

Consumers will face lack of varieties. From the consumer side this is also another disadvantage. Harmonization affects firms to produce only a type of production in the community.

2.4. Different Approaches to the Standardization Policy in the EU

2.4.1. Technical Harmonization Directives

The EU has experimented with different types of harmonization: exhaustive, optional,²³ partial, minimum, reflexive.²⁴

Total (Exhaustive) Harmonization known as national rules are replaced by the Community ones, namely by a single EC rule. It is based on the obligations on the member states that allowing the goods complying with the directive to be freely imported and marketed whereas prohibiting the sale of goods not complying with the directive

Directive 76/768 is also concerns with total harmonization. It is about packaging and labeling of cosmetics. Article 7(1) of Directive 76/768 contains the free movement clause:

Member States may not, for reasons related to the requirements laid down in this Directive and the Annexes thereto, refuse, prohibit or restrict the marketing of any cosmetic products which comply with the requirements of this Directive and the Annexes thereto.

²³ As noted by Hansson (1990); “the EEC work on technical standards harmonization up to the beginning of the 1980s has been characterized as optional-maximum harmonization- i.e. ‘the Community standards should converge on the highest standard already in existence in a particular country- but allow each country to set its own standards for products that are not going to be exported from country” (p: 180).

²⁴ They are called and distinguished as five solutions also:

- Complete solution also known as “ total harmonization
- Alternative Solution known as “ optional harmonization
- Reference to technical standards: on this method has been applied in the Low voltage directive that is worked out by standardization bodies.
- Conditional mutual recognition of tests.
- Mutual recognition of tests. (more information is available at <http://www.iue.it/LAW/WP-Texts/Joerges91/chap3a.htm#21>)

Article 3 of Directive 76/768 contains the exclusivity clause:

Member States shall take all necessary measures to ensure that only cosmetic products which conform to the provisions of this Directive and its Annexes may be put on the market.

According to Barnard (2004, p: 509), once the Community has adopted totally harmonized directive standard, Member state can not unilaterally impose stricter standards. In addition Barnard emphasizes that this type of harmonization is the best way for competition but it is also the reason for reduction of diversity and experimentation at national level.

Examples of directives with total harmonization are Noise from Tower Cranes, Air Compressors and Generators. Directives with optional harmonization include Farm Implements, Motor Vehicle Components and Legal Metrology (Australian Government 2005, p: 8).

Exhaustive (Full) Harmonization has so far been chosen in directives on hazardous substances and preparations, cosmetics and pharmaceuticals, next to the foodstuffs sector (<http://www.iue.it/LAW/WP-Texts/Joerges91/chap3a.htm#21>).

Optional Harmonization means that member states are free to choose to comply with Community –law requirements or national law. As the name suggests there is an option for producers in this type of harmonization. If they want to be in foreign markets, they are obliged to apply harmonized standards. But if they wish to operate in the local market, they can apply harmonized standard or just apply the national rules. Directive 71/316 is an example of such harmonization (Barnard, 2004, p: 515).

Barnard (2004, p: 515) indicates that “While optional harmonization offers some advantages, by avoiding the disruption to existing markets and preventing technical progress from being stifled, it did raise problems, in respect of trade in non-conforming products and difficulties with Articles 28-30. It has therefore been little used”.

Minimum Harmonization is known as the most common forms of the harmonization. In this case, the Community lay down minimum standards but Member states can prefer imposing higher standards to their products or not.

Barnard (2004, p: 516) expresses this explicitly in these words: “Minimum Harmonization Directives provide the floor below which national legislation can not fall. This floor is exhaustively harmonized and may be set at a relatively high level. Over and above the floor Member States are free to choose whether to adopt more stringent measures than those resulting from EC Law. However, that freedom is constrained by the Treaty provisions which set the ceiling which national legislation can not exceed”.

Even though the minimum harmonization exists since the early days of the EC, their use was formed by Single European Act when the Community force producers to adopt minimum requirements (Barnard, 2004, p: 516).

Two different consistency methods have been used by the European Union in order to eliminate technical barriers and regulations concerning goods. The first one is the concept of technical harmonization directives which all Member States must enact in their national legislation.

The other method is the principle of Mutual Recognition which entails that;

*“any product legally manufactured and marketed in one member state must be allowed free circulation in the Community as a whole”.*²⁵

The Harmonization approach carries out when the Mutual Recognition Principle is insufficient or unsuitable. It is due to the reason that member states do not want to recognize and accept each other standards.

EU legislation harmonizing technical specifications has involved two distinct approaches: the “old approach” and the “new approach”.

2.4.1.1. Old Approach System

The creation of a true common market with the four freedoms of goods, services, capital and people has been the long term goal of the European Community since the signing of the Treaty of Rome.

Technical regulations and industrial standards vary from one country to another as in case of EU one member state to another. And having too many different standards makes life difficult for producers and exporters within the union and its trading partners.

Some think that if standards set arbitrarily, they can be used as an excuse for protectionism and these standards may also be obstacles to trade.

When it is analyzed from this aspect technical trade barriers which are due to the differences between national legislations and standards that restrain free movement of

²⁵Dotto (2002, p: 16) agrees that “There are two ways for forming atmosphere which the goods move freely in EU: First, technical harmonization which is transferring EU Legislation to every member state’s national legislation and second, mutual recognition. These methods are not alternative or contrary of each other.”

goods were immobilized. When a country wanted to export and commercialize its goods, it had to make a change in goods or had goods controlled and proved that the product conforms to the technical requirements in order to comply with the national legislations and law.

As it is stated at the beginning of the section, The Treaty of Rome generally prohibits technical barriers to trade (Article 30), except for legitimate health and safety (which is in Article 36 of the Treaty of Rome.) Right after, this exception is used by member states frequently as a protectionism tool. The Commission attempted to deal with these exceptional categories through approximation and harmonization of member state standards to produce single mandatory EC standards. And the Community adopted different approaches to harmonization.

The earliest policy on technical harmonization within the EU was to harmonize national technical regulations by adopting and replacing by common directives of the Community which had to be decided unanimously. EU was to harmonize detailed national technical requirements by adopting similar, very specific and detailed technical harmonization directives. These directives are now referred to “Old Approach Directives”.

Article 100 of the Treaty of Rome formed the main part of this full harmonization and allowed for “harmonization of the laws” of Member States that affect the functioning of the common market. And old approach which aimed to abolish of technical barriers to trade starts with General Program. The General Program of 28 May 1969 aimed at harmonizing the national regulations in order to eliminate the technical barriers to trade.

The Community approach to removing barriers to technical regulations rests on the principle of full harmonization of national legislation, where uniform standards are set for

all member countries. The old approach incorporates all the technical details of the mandatory requirements in a directive (Hoeller, 1998, p: 45).

Ultimately, over two hundred directives adopted for setting out uniform individual product standards. This proved a slow and cumbersome process.

In essence; this type of harmonization has been slow for two reasons. First of all these detailed harmonization directives was based on unanimity in by the European Council.²⁶ Secondly, the process of harmonization became highly technical since it is thought to comply with the individual requirements of each product category (including components) Brenton (2001, p: 269). Therefore, detailed specifications with type- approval procedures were difficult to implement. Due to the fact that the directives prepared even involved technical detailed regulations, this position made firms produce one type of product. In order to reach a common set of standards, member states had to change their legislations. As a consequence; it could have created more cost for the companies in those countries.

For some products it took more than ten years to set the harmonized rules. In some cases the products sometimes outdated by the time harmonized rules entered into force (Eeckhout, 1994, p: 265).

Old approach directives consist of only one product or even only one of the elements involved in the manufacture of a product. Motor vehicle components, for instance, are covered by about 50 separate directives, such as Anchorages for Motor-Vehicle Safety Belts or Rear Registration Lamps for Motor Vehicles and their Trailers. Other areas covered by old approach directives include sectors such as measuring instruments, tractors, earth moving equipment and food (Australian Government 2005, p: 8).

²⁶ According to Öktem (1998), the case of the directives which had to be unanimously decided by the European Council, impeded study for General Program. In 1969-1978 only 100 directives was prepared, but the member states aimed at 300 directives.

Indeed the approach was ineffective and could not meet the expectations, since new national regulations proliferated at a much faster rate than the production of EC level directives on a limited set of products (Brenton, 2001, p: 269).

As Brenton stated (2001, p: 269), the old approach mainly applies to products (chemicals, motor vehicles, pharmaceuticals and foodstuffs) by which the nature of the risk requires extensive product-by-product or even component-by-component legislation and is carried out by means of detailed directives. Eeckhout (1994, p: 267) thinks that in these sectors voluntary standards are seem inappropriate due to the dangers for human health and environment.

2.4.1.2. Single European Act (SEA)

The single market has been elevated so much that for many it is taken to constitute the critical turning point between stagnation and dynamism, between ‘old’ politics of European Integration and ‘new’ politics of European regulation (Wallace, 2000, p:86).

As it is stated in the previous parts, EC encountered increasing difficulties during the 1970s and into 1980s in developing a single market free of internal barriers. An array of barriers between the member states hindered business operations and these were increasingly recognized as contributing to the serious economic problems facing the EC.²⁷

Consequently, in 1980s pressures were mounting within the EC institutions and the private sector to address in a comprehensive and systematic fashion the problems created by the “incomplete” internal market.

²⁷ See page: 3

For the reasons stated above, Jacques Delors selected the Single Market Program (SMP), thought that this program was an undertaking by the EC to eliminate the barriers that existed to the free movement of goods, services, capital and people among the member states.

EC 1992 Program

The Single Market Program was launched in 1985 and was to have been concluded by the end of 1992.

To make the single market happen, the EU institutions and the member countries strove for seven years from 1985 to draft and adopt the hundreds of directives needed to sweep away the technical, regulatory, legal, bureaucratic, and cultural and protectionist barriers that stifled free trade and free movement within the Union.²⁸

“Europe 1992” program was initiated the European Commission’s 1985 White Paper, supervised by Lord Cockfield.²⁹The single market strategy was contained in a white paper issued by the Commission and endorsed by the Council in June 1985. The countries formally adopted the White Paper with the signing of SEA in February 1986, which entered into effect on July 1, 1987, after each member state ratified it.

This paper enumerated the obstacles to the four freedoms and proposed changes to eliminate them with identifying the types of action which is necessary to overcome these obstacles. In Neal’s (1998) opinion “it was to be used as a guideline and not to harmonize or standardize at any price. Even approximations of the proposals would be significant movement toward unity”. In addition governments have agreed to take decisions affecting

²⁸ [http://europa.eu.int/pol/singl/overview\(2005\)](http://europa.eu.int/pol/singl/overview(2005))

²⁹ Lord Cockfield a former British minister who joined the Commission at the same time and was given responsibility.

the single market by as system of quality majority voting in the Council of Ministers, rather than unanimous agreement which is much harder to achieve.

The legislative program to accomplish the objectives to creating single market ran to about three hundred measures, some already under consideration and others to be developed (Commission, 1985). These directives covered a broad range of commercial activities and Community programs. Many directives addressed trade barriers created by inconsistent national regulations, particularly in the pharmaceutical, agricultural and telecommunications markets (Hanson, 2005, p: 37).

The barriers subject to removal was identified in the paper into three categories: physical, technical, and fiscal. Physical barriers were about customs and border controls related to the movement of goods. Technical barriers included the lack of uniformity among member state technical standards, restrictive public procurement practices, the absence of a common market for services, limits on types of labor and capital flows. Fiscal barriers are such as different tax rates and laws.

Especially technical barriers were because of the fact that national legislation of the member states was different from each other. In the original EC Treaty this was forbidden but countries could impose special regulations for health and safety reasons according to Article 36.

According to Hansson (1990, p: 75); in a study on harmonization in the EEC, Geoffrey Dennis states that ‘there has been an increase in the number of technical obstacles of this sort since the ending of internal tariffs.’ And ‘all non-tariff barriers, technical standards can be expected to cause the greatest trade distortions’.

When these obstacles removed and national markets opened, more companies can compete against each other. It makes diversity and greater choice of goods and services for consumers. In the single market firms could know that they have unrestricted access to more consumers in the EU. It will enable them to achieve economies of scale which translate in turn into lower prices.

These barriers were really difficult to resolve. It was estimated that before the SEA there were over 100.000 different technical regulations and standards between the member states (Neal, 1998, p: 72).

The growing impact of national requirements on intra community trade was threatening to derail the Common Market. In response, the Commission sponsored the development of a series of economic studies on the costs of protection among the members of the common market. Volume 6 of the 'Cecchini Report' examined the impact of national technical requirements in intra - community trade (European Commission, 1988). As the Cecchini report made clear, either the members of the EC would have to develop policies to liberalize internal trade or the effectiveness of the common market would be seriously compromised.³⁰

In general, the EU has been followed two strategies in order to make an atmosphere where technical regulations concerning goods could not to demolish free movement of goods. The first strategy is the concept of technical harmonization directives namely transferring of EU legislation to national legislations. (Article 100 of the Treaty of Rome that allows for harmonization of the laws of Member states) The second one is Mutual Recognition.

The New Approach and the Global Approach are based on three fundamental pillars:

³⁰ Dotto states that (2002, p: 16) that Cecchini report brings up a matter that Community will take the big advantages of liberalization in intra community trade.

1. Council Resolution of 07.05.1985, where a 'New Approach to technical harmonization and standards' is seen as an essential condition for improving the competitiveness of European industry.
2. Council Resolution of 21.12.1989 on a Global Approach to certification and testing, which states the guiding principles for Community policy on conformity assessment.
3. The Global Approach was completed by Council Decision 93/465/EEC. This Decision lay down general guidelines and detailed procedures for conformity assessment that are to be used in New Approach directives.

2.4.1.3. New Approach

EC put New Approach into practice, owing to disabilities and deficiencies of Old Approach which was analyzed in advance. At this stage; there was a need for a new strategy which takes into account technical improvements. The 'New Approach' to developing European product standards was outlined in Council Resolution of 7 May 1985 (European Council, 1985). It bases on essential requirements of the products.

This approach takes place between the Old Approach which envisages full harmonization and Mutual Recognition Principle that allows free trade between the countries that recognize the other member states' products that is produced legally to be sold in any other country in EU.

The New Approach developing a harmonized system of product safety standards in the European Union evolved over a twelve-year period. The Low Voltage Directive, which was adopted in 1973, was an important first step (European Council, 1973). This directive constitutes the fundamental of New Approach. The initial version of the LVD set out a

series of safety goals, instead of relying on formal technical requirements developed by the Commission (Hanson, 2005, p: 44).

The New Approach to Product Regulation

This constituted a radical change. The European Council of Ministers was no longer required to deal with detailed technical requirements.

In summary, New Approach Directives have the following characteristics;³¹

- The harmonization of national law is to be limited to the ‘essential requirements’, and a product must meet these requirements in order to be traded freely. And compliance with the essential requirements of the New Approach Directives is mandatory.
- The requirement for unanimous decisions to adopt a directive was also changed to “qualified majority”, thus expediting the decision making process.
- Essential requirements were defined as containing only statements for health, safety and protection of environment. And these requirements “differ from directive to directive”.³²New Approach directives implement to groups of products with similar features when national legislations are different.³³
- The technical specifications needed to implement these essential requirements which would be set forth through the harmonization of product standards.
- Technical qualifications of the products which comply with essential requirements are identified by “voluntary standards.”

³¹These resources was analyzed to learn the basic elements of the New Approach and summarize these qualifications:Hanson(2005),(AustralianGovernment2005,Brenton,P.(2001),<http://europa.eu.int/scadplus/leg/en/lvb/l21002.htm>

³² www.veritel.com

³³ Hagemer, 2005, p: 5

- A company may choose to comply with a New Approach Directive by complying with the relevant “harmonized standards” issued by a regional European standards organization.
- Regional European Standards Organizations defined harmonized standards which give technical solutions that ensure compliance with the corresponding essential requirements.³⁴
 - CEN - The European Committee for Standardization
 - CENELEC - The European Committee for Electro technical Standardization
 - ETSI - European Telecommunications Standards Institute
- Compliance with harmonized standards are not mandatory namely voluntary.³⁵
- Products that are designed, built and documented in accordance with the harmonized standards will be presumed to comply with the essential requirements. Products that are not based on the harmonized standards will not be granted this presumption and also non conforming products are exempted from CE mark system.
- The member states will be responsible for making sure that the products circulating in their territories harmonize with New Approach.
- Products manufactured to any standard or specification other than ‘harmonized standards’ can be sold in EEA provided that the manufacturer can prove that the product meets essential requirements. In such cases a specially designated, certification body (a notified body) needs to evaluate the manufacturer’s method to demonstrate compliance with the essential requirements.

³⁴ Standards making process shifted from national standard bodies to European organizations such as CEN, CENELEC e.g. It finished the proliferation of national standards and simplifies market for producers and consumers alike.

³⁵ Indeed this does not bring these standards to an unimportant position, because ultimate buyers and sellers prefer the goods which comply with these standards to other (Öktem, 1998, p: 19).

- The national enforcement authorities will also be able to take any product that they regard as unsafe out of service under a safeguard clause, regardless of if it is CE marked or complies with the harmonized standards.

The old approach incorporates all the technical details of the mandatory requirements in a directive. Under the new approach essential policy requirements are set out while the development of detailed technical standards conforming to the requirements has been entrusted to standardizing bodies. According to NIST (1997, p: 12); the EU Commission, CEN and CENELEC state that their intention is to comply with the international standards of ISO and IEC. On the other hand, the Commission emphasizes that CEN and CENELEC will develop their own standards only when international standards do not exist and unlikely to meet EU needs. According to Shortall (2007, p: 20) 30 percent of European standards are based on international standards.

Since the Old Approach directives contained detailed specifications, New Approach can apply broad categories of products owing to essential requirements. And only cover one or a few type of risks and any product may be covered by more than one directive.

A series of New Approach directives provide the legal basis for the CE marking systems. And a directive is defined as an order from the EU to the member states to make their laws comply with the requirements of the Community. According to Hanson (2005, p: 49), the New Approach directives can become binding law only when they are transposed into the national laws of the member states. Therefore many of the provisions of the New Approach directives are addressed to the states that will have to transpose and enforce them.

The Council Resolution of 7 May 1985 on the ‘new approach’ provides an outline directive which is intended to help as a guide for drafting ‘new approach directives’ (Australian Government 2005, p: 11). At present there are 22 New Approach directives.³⁶ Hanson

³⁶ The summary of the content can be seen in Appendix 4

(2005, p: 49) divides these directives into these sections. For example “horizontal directives” cover a series of broadly applicable aspects of manufacturing, design, packaging and use for a wide range of products. The main word that defines these directives is, of necessity, relatively general. These groups contains: Horizontal Directives;

| | |
|-------------------------------|----------------------|
| Machinery Safety | Directive 98/37/EC |
| Low Voltage Equipment | Directive 73/123/EEC |
| Electromagnetic Compatibility | Directive 89/336/EEC |
| Pressure Equipment | Directive 94/62/EC |
| Packaging and Packaging Waste | Directive 94/62/EC |

The other 16 directives comprise narrower classes of product characteristics. The Vertical directives cover generally all aspects of type of product. This category includes:

| | |
|-------------------------------------|----------------------|
| Medical Device: General | Directive 93/42/EC |
| Medical Device: Active Implantable | Directive 90/385/EEC |
| Medical Device: In Vitro Diagnostic | Directive 98/79/EC |

Directives which is concerned with series of risks:

| | |
|-----------------------------|----------------------|
| Construction Products | Directive 89/106/EEC |
| Lifts | Directive 95/16/EC |
| Cableways Installations | Directive 00/9/EC |
| Gas Fired Hot Water Boilers | Directive 92/42/EEC |

The largest group of vertical directives related to consumer use items. These include:

| | |
|------------|----------------------|
| Toy Safety | Directive 88/378/EEC |
|------------|----------------------|

| | |
|--|----------------------|
| Recreational Craft | Directive 94/25/EC |
| Radio Telephone and Telecommunications Terminal Equipment | Directive 99/5/EC |
| Non Automatic Weighing Instruments | Directive 90/384/EEC |
| Appliances Burning Gaseous Fuels | Directive 90/396/EEC |
| Simple Pressure Vessels | Directive 87/404/EEC |

When it is analyzed the first articles generally define the coverage of the directive. For example Article 1.2.(a) of the Machinery Directive (European Council, 1998) defines the machinery “an assembly of linked parts or components, at least one of which moves, with the appropriate actuators, control and power circuits, etc., joined together for a specific application, in particular for the processing, treatment, moving or packaging of a material”.

As the machinery directives show, the scope of the New Approach directives is in general not exclusive. And it is common for a product to be covered by two or more directives. According to Eeckhout (1994, p: 266); the machinery directive governs 55.000 types of machines.

The technical characteristics of machines are described by European Voluntary standards respectively.

In Hanson (2005, p: 46) opinion; the Commission does not have to develop specific directives for very specific types of products, such as car silencers. More than one directive may apply to a single product at the same time. And it is also easier to obtain the approval of the European Parliament and the Council for a list of safety concerns than for description of detailed product requirements.

Directives which cover the high risk products such as medical devices will generally preempt the applicability of other New Approach directives on a particular product. The directives also state the date of the requirements is to be enforced. There is a transition period provides member states time needed to comply with new requirements or to transcribe the requirements of the directive into national law (Hanson, 2005, p: 51).

The point that would interest the manufacturers is the list of essential requirements that covered by the directive must meet. These essential requirements are far too general. The essential requirements in the Toy Safety directive can be an example. A part from this directive about essential requirements includes following provisions:

I.1. In compliance with the requirements of Article 2 of the Directive, the users of toys as well as third parties must be protected against health hazards and risk of physical injury when toys are used as intended or in a foreseeable way, bearing in mind the normal behavior of children. Such risks are those:

1. (a)[T]he design, construction or composition of the toy;
1. (b) which are inherent in the use of the toy and cannot be completely eliminated by modifying the toy's constructionof its essential properties.
2. (a) The degree of risk present in the use of a toy must be commensurate with the ability of the users dimensions and characteristics, are intended for use by children of under 36 months.
2. (b)[A] a minimum age for users of toys and/or the need to ensure that they are used only under adult supervision.

3. Labels on toys and/or their packaging and the instructions for use which accompany them must draw the attention of users or their supervisors fully..... in using them and to the ways of avoiding such risks.

II.1. Physical and mechanical properties

1. b) Accessible edges..... so designed and constructed that the risks of physical injury from contact with them are reduced as far as possible.
1. (c)to minimize the risk of physical injury which could be caused by the movement of their parts.
1. j Toys containing heating elements must be so constructed as to ensure that:- the maximum temperature of any accessible surfaces does not cause burns when touched...(European Council, 1988)

2.4.2. Mutual Recognition

EU has experienced different types of harmonization as before mentioned. But there is another concept which called Mutual Recognition is the situation where no harmonization is required at all.

Mutual Recognition is the major principle in the policies tending to remove technical barriers to trade. Mutual Recognition is based on case-law and is now the primary principle. Mutual Recognition came into consideration with New Approach.

As it is stated in one of key elements of the new approach directives, a product which is manufactured in accordance with the harmonized standards are presumed to ensure compliance with the essential requirements.

The principle of mutual recognition means that a product lawfully marketed in one Member State should be allowed to be marketed in any other Member State even when the product does not fully comply with the technical rules of the Member State of destination.³⁷ It is thought that these products have already satisfied home states controls. The only limit brought to mutual recognition is measures concerning Article 36 and mandatory measures. Just in cases regarding public safety, health or the protection of the environment any measure could be taken. And these measures must be compatible with the principles of necessity and proportionality.³⁸ For instance with a technical or scientific proof that the product constitutes a risk for human health, safety and the environment.³⁹

³⁷ Preparation of the Competitiveness Council, Brussels, 30th September. At this Council meeting, the Commission will be represented by Internal Market Commissioner Frits Bolkestein. Mr Bolkestein pointed out that “mutual recognition is one of the cornerstones of the Internal Market, as it allows goods and services which are not covered by Community harmonization and are legally on the market in one Member State to be freely marketed in any other Member State”.

³⁸ In the EU Commission web site it is written that “The European Commission has published a Communication clarifying the ‘mutual recognition’ principle. It aims to improve the application of mutual

This principle has been developed since the Court of Justice's famous Cassis de Dijon was discussed in a Commission interpretative communication of 3 October 1980.

In the Commission's Communication of 6 November 1978 on 'Safeguarding free trade within the Community', it was emphasized that the free movement of goods is being affected by a growing number of restrictive measures. The judgment delivered by the Court of Justice on 20 February 1979 in Case 120/78 (the 'Cassis de Dijon' case), and recently reaffirmed in the judgment of 26 June 1980 in Case 788/79, has given the Commission some interpretative guidance enabling it to monitor more strictly the application of the Treaty rules on the free movement of goods, particularly Articles 30 to 36 of the EEC Treaty (OJ C 256/2, 3/10/80).

Attempts to liberalize the market were many but there were so many national differences which can be used as a protectionism tool for trade. The solution to this problem came forth after the Cassis de Dijon case. It was about German attempts to block the import and sale of French liqueur produced in France. Germany claimed that the blackcurrant liqueur did not meet national requirements for minimum alcohol content. But it was not a reason impeding trade between member states. And ECJ held that Germany could not discriminate against products from other member states that met basic health and safety standards. And the Court stated that any product lawfully produced and marketed in one Member State must be admitted to the market of other Member State of the EU.

Mutual Recognition Principle is a tool which is under Commission for providing free movement of goods. During 1993, there were 314 technical barriers to trade and they were solved within the framework of the Mutual Recognition Principle (Kovan, 1995, p: 75).

recognition by providing a summary of how it should work and the rights which it gives to economic operators".

³⁹ http://europa.eu.int/comm/enterprise/regulation/goods/mutrec_en.htm

There were so many advantages of this principle which is put forwarded in some resources that; before all else it is more simple than technical harmonization. Furthermore it enables new technologies of production to be diversified. Hence it ensures simplification of export and import (Dotto, 2002, p: 20).

In his analysis Hoeller (1998, p: 45) points out that, the benefits of this principle can be explained in these sentences.

“Under a MRA each party is given the authority to test and certify products against the regulatory requirement of the other party in its own territory and prior to export. MRAs do not require prior harmonization of each party’s requirements, so that each country’s ‘technical culture’ is preserved.”⁴⁰

It means that this principle preserves the other country’s national regulations and cultural values. Variant commodities can be marketed; imported and domestic goods can be marketed and known in the same conditions.

The rationale behind the Commission Communication on mutual recognition and free movement of goods.

This communication aims to improve the application of mutual recognition by explaining how it should work the rights given to economic operators. It is like a guide for Member States so as to benefit from free movement of goods. Articles 28 to 30 of the EC Treaty on the free movement of goods explain the obstacles to the free movement of goods within the EU, in short and general. European Court of Justice has developed these principles in extensive case law. But it is not expected that the national administrations and businesses

⁴⁰ It is emphasized also in The Community Internal Market 1993 Report.

can have perfect knowledge of how the court has interpreted the Treaty. In that respect this communication plays a role as a guide to them. For example there are many questions about this principle.

In some cases a product which forms risk can be manufactured but nevertheless legally sold in its Member state of origin. So that how can member state of destination can refuse this product? Maybe the state of origin is not aware or thinks that there are other guarantees to protect the consumer like information that is given by labeling e.g. On the one hand one member state may have faced a problem with a type of product, on the other hand another one has never faced any problem with the same type of product.

At that point communication states that every Member State hold a right to choose its own way based on its own circumstances to protect the consumer or environment. If the way is different than that of the Member state of origin, the Member State of destination is obliged to prove why it is technically or scientifically necessary to impose its own protection way. If it can not prove it than Mutual Recognition should be accorded.

In the case of technically less complex products that present little in the way of safety problems, mutual recognition is operating well. For example; bicycles, and containers. But it is less satisfactory in the case of technically more complex products, especially those which may cause safety or health problems. These are the lorries, construction materials, food supplements e.g.

In most cases such as machinery, medical devices, pressure equipment are already covered by harmonized EU rules. But there are some additional sectors in which the national regulations of countries are not equivalent. There were huge divergences. These areas are the ones where mutual recognition can not be the most effective means of ensuring the free movement of goods. For example; fortified food products and construction products. There

too, harmonization appears to be the most appropriate solution by the Commission Communication, too.⁴¹

2.4.3. Global Approach

Council Resolution of 7 May 1985 on a new approach to technical harmonization and standards in which it stated that the new approach should be accompanied by a policy on the assessment of conformity. Global Approach took into consideration the basic lines of that approach and introduced by Council Resolution of 21 December 1989 on a Global Approach to Conformity Assessment (European Council, 1989) expresses the guiding principles for developing a comprehensive system of conformity assessment.

The term “conformity assessment procedures” covers the designs and manufacturing processes of the product as well as product performance. And examines if the product complies with the essential requirements of new approach directives or not. It is provided by elements such as testing and certification. This is a new policy for how producers can prove that their products meet the legally binding technical requirements in new approach directives.

As Hanson (2005) says;

“There are four guarantors of conformity assessment in the CE marking system. When the manufacturer signs the declaration of conformity, s/he is creating a legally binding pledge that the product conforms to the requirements of the relevant directives. The product may require testing. By signing an affirmative test report, the manager of the laboratory is attesting that the product met the standards to which it was tested” (p: 89).

⁴¹ There are many other areas and information about the Mutual Recognition Principle which can be seen from “Commission Communication on mutual recognition and the free movement of goods - frequently asked questions” section from the website of European Commission.

As Edremitlioğlu has pointed out (1996, p: 39) if the manufacturers choose to comply with essential requirements of the directives than there is a need for a third entity which can prove the conformity. Whereas, the manufacturers prefer to comply with relevant harmonized standards may prove their compatibility easily with simple steps.

Harmonized essential requirements came up to agenda with the New Approach, but conformity to these essential requirements was still being tested by different conformity assessment procedures and then being given different documents. In other words harmonization of conformity assessment procedures and documentation had not discussed. This harmonization was provided by Global approach (Edremitlioğlu, 1996, p: 38).

Global Approach is seemed as complementary of New Approach. Controls and documentations got into consideration with Global Approach.

According to Australian Government (2005, p: 11), this approach promotes attention to quality in European production and emphasizes the fact that manufacturers always have total responsibility for their products. Member state practices differ from country to country. It is noted in Australian Government (2005) paper that;

“Before the adoption of the global approach it was common for countries to require mandatory testing and approval by government authorities before a product could be placed on the market. These procedures were often slow and costly. Approval by government authorities can also give manufacturers a false perception that the authorities take some responsibility for manufacturer’s products” (p: 11).

In Dinan (2000, p: 436), it is pointed out that some certain products would be subject to governmental approval in certain countries and not in others; likewise, some would necessitates results from an independent laboratory whereas the others allow companies to do their own testing. In many resources Global approach is called as a number of

techniques for demonstrating conformity on the degree of risk posed to the consumer by potentially faulty products.

The manufacturers can comply with the essential requirements easily when they produce kind of low risky products. Toys producers could be seen as an example for it. At the other hand of the scale complex and risky products which can cause death or major injuries if they malfunction. Very high risk products such as cardiac pacemaker are subject to more elaborate means of assessing conformity, involving government approved testing and certification bodies from the development of initial design to the production and testing of individual products (Hanson, 2005, p: 53).

Notified Bodies

Notified bodies carry out specific tasks pertaining to conformity assessment procedures, surveillance of manufacturing processes.

Under this approach the directives lay out essential requirements must state the steps producers must take to show compliance with the essential product requirements. And each member states government must form a list of notified bodies ⁴²whose testing and certification of products are deemed acceptable to ensure conformity to a given directive (Dinan, 2000, p:436).

According to Commission;

“Notification is an act whereby a Member State informs the Commission and the other Member States that a body, which fulfils the relevant requirements, has been designated to carry out conformity assessment according to a directive. Notification of

⁴² The lists of notified bodies published in the Official Journal C 302 on 12 December 2003 cover the bodies notified up to 30 September 2003.

Notified Bodies and their withdrawal are the responsibility of the notifying Member State.”

Member States are responsible for ensuring that notified bodies maintain their competence at all times and are capable of carrying out the work for which they are notified. It is up to the Member States to choose the means and methods for this. There is free competition between notified bodies. A manufacturer can choose between all notified bodies in Europe which are specified for the same types of products and conformity assessment procedures.

The notified bodies can involve government agencies, quasi- public organizations or private laboratories, depending on the country and the product (Dinan, 2000, p: 436).

The main principle of the global approach is that the manufacturer issues an EC Declaration of Conformity that says the product satisfies the requirements of the directives or conforms to an approved type. The global approach based on the fact that different types of risk are associated with different products. If the product has an unusual high level of risk then the manufacturer may be required to implement a full quality assurance system which is approved and supervised by a notified body (for products where there is a perception of high risk).The notified body will check the product for conformity with the CE marking requirements. However, low risk products do not require intervention of a notified body.

The policy identifies options to be applied by new approach directives. These range from manufacturer’s declarations of conformity without intervention of a notified body (for products assessed as low risk) to a requirement that the manufacturer implement.

2.4.4. Modular Approach

The main aim of this approach is to identify conformity assessment methods taking into account the characteristics of products and associated risk. The Global Approach establishes eight basic modules to cover different situations. Each Directive specifies which modules can be used. There are modules for both the product's design and production phase. Most modules require use of notified bodies. Concerning body may enclose just some products of directive not all. And these bodies enforce conformity assessment in accordance with procedures. And these procedures are identified within the framework of Modular Approach.

According to Modular approach, conformity assessment procedures are done by modules. In sum; this approach divides conformity assessment procedures according to product's design and production phase, concerning type of assessment (documentation, quality assurance or testing) and the one who enforces the assessment such as third entities or producers (Edremitlioğlu, 1996, p: 39).

A description of each module is given Appendix 3. This was introduced by Council decision of 13 December 1990.

The basic modules can be listed as follows:

- A Internal control of production (design & production)
- B EC type examination (design) (notified body)
- C Conformity to type (production)
- D Production quality assurance (prod.) (notified body)
- E Product quality assurance (production) (notified body)
- F Product verification (production) (notified body)

- G Unit verification (design & production) (notified body)
- H Full quality assurance (design & production.) (notified body)

According to Hanson (2005);

“The actual system is, of course, more complex. Many directives impose additional inspection or testing requirements in addition to the specified modules. With these additional requirements, there are over 24 alternatives instead of just eight. Moreover the module A to H system was invented in 1993 (European Council, 1993). Since then the directives have followed the language of the modules more or less exactly. However the New approach directives were developed in 1985. The directives were drafted before 1992 do not make reference to any particular system. The Commission is gradually amending the older New Approach directives to incorporate the modules (p: 54)”.

Conformity Assessment procedures under the New Approach cover product design, manufacturing and product testing. And product design is enclosed by modules A (self-declaration), B (type- examination) and H (design dossier). And Modules C, D, E and F enclose manufacturing and/or testing. Module H includes everything.

Hanson (2005) notes that there are three tasks of notified bodies;

“They can carry out a module B type review to make sure a product designed and developed in accordance with the relevant directives. They can also be hired to review and approve a manufacturer’s consistency control system for modules D, E and H that are based on ISO 9001, 9002 and 9003. Finally, they can inspect products for conformity with the essential requirements under modules G and H. This system has been developed in accordance with a 1993 decision of the Council (p: 89)”.

CE Marking

All products covered by new approach directives must bear the CE marking which indicates conformity to the essential requirements before the products marketed. And the manufacturer is responsible to affix CE marking to a product. It proves that conformity assessment procedures have been followed.

All the products covered by these Directives should be affixed with the CE marking to be allowed to circulate in the EU market. Each member state of the EEA must accept CE-marker products.

There are many groups of products such as chemicals, motor vehicles, pharmaceuticals and foodstuffs. And these products are regulated by Old Approach and do not take place in the system of CE marking.

There are appendixes regarding this chapter at the end of the thesis.⁴³

⁴³ These appendixes are available in Australian Government 2005. It is shown in the bibliography of the thesis.

3. EFFECTS OF EU STANDARDIZATION ON INTRA AND EXTRA EU TRADE

3.1. Effects of EU Standardization on Intra EU Trade

In the European Single Market the relationship between standardization and trade is very close. It is because of the fact that, initially standards were understood by the European Union as technical barriers to trade. And the member states tried to use these standards to protect their existing markets. As a consequence, intra EU trade was affected negatively. As it is mentioned in previous chapter EU try to eliminate these technical barriers to trade within European Standardization by approaches. And in the length of time European Standardization have a positive influence on intra EU trade.

3.1.1. Dominant Approach used by the EU for the Removal of TBTs

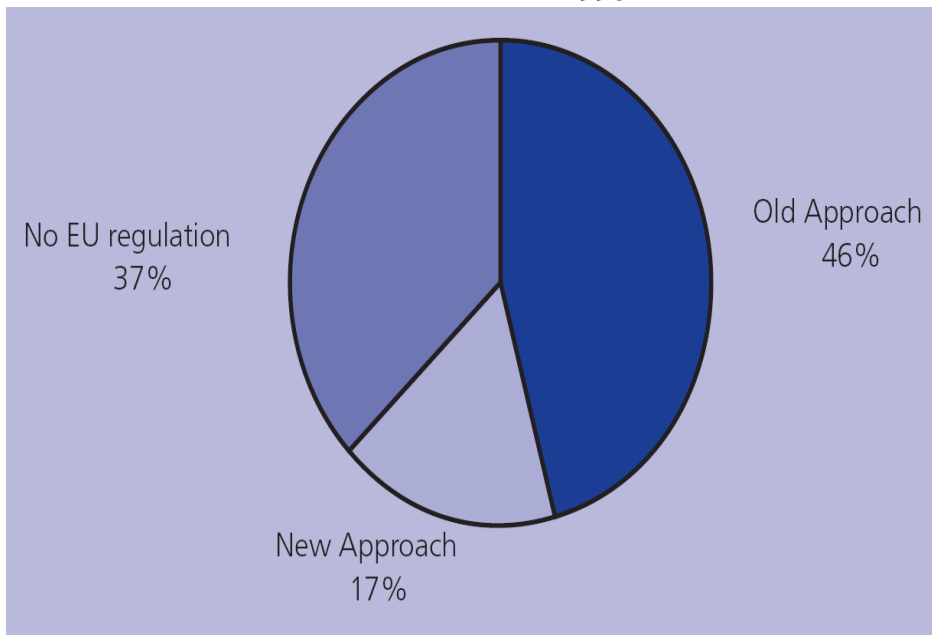
In order to assess the EU policy to eliminate technical barriers to trade, it will be beneficial to look the importance of the TBTs in the EU. In that respect; sectors that are affected from TBTs and dominant approaches used by the EU will be analyzed. There were several studies analyzing the significance of standards in Single European Market.

The EU's approach toward eliminating technical barriers to trade is formed by three ways as mentioned in Chapter 2: Old approach, New Approach and Mutual Recognition. The Figure 3.1 which is taken from WTO (2005a, p: 52), shows the percentages of intra regional EU merchandise trade covered by different approaches.

As the figure shows old approach applies to products that represent about 46 per cent of intra EU trade. 17 per cent of intra –EU merchandise trade is in products subject to New Approach and 37 per cent of trade is in products where no EU directive is applied.

As the figure supports, the EU mainly use old approach in order to eliminate the barriers to trade and harmonize the EU market. The harmonization of EU directives becomes essential for exporting the goods to the EU.

Figure 3.1 Intra EU trade by type of policy initiatives to remove technical barriers to trade, 1998



Source: *WTO calculations on COM/TRADE and Atkins (1998) and <http://newapproach.org/Directives/DirecetiveList.asp> visited in December 2004. This chart is taken from WTO.*⁴⁴

⁴⁴ Note: calculations are based on intra- EU trade at 4 digit ISIC classifications.

The standardization policy in the EU was started by old approach. Even, it was seemed that this approach caused difficulties it is mainly used also. In Eeckhout's (1994, p: 267) opinion; old approach was already at an advance stage when the new approach was formed.

When the detailed harmonization was adopted, the EU directives replace national directives. It was difficult for the non member states. But the standardization policy within the EU was developed in this way. There are some studies which analyze the importance of standards and dominant approaches used by the Commission.

One of the studies regarding the importance of standards in the EU is currently being analyzed by Hagemer (2005, pages: 5-9). He used estimations from Eurostat Comext database.

Another study is done by Breton (2001, p: 271). He used information on the sectoral incidence of technical barriers and the particular approach adopted by the EU to eliminate these barriers. The data come from the detailed study that is undertaken by the EU Commission (1997). The publication reports that which approach has been selected for each industry in the aim of European Single Market program. The estimations are based on trade data extracted from the Eurostat Comext database including intra and extra EU trade.

The study provides information at a 3 digit level of the NACE classification (about 120 manufacturing industries) whether trade is affected by technical regulations and the dominant approach that used by the EU for the removal of TBTs.

According to the results of these studies; Brenton and Hagemer also agreed and divided the sectors under the influence of technical barriers to trade in two: First one is the case where the barriers can be eliminated by Mutual Recognition and the second one is the

sectors where mutual recognition is insufficient or unsuitable. Therefore Old Approach and New Approach are used in order to hinder these barriers.

The common point of view is that Mutual Recognition Approach is the most effective way to overcoming technical barriers and also OA is the most costly way for firms due to the conflicts between member states.

The Mutual Recognition (MR) forms the solution, on sectors which is affected by technical barriers and impede trade. Mutual Recognition Approach is used in sectors when the number of required product characteristics is low, where consumers are not directly faced to risk namely in essence sectors which have low TBTs.

Especially Mutual Recognition is used when the countries simply accept each other's standards. This method will therefore only be observed among countries with equivalent objectives (WTO, 2005a, p: 52).

On the other hand, some sectors where Mutual Recognition can not function properly or fails to work; Old Approach (OA) and New Approach (NA) are used in order to eliminate TBTs.

In addition EU has good implications in the sectors such as chemicals, pharmaceuticals, motor vehicles etc. Especially foodstuffs or pharmaceuticals are really significant sectors. The disparities in level of protection arising from national regulations are large and these sectors have really high TBTs. Generally, EU standardization policy can promote internal trade and success to remove these barriers in these sectors by introducing Old and New Approach within the EU.

The trade between EU members seems to be based on high TBT products, whereas the imports from outside are concentrated within the low- TBT or no TBT products. There is an important point has to be stressed that the sectors with low TBTs (MR is used) do not impede the extra EU imports. So that generally EU - mutual recognition do not make foreign trade difficult, while the new and old approaches have a different effect. They facilitate trade between EU members and resolve trade problems and trade barriers within the EU are not very significant, whereas they hinder the external trade. Because; exporting to the EU required complying with the regulation both their home and EU requirements together (Hagemejer, 2005, p: 89).

3.1.2. The Trade Coverage of EU Member States by Different Approaches to Standardization in 1998

In this section the trade coverage of technical regulations in the EU will be shown according to every approach that is used for TBTs removal. A study by Brenton (2001) will be utilized in this respect. The breakdown of EU imports in 1998 from existing EU member states can be seen in Table 3-1.

Table 3.1: The Importance of Different Approaches to Technical Barriers to Trade: Coverage of EU (15) imports from Member States in 1998 (%)⁴⁵

| | Old Approach | New Approach | Mutual Recognition | No Technical Barriers |
|-------------------------------|--------------|--------------|--------------------|-----------------------|
| EU imports from Member States | | | | |
| Austria | 26.69 | 17.97 | 11.40 | 29.26 |
| Bel-Lux | 30.03 | 10.62 | 13.74 | 26.36 |
| Denmark | 24.98 | 17.39 | 16.54 | 27.14 |
| Finland | 38.89 | 12.20 | 5.04 | 21.53 |
| France | 30.74 | 11.12 | 17.32 | 26.68 |
| Germany | 31.12 | 17.53 | 14.70 | 20.18 |
| Greece | 17.28 | 5.60 | 29.65 | 40.75 |
| Ireland | 22.06 | 9.45 | 32.34 | 15.42 |
| Italy | 17.98 | 20.90 | 17.84 | 27.50 |
| Netherlands | 27.17 | 7.95 | 22.22 | 24.95 |
| Portugal | 25.32 | 8.92 | 28.78 | 26.93 |
| Spain | 39.73 | 8.86 | 11.31 | 28.84 |
| Sweden | 33.91 | 16.43 | 10.45 | 21.00 |
| UK | 21.29 | 14.08 | 24.61 | 23.31 |
| Intra EU | 27.91 | 13.39 | 18.14 | 24.53 |

Source: Brenton, 2001.

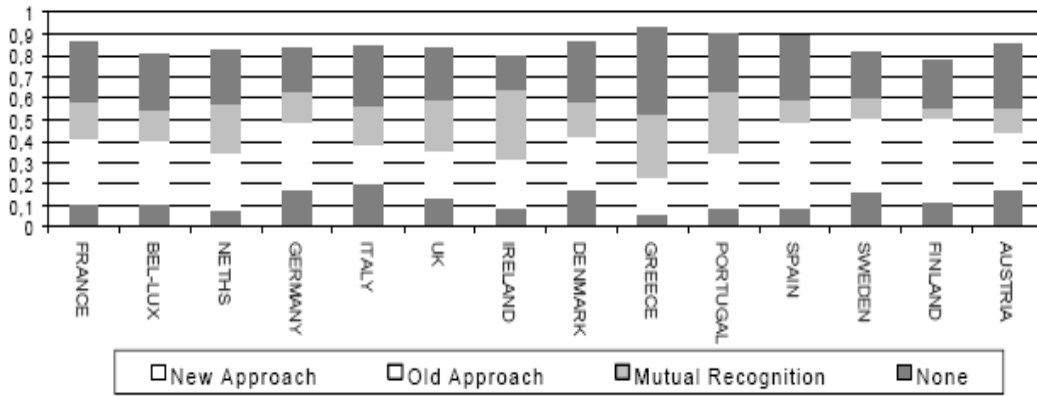
In Table 3-1 and Figure 3-2⁴⁶ the shares of sectors that are subject to various approaches to technical barriers in EU imports from each EU member States is shown. This data allow us to see trade coverage of sectors where technical regulations are not important and also the coverage of sectors where technical barriers to trade may act as barriers to trade.

And it also shows that a large proportion of intra- EU trade is in sectors affected by TBTs. When it is analyzed on average less than one-quarter of intra – EU imports are in sectors where there are not technical barriers (Brenton, 2001, 272).

⁴⁵ Note: the share for each sector do not sum to 100 per cent since a small number of sectors where multiple approaches apply are excluded.

⁴⁶ Source: <http://www.ciaonet.org/wps/brp02/brp02.pdf>, p: 17 Note: None is uppest part of the figure.

Figure 3.2 The Importance of Different Approaches to Technical Barriers in the EU: Coverage of Trade with EU Countries in 1998



Source: Brenton, 2001

In no technical barriers column in Table 3-1, 41 percent of EU imports of Greece constitute the huge number. This can be easily perceived from the Figure 3-2 also. And 15 percent of EU imports from Ireland are the small share.

The share of trade which is affected by different approaches to the removal technical barriers differs from a member state to another. The national regulations are different and the sectors which they are dominant can be the reason of it. As it is mentioned above the sectors which have low TBTs subject to mutual recognition, while sectors with high TBTs use Old Approach or New Approach.

Member States percentages for different approaches to the removal of technical barriers vary. For instance, sectors subject to Old Approach comprise large share of imports from Spain and Finland (over one third of total). Than Germany (31.12), Sweden (33.91), France (30.74), Belgium (30.03) follow Spain and Finland. For these sectors it is assumed that they are under the force of technical regulations namely high TBTs. And Old Approach policy tries to eliminate these barriers.

When the sectors use New Approach to the removal of TBTs is analyzed from the table, it can be easily seen that there are large shares of EU imports from Italy (21 per cent of total imports), Austria (18 per cent of total imports), Denmark and Sweden. But it is less important for EU imports from the member states such as Greece, Netherlands, Portugal and Spain.

The sectors characterized by the Mutual Recognition to the removal of technical barriers comprise large share of imports from Ireland (32 per cent of total imports), Greece, and Portugal. But Finland has the small share of the total of EU imports (5 per cent).

3.1.3. Positive Effects of EU Standardization on Intra EU Trade: Practical Examples Pertaining to EU Member States

The aim of this section is to find out to what extent standards have a positive effect or negative effect on foreign trade in Germany and Poland.

3.1.3.1. The Effects of EU Standardization on German Foreign Trade

In the past, standards were misused as non tariff barriers. In general it arose from the differences of national regulations. In spite of this effect, standards generally have positive effects on foreign trade where national or international standards occur.

National standards make the domestic investments and consumer goods more transparent and thus optimum decisions can be made and products can be sold and manufactured according to individual preferences. National standards are, like patents can be indicators of technological potential of a nation (Verlag, 2000, p: 23). And national standard can be indicators of innovation and disseminate it. As it was emphasized before, when a company

participates in standardization process, it gains competitive advantages with regard to costs and quality.⁴⁷

Due to the fact that the standards can disseminate the technology and information, the national standards do not cause trade barriers for manufacturing sectors as much as non-manufactured goods sectors. In non - manufacturing sectors (agricultural) informational costs are lower and products are homogeneous, so that product adaptation costs dominate the information costs. Since standards lower information gathering costs, if goods have to be adapted to a foreign market then national standards of the importing country provide valuable information in manufacturing sectors and enhance trade (Moenius 2004, p: 3).

The research taken from Verlag (2000) differentiated between national and international or harmonized European standards and examined their different effects on the major trade partnership in Germany. The research was undertaken by the Fraunhofer Institute analyze the effects of EU standardization on German foreign trade.

Results of Cross- Section Analysis

In the study a cross- section analysis of the major bilateral trade relations was carried out. The study analyzed 36 bilateral trade relations for the year 1995, taking into consideration the different functions and structures of standards in different sectors of the economy and technology.

According to the results of the study; in one-third of technological sectors, standards play a positive role in creating export surpluses. However; there are a few subject groups where

⁴⁷ Before the EU Directive 92/46 the UK had some problems to export to the Germany in dairy products. After that differences in raw milk requirements and testing methods are removed , as a consequence of this harmonization the costs declined 3-4 per cent Now there is no risk to be refused by the German (Henson, 2000, p: 59).

specialization of standards actually encourages import rather than export. It is significant to mention that as the study shows; standards do not have a negative, but rather a positive importance for national competitiveness as a precondition for exports depending on technology.

It is obvious that when the national producers comply with international standards they gain competitive edge and export their products to the world.

Another result of the study is that compatibility and quality standards develop trade, whereas variety reducing standards can limit trade. The latter hypothesis was derived from the principles of intra industry trade within a product group. The study on the basis of ICS subject groups confirms the hypothesis that international standards or harmonized European standards stimulate intra-industrial trade more than national standards. Blind (2004) also agreed with this result and said that;

“From the viewpoint of intra-industry trade, international standards are seen as especially beneficial, because they facilitate the specialization in product variations which is characteristic for intra - industry trade” (p: 48).

Results of Time Series Analysis

Another analysis that is mentioned in Verlag is time series analysis. It was carried out to determine if there is important relationship between size of the standards and export import levels. Firstly; the effects of size of the standards and technological specialization on German exports and imports examined. Then, trade between Germany and UK and Germany and France was analyzed. Firstly it is significant to say Germany's total export was not affected significantly by the development of standards. German exports do

particularly well in sectors that they have patents. However, if we look from standards side, when the analysis examined; these results were determined:⁴⁸

- Development of national standards does not have important influence on total German exports. It is due to the fact that especially national standards are the consequence of national needs.
- German imports particularly more in technological product groups.
- German producers bring intermediary products for further processing. If foreign supplier also adopts standards then producers can import intermediary or primary goods less costly.
- As a result of analysis it can be said that national German standards are not trade barriers and thus do not lead trade distortions.
- On the other hand international standards provide competitive chances to German domestic producers against their foreign rivals.
- Lastly, the analysis emphasizes the fact that international standards improve the competitive chances of domestic producers.

The results of the cross section analysis verify the positive role of international standards. International standards can lead to international competitiveness. National standards are important and necessary for exports. Because, exports are basically fixed by the technological portfolio of a nation. But international standards are required for national company's competitiveness in the world. It is provided by diffusing new technical knowledge, securing advantages in international technology race and strengthening national innovation system (Verlag, 2000, p: 26).

In conclusion; it can be concluded that International and European standards have much more positive and significant effect on German exports than the German national standards

⁴⁸ These results were taken from Verlag (2000) and these results are interpreted.

do. Increased participation in European standards and also international standards is necessary. As it is stressed before, a prerequisite for international involvement is provided active participation in standards work at a national level.

The results of the sectoral and macroeconomic analyses confirm that German exports surplus benefits from European and international standards. German firms can compete both in Europe market and world market efficiently.

3.1.3.2. The Effects of EU Standardization on Poland Foreign Trade that arose joining the EU

There are arguments that only the firms active in international markets can evaluate the significance of technical barriers to trade. Therefore, the significance of TBTs and the ways to solve these problems and the results try to be explained through surveys. In that respect, the studies about Polish firms will be examined. The effects of EU standardization on Poland foreign trade can be analyzed in two parts: before accession and after accession.

Polish firms faced so many problems exporting the goods to EU market. In this part, it will be mentioned that, if the firms eliminated technical barriers facing their export to the single European market, or not. Hagemeyer (2005) mentions and interprets with respect to questionnaires that are answered by Polish firms.

The results of questionnaire before accession of Poland to the EU

There are two similar surveys made before accession of Poland to the EU. In the first one 96 firms, especially big firms from food and chemical sector were analyzed. According to their results over one third of the sample complains about the difficulties in selling because of

different technical regulations. Nevertheless, overall cost-benefits balances were assessed neutral by 90% of the respondents.

Second one involved 272 Polish companies work in machinery, furniture and textile industries. And 70% of them are the exporters to the EU. Most of them expressed balanced interest about the issue. Only smaller ones saw the unification of standards as very beneficial for trade. But these ones the less prepared to comply with the new EU regulations involving compulsory directives.

The results of questionnaire after accession to the EU

This survey is made six months after accession to the EU. This survey and results of it is available at Hagemer (2005).

Three kinds of industries were analyzed: food processing (NACE 15), chemical (NACE 24), electrical (NACE 31). In Hagemer's (2005, p: 12) opinion, the main reason behind this choice was the extent of technical regulations and standards are effective in those industries. And these industries forms the large share of total Polish production (33%), as well as exports (19%). The data was collected by two methods: personal interviews with 96 companies and email questionnaires which 55 firms responded to. Altogether 155 Polish firms responded. 54 of them belonged to food, 46 to chemical, 55 to electrical industry.

The most important positive effects of the study are the following:

- More than 80% of the firms did not face any difficulties when they want to sell their products to the EU (after joining the EU). 75% of the firms expressed that they did not have to redesign their products, thus did not bear extra adjustment costs;

- Most firms (especially food and electrical sectors) evaluated the existence of the MR principle positively owing to their economic activity;
- The firms improved their quality and interested in ISO 9000;
- More than half of the exporters said that the unification of standards within the EU increased their exports;
- The general opinion on Poland' membership in the EU is rather positive, by the opportunity of large market and necessity of adjustment costs.
- However, 19% of the companies said that the membership would be negative for their economic activity.

There are benefits of the membership, however; it should be noticed that the new requirements generates additional costs for adjustment. And existing costs depends on a firm and an industry. In accordance with the questionnaire there are more results about costs:

- Significant percentage of firms said that Poland membership did not affect their economic situation. But 10 % said that unification of standards affected them negatively;
- 54% of food industries said that the cost of certification of products increased. Less than half of the surveyed firms responded that the cost of providing detailed information on their products' labels was high. These firms were usually from food industry with the share of 43%. While most of the chemical and electrical industries' answer was neutral/negligible;
- More than half of the companies did not apply ISO 18000 and ISO 14000. Only the companies from chemical sector was interested in ISO 14000 system.

The results of the study confirm that the effects of joining the EU were quite different for companies from various industries. And the highest cost is shown in food industry. More than 30 % of them had to invest to redesign their products to reach EU standards.

Overall, 54% of firms saw the net effects of joining the EU positive, whereas 20% said that the effect was negative.

The cost is less for chemical industry. 76% of the companies said that they did not face any difficulties after accession. More than 70% of them answered that they did not have to redesign their products. The answer of firms about regulations on hazardous products, on soap and fertilizers and on Good Laboratory Practice is important. 70% of them said that they had been implemented these regulations and would continue. The case was similar for electrical industry, they said that their regulations were similar and they were well prepared for membership. Just one fourth of them redesigned their products. 60% of them thought that harmonization of standards would be good for their economic activity.

Apart from the fact that Polish firms had to bear some adjustment costs for harmonization, the net effect of accession to the EU is positive. And another consequence indicates that the process of harmonization of the standards had already started and often achieved before 1 May 2004.

3.2. The Effects of EU Standardization on Trade between the EU and CEECs before Accession

Central and Eastern European Countries would have to comply with EU standards which set by old approach and new approach to enter to Single European market.

3.2.1. The Trade Coverage of CEECs by Different Approaches to Standardization in 1988-1998

Before analyzing the trade coverage of CEECs to the EU according to the various approaches from 1998 to 2003, it will be beneficial to see the overall picture of the sectoral incidence of standards in Table 3.2.

Table 3.2 Number of standards Implement in Each Sector

| Sector | Measures | Share of technical barriers removed (%) |
|---------------------------|--|---|
| Agriculture | Harmonized food regulation | 100 |
| Raw Materials | MRP | 100 |
| Food | Harmonized food regulation | 100 |
| Textiles | MRP | 100 |
| Clothing | MRP | 100 |
| Leather | MRP | 100 |
| Wood | None | 35 |
| Paper and printing | Packaging and waste directive, European copyright system | 75 |
| Petroleum | MRP | 100 |
| Chemicals | Detailed directives and MRP | 40 |
| Non-Metallic minerals | CPD | 25 |
| Iron, steel | Standards (Construction products (CPD)) | 35 |
| Other materials | | 45 |
| Metal Products | CPD, public procurement | 45 |
| Motor vehicles | Harmonized regulation | 20 |
| Other Transport Equipment | Harmonized regulation and public procurement | 55 |
| Electronic equipment | Standards (Machinery Directives) | 25 |
| Manufacturing nec | Standards (Machinery Directives) | 25 |

Source: Michalek, 2004, p: 7

Some sectors do not include many differences among country's regulations, whereas some diverges totally. And the measures are different to solve the problems in each sector.

As it is presented in Table 3.2, the importance of standards and technical regulations differs among sectors and might have impact on export capacities of new members of the EU.

The data in Figures⁴⁹ 3.3, 3.4, 3.5, and 3.6 show the evolution of the shares of sectors that includes technical barriers to trade and approaches for removal of them, in a ten year period. This period is also important for existing European Union countries in these years. The pressures for completing the internal market had increased in 1980s in the EU. And Single Market Program⁵⁰ was launched in order to eliminate barriers for free movement of goods, capital, services and people. So that; it was assumed that it would also remove the technical barriers to trade that might be a reason for impeding free trade between members.

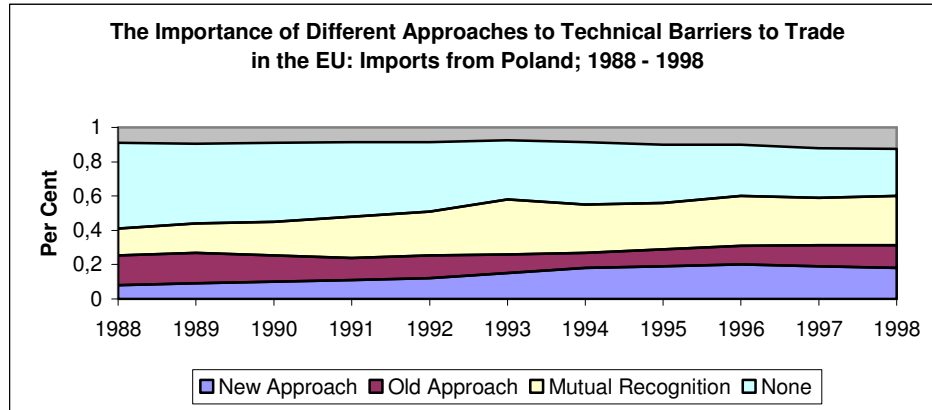
In foregoing ten year period was also important for the central and eastern European countries to export their goods to the EU. In the Figures from 3.3 to 3.6 which are taken from Brenton (2001) show the case for Poland, Hungary, Romania and Bulgaria as a sample. The graph shows increasing importance of products bound by technical regulations in the EU for these countries. And it also demonstrates that the picture differs between the countries and every sector.

The picture can be divided in two: Poland and Hungary; Bulgaria and Romania. The graphs for Poland and Hungary shows lessening share of sectors where technical regulations are not a barrier to trade.

⁴⁹ Source: Brenton, 2001, p: 276.

⁵⁰ This program was launched in 1985 and would have been concluded by 1992.

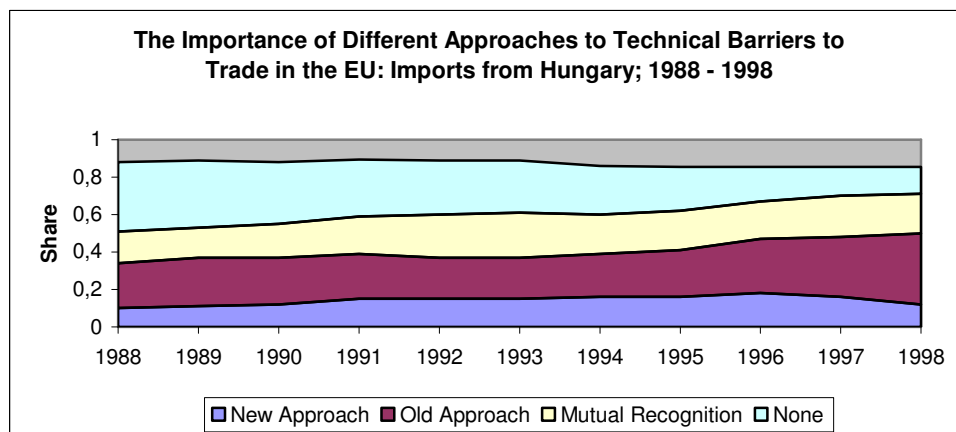
Figure 3.3 The Importance of Different Approaches to Technical Barriers in the EU: Imports from Poland; 1988 -1998



Source: Brenton, 2001

In 1988, 50 per cent of EU imports from Poland were in sectors where technical regulations are not important. As it is understood in Figure 3.3, this number had decreased to 25 per cent with the shares of the new approach and mutual recognition sectors rising in 1998. Old approach sectors remained constant. The explanatory knowledge about the reason of this will be given in coming pages.

Figure 3.4 The Importance of Different Approaches to Technical Barriers in the EU: Imports from Hungary; 1988 -1998



Source: Brenton, 2001

For Hungary the case was similar. Little changes had been appeared in old approach products. The share of sectors with no technical barriers to trade was 34 per cent in 1988. But it was less than 15 per cent in 1998. On the other hand, shares of sectors characterized by new approach had increased from 10 to 14 per cent, and mutual recognition products also increased from 18 to 25 per cent.

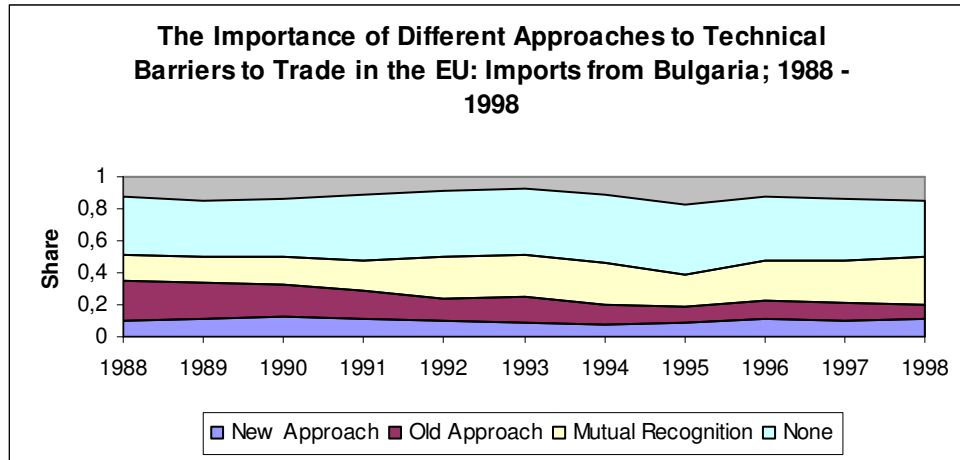
The issue of fact differed for Romania and Bulgaria. In opposition to Poland and Hungary, the EU imports from Romania increased from 19 to 29 per cent at the share of sectors where there are no technical barriers, But for Bulgaria this number of trade didn't change and remained 40 per cent.

The share of EU imports from Bulgaria characterized by old approach decreased from 24 per cent to 5 per cent in ten years. For Romania there had been more reduction, and the share of sectors changed from 35 per cent in 1988 to 3 percent in 1998.

Brenton (2001, p: 275) states that the case for Bulgaria shows a constant share of exports of old approach goods amongst a growing share of aggregate export to the EU. But for Romania the decline occurred mainly in exports of refined mineral oil products, motor vehicles and prepared meats.

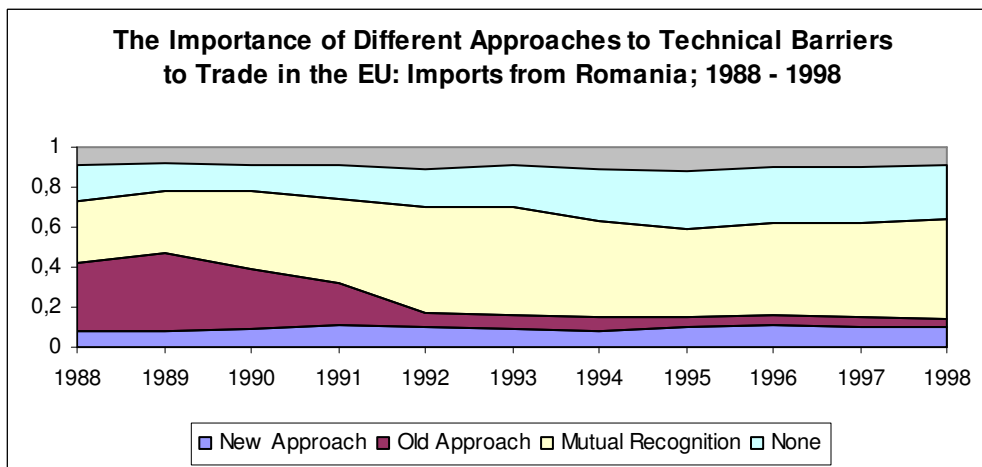
As it is clearly shown in the Figures 3.5, 3.6, the share of sectors subject to new approach remained constant for EU imports from Romania and Bulgaria.

Figure 3.5 The Importance of Different Approaches to Technical Barriers in the EU: Imports from Bulgaria; 1988 -1998



Source: Brenton, 2001

Figure 3.6 The Importance of Different Approaches to Technical Barriers in the EU: Imports from Romania; 1988 -1998

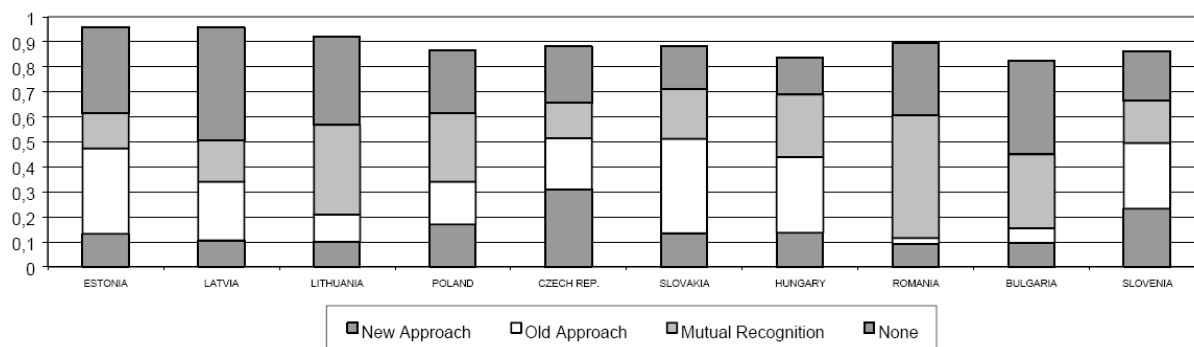


Source: Brenton, 2001

The most significant change happened in share of products that bounded by mutual recognition policy. The share of products increased from 31 to 45 per cent for Romania and from 16 to 25 per cent for Bulgaria.

These changes and also the circumstance for the other CEECs can be explicitly seen from the Figure .7.

Figure 3.7 The Importance of Different Approaches to Technical Barriers in the EU: Coverage of Trade with the CEECs in 1998



Source: Brenton, 2001

There had been important changes for EU imports from these CEECs on the sectors with TBTs that are linked to different approaches for their removal. And the main effect of increases in new approach sectors in EU imports from Poland and Hungary is seen as foreign direct investment (FDI) (Brenton , 2001, p: 277).

Brenton (2001, p: 277) also stresses if Bulgaria and Romania can attract great amount of foreign direct investment into the sectors where new approach is subject to (maybe engineering), than concerning countries can solve this problem effectively. And the problem of declining or stable share of old approach products in EU imports from central and eastern Europe emphasize the need of comparative advantage in these sectors.

Table 3.3 can be demonstrated in order to summarize the trade coverage of sectors bounded by technical regulations in EU imports from all CEECs in 1998. This includes

information for Bulgaria, Romania, Hungary and Poland in parallel with Figures 3.3, 3.4, 3.5, 3.6.

Table 3.3 The Importance of Different Approaches to Technical Barriers to Trade: Coverage of EU (15) imports from Applicant Countries in 1998 (%)⁵¹

| | Old Approach | New Approach | Mutual Recognition | No Technical Barriers |
|-------------------------------------|--------------|--------------|--------------------|-----------------------|
| EU imports from Accession Countries | | | | |
| Bulgaria | 5.73 | 9.61 | 29.72 | 37.51 |
| Czech Republic | 20.52 | 30.91 | 14.35 | 22.39 |
| Estonia | 34.40 | 13.06 | 14.06 | 34.68 |
| Latvia | 23.54 | 10.59 | 16.40 | 45.48 |
| Lithuania | 10.91 | 9.91 | 36.03 | 35.47 |
| Poland | 17.03 | 16.96 | 27.44 | 25.43 |
| Hungary | 30.45 | 13.45 | 24.98 | 14.95 |
| Romania | 2.38 | 9.13 | 49.44 | 28.74 |
| Slovakia | 37.87 | 13.43 | 19.82 | 17.35 |
| Slovenia | 26.46 | 23.18 | 16.90 | 19.82 |
| Extra -EU | 14.22 | 13.76 | 27.37 | 28.86 |

Source: Brenton, 2001.

It is clear from the table that Latvia met the large share of exports subject to no technical barriers to the EU. Latvia and Bulgaria generated the one third of EU imports from these two countries in 1998. These are the sectors called non-ferrous metals, footwear, sawing and processing of wood. On the contrary Hungary, Slovakia and Slovenia comprised the less than one fifth of EU imports from the applicant countries in 1998.

Table 3-3 presents that Czech Republic and Slovenia formed the large shares of EU imports which are covered by the new approach directives. These are sectors of producing

⁵¹ Note: the share for each sector do not sum to 100 per cent since a small number of sectors where multiple approaches apply are excluded.

machinery. According to Brenton (2001, p: 274), Romania and Bulgaria did the stable share of new approach products as similar as France and Netherlands.

It is apparent from the table that the products subject to old approach directives from non member countries included the small shares when it is compared to intra -EU trade. But for the CEECs other than Lithuania, Bulgaria and Romania had the shares of exports to the EU similar to existing EU countries when they are compared to non member countries.

As it is stated before, mutual recognition products are met by Balkan countries and Lithuania, on the other hand it is clearly seen from the Table 3-3; Czech Republic (14.35 per cent) and Estonia (14.06 per cent) has the small share of EU imports subject to mutual recognition. Examples of such sectors are knitting and clothing industries.

The sectors that do not possess significant technical barriers to trade comprise high share of EU imports from Balkan and Baltic States. But these sectors are much less important for Hungary (14.95 per cent), Slovakia (17.35 per cent), and Slovenia (19.82 per cent).

Again, this table and figures reinforce the conclusion of diversity between CEECs. And it will be beneficial to emphasize the conclusion that is made by Brenton (2001, p: 277) in that respect. From the Table 3-3, it is clear that there are small shares of EU imports that are subject to old approach directives from CEECs. The decline of shares also is showed in Figures 3-5 and 3-6 for Romania and Bulgaria. And this decline suggests that there are no strong comparative advantages. In this respect it will be beneficial to present a table which reveals the comparative advantage of CEECs with EU in 1998. This knowledge also supports the conclusion. The concerning table is right below. The authors of the study (Brenton, 2001) analyzed 114 industrial sectors for the intensity of three approaches to TBT removal (Hagemejer, 2005, p: 9).

Table 3.4 No. of Sectors in each Category where CEEC Country Reveals a Comparative Advantage in Trade with the EU in 1998

| | Old Approach (22) ⁵² | New Approach (19) | Mutual Recognition (22) | No Technical Barriers (51) |
|-------------------|------------------------------------|----------------------|-------------------------------|-------------------------------|
| Bulgaria | 3 | 5 | 7 | 16 |
| Czech Republic | 3 | 17 | 11 | 23 |
| Estonia | 2 | 6 | 3 | 11 |
| Hungary | 4 | 5 | 7 | 12 |
| Latvia | 2 | 3 | 5 | 8 |
| Lithuania | 3 | 5 | 6 | 10 |
| Poland | 3 | 11 | 10 | 25 |
| Romania | 0 | 5 | 7 | 16 |
| Slovakia | 2 | 9 | 8 | 12 |
| Slovenia | 4 | 9 | 7 | 19 |

Source: Brenton, 2001.

In general the results indicate that for all the CEECs there are few old approach sectors where a comparative advantage in trade with the EU is explained. According to study Old Approach was dominating in 22 sectors.⁵³ And none of the CEECs could be efficient more than 4 sectors in competitive EU market. Hungary is the best one with four sectors. Poland, Bulgaria and Czech Republic follow Hungary with three. Brenton (2001) put it rightly;

“This suggests that the accession of the CEECs and their access to the single market will have no great impact on EU imports of products from old approach sectors. In contrast, France reveals a comparative advantage (data not shown here) in 14 of the old approach sectors” (p: 278).

⁵² Note: The numbers in brackets show the total number of sectors in each category.

⁵³ The countries can not be compared totally, because the number of sectors with comparative advantages is not same in each of them. But still, it can give some rough conclusions.

For the new approach sectors Czech Republic reveals a comparative advantage in 17 sectors in 19 at all. Poland is also efficient with 11 sectors. Brenton (2001) thinks that;

“Thus, this analysis suggests that if trade in new approach sectors between the EU and CEECs is currently constrained by technical barriers to trade and the accession of the CEECs alleviates these barriers, then competition in the EU market for these products may intensify”(p:278).

Here again in Table 3.5, the results of an analysis of revealed comparative advantage for each of the CEECs in their trade with the EU will be given according to the sectors subject to the approaches in order to eliminate the TBTs. But these results and the data demonstrate 2002. And this data which is taken from Michalek (2004) can be compared to the one provided from Brenton (2001) for 1998.

Table 3.5 Number of Sectors under each category where CEEC Country Reveals a Comparative Advantages Trade with the EU in 2002

| | Old Approach (24) | New Approach (23) | Mutual Recognition (25) | No Technical Barriers (42) |
|-------------------|----------------------|----------------------|-------------------------------|-------------------------------|
| Bulgaria | 3 | 7 | 9 | 16 |
| Czech Republic | 5 | 18 | 10 | 20 |
| Hungary | 5 | 7 | 7 | 10 |
| Poland | 9 | 14 | 10 | 17 |
| Romania | 1 | 7 | 9 | 13 |
| Slovakia | 5 | 12 | 7 | 12 |

Source: Michalek, 2004.

According to Michalek (2004, p: 8); four countries reveal comparative advantages in old approach industries. When it is compared the data of 1998 in Table 3-4, it is apparent that Poland had the largest increase and the other countries also developed shares of revealed

comparative advantages in the Old approach sectors. Even Romania had the lowest share; it increased the number of RCA sectors subject to OA from 0 to 1.

All of the countries gained some RCAs in new approach sectors in the period 1998-2002 and developed.

In the case of MRP sectors, there are not large developments in the six countries. The least improvements are seemed RCAs in the sectors that are not covered by any approach. Romania and Bulgaria had relatively larger shares.

As a result Michalek (2004) noted that;

“The above result would again suggest that the new EU member states structures of trade are converging with those of the current EU members loosing RCAs in sectors not covered by any approach and gaining in sectors subject to EU TBT removal policy”(p: 8).

3.2.2. Evolution of Trade Coverage of Certain CEECs that Reveals Comparative Advantage in Trade with EU in 1999-2003

Trade coverage of different approaches varies across the CEECs. Trade coverage of an approach is explained as the share of EU imports from a region characterized by an approach in the aggregate value of EU imports from that region (Hagemejer, 2005, p: 9).

As it is stated in previous pages; the approaches for removing TBTs used by sectors varied in years. And CEECs started to harmonize their economies towards integration with the EU.

Therefore, they increased exports to the EU in 1990s. It is especially the same for Poland. Over half of its exports to the EU in the late 1980s were not subject to any approaches. At present, they are similar to the intra EU trade (Hagemejer, 2005, p: 11). Until 1998s countries had difficulties in complying with EU regulations and reaching to comprise and they were losing time. It caused decreases in trade covered by old approach. This knowledge can be confirmed by the data showed in Michalek (2004, p: 6). It is presented in Table 3.6.

Table 3.6 The share of “old” and “new” approach sectors in Polish exports to the EU (per cent)

| Year | Old Approach | New Approach |
|------|--------------|--------------|
| 1990 | 25.2 | 9.0 |
| 1992 | 19.2 | 8.4 |
| 1994 | 16.6 | 10.1 |
| 1996 | 17.0 | 14.2 |
| 1998 | 17.2 | 18.0 |
| 1999 | 18.0 | 23.8 |

Source: Michalek, 2004.

The decreases for the sectors covered by old approach are not seemed in the sectors where the essential requirements are enough to meet covered products. Therefore, there is a systematical increase in the share of new approach sectors. But after 1999, the results changed mainly. As it is apparent from the Table 3.7, for Poland the trade coverage of new approach were stable on the 23-24 per cent level. However, the new Polish trade based on detailed harmonization (OA).⁵⁴ It increased from 18- 19 per cent to 30.2 per cent in 2003.

On the other hand, the shares of trade where there are not technical regulations were stable on the 10 per cent level.

⁵⁴ As Michalek stated that it is partially due to large increases in automobile exports to the EU between 1999 and 2000.

Trade coverage of sectors subject to different approaches in export of selected CEECs to the EU in recent years is presented in Table 3.7. These are generally countries achieved to reveal comparative advantage and improved their trade coverage in EU imports.

Table 3.7 Evolution of trade coverage of Old Approach, New Approach and Mutual Recognition in CEEC export to the EU 1999-2003⁵⁵

| Year | Approach | Czech Republic | Hungary | Poland | Slovakia | INTRA-EUR |
|------|---------------|----------------|---------|--------|----------|-----------|
| 1999 | OA | 21.0% | 30.3% | 19.8% | 33.4% | 27.8% |
| 2000 | OA | 24.7% | 28.2% | 27.6% | 31.4% | 27.7% |
| 2001 | OA | 23.2% | 29.9% | 28.7% | 31.0% | 27.7% |
| 2002 | OA | 22.2% | 28.6% | 28.4% | 37.5% | 28.2% |
| 2003 | OA | 21.0% | 27.9% | 30.2% | 39.4% | 29.1% |
| 1999 | MR | 18.9% | 27.3% | 29.9% | 24.9% | 25.8% |
| 2000 | MR | 18.8% | 26.3% | 26.7% | 23.3% | 27.6% |
| 2001 | MR | 19.9% | 22.1% | 26.0% | 21.3% | 28.0% |
| 2002 | MR | 21.9% | 22.6% | 25.8% | 19.0% | 27.9% |
| 2003 | MR | 21.7% | 20.3% | 23.4% | 16.0% | 27.9% |
| 1999 | NA | 37.0% | 17.0% | 26.3% | 22.0% | 20.7% |
| 2000 | NA | 35.1% | 17.6% | 24.7% | 24.3% | 19.8% |
| 2001 | NA | 35.0% | 17.7% | 24.5% | 24.5% | 19.6% |
| 2002 | NA | 34.3% | 19.1% | 25.3% | 21.3% | 19.3% |
| 2003 | NA | 34.8% | 19.6% | 25.7% | 19.3% | 19.1% |
| 1999 | No Regulation | 17.2% | 10.8% | 13.9% | 12.7% | 13.5% |
| 2000 | No Regulation | 15.3% | 10.2% | 11.7% | 12.5% | 12.5% |
| 2001 | No Regulation | 14.5% | 10.4% | 11.6% | 13.5% | 12.8% |
| 2002 | No Regulation | 13.9% | 11.0% | 11.6% | 12.5% | 12.8% |
| 2003 | No Regulation | 13.9% | 10.5% | 12.1% | 17.1% | 13.0% |

Source: Hagemeyer, 2005.

It is apparent from the table that high share of Slovakian and Polish exports to the EU is in sectors subject to Old Approach. And the share of Poland exports covered by OA is very close to intra -EU trade figures.

According to survey sectors subject to Old Approach is seen as the least important one that Baltic States want to export to. It covers only 15-16 of the Estonian and Latvian exports to the EU. But Baltic States which are not shown in Table 3.7 especially benefit from Mutual Recognition. 47.5 % of the Lithuanian export to the EU is enclosed by MR Principle (42.1%) or by Mutual Recognition Agreements (5.4%) (Hagemeyer, 2005, p: 10).

⁵⁵ This table is available at Hagemeyer (2005, p: 10).

As Czech Republic had good values in exports to the EU characterized by new approach for previous years, it also dominated in 1999-2003 period as much as 35% according to the Hagemer's study. The TBT trade coverage is resembling, while the situation is different for Baltic States, they have high share of exports where technical regulations are not important.

3.3.Effects of EU Standardization on Extra EU Trade

The EU standardization policy can mainly eliminate the technical barriers to trade in internal trade. According to the result of Hagemer (2005) study, he concluded that;

“The possible explanation to the results is that the trade barriers within the EU are not very significant due to the standardization policy being in place. However, this policy affects a lot the external EU trade” (p: 8).

It is because of the fact the external partners have to comply with high technical regulations of EU's. It imposes significant costs to them. Just for the sectors involve low TBTs concerning countries can export their goods to the EU market. But, for the other sectors covered by new and old approach sectors the picture is different. Because, in these sectors external partners can not eliminate barriers and access to the EU market quite easily.

As Hagemer (2005) emphasized that, his hypothesis can be confirmed by the progressive importance of the TBTs over time.

3.3.1. EU External Trade Policy

The general principle of EU external trade policy in this field are set out in the 1996 *Communication from the Commission on the Community External Trade Policy in the*

*fields of Standards and Conformity Assessment.*⁵⁶ The Communication rests on two assumptions:

- (a) that the impact on trade of product standards and means of determining conformity with them appears to be increasing, thereby giving rise to technical barriers to trade, and demanding greater attention and action than in the past; and
- (b) that the completion of the single market has placed the Community in a position to pursue a more outward-looking trade policy in this field.

The European Union has two main external trade policy objectives with respect to standards and conformity and the EU achieve to mutually facilitate trade and market access by both objectives:

Firstly; it aims to reduce technical barriers in external markets and prevent the emergence of new ones.

Secondly; it wants to encourage its trading partners to adapt regulatory approaches based on, or compatible with international and European implications.

In order to facilitate trade the Commission use different measures to facilitate trade. EU Commission's working paper (2001) states measures such as regulatory co-operation (to make regulatory and market surveillance systems more compatible); harmonization (to create single technical rules); mutual recognition agreements (to eliminate costs arising from unnecessary duplication of certification requirements); support for international standards (to create compatibility and interoperability of products and, eventually, to provide a common technical basis for rules); and the development of codes of conduct and use of technical assistance (to provide support for the setting-up of a quality infrastructure in third countries).

⁵⁶ COM(96) 564 final of 13.11.1996.

A broad variety of measures can be used to facilitate trade between the European Union and its trading partners.

All governments make regulations. And the domestic regulations relating to the trade may generate some problems. Therefore, foreign suppliers have to comply with the importing country's regulations. And all these regulations are needed to protect health, safety and environment. But they should not damage international trade and be more trade restrictive than necessary. Consequently, the WTO supports the principle of proportionality⁵⁷ and wants to see it applied as widely as possible.

In order to accomplish trade objectives the EU:

- firstly relies on the WTO, notably Technical Barriers to Trade Agreement;
- negotiate mutual recognition agreements;
- provide technical assistance to ensure regulatory regimes which are transparent and trade friendly;
- encourage regulatory co-operation aiming at harmonizing regulations with other trading partners.

Especially MRAs are really active and establishes solutions to the EU external trade compared to the harmonization of regulations. The Commission opened negotiations with non-EU governments in order to arrive at sector specific MRAs. In that respect, the EU would allow the imported products that are controlled and approved to be marketed in their home countries, would be sold in the EU market without any additional procedures, and vice versa. It requires both countries' confidence. And each party is free to set its own

⁵⁷ It is a fundamental principle of European Union law. According to this principle, the EU may only act to exactly the extent that is needed to achieve its objectives, and no further.

health, safety environmental and consumer protection requirements provided to comply with international obligations.

The EU co-operates closely with player from the international community (for example, WTO) in funding developing providing technical assistance. It also interested in providing eligible technical assistance to developing countries (EU Comm., 2002).

3.3.2. Trade & Health- Environment Relations in the GATT/WTO

In that respect the WTO's entity is really important for trade in the world. All the countries rely on this multilateral trading system. In WTO's opinion;

“In the absence of international disciplines, a risk exists that technical regulations and standards could be adopted and applied solely to protect domestic industries”.

This point of view explains that in that case; standards and technical regulations will not occur as a technical barrier to trade.

In 1947 the provisions of the GATT contained also a general reference to these subjects. In Articles III, IX, XX.

And then a GATT working group started to assess non tariff barriers issues in international trade. Technical barriers were determined as the main and important non tariff barriers faced by exporters. At the end of the Tokyo Round in 1979, 32 GATT Contracting Parties signed the plurilateral Agreement on Technical Barriers to Trade. The new WTO Agreement on Technical Barriers to Trade has strengthened and revealed the provisions of the Tokyo Round Standards Code. The Standards Code laid down the rules for preparation, adoption and application of technical regulations, standards and conformity assessment procedures. In sum, WTO is the result of negotiations. It created by the 1986–94

negotiations called the Uruguay Round and earlier negotiations under the GATT. And WTO established in 1 January 1995. It is an international organization sets global rules of trade between nations.

The multilateral trading system that was originally established under GATT is well over fifty years old. In 1979 GATT did not oblige countries to depend on this agreement. But in 1996 WTO changed and brought more binding judgments.

One of the functions of WTO is technical assistance and training developing countries. The goal of WTO is to help producers of goods and services, exporters, and importers manage their business. At the end of the Uruguay Round, developing countries were prepared to take on most of the obligations. But the agreements gave them transition periods to adjust unfamiliar and maybe difficult WTO provisions. WTO seeks increased technical assistance for them (WTO, 2005b). All WTO agreements support least developing countries and gave them longer periods to implement technical standards and cope with problems.

There are two agreements dealing with food safety and animal and plant health and safety and with product standards which entered into force with the establishment of the World Trade Organization on 1 January 1995.

The Agreement on Technical Barriers to Trade

The agreement seeks to ensure that technical regulations or standards as well as conformity assessment procedures do not create unnecessary technical barriers to trade. All the countries have the right to adopt standards which they see appropriate. And also agreement recognizes protection of human health, safety, animal or plant life, environment and to meet other consumer interests (in Article 2.2 of the agreement). In order to prevent too much diversity, the TBT agreement encourages countries to use international standards where these are appropriate, but it does not require them to change their levels of protection as a result. It aims to provide avoidance of unnecessary obstacles to trade.

The WTO Agreement on Sanitary and Phytosanitary Measures

This is close to the agreement on TBTs, but covers a narrower range of measures. It covers measures that are taken by countries to ensure the safety of foods, beverages and feedstuffs from additives, toxins or contaminants, or for the protection of countries from the spread of pests or diseases. Again, countries can set their own regulations provided to be applied only to the extent necessary to protect human, animal or plant life or health. They should not arbitrarily or unjustifiably discriminate between countries where similar conditions prevail.

There are also environmental issues that were taken up by WTO. Environmental concerns are also addressed in article XX of the GATT:

“Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures:

(b) necessary to protect human, animal or plant life or health;

(g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.

With this article GATT allows governments to act on trade so as to protect human, animal and plant life or health, provided they do not discriminate and use this disguised protectionism.

The protection of environment is necessary and important. But WTO mainly interested in trade rather than environmental policy. And the regulations regarding environment can not be more trade restrictive than necessary to fulfill legitimate objectives (article 2.2) about environment.

The tendencies of countries for protecting the health, safety and environment, sometimes acted as disguised protectionism. Generally, developing countries' foreign trade is affected from tendencies negatively.

These technical regulations and standards are typical non tariff barriers. In the case of EU; Piet (1994, p: 267) also thought similar things with Hagemeyer (2005) and said that EU's standardization policy is not a problem for intra community trade certainly. However, the harmonization policy of EU affects other countries to want to export their goods to the EU market. Accordingly, there have been efforts within the GATT system aimed to use multilateral rules designed to struggle with trade distorting effects of these regulations.

The world can be divided into two perspectives: the North countries or developed ones and the South countries or developing ones. The EU is also in developed countries' category. Its standardization policy affect especially developing countries, even developed countries trade negatively. There are number of trade disputes over standards that brought to the WTO.

Most of the developing countries are not able to provide the requirements for food safety or health requirements. They also want cleaner environments and environment standards for products and production process, healthier goods, and higher safety for products and their contents. These impose really high costs for the producers. But they can not have capital technological information to adjust the higher standards. National standards are open and

non proprietary, but these countries may not have absorbing capacity of these standards. Therefore, they can not meet the requirements.

A survey (Henson, 1999, p: 6) that searches about the range of factors impedes the exports of developing countries to the EU indicates the significance of each on a five point Likert scale from ‘very significant’ (1) to at one one extreme to ‘very insignificant’ (5) at the other. As a result it is explained that the most important impediment to exports to the EU was SPS requirements.

Table 3.8 Mean significance scores for factors influencing ability to export agricultural and food products to the EU⁵⁸

| Factor | Mean Score |
|--|------------|
| SPS Requirements | 2.1 |
| Other Requirements | 2.8a |
| Transport and other direct exports costs | 2.8a |
| Tariffs | 3.3 |
| Quantitative restrictions | 3.8 |

Source: Henson, 1999

As Guttal (2000, p: 2) indicates environmental – friendly technologies, materials can be used by large companies among Northern institutions. But, the southern producers could not bear these costs.

And also there is another point of view that developing countries lag behind the developed ones in their capacity for the testing facilities. Also developed ones do not trust their certified test. Therefore, developing countries find it difficult to improve similar standards

⁵⁸ Note: Scores denoted by the same letter are not significantly different at the 5 percent level.

and reach mutual recognition agreements with the other nations. They lose the potential for trade (Maskus, 2000, p: 19).

It is also can be based on the fact that members of lower income societies face greater uncertainty about the future and it stops them to invest in more stringent environment, health and safety standards (WTO, 2005a, p: 49).

On the other hand, there is another argument about the results of environment standards. Low environmental standards in developing countries create unfair trade because of the lower costs compared to the developed countries. And the developing ones can increase their trade and low costs encourage them to unfair trade. In order to lessen these difficulties, the environmental and health standards should be implemented. It is necessary for the people and environment. Also it can hinder the unfair trade in some cases. But, for the developing countries there are many problems to comply with these standards.

It may be solved by financial and technological transfers to the developing countries. If they can export to the other countries increase their economic growth then concerning countries can afford these costs and protect environment, human and animal health (WHO&WTO, 2002, p:78).

Another important argument that WTO (2005a, p: 42) hold is that voluntary standards do not exclude the supply of goods not meeting the quality, safety level. However, mandatory standards do not allow them to be in the market. A wide range of products -food, drugs, vehicles, electrical appliances face many requirements such as ingredients (e.g. chemicals), performance (helmet), or process of manufacture (e.g. pasteurization of milk). Mandatory standards act as minimum standards in these situations. The products can be marketed providing these minimum standards. On the other hand, voluntary standards allow the

lower and higher quality of products to be traded in the market. High quality of products can prove it with a label, e.g. child-safe toys.

It is noteworthy that voluntary standards can be considered more market- friendly but also more risky. If the risks arising from low quality products can be acceptable by the society, then voluntary standards may be preferable to mandatory ones.

Intra Regional EU merchandise trade is largely based on the trade covered by old approach. At least, it wants essential requirements for the products subject to be traded and new approach is applied. Even, the voluntary standards which are identified by European organizations comply with international standards; the EU can also develop its own standards when it believes that these standards unlikely to meet the EU needs as mentioned previous pages.

3.3.3. Practical Examples regarding Trade Disputes

There are many disputes occurring from the requirements of EU standardization policy. The pressures of complying with their standards affected the value of trade; the issues were brought to the WTO. Some of them are between the EU and developed countries. And some of them are between the EU and developing countries.

3.3.3.1. The EU - USA Beef Case

This case study is about the use of bovine growth hormones and its effects on trade between U.S. and the EU. This case was analyzed by Weir (1994). The summary of his study will be given below.

Since the 1970s the U.S. farmers have used natural and artificial hormones to improve the growth rate of animals. These hormones provided them to save time and money. On

January 1, 1989 the European Community banned meat imports because of becoming fearful of hormone. The U.S. beef industry and manufacturers of these hormones (major chemical companies) affected negatively from this regulation. \$140 million worth of American beef exports were blocked during the first year. Against this the U.S. initiated 100 per cent tariffs on a range of agricultural products involving canned tomatoes, fruit juices and ham as a retaliation. And further the EC tried to threaten U.S. nuts and fruits in retaliation of tariffs.

They had been detected DES (the dangerous synthetic hormone diethylstilbestrol) in baby food made with veal. This led to deformities in babies. This made some European countries such as France and Belgium bans the use of hormones in cattle. Those who impose the EC ban alleged that the hormones that U.S. used cause tumors and genital deformities in children.

The EC officials claimed that the laws are not discriminatory. They are valid for all manufacturers that want to export to the EU. And officials said that regardless of its safety, it was cultural aspect that their citizens did not choose to eat the hormonally treated beef. And this rule was valid for both European and foreign manufacturers. So, it would not break the rules of GATT under non- discrimination.

But, the U.S. saw the ban as a case of unfair trade. Because universal test in the hormones demonstrated that they were safe. A 1988 report by the World Health Organization arrived at the conclusion that the natural hormones used did not pose hazard to human health, if good animal husbandry was practiced. And also the hormone levels between 1.4 and 2 micrograms per kilogram was recommended as limit for beef muscles. Some reports done by the EU also tend to confirm that the hormones are safe.

According to the study, as the data taken from the Report on U.S. Barriers to Trade and Investment by the European Commission stated U.S. beef exports had risen steadily to \$34.3 million in 1994. Despite the fact that U.S. increased exports of beef to the EU market, the industry lost millions of dollars of potential trade. The reason of it was the fact that more than of all cattle manufactured in U.S. are produced by hormones. And the other one can be the protectionist tendency of the EU.

All of them show that the fear of the Community for the citizen's health is really important and necessary but however, there was not a conclusive evidence for hindering the export from the U.S. It connotes the strong belief for creating 'Fortress Europe'. According to the study, tensions about the hormone beef regulations continued by the EU. This proves the tendency of Europe for protecting domestic industry. So that this kinds of NTBs are imposed by two sides and impedes the trade.

3.3.3.2. The EU - Africa Aflatoxin Case

As a result of the differences between national regulations of countries, trade disputes occur in a non harmonized system. One of the cases about different approaches to standards and food safety among the trading partners is the one called EU – Africa Aflatoxin Case.⁵⁹ This is about European Union's maximum level of aflatoxins in imports of cereal, dried preserved fruit and nuts.

This regulation implemented in April 2002 and generated among countries, especially developing ones such as: Argentina, Australia, Brazil, Canada, Colombia, India, Indonesia, Malaysia, Mexico, the Philippines, Senegal, South Africa, Thailand, Turkey, Uruguay and

⁵⁹ As Otsuki (2001) defined: "Aflatoxins are a group of structurally related toxic compounds which contaminate certain foods and result in the production of acute liver carcinogens in the human body. They were discovered in 1960 following the deaths of 100,000 turkeys in the United Kingdom and high incidences of liver diseases in ducklings in Kenya and hatchery trout in the United States.

the U.S. This case is regarding food safety, health risk and conflicts between these concepts and foreign trade.

There are two sides in the cases. One of them is trade losses and the other one is health risk. And the effects of the different regulations and standards tend to differ across countries. And the EU regulation of aflatoxins imposes high costs for developing countries.

Otsuki, Wilson, Sewedah (2001, p: 1) estimate the impacts of changes in differing levels of protection based on the EU standards for bilateral trade flows for 15 European countries and 9 African countries between 1989-1998. They concluded that 10 per cent reduction on the maximum allowable level of aflatoxin contamination of cereals and dried fruits and nuts would reduce trade flow by 11 per cent for cereals and 4, 3 per cent for dried fruits, nuts and vegetables.

Otsuki (2001) examined and compared three regulatory scenarios: pre-harmonized standards, an international standard indicated by guidelines set by Codex⁶⁰, and the new EU- harmonized standards. According to the survey undertaken by Otsuki (2001):

- They concluded that compared to pre harmonized standards, the Commission's new standard would cause a considerable loss of export revenue in African countries. Their export revenue decreased from Europe by 59 per cent for cereals and 47 per cent for dried and preserved fruits and edible nuts. And total loss was U.S.\$ 400 million for concerning foods.

⁶⁰ The Codex Alimentarius Commission was created in 1963 by FAO and WHO to develop food standards, guidelines and related texts such as codes of practice under the Joint FAO/WHO Food Standards Programme. The main purposes of this Programme are protecting health of the consumers and ensuring fair trade practices in the food trade, and promoting coordination of all food standards work undertaken by international governmental and non-governmental organizations.

- In contrast to Codex standard, the implementation of the EU aflatoxin standards would reduce health risk by approximately 1.4 deaths per billion a year, but would simultaneously decrease African exports by 64 per cent or U.S.\$ 670 million, while the Codex imposed the least costly trade impediments.

A different point of view is Jaffee and Henson (2004). They argue that the regulations can form barriers for individual countries, but total trade does not change where there are losers and winners together. For example, the case which Guatemalan raspberries export to the U.S. stopped for the reason of the outbreak of cyclospora⁶¹. And then, the leading firms in the industry started to take from Mexico. They criticized Otsuki and said the effect of the new aflatoxin standard was exaggerated, and just a small number of consignments of groundnuts rejected by EU Member States due to aflatoxin (WTO, 2005a, p: 69). Jaffee and Henson (2004) also suggested that;

“the near term “loss” of African trade due to the more stringent European Union standards has actually been in the hundreds of thousand rather than the hundreds of million of dollars”(WTO, 2005a, p:69).

3.3.3.3. The EC - Peru Sardines Case

This case is again between a developing country and the EU. The dispute arose when the European Community banned the use of term “Peruvian sardines” on tins which contains like fish species caught by the Peruvian coast. And Peru prevailed in WTO dispute settlement against the strong European Community on September; 2002. Peru claimed that the EC Regulation was inconsistent with Articles 2 and 12 of the TBT Agreement.

⁶¹ Cyclospora, infection is a newly emerging parasitic illness that can cause severe diarrhea.

The EC regulation about this case obliges just *Sardina Plichardus* could be marketed in the EC under the name of 'sardines'. *Sardina pilchardus* is found mainly in European coasts and fished by EC vessels (Shaffer, 2002, p: 1). In other words, just these kinds of species can have the word sardines on cans.

On the other hand , *Sardinops sagax* which is fished mainly in Pacific along the coasts of Peru and Chile could be sold under the name of 'Pasific Sardines' or 'Preuvian Sardines'(Shaffer, 2002, p: 1).

The WTO Panel and Appellate Body decided that Peru was right and found that Codex Alimentarious Commission for sardines products formed a relevant international standard under the TBT agreement. It said that these species (canned sardines prepared from a list of 21 species) could be sold throughout the world with the name of sardines.

EC Regulation failed to comply with Article 2.4 of TBT Agreement and failed to demonstrate that the Codex standard would be inefficient and inappropriate to fulfill the 'legitimate objectives' pursued by the EC Regulation.

This case shows that Codex Alimentarious Commission has a potential significance in WTO disputes. And also it demonstrates that small and weak developing countries also can win this game and defense them.

And also Shaffer(2002, p:1) states that this panel decision confirms that the importance of Codex standards for developing countries such as Peru to access to developed countries' market- U.S. and EU.

3.3.3.4. The EC - Canada Asbestos Case

The case is about banned imports of asbestos and of products including asbestos. France prohibited the import and use of asbestos. Asbestos is seemed as the leading cause of occupational cancer. And it claims the lives of 2000 people each year. And France produces substitutes of asbestos (WHO&WTO, 2002, p: 82).

Canada accused France to violate articles 2, 3 and of the SPS Agreement and Article 2 of the TBT agreement. And Canada requested that the Dispute Settlement Body form a panel (Maskus, 2000, p: 6). The case was analyzed by the WTO.

The panel has stated that although the French ban was incompatible with national treatment provisions outlined in Article III⁶² of the General Agreement on Tariffs and Trade (GATT), nevertheless the EC (France) could apply the ban under GATT Article XX (b) (General Exceptions).

It is thought that the asbestos case clarified the meaning of what is necessary to protect health under WTO rules. GATT states that nothing prevents members from imposing measures necessary to protect human, animal or plant life or health.

According to trade officials, the five scientific experts consulted by the panel unanimously agreed with the EU that chrysotile asbestos is carcinogenic and dangerous to human health. Until now, WTO dispute settlement panel has not allowed a WTO Member to use the article XX (b) to impose trade measures.⁶³

⁶² Article III of GATT “national treatment” principle which required that once having entered the market, the imported good must have been treated no less favourably than the equivalent domestically produced good.

⁶³ It is available at: <http://www.ictsd.org/html/weekly/story1.20-06-00.htm>.

3.3.3.5. The EU - Bangladesh Shrimp Case

Over the period August to December 1997 the European Commission banned the export of Bangladesh frozen shrimps due to the concerns about hygiene standards and controls carried out by Bangladesh government inspectors. It is estimated that the loss of revenue to shrimp processors was \$14.6 million. The cost of total industry to maintain the HACCP in these plants is calculated as \$2.2 million per annum (Henson, 1999, p: 3).

3.3.3.6. The EU - Kenya Fresh Vegetables Case

This is a good example for the performance of a developing country. In all the cases there are comparative disadvantages for low income countries regarding foreign trade against the developed countries. In some cases the costs for complying with the developed country's regulations, gave rise to decreases in the trade flows of developing countries.

In Kenya's case standards did not act as a technical barrier to trade against the EU. Because they used concerning standards for competitive gains.

As Jaffee (2005, p: 8) said that the leading firms in Kenya to access British markets with fresh vegetable products. They invested in products, internal systems, supply chains to service involving the growing demand for salads and other semi-prepared vegetable products. Leading companies expanded and upgraded their possibilities. New water sanitation systems, new cold treatment and storage systems, policy of worker hygiene and the main important system of businesses called quality management. Kenyan exporters gained net profit margins -14% per cent from the high care packaged goods. And also they gained regulatory of demand and advance information from supermarkets clients on market trends, certainty about quality and hygiene and improved their reputation.

And the Kenya succeeded to increase the value of fresh vegetables exports to the EU. Over the past decade exports values from non-member countries were flat. It met the highest standards in EU markets and survived in the EU market. From 1991 to 2003 there had been a huge increase of Kenya's exports of fresh vegetables to the EU. They increased the exports five fold.

3.3.3.7. German Product Standards against the Other Package Exporters

Products and process standards are regarding the environmental standards. Product standards identify the product characteristics such as performance, product safety, dimensions and requirements for packaging or labeling.

Packaging sometimes causes problems for international trade as in the case of Germany. In 1991, Germany's regulation that enforced the manufacturers to collect the packaging materials is an example of the product standards that impede international trade. Even though the importer was actually responsible for collecting, this implementation affected exporters negatively (Saatçioğlu, 2001, p: 70).

3.3.3.8. The German - Canada Newsprint Paper Case

Germany forced the exporters of newsprint paper to produce these papers provided to include certain proportion of old paper. This rule affected the main exporters of German, namely Canada and Switzerland negatively. Because, they were not using old paper and it was difficult to find enough old paper for them. Thus, the trade between them decreased and the exporters stranded. This case also brings about the assumptions of trade protectionism (Saatçioğlu, 2001, p: 71).

3.3.3.9. The European Union - Japan TV Industry Case

The main problems emerge from the need of complying with health and environment standards. The cases are generally based on food and agricultural products in that respect. On the other hand, there are some of trade losses arising from technical standards of different industries.

For instance, it is stated that when network externalities are large, the countries have incentive to harmonize standards and use compatibility standards in order to be compatible. Thus, there will more international trade flows. In essence it is really important for international trade. Gandal (2000, p: 9) gives a television industry example about it. The NTSC (National Television Standards Committee), PAL (Phase Alternate Lines) and SECAM (Sequential Couleur Avec memorie) are three different standards and they are incompatible. NTSC was adopted by the U.S. and Japan, whereas PAL system was adopted by Western Europe countries except France. SECAM was adopted by France and Eastern countries. Despite the strong competitive advantage of Japanese TV manufacturers, they could not access to the European markets as easily as U.S. market. It is because of the incompatible standards.

By the early 1980s Japanese's market share was about 43.5 per cent to the U.S., (both of them were on the NTCS system) whereas their market share in Europe was only 15.2 per cent (WTO, 2005a, p: 39).⁶⁴

⁶⁴According to Gandal, it is also noted that the size of U.S. market and early entry of Japanese companies into the U.S. television market, caused the television prices to be higher in Europe than in the U.S.

3.3.3.10. Examples about EU and Some Countries from Different Sectors

According to an interview (by fax) aimed to find the difficulties faced by businesses in meeting technical requirements of conformity assessment procedures when exporting to other countries, some information was obtained. Firstly it is followed in August 1998 by Germany and Japan and in August 1998 by USA and UK (Henson, 2000).

In automotive sector it is stated that exhaust system standards, noise standards, emission standards, seat belts are different for the EU, USA and Japan. In addition both bench and vehicle testing which prove the compliance with the regulations add huge costs due to the differences between countries. In terms of problems and costs related to EU countries, it is also stated that customer requirements are the main factor to affecting firm's ability to the EU market. It caused difficulties for other countries to enter the EU market in this industry. As a result the significance of complying with international standards for trade is seemed explicitly.

For terminal telecommunication equipment sector, the same study concludes that EU did not find difficult to comply with other country's standards owing to the advanced state of technology in all study countries.

CONCLUSION

The impact of standards and technical regulations related to goods on trade stands in the forefront of global policy discussions. Increasing globalization provides the convergence of markets and international standards facilitates it by opening new markets and more market transparency. While standards and technical regulations foster international trade flows and increases competitiveness, they can also act as technical barriers to trade if they vary widely from country to country. It is obvious that national regulations and standards which are introduced to protect the interests of consumers can hinder trade flows in international arena.

International barriers to trade have shifted from tariff and quotas to non-tariff barriers in world as well as in the EU. Therefore; the necessity of harmonization of technical regulations and standards occurred. In this framework; the EU started to work on removal of technical barriers to trade. When the EU was formed by the Treaty of Rome, the main aim was to guarantee the free movement of goods within the European Community. In order to provide it, firstly direct barriers were eliminated. But in order to protect their domestic economies, the member states took some protective measures and standards are used as a type of non tariff barriers in the EU.

The oil crisis of the mid and late 1970s had increased the protectionist tendency of the countries. Trade distorting measures caused problems for intra and extra EU trade. EU has to made new reforms to solve these problems.

Firstly; full and detailed harmonization was applied. But; it is analyzed that the old approach directives were difficult to reach a compromise and might be an obstacle to technological progress. Therefore, in 1985 the New Approach was adopted. It identified

essential requirements for public safety, health and protection of environment. New approach directives are limited but their scope is fairly wide.

According to the results of researches and studies; it is noted that trade coverage of EU member states by different approaches depends largely on the characteristics of the sectors. The importance of them varies among sectors. Large proportion of intra EU trade is in sectors subject to technical barriers to trade. It explains the fact that the national regulations of the member states were divergent.

In the length of time the EU achieved to eliminate these barriers by policies such as old approach, new approach and mutual recognition significantly. The European Standards has a positive influence on intra EU trade.

In essence; the EU has also been successful to promote internal trade and eliminate the barriers exist in high requirement sectors such as food, chemical e.g. by old approach. It is noted that the intra EU trade is largely related to products applies to old approach.

When the disparities between the levels of protection arising from national technical regulations exist significantly, then harmonization can be the most useful method for removal of technical barriers to trade and to protect public health and environment. In that respect, Mutual Recognition can be used efficiently in sectors which include less complex products and may have low technical barriers to trade. In addition, many sectors are already covered by harmonized rules before the existence of mutual recognition. This can also be the reason of general utilization of the EU harmonization policy.

Every member state has different share of trade coverage in different sectors subject to different approaches. It explains the fact that every country has differing technical

regulations and their success is different for the removal of technical barriers to trade and complying with harmonized rules.

According to the results of the analysis; it is possible to say member states satisfy European Standards. They gain competitive edge and export their products easily to the EU. Even, the effect of EU Standardization is quite different for various industries from various countries. The general impact is positive. The trade barriers within the EU are not very important owing to the general standardization policy carried out by the EU. They are fully harmonized in general and take the advantage of the harmonization with the policy being in place.

Another important issue is the impact of EU Standardization for Central and Eastern Europe Countries. The picture is same for these countries also and changes according to each country's economic position and the characteristics of the sectors. The countries which can not afford the costs of sensitive high quality product sectors, is not able to export their goods to the concerning sectors in the EU market. The large proportion of EU trade is in sectors subject to full harmonization. Therefore, they could not converge and fulfilled the requirements of the EU standardization completely.

To summarize; the trade coverage of countries' differ in terms of sectors and the level of economic development. For example, Bulgaria and Romania can not become close to the characteristics of intra EU trade especially covered by old approach. However; many of them could start to show a comparative advantage in trade with the EU.

Especially before the accession in 2002; the CEECs gained some revealed comparative advantages. Especially, the share of Poland exports covered by old approach is very close to intra EU trade figures. Poland has been successful after accession also and net effects of accession to the EU become positive in general. The other countries also started to

harmonize their regulations with EU directives and compete in the EU market. They can also benefit from applying common technical regulations of the EU after accession likewise Poland, if the adaptation costs are not excessively high and can be afforded.

As it was emphasized before every approach has different effects for internal trade. In addition; they have different effects for external trade. Even, complying with old approach directives was costly and complicated; it did not cause lots of problem within the EU. In the light of data of the intra EU trade, it is apparent that there is an increase in trade of products which the detailed and most complicated technical regulations are necessary. EU has the largest share of trade flows in high TBTs sectors. These high cost requirements can be obstacle for non member and/or developing countries. It impedes the external trade.

Consequently, this tendency increases the volume of trade within the EU, whereas it hinders and decreases the imports from non member countries. They can not comply with the characteristics intra EU trade. They can just succeed in low TBT products which the volume of trade is particularly lower than the high TBT products in the EU market.

When the divergences occur in productivity between the intra and extra EU partners, then the external partners will face difficulties entering the EU market and it will affect the external EU trade negatively.

Even the EU external trade policy aims to reduce technical barriers in external markets and use different measures for removal, there are still difficulties for external partners. In that respect, the WTO's entity is really important. The EU relies on WTO and Technical Barriers to Trade Agreement. WTO recognizes the protection of human, animal or plant life or health, protection of environment, public safety, consumer protection (legitimate objectives). But, they should not arbitrarily discriminate between countries, if there are similar conditions. It aims to provide avoidance of unnecessary obstacles to trade.

WTO also is important to protect the developing countries against the disguised protectionist tendencies of developed countries and the EU.

The EU is one of the biggest trade players in the world. It is a really significant market for many countries from the world. But its standardization policy can decrease the trade flows of countries thereby reduce the welfare.

Although, the international and European standards are designed to provide public safety and health, facilitates trade, develop consumer information and increase domestic welfare; they can also impedes trade between countries. In conclusion, these standards can increase the domestic welfare while they decrease the trading partner's welfare.

In the case of European standards, it also has same implications. The trade flows increase within the union especially developed countries, whereas the imports from non union countries decrease. Those who can not meet the requirements and adjust the higher standards of the EU, could not import to the EU and left out from the market. So, it affects their economic growth negatively.

These kinds of standards are also beneficial to impede unfair trade, but they could not be used as a protectionism tool. Every country has to prove that a regulation is necessary. In that respect, there are many examples which WTO deals with.

In conclusion, standards are really important for our life. All of us deserve quality and safety products as well as cleaner environment. But they should not be used for impeding trade and protecting domestic markets. Opening new markets and creating more business opportunities can foster economic growth. If developing countries' economic growth can be increased, they can afford the costs of standards and compete in all over the world.

The EU wants to harmonize its rules and international rules with the countries from the world. It also tries to boost developing countries capacity to benefit from trade and help them to improve competitiveness. However; protectionist tendencies of the EU continue. It lays down stringent regulations and sometimes unnecessary restrictions especially health and environment issues.

If the EU and many developing countries want to sustain these high safety and health regulations, they also have to help and co-operate with low income countries and gave up disguised protectionism for the welfare of the entire world.

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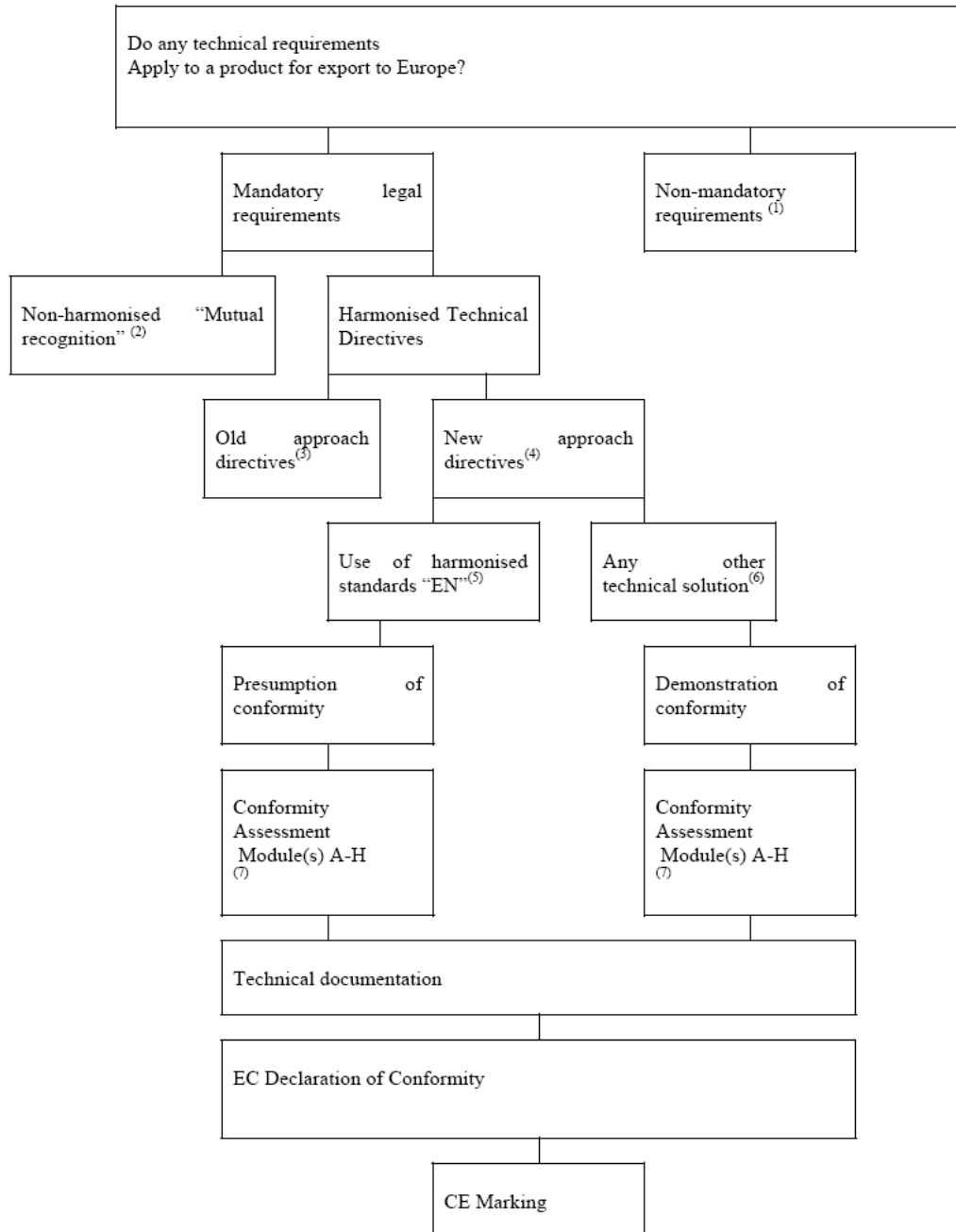
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Appendix 1



Explanatory notes for Appendix 1

1. Examples of requirements which are not mandatory by legislation are technical specifications by the purchaser such as branch standards, insurance requirements, etc.
2. Non Harmonised means that there is not a unique regulatory text at EU level, but that each EU Member State keeps its own regulation. However national technical regulations are subject to the provisions of Articles 28 and 30 of the Treaty establishing the European community, which prohibit quantitative restrictions or measures having equivalent effect. In addition, case law by the European court of Justice(case 120/78 "Cassis de Dijon") provides the key elements for mutual recognition in the absence of a unique EU regulation: a product legally manufactured and marketed in one Member State is presumed to be in compliance with the relevant provisions of the other Member States.
3. Each Member State of the EU has its own technical legislation. A product which meets the requirements in one Member State may be sold throughout the whole EU provided there are no substantial safety related differences between the national legislation.
4. Old approach directives cover specific products, specifies technical requirements, conformity assessment and may require certain marking. There are several hundred old approach directives.
5. New approach directives cover groups of products or certain risks. They define the essential requirements to be met, but do not specify technical solutions
6. Products manufactured according to European harmonised standards (EN) are presumed to meet the essential requirements.
7. If a product is manufactured in any other way, the manufacturer needs to demonstrate that it meets the essential requirements and a notified body needs to evaluate the manufacturer's method to demonstrate compliance with the essential requirements.
8. The procedures for conformity assessment differ depending on whether or not a product is manufactured according to harmonised standards. The modules are set procedures for conformity assessment. The individual directives prescribe which modules apply.

Appendix 2

List of Proposed New Approach Directives

| Proposed Directive | Reference |
|--|----------------------------|
| 1 Precious metal Amendment | COM/93/322 COM/94/267 |
| 2 In vitro diagnostic Amendment | COM/95/130 COM/96/643 |
| 3 Connected telecommunications equipment | COM/97/257 |
| 4 Machinery | Proposal in preparation |
| 5 Minimum efficiency standards for ballast for fluorescent lighting | Proposal in preparation |
| 6 Recreational craft (modification to 94/25/EC) | Proposal in preparation |
| 7 Measuring instruments | Proposal in preparation |

Appendix 3

Description of the Modules

| | |
|---|---|
| A Design and Production | Internal Production Control The manufacturer ² ensures in a written “ <i>declaration of conformity</i> ” that a product satisfies the requirements of the applicable directive. The manufacturer ² shall retain technical documentation covering the design, manufacture and operation of the product at the disposal of national surveillance authorities for inspection purposes for 10 years. The technical documentation shall be sufficient to enable the authorities to assess the conformity of the product with requirements if required. The manufacturer ² shall affix the CE-marking to each product. The manufacturer must also take all necessary steps to secure that the manufacturing process ensures that manufactured products comply with the technical documentation and the essential requirements of the applicable directive. |
| Aa Design and Production | Module A plus Supplementary Requirements This module consists of module A plus either of the following supplementary requirements: <ol style="list-style-type: none">1. For each manufactured product tests on specific aspect of the product must be carried out by the manufacturer or on his behalf. A notified body - chosen by the manufacturer - carries the responsibility for these tests. On the responsibility of the notified body the manufacturer shall affix the <i>identification number</i> of the notified body, together with the CE marking, indicating that the test results were positive.2. The notified body carries out product checks at random intervals. If the checked products do not conform, the notified body must take appropriate measures. |
| B Design | Type examination The manufacturer ² lodges an application for EC type examination with a notified body of his choice and submits a representative specimen of the envisaged production a "type" together with technical documentation. The notified body examines the technical documentation, performs appropriate examinations and necessary tests and issues an <i>EC type examination certificate</i> declaring that the type meets the essential requirements of the applicable directive. |

² or his authorised representative established within the EU.

**C
Production**

Conformity to type

Before attaching the CE marking, the manufacturer² must attest in a written *declaration of conformity* that the products concerned are in conformity with the type described in the *EC type-examination certificate* and satisfy the requirements of the directive that applies to them.

Additional requirements may be that a notified body tests specific aspects of the product or carries out product checks at random intervals. In those cases the manufacturer shall affix the *identification number* of the notified body together with the CE-marking, indicating that the test results were positive.

**D
Production**

Production quality assurance

The manufacturer must operate a quality system for production, final product inspection and testing approved by a notified body. Before affixing the CE marking the manufacturer must ensure in a written *declaration of conformity* that the products concerned are in conformity with the type described in the *EC type-examination certificate* and satisfies the requirements of the directive that applies to them.

The Notified Body may carry out tests on specific aspects of the product and check products at random intervals. On the responsibility of the notified body, the manufacture² shall in those cases affix the *identification number* of the notified body together with the CE marking indicating that the test results were positive.

**E
Production**

Product quality assurance

The manufacturer must operate a quality system for final product inspection and testing, approved by and under surveillance of a notified body. Before affixing the CE marking, the manufacturer must ensure in a written *declaration of conformity* that the products concerned are in conformity with the type described in the *EC type-examination certificate* and satisfies the requirements of the directive that applies to them. The CE marking must be accompanied by the *identification symbol* of the notified body responsible for surveillance of the quality system.

² or his authorised representative established within the EU

| | |
|--|---|
| F Production | <p>Product verification</p> <p>Before affixing the CE marking, the manufacturer must take all necessary measures to ensure that the manufacturing process results in products conforming with the type as described in the <i>EC type-examination certificate</i> and with the requirements of the directive that applies to them and <i>draw up a declaration of conformity</i>.</p> <p>The notified body carries out appropriate examinations and tests to check the conformity of the product with the requirements of the directive either by examination and testing of every product or by examination and testing on a statistical basis. The notified body verifies conformity with some essential requirements, issues a <i>certificate of conformity</i> and affixes its <i>identification symbol</i> to each approved product.</p> |
| G Design and Production | <p>Unit verification</p> <p>The manufacturer submits technical documentation to a Notified Body who examines the individual product, carries out appropriate tests and issues a <i>certificate of conformity</i> concerning the tests carried out. Before affixing the CE marking the manufacturer must draw up a <i>declaration of conformity</i> where he ensures and declares that the product satisfies the requirement of the directive that apply to them. The notified body must affix its <i>identification number</i>, indicating that tests have been carried out with a positive result</p> |
| H Design and Production | <p>Full quality assurance</p> <p>The manufacturer must operate a quality system for design, manufacture and final product inspection and testing approved by and under the surveillance of a notified body. Before affixing the CE marking the manufacturer², must draw up a <i>declaration of conformity</i>. The CE marking must be accompanied by the <i>identification symbol</i> of the notified body responsible for the surveillance of the quality system.</p> <p>The Notified Body carries out surveillance of the quality system, verifies conformity of the design and issues an <i>EC design examination certificate</i>. The manufacturer affixes the CE marking together with the identification number of the notified body .</p> <p><i>Design examination</i> is a possible supplementary requirement. The manufacturer must then lodge an application for examination of design with a notified body, which examines the application and issues an <i>EC design examination certificate</i> containing the conclusions of the examination, conditions for its validity, the necessary data for identification of the approved design and, if relevant, a description of the product's functioning.</p> |

² or his authorised representative established within the EU.

List of new approach Directives which have been adopted (as at 1 July 2001)

Appendix 4

| Directive | Reference | Date of adoption | Date of entry into force | Date of end of period of transition |
|-----------|--|------------------|--------------------------|--|
| 1 | Low voltage ⁽¹⁾ 73/23/EEC | 19.02.73 | 18.08.74 | n.a. ³ |
| | 93/68/EEC ⁽⁵⁾ | 22.07.93 | 01.01.95 | 01.01.97 |
| 2 | Simple pressure vessels 87/404/EEC | 25.06.87 | 01.07.90 | 01.07.92 |
| | 90/488/EEC | 17.09.90 | 01.07.91 | n.a. |
| | 93/68/EEC ⁽⁵⁾ | 22.07.93 | 01.01.95 | 01.01.97 |
| 3 | Safety of toys 88/378/EEC | 03.05.88 | 01.01.90 | n.a. |
| | 93/68/EEC ⁽⁵⁾ | 22.07.93 | 01.01.95 | 01.01.97 |
| 4 | Construction products 89/106/EEC | 21.12.88 | 27.06.91 | not fixed |
| | 93/68/EEC ⁽⁵⁾ | 22.07.93 | 01.01.95 | 01.01.97 |
| 5 | Electromagnetic compatibility (EMC) 89/336/EEC | 03.05.89 | 01.01.92 | 31.12.95 |
| | 92/31/EEC | 28.04.92 | 28.10.92 | n.a. |
| | 93/68/EEC ⁽⁵⁾ | 22.07.93 | 01.01.95 | 01.01.97 |
| 6 | Safety of machines 98/37/EEC | | | 31.12.94 31.12.94 31.12.96 01.01.97 |
| 7 | Personal protection equipment (PPE) 89/686/EEC | 21.12.89 | 01.07.92 | 30.06.95 |
| | 93/95/EEC | 29.10.93 | 29.10.94 | n.a. |
| | 93/68/EEC ⁽⁵⁾ | 03.09.93 | 01.01.95 | n.a. |
| | | 22.07.93 | 01.01.95 | 01.01.97 |
| 8 | Non-automatic weighing instruments 90/384/EEC | 20.06.90 | 01.01.93 | 01.01.2003 |
| | 93/68/EEC ⁽⁵⁾ | 22.07.93 | 01.01.95 | 01.01.97 |
| 9 | Active implantable medicinal devices 90/385/EEC | 20.06.90 | 01.01.93 | 31.12.94 |
| | 93/42/EEC | 14.03.93 | 01.01.95 | 14.06.98 |
| | 93/68/EEC ⁽⁵⁾ | 22.07.93 | 01.01.95 | 01.01.97 |
| 10 | Appliances burning gaseous fuels 90/396/EEC | 29.06.90 | 01.01.92 | 31.12.95 |
| | 93/68/EEC ⁽⁵⁾ | 22.07.93 | 01.01.95 | 01.01.97 |
| 11 | Telecommunications terminal and satellite earth station equipment 98/13/EEC | | | n.a. n.a. 01.01.97 |
| 12 | New hot-water boilers fired with liquid or gaseous fuels 92/42/EEC | 21.05.92 | 01.01.94 | 31.12.97 |
| | 93/68/EEC ⁽⁵⁾ | 22.07.93 | 01.01.95 | 01.01.97 |
| 13 | Explosives for civil uses 93/15/EEC | 05.04.93 | 01.01.95 | 31.12.2002 |
| 14 | Medical devices 93/42/EEC | 14.06.93 | 01.01.95 | 14.06.98 |
| 15 | Equipment in explosive atmospheres (ATEX) 94/9/EC | 23.03.94 | 01.03.96 | 30.06.2003 |
| 16 | Recreational crafts 94/25/EC | 16.06.94 | 16.06.96 | 16.06.98 |
| 17 | Lids for persons 93/16/EC | 29.06.93 | 01.07.97 | 30.06.99 |
| 18 | Energy efficiency requirements for household electric refrigerators and freezers 96/57/EC | 03.09.96 | 08.10.96 | 03.09.99 |
| 19 | Pressure equipment 97/23/EC | 29.05.97 | 29.11.99 | 29.05.2002 |
| 20 | Medical devices: in vitro diagnostic 98/79/EC | | | |
| 21 | Cableway installations designed to carry persons 009/EC | | | |

(1) This Directive predates the New Approach, but is nevertheless based on the principle of reference to standard and can therefore, in this respect, be considered to be precursor of the New Approach Directive.