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MARMARA ÜNİVERSİTESİ

AVRUPA BİRLİĞİ ENSTİTÜSÜ

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INDUSTRY SECTOR: THE IMPACT OF REGULATION ON COMPETITIVENESS IN THE CONTEXT OF TURKEY'S ACCESSION TO THE EU

DOKTORA TEZİ

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ONAY SAYFASI

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ABSTRACT

Competition is essential both for Turkey and the European Union (EU) for the creation of a thriving manufacturing industry. In this context, this dissertation examines the role of competition policy in developing competition structure of manufacturing industry in Turkey and the EU comparatively, in the process of accession of the Turkish economy to the EU. Thus, one of the main purposes of this dissertation is to find out to what extent the introduction of competition policy has affected the Turkish manufacturing industry.

Especially intensified relationships with the EU in the 1990's, resulting in the Customs Union (CU) in 1996, compelled Turkey to be more concerned with the structure of competition. Along with the CU, Turkey implemented competition policy, with the objective of the protection of competition by following the policies preventing monopolization, abuse of dominance and concerted agreements among firms. In the relatively short span of about more than a decade, there has been important progress in the implementation of competition policy. Such developments made significant contributions to the competition structure of Turkish manufacturing industry. However even though Turkey has made progress on improving competition regulations in recent years in conformity with the EU legislation, there is still much to be done, particularly in monitoring and eliminating state aid with a distortive effect on competition, enhancing the antitrust regime. It also needs to adopt a more integrated approach towards developing competition, and where possible give priority to competition policy considerations in general and sector specific regulations and policy interventions. This dissertation also tests some important linkages in the Turkish manufacturing industry concerning productivity, competition and trade (import penetration ratio and CU) by using panel data econometrics.

Keywords: Competition, Competition policy, Manufacturing industry, Turkey-EU relations

ÖZET

Rekabet, hem Türkiye hem de Avrupa Birliği'nde (AB) için gelişen bir imalat sanayine sahip olunabilmesi açısından önemlidir. Bu kapsamda, bu tez Türkiye'nin AB'ye üyelik sürecince Türkiye ve AB'de imalat sanayinde rekabetin gelişmesini sağlayan politikaların rolünü karşılaştırmalı olarak incelemeyi amaçlamaktadır. Dolayısıyla, tezin temel amaçlarından biri uygulamaya konan rekabet politikasının Türkiye imalat sanayini ne kapsamda etkilediğinin araştırılmasıdır.

Özellikle 1990'lı yıllarda AB ile artan ve 1996 yılında Gümrük Birliği (GB) ile sonuçlanan ilişkiler Türkiye'yi ülkedeki rekabetin yapısı ile daha fazla ilgilenmeye zorladı. Türkiye, GB ile birlikte temel amacı tekelleşmeyi, piyasa hâkimiyetinin istismar edilmesini ve firmalar arası anlaşmaları önleyerek rekabetin korunmasını sağlamak olan rekabet politikasını uygulamaya soktu. Yaklaşık on yılı aşan kısa süreçte rekabet politikasının uygulanmasında önemli bir gelişme sağladı. Bunun gibi gelişmeler Türkiye imalat sanayinin rekabet yapısına önemli katkılar sağlamıştır. Fakat Türkiye'nin AB ile uyumlu olarak yaptığı piyasa düzenlemelerindeki bu önemli iyileşmelere rağmen halen özellikle rekabeti bozucu devlet yardımlarının gözetimi ve ortadan kaldırma ve anti-tröst rejimini genişletmek gibi alanlarda yapılması gereken şeyler vardır. Ayrıca rekabetin gelişmesini artıracak daha bütünleştirilmiş bir yaklaşıma, genel ve belirli sektörlere dönük düzenleme ve müdahaleleri de dikkate alarak daha kapsayıcı rekabet politikasına öncelik vermesi de gerekir. Bu tez, ayrıca, panel data ekonometrisi kullanarak Türkiye imalat sanayinde verimlilik, rekabet ve ticaret (ithalat nüfuz oranı ve GB) gibi önemli ilişkileri de test etmeyi amaçlamıştır.

Anahtar Kelimeler: Rekabet, Rekabet politikası, İmalat sanayi, Türkiye-AB ilişkileri

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ABBREVIATIONS

CR4	: Four-firm Concentration Ratio
CU	: Customs Union
ECN	: European Competition Network
ECMR	: European Commission Merger Regulation
EEC	: European Economic Community
EIS	: European Innovation Scoreboard
EU	: European Union
FDI	: Foreign Direct Investment
GCI	: Global Competitiveness Index
GDP	: Gross Domestic Product
ICN	: International Competition Network
ICT	: Information and Communication Technologies
IMF	: International Monetary Fund
M&A	: Mergers and Acquisitions
n.e.c.	: not elsewhere classified
NCA	: National Competition Authority
NEIO	: New Emprical Industrial Organization
OECD	: Organization for Economic Cooperation and Development
RPM	: Retail Price Maintenance
SAAP	: State Aid Action Plan
SCP	: Structure-Conduct-Performance
SMEs	: Small and Medium Sized Enterprises
SPO	: State Planning Organization
TCA	: Turkish Competition Authority
TFP	: Total Factor Productivity
UNCTAD	: United Nations Conference on Trade and Development
WTO	: World Trade Organization

INTRODUCTION

During the 1980's Turkey changed its course towards economic development. From state-led planning and strategic interventions, it followed more free market-oriented policies to encourage private sector. In the beginning of 1980s Turkey has taken important steps in order to create an open and competitive macroeconomic structure by adopting the principles of free market economy. Trade liberalization has been an important aspect of Turkey's economic policy and in this context trade barriers were eliminated, capital movements were liberalized and economic reform started in order to decrease government intervention in the economy.

Along with these internal developments, as a significant external development, the relationship of Turkey with the European Union (EU) became a vital factor in the prospective of the Turkish economy. The Customs Union (CU) agreement, signed between Turkey and the EU in 1996, called for the harmonization of Turkish legislation with that of the EU in many issues. Thus, it has worked as a catalyst for Turkish institutional reforms in different areas. In this wider context of the CU, Turkey has adopted a considerable amount of the EU acquis and established necessary institutions to implement relevant regulations.

With the CU, competition policy became a priority in the mid 1990s. The CU agreement included the EU's standard substantive provisions about competition, and it also obligated Turkey to adopt such a competition law as domestic legislation and to adopt implementing regulations consistent with the EU's competition law. This process was strengthened by the formation the Turkish Competition Authority (TCA) in 1997. In the relatively short period since then, the TCA has made important progress in the implementation of competition law. Although there is much to be

done, Turkey has made progress on competition policy issues in recent years in conformity with the EU legislation.

Accepting the importance of the significance of the competition policy in the whole economy, the main motivation of choosing this subject matter is the importance of competition, especially in manufacturing industry, in the process of accession of the Turkish economy to the EU. Currently, with the CU agreement Turkey is participating in the EU single market for industrial and processed agricultural products. The Turkish manufacturing industry in the pre-accession period to the EU should be ready to the strict and rule-based competitive structure of the post-accession period in the EU. Improving market regulations in Turkey in conformity with the EU would strengthen the investment climate and hence increase productivity and help Turkey achieve sustainable and long-term economic growth.

In this context, the first chapter provides the theoretical framework of competition and competition policy. After discussing the notion of competition on a theoretical basis, the degree of competition will be elaborated by market and competitive structures. Then the rationale of competition policy will be analyzed. Thirdly, the interaction between regulation and competition will be argued. In this context, competition policy as a constituent part of the regulation policy aims at establishing market structures and enticing enterprises to behave in a way conductive to the enhancement of economic welfare. On the other hand, economic regulation is defined as the government intervention to affect or change market outcomes such as pricing, product quantity and quality, number of firms in an industry, investment and entry conditions. Governments intervene in the operation of a market-based economy through competition policy for various reasons. The primary rationale for government intervention through competition policy is to respond to market failures such as abuses of market power in order to improve economic efficiency.

After providing theoretical basis for competition and competition policy, in the second chapter, firstly, the development of European industrial policy and then the structure of the EU manufacturing industry will be analyzed. By analyzing the structure of European manufacturing industry special emphasis will be put on firm

size, concentration ratios, foreign direct investment, innovation and technology policies and specialization. In the last part of this Chapter competition policy – which is considered as a regulatory policy that guaranties competition within the EU- will be evaluated.

In the third and final chapter, what extent the effort to access to EU has changed the Turkish regulatory regime on competition and its effects on Turkish manufacturing industry over time will be analyzed. In this context, the chapter will mainly focus on competition policy issues.

In the first part of the third chapter, the present situation, objectives and policies for manufacturing industry in Turkey will be presented. In this context, an overview of the Turkish industrial policy will be elaborated. The main objective of industrial policy in Turkey is to increase competitiveness and productivity of the industry, and to promote and maintain sustainable growth within an outward oriented structure, in the face of increased global competition. In that respect, industrial policy aims to improve the business environment favorable to industrial competitiveness, in which entrepreneurs and enterprises can take initiatives, create opportunities and use their potential. Therefore, regulatory reform in the industry sector is an essential instrument to carry out these purposes.

In the second part, the structure of Turkish manufacturing industry will be introduced. Moreover, in line with the second chapter, the structure of Turkish manufacturing industry will be analyzed by focusing on firm size, concentration ratios, foreign direct investment, innovation and technology policies and specialization.

In the next section of the third chapter, a review of competition policy that was designed on the basis of the EU model will be elaborated. As a result of the entry in the CU, Turkey achieved the following reforms: (i) abolishment of all duties and equivalent charges on imports of industrial goods from the EU; (ii) implementation of the EU's Common External Tariff on imports of industrial goods from third countries; (iii) harmonization of its laws with EU legislation on trade; (iv)

adoption of competition law and establishment of the Competition Board; (v) adoption of intellectual property rights and establishment of the Patent Office. However, this study will mostly concentrate on the development of Turkish competition policy which is regarded as one of the most important outcome of the CU agreement. Thus, in this section, firstly the evaluation of Turkish competition policy will be briefly presented. Then, the current competition policy framework and the structure of the TCA (the regulatory body responsible for applying the law) will be explained. Then the limits and policy options of the Turkish competition policy will be addressed. In this context, one of the main purposes of this study is to find out to what extent the introduction of competition policy has affected the Turkish manufacturing industry.

The aim of the last section of the study is to find out whether pro-competitive regulations (trade liberalization and introduction of competition policy) had an impact on productivity and on mark-ups in Turkish manufacturing industries. Competition, which is measured by lower levels of industial price-cost margin, enhances productivity growth. Thus, in the last section of the third chapter, panel data econometrics will be used to investigate; (i) whether there is impact of price-cost margin (mark-up), import penetration, export competitiveness and customs union/competition policy on productivity in the Turkish manufacturing data for the period 1992-2001 and (ii) whether there is impact of mark-up, trade structure and customs union/competition policy on productivity in the Turkish manufacturing data during the same period. The main aim of this section is to analyze the effect of that customs union/competition policy on the productivity and pricing behavior in the Turkish manufacturing industry for the period 1992-2001. In other words, testing the pro-competitive effect of the CU agreement which both liberalized trade and introduced a new competition policy framework similar to the European one has been the cornerstone of the study.

I. THE THEORETICAL FRAMEWORK OF COMPETITION AND COMPETITION POLICY

1.1 Introduction

This chapter provides the theoretical framework of competition and competition policy. After discussing notion of competition, the degree of competition will be reviewed. In doing so, market structures and the degree of competitive structures are elaborated. Then the competition policy hence regulation is analyzed.

To preserve and protect the process competition primarily constitutes the core of competition policy. Thus, the primary purpose of competition policy is to protect and preserve competition as the most appropriate means of ensuring the efficient allocation of resources in free market economies by lower consumer prices, higher quality products and better product choice. Competition policy encourages firms to become more efficient and offers consumers greater choice of goods and services at competitive prices and improves the functioning of markets for the benefit of consumers.

Economic regulation is defined as the government intervention to affect or change market outcomes such as pricing, product quantity and quality, number of firms in an industry, investment, advertising and entry conditions. Governments intervene in the operation of a market-based economy for various reasons. The primary rationale for government intervention is to respond market failures such as abuses of market power in order to improve economic efficiency. Moreover, the

relationship between regulation and competition or how the competition is guided by regulation policies, which is a crucial part of this thesis, will be assessed.

Over the past decade, a large number of theoretical and empirical literatures have highlighted the effects of regulatory reform on crucial dimensions of economic performance. It is argued that, the heavy and inefficient regulation in product, financial and labor markets of Europe is one of the prime causes of its macroeconomic underperformance over the last decade. This is why the interaction between regulation and competition is that much important: a good economic performance requires a workable competition, which in turn necessitates well-defined competitive regulations.

1.2 Theoretical Framework of Competition

1.2.1 The Notion of Competition

Although the notion of competition is central to economic theory, there are some contrasting views about its meaning. Indeed, there is probably no concept in economics as the concept of competition that is ever defined fully and in a clear manner. The most general tendency about the meaning of competition is that it is usually conceived as the opposite of monopoly. Moreover, "competition has long been viewed as a force that leads to an optimal solution to economic performance problem, just as monopoly has been condemned throughout recorded history for frustrating attainment of the competitive ideal" (Scherer, 1980:9).

The search for a practical definition of competition led to introduction of different concepts of competition. According to Clark (1961:9) competition is an indispensable mainstay of a system in which the character of products and their

development, the amount and evolving efficiency of production and the prices and profit margins charged are left to the operation of private enterprise. The notion of workable competition[1], introduced by J.M.Clark, serves as a standard or guide to estimate whether the degree of competition is reasonable. Clark (1940:243) characterizes workable competition as;

"rivalry in selling goods, in which each selling unit normally seeks maximum net revenue, under conditions such that the price or prices each seller can charge are effectively limited by the free option of the buyer to buy from a rival seller or sellers of what we think of as "the same" product, necessitating an effort by each seller to equal or exceed the attractiveness of the others' offerings to a sufficient number of sellers to accomplish the end in view."

Although Clark's definition of competition is not a complete one, it focuses attention on a crucial point which is sometimes neglected-namely the nature of the option actually open to the buyer. Clark (1940:243-244) indicates that the specific character of competition in any given case depends on at least ten conditioning factors as the standardized or unstandardized character of the product, the number and size distribution of producers, the general method of price-making, the general method of selling, the character and means of market information, the geographic distribution of production and consumption, the degree of current control of output, variation of cost with varying size of firm, variation of cost with short-run fluctuations of output and flexibility of productive capacity.

If competition is workable or if the market has become sufficiently workably competitive an industry's behavior and performance are close enough to the competitive ideal to lead most people to agree that the markets are working satisfactorily. For instance, Bain (1950) analyze the concept of workable competition within markets of oligopolistic structure. According to Bain (1950:36-37) competition is workable if productive efficiency reasonably approaches the best attainable, if industry output is not much restricted below and does not much exceed

[1] See Sosnick (1958) for a review of the literature and the principle questions on the theory of workable competition.

a level generally consistent with good allocation of resources, if an excessive proportion of resources is not devoted to sales promotion effort, if the income share going to profit is not substantially higher than required but high enough to reward investment and to induce socially desirable innovation, if opportunities for such innovations are not grossly neglected, and if prices respond to cyclical changes in a way which does not demonstrably intensify the cyclical problem.

McNulty (1968:643) indicates competition takes two basic and fundamentally different forms. On the one hand, competition is seen as a "force" that assures allocative efficiency in the use of resources by equating prices and marginal costs. In this sense, through competition, resources are allocated toward their most productive uses. The market price is forced to the lowest level which assures stability in economy and a sustainable order (in the long run). On the other hand, competition is conceived as a descriptive term characterizing a particular situation. Thus, in this view, competition is not an ordering force but rather it is assumed as "state of affairs".

In general, there are three schools of economics that interpret competition in different perspectives: classical, neoclassical and Austrian schools. The classical and neoclassical concepts of competition differ in their view of what competing means. In general, competition encompasses two broad sets of conflicting views: competition as a process and competition as a structure. In this context, in order to understand the importance and the meaning of the concept, it is also necessary to examine its emergence and evolution in a historical perspective.

The classical economists view competition as a process and consider it as an ordering force and their view is more about the concept of firm behavior that involves organizational and technological changes. The notion of competition, according to classical economists such as Adam Smith, was a fundamentally different character than that which was later perfected by economic theorists. Smith viewed competition as "a process of rivalry between participants in the market who would compete by changing prices in response to market conditions, thereby eliminating excessive profits and unsatisfied demand" (Cook et.al, 2004:5). "The

rivalry forces price towards an equilibrium of supply and demand, but that will be constantly shifting in response to changing circumstances" (Vickers, 1995:5). The classical view considers price as a variable and it depends on the dynamics of competition between buyers and suppliers where the competitive market is guided by an invisible hand. This view concerns resource-allocating aspect of competition and that competition would tend to bring actual market prices into equality with natural prices.

By the late nineteenth century the analytical development of the concept of competition had moved away from a behavioral approach to one that emphasized the importance of different market structures, and in which the organizing concepts of the market relied on equilibrium and optimization with the contributions of Cournot (1838), Edgeworth (1881), Clark (1900), Knight (1921), Stigler (1957) and McNulty (1968). Among them, Cournot pioneered the re-invention of competition as a market structure. Thus, the neo-classical view is not about behavior but is more related with different market structures. The neoclassical view of competition is essentially static which considers four main theoretical market structures. The neoclassical approach generated the view that a market could be defined as competitive when there was a significantly large number of sellers of a homogeneous product, so that no sellers had enough of a market share to enable them to influence the product price by changing the quantity that they put onto the market (Cook et al, 2004:6). The neoclassical view considers price as a parameter rather than a variable as classical view did. Consequently, the neoclassical economists consider competition as a state of affairs rather than a process and the market is characterized by a state of equilibrium that is depended on forces of demand and cost structure that determine who survives and who fails, and is formally presented in the idea of perfect competition (Cook, 2002:544).

A more dynamic approach to competition is developed by Austrian school. Introducing technological change into economic models is a hard task and, introduction of new technologies lead to the creation of a dynamic concept of the economy where competition has a new role to play. For instance, Hayek views

competition as a "discovery procedure" and considers competition as a process of experimentation in which new knowledge is generated. Austrian, thus, the evolutionary view considers competition as the process that guides economic development rather than an equilibrium. The evolutionary view considers the role of markets in the competitive process. Firms set prices, however their freedom to set prices is mostly constrained by the market environment in which they belong to. For instance, firms in more perfect markets may have less latitude to set their prices.

1.2.2 Market Structures

The definition of "market" is a critical concept in the economics of industrial organization and it is a preliminary step towards the analysis of market structures and the assessment of market power. A *market* is defined as a region within which and a group of varieties for which prices tend to equality, adjusting prices for differences in cost of supply and for differences in product characteristics (Martin, 2002:5). In this sense, besides the assessing the internal structure of any market, it is also necessary to determine its boundaries. In early discussions, for example, in the year of 1838 Cournot defined the geographical boundaries of the market as;

"not a certain place where purchases and sales are carried on, but the entire territory of which the parts are so united by relations of unrestricted commerce that prices there take the same level throughout, with ease and rapidity."(quoted from Lipczynski et al. 2005:206-207; Martin, 2002:3)

The market is generally seen as the most efficient instrument to allocate resources and set prices and the success of markets is determined by the degree of competition in the market involved. Market definition is an instrument to define the boundaries of competition between firms. The definition of any market mainly has

two dimensions: product type and geographic area. The definition of product market includes all products that are close demand and supply substitutes, both in consumption and production. If products are substitutes, firms compete with each other, but if they are close complements, they should be considered part of the same industry. Geographic market definition include whether an increase in the price of a product in one geographical area significantly affects either the demand or supply and the price in another geographic area. If so, then both locations should be considered part of the same geographic market. Relevant market is also a crucial concept in the definition of market structures. Relevant market is defined as "the set of products and geographical areas to which the products of the merging firms belong to" (Motta, 2004:101).

Both in microeconomics and industrial organization, there is tendency for the terms *market* and *industry* to be used rather loosely, and sometimes interchangeably. Although the distinction is not rigid, the term industry is used to refer specifically to a market's supply side or productive activities, while the term market encompasses both supply/production and demand/consumption. However, such convention is not universal. In this study, we will use the term 'industry' to refer to a group of firms producing and selling a similar product, using similar product, using similar technology, and perhaps obtaining factors of production from the same factor markets.

In principle, the definition of markets and industries may raise a number of difficult issues. In order to compare the structures of different markets (product or geographic) or to examine changes in the structure of a single market, some specific scheme for defining and classifying industries is required. To meet this need, government statistical agencies develop necessary information about economic activity such as market structure by classifying the activities of firms into industries. In the UK, the official classification of industries is known as the International Standard Industrial Classification (ISIC)[2]. In 1992, the European Commission

[2] This system was first introduced in 1948, and was subsequently updated in 1980 and 1992. The 1980 SIC is divided into 10 divisions, each assigned a digit from 0 to 9. The 10 divisions of SIC 1980 are

introduced a new classification system for use throughout the EU, known as Classification of Economic Activities in the European Community (NACE).

Market structure is determined by the number of firms in a market, the ease of entry and exit by new firms and the degree of product differentiation. The type of market structure influence how a firm behaves (pricing, supply, barriers to entry, efficiency and competition). Robinson (1965:17) considers homogeneity as an essential characteristic of a market and defines *commodity* as "a consumable good, arbitrarily demarcated from other kinds of goods, but which may be regarded for practical purposes as homogenous itself"; defines *firm* as "a concern very similar to the firms of the real world, but which produces only one commodity, and is controlled by a single independent interest" and defines *industry* as "any group of firms producing a single commodity". Moreover, Needham (1969:1) defines *structure of industry* as the selected number of characteristics of the output (such as cost conditions, concentration, vertical integration, diversification and entry barriers) of a firm or group of firms.

The neoclassical theory of the firm studies four major forms of theoretical market structures: Perfect competition, monopolistic competition, oligopoly and monopoly. These market structures deal with much of the matter of industrial organization. The most extreme cases are perfect competition (most competitive model) and monopoly (the least competitive model). On the other hand, the theory of imperfect competition may be subdivided into two categories namely; monopolistic competition and oligopoly. Monopolistic competition is the more competitive variant of imperfect competition. Oligopoly is the less competitive variant of imperfect competition.

The neoclassical view of market structures led to the development of the structure-conduct-performance (SCP) paradigm in industrial organization. The first major and traditional approach to the study of industrial organization, the SCP paradigm, introduced in the 1970s, considers the differences in market structure and

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subdivided by the addition of further digits, to provide more refined definitions at the class (two-digit), group (three-digit), and activity (four-digit) levels.

behavior of firms. It provides frameworks to analyze competitive conditions in industries. The SCP assumes a stable and causal relationship between the structure of an industry, firm conduct (behavior) and market performance. According to SCP paradigm; the structure of a market determines the conduct of firms operating in the market, which in turn determine the various aspects of performance of those firms.

The SCP paradigm has been criticized for putting much emphasis on industry structure rather than the analysis of firm conduct since conduct was thought to be difficult to observe directly. These criticisms have led to the emergence of the new empirical industrial organization (NEIO) approach which attempts to assess the nature of competition by analyzing conduct directly. NEIO is grounded firmly on oligopoly theory and it works in harmony with game theory. Game theory rejects the SCP since market structure is determined by the strategies of firms. Thus, the SCP measures structure-performance across number of industries and tries to draw inferences about the relationship between concentration and profitability. On the contrary, NEIO analyses the conduct in specific industries and estimates the degree of competitiveness in an industry.

1.2.3 The Degree of Competitive Structure

OECD (1993) defines market power (or monopoly power) as the ability of a firm (or group of firms) to raise and maintain price above the level that prevail under competition. Thus, a firm is said to have monopoly power when it can influence the price it receives for its products. As the firm gets more market power, it diverges further from the competitive market structure.

In a similar manner, “market dominance” is the concept which is used in European Competition Law. Market dominance can be interpreted as a situation where a firm has a large degree of market power, which allows it to charge prices

which are “close enough” to those that a monopolist would charge. It is important to estimate to what extent a firm has market power. Especially in merger cases, the merging firms may be able to raise prices above the current level. Market power of firms may be evaluated by analyzing the market in which they operate.

There are some useful concepts to understand the market power or competitive structure such as price-cost margin, concentration rates, barriers to entry, mergers, and collusion. They will be discussed in detail in following sections.

1.2.3.1 Price-cost Margin

Market power is the ability of a firm to set price above marginal cost. As the firm gets more market power, it diverges further from the competitive market structure. A firm is said to have monopoly or market power when it can influence the price it receives for its products. The exercise of market power leads to reduced output and loss of economic welfare.

One theoretical approach to measurement of market power that has been suggested is the *Lerner Index* or *the price-cost margin*. The price-cost margin is considered as an indicator of market power because the larger the margin, the larger the difference between price and marginal cost, that is, the larger the difference between the price and the competitive price.

Lerner Index is a measure proposed by A.P. Lerner to measure market power as follows, $L = (P - MC)/P$. Lerner Index is positive when the firm has the ability to profitably set price above competitive levels (marginal cost). Since accounting data on MC is not usually available, the price-cost margin is used instead. The price cost margin is the difference between price and average variable cost as a friction of price. It is defined as $L = (P - AVC)/P$ where AVC is average variable cost.

Lerner Index is subject to minimum value of 0 and a maximum value of 1. In perfectly competitive markets, $P = MC$, L=0. In monopoly, $P > MC$, hence $0 < L < 1$.

1.2.3.2 Concentration Rates

Any analysis of a firm's competitive environment involves identifying the key elements of industry structure. The most important characteristics of industry structure include the number and size distribution of firms, the existence and height of barriers to entry and exit, and the degree of product differentiation. In empirical research in industrial organization, concentration is probably the most used indicator of industry structure. Concentration measures are extremely crucial to define the structure of any market. Basically, concentration (seller), an indicator of the number and size distribution of firms, can be measured at two levels (Lipczynski et al. 2005:211):

1. for all firms that form part of an economy, located within some specific geographical boundary,

2. for all firms classified as members of some industry or market, again located within some specific geographical boundary.

The first type of seller concentration, known as *aggregate concentration*, reflects the importance of the largest firms in the economy as a whole. Basically, aggregate concentration is measured as the share of the n largest firms in the total sales, assets or employment for the economy as a whole. The number of firms included might be n=50, 100, 200 or 500. Aggregate concentration might be crucial for various reasons (Lipczynski et al. 2005:213-214):

(i)If aggregate concentration is high, this might have implications for the levels of seller concentration in particular industries,

(ii) Aggregate concentration data might reveal information about the economic importance of large diversified firms, which is not adequately reflected in indicators of seller concentration for particular industries,

(iii) If aggregate concentration is high, this might indicate that the economy's largest firms have opportunities to exert a disproportionate degree of influence over politicians or regulators, which render the political system vulnerable to abuse.

The second type of seller concentration, known as *industry concentration* or alternatively *market concentration*, reflects the importance of the largest firms in some particular industry or market. In some cases, it may also be relevant to measure buyer concentration, in order to assess the importance of the largest buyers. This might arise in the case of an industry which supplies a specialized producer good, for which the market includes only a very small number of buyers.

There are several measures of concentration like the n-firm concentration, the Herfindahl-Hirschman index, the Hannah-Kay index, the entropy coefficient, the variance of logarithms of firm sizes, and the Gini coefficient[3]. For example, the n-firm concentration ratio measures the share of the n largest firms in some measure of total industry size. The most widely used size measures are based on industry sales, assets or employment data. Another alternative and a common measure of market concentration is Herfindahl-Hirschman Index (HHI), which is based on the sum of the squared market shares of all firms in the industry. It incorporates the market shares of all firms. Hannah and Kay index generalize Herfindahl-Hirschman index as a weighted sum of the market shares of all firms in the industry, with market shares is used as weights. Another measure of concentration is the entropy coefficient, which is another weighted sum concentration measure. In this case, however, the weights are inversely related to the firms' market shares. The weights are the natural logarithms of the reciprocal of the firms' market shares. The variance of the logarithms of firm sizes can be included among the list of concentration measures.

[3] See technical details of these measures in Lipczynki et al (2005: 211-225)

1.2.3.3 Barriers to Entry

Barriers to entry can be defined in different ways. Entry and exit conditions include barriers to entry which can be defined as factors that allow incumbent firms to earn excess profits while preventing the entry of new entrants into an industry. Stigler (1968:68) defines entry barriers as;

"a cost of producing which must be borne by a firm which seeks to enter an industry but is not borne by firms already in the industry".

Free entry and exit into an industry is a desirable component of competition. The important issue is that the entry barriers determine the degree of potential competition between existing firms that can enter an industry. When there is free entry and exit then it will be difficult for incumbent firms to maintain prices above marginal costs and earn excess profits. "Thus, entry restrictions are like a tax on the consumption of a good. A tax, however, transfers money from consumers and producers to the government. In contrast, the entry restrictions transfer money from consumers to firms that were able to operate in this market." (Carlton and Perloff, 2000:76). If entry is deterred, then incumbents are sheltered from outside competition that they can exercise market power by setting prices above marginal cost. "An important consideration in understanding a firm's incentive to enter a market is, paradoxically, the firm's ability to exit a market. If it is costly to exit a market, the incentives to enter are reduced. It is costly to exit a market if there are sunk costs (sunk costs are cost of exiting) that cannot be recovered" (Carlton and Perloff, 2000:78).

In many industries, governments or firms collectively may set licenses to restrict entry. The entry restrictions are inefficient for two reasons (Carlton and Perloff, 2000:74-75): First, the average cost of production will increase and the prices will rise above competitive levels. Second, there will be a loss in efficiency due to restrictions in output.

There are two broad classes of barriers to entry: structural and strategic. In other words, the welfare implications of entry barriers are specified by two cases (OECD, 1993:13-14): structural barriers and strategic barriers. Structural barriers to entry may be due to fundamental characteristics of the products or production techniques, cost structure and demand, over which neither incumbent firm not entrants have direct control. Absolute cost advantages, economies of scale and product differentiation are regarded as structural barriers to entry. Product differentiation creates advantages for incumbents because entrants must overcome the accumulated brand loyalty of existing products. Absolute cost advantages imply that the entrant will enter with higher unit costs at every rate of output, perhaps because of inferior technology. Scale economies restrict the number of firms which can operate at minimum costs in a market of given size.

On the other hand, strategic barriers to entry arise from the actions of the incumbent firms to prevent entry. Incumbents might adopt entry-deterring strategies which include changes in prices or output levels and these strategies depend on the degree of the market power exercised by the incumbent firms.

A long-run barrier to entry is a cost that must be incurred by a new entrant that incumbents do not. Patents and licenses are a good example of a long-run barrier to entry. Patents, generally, are imposed for a fixed period of time and inventor is granted the monopoly right to sell invention by the government. Thus, under these conditions a patent can be regarded as a legal monopoly. Agriculture, construction, whole and retail trade and services are the sectors that have low entry barriers. Contrary, some manufacturing industries, network industries and mining have high barriers to entry.

1.2.3.3 Mergers

A merger arises when two or more firms join to become a single entity. Most countries with competition policies have some form of merger control.

There are three types of mergers: Horizontal, vertical and conglomerate mergers. Horizontal mergers involve firms producing same product in the same industry. They primarily aimed at reducing competition. Vertical mergers involve firms operating at different stages of production and distribution. Conglomerate mergers involve firms producing different goods and services.

Mergers may raise several competitive concerns. In particular, they may result in the undertakings acquiring or strengthening a position of market power and, consequently, in an increase in the market price of the products or services on the relevant market. Although mergers and acquisitions occasionally increase the level of competition, in most cases, competition is restricted or competition is completely eliminated when a merger or acquisition assumes a dominant position in the marketplace. Thus, for the protection of competition in the market place, the control of mergers and acquisitions both at the national and regional level is rather significant.

1.2.3.4 Collusive or Restrictive Agreements

Collusive or restrictive agreements increase the market power of coordinated firms and thus reduce or eliminate competition among the participants of the agreement. Collusive agreements relate to agreements, between firms, which prevent competition, or restrict competition, or in some way distort competition within a market. There are two types of agreements that may raise concerns of anti-competitive conduct; horizontal and vertical agreements.

Vertical agreements are agreements between two or more firms at different stage of production- between a manufacturer and wholesalers, or between a wholesaler and retailers. Manufacturers and distributors often agree to contracts that embody vertical restrains, including but not limited to (Martin, 2002:130-131);

- exclusive territories (a manufacturer authorizes one and only one distributor for a certain area)

- exclusive purchasing (a distributor agrees to acquire all supplies of certain product from a specified manufacturer)

- resale price maintenance (the distributor agrees to sell at, or not below, the price designated by the manufacturer).

"In terms of pro-competitive effects, vertical agreements can be efficiency-enhancing through such means as improved cooperation and mutual commitment, reduced free-riding, the certification of quality to consumers, reduced cost of entry and improved sharing of risk" (OECD, 1994:14). On the other hand, vertical mergers may raise some competition concern that they may foreclose the market or a source of supply to competitors. In addition, these agreements can exclude or restrict competition or harm consumer welfare. In other words, vertical agreements may both have pro-competitive and anti-competitive effects.

Horizontal agreements are agreements between two or more firms at the same stage of production- between manufacturers, or between wholesalers, or between retailers. Horizontal agreements are anti-competitive and they are intended merely to eliminate competition among firms that they may raise concern to the extent that they restrict the competitors' ability to compete independently in the marketplace. Only horizontal or vertical agreements that have anti-competitive effects should be prohibited. There are many useful forms of horizontal agreements which include some agreements to adopt common standards or other product specifications. Such industry standardisation may result in greater production efficiency. It can also promote competitive entry by establishing an open market with increased product interoperability.

1.3 Competition Policy

Competition law/policy is not a new issue and it has been on the agenda of many developing countries. In the international context, major developments have taken place such as; globalization of the world economy, reduction or elimination of trade barriers and the rapid technological progress. And all these developments have led the attention drawn towards the enforcement of competition rules for the efficient use of resources in the international level. “Competition policy, also known as “antitrust policy,” is defined as the body of laws and regulations governing business practices (horizontal or vertical agreements between enterprises, abuses of dominant positions, monopolization, mergers and acquisitions). Broader definitions of competition policy exist in some countries, which include all government policies which affect competition such as aids and subsidies to enterprises, regulation of prices and output of monopolies, and demonopolization” (OECD, 1994:8).

Governments intervene or regulate in the operation of a market based economy for a various reasons. The primary rationale for government intervention through competition policy is a) to respond to market failures, b) to limit abuses of market power, and c) to improve economic efficiency. Competition policy is seen as an important policy instrument for governments to regulate the private sector. Both at the national and international level countries are being asked to reform their competition policy and build effective institutions. Many developed countries, especially OECD countries, were very quick to implement competition policy and enforce competition laws to maintain and ensure competition in their markets. Diverging competition policies and enforcement methods result in enforcement and administrative costs for private sector as well as governments. Greater convergence in the field of competition contributes primarily to international economic efficiency

particularly by paving the way for international flows of goods, services, capital and technology.

Competition policy is a cornerstone of economic policy and it applies to all areas of economic activity. There are complex interactions between competition policy and other economic policies such as; trade policy, industrial policy, science and technology policy, tax policy, intellectual property rights and privatization. Moreover, a sound and effective competition policy is an essential element of a fully functioning market economy. Competition policy encourages firms to become more efficient and offers consumers greater choice of goods and services at competitive prices. To preserve and protect the process of competition primarily constitutes the core of competition policy.

1.3.1 The Objectives of Competition Policy

There is a general consensus that the primary purpose of competition policy is to protect and preserve competition as the most appropriate means of ensuring the efficient allocation of resources in free market economies by lower consumer prices, higher quality products and better product choice.

The objectives of competition policy have been subject to various controversies. Within this concept, there are four objectives of competition policy that may be identified as (Neumann, 2001:1);

- establishing a competitive order as an end in itself to safeguard economic freedom,

- maintaining a competitive order to foster economic efficiency and technological and economic progress,

- providing for a level playing field of fair competition, which implies prohibition of deceptive and fraudulent practices, threat, extortion and blackmail as well as unfair advantages through government subsidies,

- maintaining a decentralized structure of supply because small and medium-sized enterprises are considered as the backbone of a democratic society.

The basic objective of competition is the achievement of economic efficiency. There are a number of other broader objectives such as; a) prevention of abuse of economic power; b) freedom of trade, freedom of choice and access to markets; c) reducing the adverse effects of government intervention in the marketplace; d) facilitating economic liberalization, including privatization, deregulation and e) promoting trade and integration within the regional economic groups. All these objectives have vital importance for the establishment of modern competition policies, laws and institutions. In order to achieve these objectives competition policies and regulations need to be applied uniformly and internationally throughout the economy with a minimum of exemptions.

The competition policy aims to prohibit, penalize and deter anti-competitive practices and help to remove obstacles to competition. Competition policy embodies various kinds of instruments that are conventionally classified as; the control of mergers, the restrictive agreements, state aids and abuse of dominance. These instruments are in fact regulatory policies to manage the competition structure as desired.

The economic rationale underlying merger control is that competition is a means to achieve efficient market outcomes. Distortions to the structure of a market, such as mergers, which may significantly impede competition, ought to be monitored and if necessary prevented. Most countries with competition policies have some form of merger control. Merger policy deals with the question of the structure between firms such as vertical integrations, joint ventures and strategic alliances. The rationale for merger control is to enable competition authorities to regulate changes in market structure and to prevent firms from gaining market power than to attempt

to control market power once it exists. Although most mergers pose little or no threat to competition within a marketplace, some mergers would seriously harm competition by significantly increasing the probability of exercising market power. A firm may increase its size and expand into new activities or economic markets as a result of increasing investment or by means of a merger. However not always mergers generally may lead firms to operate efficiently and profitably. Mergers that increase efficiency are beneficial to the society.

Since collusive or restrictive agreements increase the market power of coordinated firms and thus reduce or eliminate competition among the participants of the agreement, the competition policy should be designed to prevent such agreements.

A crucial element of consideration in any competition framework relates to state aids. State aid is a sort of state intervention used to promote a certain economic activity. State aids imply that specific economic sectors, practices or regions are treated more favorably than the others. State aid measures can be a serious barrier to competition since government restraints on competition damages economic growth and industrial competitiveness. State aids policy should be designed in order to prevent these consequences.

On the other hand, dominance is a position of considerable economic power held for a period of time by a firm over customers and suppliers in a market. More specifically, it is the ability of a firm to restrict output and thus raise prices above the level that would prevail in a competitive market, without existing rivals or new entrants in due time taking away its customers (Faul and Nikpay, 2000:122). Restraint of abuse of dominance is the main objective.

1.4 Regulatory Policies to Ensure Competition

Over the last decades, both the EU and OECD countries have implemented regulatory reforms to stimulate competition and improve economic performance. These applications have arisen from the acknowledgment of positive impact of regulations on competition and hence economic performance.

Regulations/regulatory reforms have a multidimensional character and they involve both an industry's economic conduct (such as pricing, entry and exit) and social conduct (such as health and safety of workers and workplace). As Winston (1993:1277) indicates industry performance under deregulation is influenced not only by technological change and external economic developments but also by public policies unrelated to economic regulatory reform. Because all the influences are interdependent, each one must operate in accord with each other. Otherwise the performance will be disrupted. In this context, government regulations are regarded as one of the most crucial institutional and structural aspects that influence the performance of product markets. Moreover, the direction and size of the effects of regulations/regulatory reform on competitiveness and performance are crucial issues that need to be examined.

Over the past decade, a large number of theoretical and empirical literatures have highlighted the effects of regulatory reform on crucial dimensions of economic performance. Empirically, especially in overall Europe, regulation and its effect on economic performance has also become a controversial issue. It is generally recognized that, the heavy and inefficient regulation in product, financial and labor markets of Europe has been the prime cause of its macroeconomic underperformance over the last decade with compared to the US (Blanchard, 2004:4). Koedejik and Kremers (1996:446) argued the reasons that keep the deregulation and market openness on the agenda of European countries: First, competitiveness is broadly acknowledged to be a structural problem which requires a revitalization of the

European economy. Second, concerns about unemployment and competitiveness are at the centre of the current debate about Economic and Monetary Union. Once the exchange rate instrument is given up, market flexibility has become the means of adjustment rather than the adjustment of foreign exchange rate. Third, global competition is forcing Europe to utilize its resources more fully, necessitating a critical look at inefficient arrangements not only in labor but also in product markets. Moreover, technological progress places government regulations in a new light. Technological progress can cause any regulation to be ineffective rapidly. Therefore, governments should take into consideration technological developments when arranging regulations.

In a similar manner to what happens in Europe, intricate regulation and its arbitrary enforcement are listed by the World Bank among the key obstacles to growth all over the world but especially in developing countries. By imposing extra costs, uncertainty and risks, heavy regulations hamper investment by erecting barriers to entry in these countries (World Bank, 2005:95).

The effectiveness of a regulatory policy depends on how well macroeconomic and structural policies interact in designing the business environment. Regulatory reform which is a crucial element of economic policy and structural reform should think of: where regulations are hindering economic growth; where regulatory reform would help the growth of new industries; and where regulations hinder market access (Wienert, 1997:46). Thus, in assessing the influence of the regulatory environment, it is important to consider that the quality of regulation is largely affected by the institutional structure in which it is imposed. That is, the final impact that regulation may have on macroeconomic performance is likely to be affected by the country's level of institutional development and the influence of institutions on regulation (Loayza et al., 2004:12). The regulatory environment is also affected by macroeconomic performance and there is an interconnection between regulation and macroeconomic performance. However, it is not clear to what extent.

The OECD (1997) defines *competitiveness* as 'the ability of companies, industries and regions, nations or supranational regions to generate, while being and remaining exposed to international competition, relatively high factor income and factor employment levels on a sustainable basis'. There exist two essential objectives of competitiveness policy: Productivity growth and the ability to compete on world markets. Therefore, the policy makers aim at exploiting regulatory instruments to increase the competitiveness of the whole economy.

However, in order to link between the relationship between regulation/regulatory reform and industrial competitiveness, the following issues have to be taken into account (Wienert, 1997:10);

(i) whether to regulate: to determine when alternative measures to regulation may be more appropriate to achieve a given set of policy objectives,

(ii) what aspects of economic behavior government should regulate so as to stimulate competitiveness and thus economic development;

(iii) when to regulate, so that regulations can be matched to technological and social change;

(iv) how to regulate and/or change regulations: to ascertain both the most appropriate type of regulation in order to facilitate innovation and stimulate competition.

The relations between regulation and competition have changed over the last decades. In the early 1970s, Stigler said that `regulation and competition are rhetorical friends and deadly enemies: over the doorway of every regulatory agency … should be carved: Competition Not Admitted' (quoted from Jordana and Levi-Faur, 2004:5). While this concept of the relations between regulation and competition is still an important part of public and political debate, the relations between competition and regulation have changed drastically over time. Regulation and competition became aligned in a different way that Stigler defined. The

regulatory instruments have expanded and most importantly, involve new techniques of regulation-for-competition.

There are several notions used in the context of the relationship between regulation and competition. Deregulation, re-regulation, regulation of competition and regulation for competition have different and sometimes conflicting dimensions (Jordana and Levi-Faur, 2004:6).

The concept of deregulation is the process by which governments reduce the economic, political and social restrictions on the behavior of social actors. The elimination of regulation (deregulation) is a necessary condition for competition and leads to a high level of competitiveness, therefore higher productivity and efficiency. On the other hand, apart from deregulation, re-regulation, in general results in new settings of regulation. Re-regulation requires the removal of institutional impediments, improvements in the regulatory structure or the replacement of inefficient regulatory systems. The notion of re-regulation is vague in terms of the nature and objectives of the new regulation, and hence has rather limited use in explaining the relations between competition and regulation.

The concepts of regulation of competition and regulation for competition distinguish in the degree of intervention by state authorities and in the capacities of the state to monitor and enforce competition. While both necessitate the strengthening of capacities of authorities, regulation for competition requires far more intrusive capacities. This is represented by the contrast between economy-wide responsibilities of national competition authorities in the case of regulation of competition, and sector-specific responsibilities of regulatory authorities in the case of regulation for competition. The broader responsibilities of national competition authorities lead them to influence less on market actors who know their industry well. These broader responsibilities also show that competition authorities adopt a reactive approach to anticompetitive measures. On the other hand, in regulation for competition, the responsibilities of regulatory authorities are limited to a sector or industry, but they usually give those authorities much more influence over market actors. Unlike the reactive approach of competition authorities, these sector-specific

authorities are today proactive and involved in market design and market control (Jordana and Levi-Faur, 2004:6). For example, the power to strengthen competition is better allocated to the hands of an energy regulator than to those of a competition authority. The latter is in charge of protecting competition not making competition stronger.

In fact, there can be anti-competitive and pro-competitive regulations. The anti-competitive regulations can arise out in several ways. For example, regulations can impose costs on firms. The high cost of regulation, in the form of compliance costs, is regarded to have a negative impact on the competitiveness of firms. Compliance may require additional investment in order to adjust to necessary changes in the production process. Besides, the administrative obligations that compliance may necessitate also lead to an increase in financial expenses. "Regulations are also said to reduce competitiveness in that they divert management time and capital expenditure from activities that could enhance the long-term competitiveness of a firm; slow down the decision-making process; and hinder the flexibility with which a company can operate" (Wienert, 1997:16).

However, the regulatory system is in general designed to be pro-competitive to improve the framework conditions for industrial competitiveness. Hence, regulatory reform should be treated as a fundamental element of structural reform. Improving the flexibility, simplicity and quality of regulations, establishing regulatory institutions that facilitate the diffusion of innovations and increase competition, and reforming the regulatory process should be the crucial dimensions of regulatory reform.

The regulatory reforms should be designed to intervene in a manner that is complementary to competition policy objectives. Competition and regulatory policy are made complementary where the objectives of both are establishing competitive markets. In a general manner, competition law/policy and regulation is designed to defend the public interest against monopoly/market power. If both provide tools to a government to fulfill this objective, they vary in scope and types of intervention. Competition law and regulation are not identical. Whether regulatory policy is

consistent with the conception and purpose of competition law/policy, there are four ways in which competition law/policy and regulatory issues can interact (OECD,2002a:6):

(i) Regulation can contradict competition policy. Some regulations may have encouraged, or even required, conduct or conditions that would otherwise be in violation of the competition law. For example, regulations may allow for the price co-ordination, prevent advertising or other forms of competition, or require territorial division of a market. Other examples include laws that prohibit sales below costs, which claim to promote competition but are often constructed in anti-competitive ways, and the very broad category of regulations that restrict competition more than is necessary to achieve the regulatory goals. When such regulations are modified or suppressed, the firms affected have to change their habits and expectations.

(ii) Regulation can replace competition policy. In the case of a monopoly, regulations may try to control market power directly by setting prices and controlling entry and exit. Technological developments and institutional changes may lead to reconsideration of the basic premise in support of regulation, that competition law/policy and institutions would be inadequate to the task of preventing monopoly and the exercise of market power.

(iii) Regulation can reproduce competition policy. Regulations and regulators may try to prevent co-ordination or abuse in an industry, just as competition law/policy does. For instance, regulations may set standards of fair competition or tendering rules to ensure competitive bidding. However, different regulators may apply different standards, and changes or differences in regulatory institutions may reveal that seemingly duplicate policies may have led to different practical outcomes.

(iv) Regulation can use competition policy methods. Instruments to achieve regulatory objectives can be designed to take advantage of market incentives and competitive dynamics. Co-ordination may be necessary, to ensure that these instruments work as intended in the context of competition law/policy requirements

Regulations and reforms, which liberalize or improve the functioning of product markets, can affect macroeconomic performance in several ways. The impacts of regulation on aggregate variables of macroeconomic performance such as output growth, productivity and unemployment have received large attention during the last decades. There are three major channels through which product market regulation can affect macroeconomic performance. The impact of regulations on competition thus on the economic performance is discussed under the headings of allocative efficiency, productive efficiency, and dynamic efficiency. Allocative efficiency and productive efficiency can be categorized as static efficiency (allocation of resources within the economy and efficiency of the firm). A static efficiency improvement occurs when a firm finds a way of producing more output with the same inputs. Productive efficiency refers that increased product market competition may influence firms' incentives to reduce slack and organize work more efficiently. "Increased competition in product markets is associated with static efficiency gains. Indeed, competition is associated with greater pressures to reduce general slack and waste (X-efficiency) and to adopt best practice technology" (Elmeskov, 2003:25). On the other hand, dynamic efficiency is defined as a key factor in productivity growth and that it concerns firms' ability and incentive to continually implement innovative efforts and R&D activity. Regulatory reform must consider a potential relationship between static and dynamic efficiency.

i. Allocative Efficiency

Regulations/regulatory reforms affect productivity and growth by reducing the cost of doing business and increase competitive pressures among firms. More competitive product markets bring prices more in line with marginal costs and this will lead to increased allocative efficiency. "Indeed, when regulatory reforms lead to more competitive product markets, the difference between prices and marginal costs is reduced and the allocation of goods and resources, in the absence of other distortions, will become more efficient in a static sense: more competitive markets will allocate capital and labor more efficiently to the production of those goods that consumers value more" (Schiantarelli, 2005:2-3). Moreover, in a more competitive environment the less efficient firms will exit the market and market shares will shift from lower to higher productivity firms, which lead to a more efficient allocation of goods and resources.

There is a large empirical literature that exists on the impact of changes in product market competition on productivity. For instance, Green and Mayes (1991) examined technical efficiency[4] of 151 UK manufacturing industries and found a positive link between technical efficiency and competition at the firm level. They explain the factors which affect the levels of inefficiency across industries by the extent of competition in the industry, the degree of product differentiation, the structural characteristics of the industries and the rate of structural change, openness to trade, capital intensity, the size of markets and the organization of firms within the industry. Moreover they argue that market concentration leads to a reduction in technical efficiency. On the other hand, Nickell (1996) uses firm level data for the UK to investigate where changes in competition affects productivity levels and growth rates by measuring competition in several ways, including measures of monopoly rents, concentration, import penetration, and number of competitors. By estimating a dynamic production function with the competition variables, he finds

[4] Green and Mayes (1991:524) define technical efficiency as "the failure to achieve maximum possible output from whatever combination of inputs has been chosen".

that greater competition has a positive effect both on the level and the growth of productivity. He argues that there is clear evidence on the degree of competition to generate the productivity growth. Nickell (1996:728) gives three observations to verify his results: First, the low level of productivity in Eastern Europe relative to the Western Europe is an impressive example of what can be achieved by repressing the forces of market competition. Second, the Japanese success stories (industries such as; cars, motorcycles, cameras and video recorders) are precisely those industries in which domestic competition is intense. Those Japanese industries, in which domestic competition is weak, have little or no international success (industries such as; construction, commodity chemicals, and paper). Third, deregulation is generally followed by significant productivity gains on the US airline industry.

Dawson and Seater's study (2005) gives similar results to above studies. They investigate the relationship between federal regulation and macroeconomic performance in the US. They find that regulation has significant effects on aggregate output and the factors that produce it such as total factor productivity, physical capital, and labor. They also conclude that regulation has allocative effects and that it changes the mix of inputs used to produce output.

On the other hand, a large number of studies have analyzed the impact of regulation on proximate determinants of GDP growth such as productivity, investment and employment. In this sense, Nicoletti and Scarpetta (2003) find that product market regulation lowers multifactor productivity growth in OECD countries over the past two decades. Alesina et al. (2003:21) also report that (tight) product market regulations have a (large) negative effect on private investment in OECD economies.

In turn, Griffith and Harrison (2004:5) find that greater competition is associated with higher levels of investment and employment, particularly in the service sector. Nicoletti et al. (2001:48) also show that anticompetitive product market regulations reduce long-term employment rate in a panel of industrial countries. In the same context of the matter, Koedijk and Kremers (1996) highlighted the question of whether a relationship can be established between the degree of regulation and

economic performance by characterizing a sample of eleven European countries by the degree of regulation of their product and labor markets. They consider three indices of economic performance: overall economic growth, productivity growth and employment growth and find a negative link between regulation and economic performance. Moreover, in their study, they indicated that the promotion of greater product market dynamism could contribute to a better economic performance.

In an empirical study, Salgado (2002) investigates the potential impacts of reforms in trade, product markets and labor markets on productivity performance with an analysis based on panel data for 20 OECD countries during 1965-98. The results suggest that especially reforms in trade and product markets could explain improvements in trend productivity growth, even though the impact of such reforms on productivity may be weak or negative in the short run due to, for instance compliance costs. Baily et al. (1995) finds out similar results in their study while explaining the international productivity differences in manufacturing industries across Germany, Japan and the US. In addition to traditional determinants such as capital intensity and scale, they find that innovations such as design for manufacturing and workplace organization also found to play an important role in productivity. They show that there is a positive relation between the nature of competition and relative productivity levels under the suggestion that it is the nature of competition facing companies that strongly influences the productivity of the production processes used in a given industry in a given country.

As mentioned, foreign trade can be liberalized through regulations. Trade liberalization, in turn, may contribute to an increasing degree of competition and improved factor productivity. For instance, in Europe, the establishment of Single Market Program that included the removal of barriers to entry and regulatory barriers to trade has been particularly important in improving the cross-border competition in many sectors of the economy. Indeed, a large number of surveys have been carried out in order to identify industries and countries that were affected by reforms to different extents regarding the EU's Single Market Program. By using a large sample of Italian firm level data, Bottasso and Sembenelli (2001), find that the EU Single

Market Program, which contains some deregulations, has lead to a decrease in the price-cost margin (mark-up) and an increase in productivity for those firms that were more sensitive to the abolition of external barriers. Furthermore, they indicate that these results are consistent with the long-standing view that market integration increases competition and consequently reduces market power. Indeed, market integration within the EU reduces firms' market power due to the increasing number of competing firms in the Single Market and increases productivity through the elimination of barriers to trade.

There are some other theoretical studies that analyze the reallocation effects of trade liberalization. For example, Melitz (2003) model shows how the liberalization of trade will induce only the more productive firms to enter the export market while some less productive firms continue to produce only for the domestic market and will simultaneously force the least productive firms are forced out of the market. Thus, the more productive firms reap benefits from trade liberalization in the form of gains in market share and profits. There are several studies that support the results that Melitz (2003) found. For instance, Pavnick (2002) finds that reallocation of resources after trade liberalization in Chile significantly contribute to the productivity in tradable markets. Nicoletti and Scarpetta (2003) show two main effects of regulatory reform of entry and state control by using cross-country data. They find that countries with entry liberalization (lowering barriers to entrepreneurship) and reduced state control catch-up more the frontier in manufacturing industries and adopt best-practice technologies more quickly. Moreover, the process of privatization is found to involve direct productivity gains.

However, since any regulation that leads to trade liberalization opens firms to foreign competition forcing exit of high cost firms and shifting market share to low cost firms. This resulting adjustment process, as plants shut down and workers are displaced, may be lengthy. Low cost producers may be located in other countries so individual countries and industries can gain or lose from this process (Griffith and Harrison, 2004:11-12). Therefore, abolition of barriers to trade has enforced governments to implement more subtle policies in order to protect their national

interests in international markets and thus the question of optimal market entry regulation even become more complicated in the international environment. As a consequence, the issue of whether to allow for market entry or to regulate access (by granting licenses or patents) is likely to be imposed by trade-strategic considerations.

As for the relationship between regulation and investment, it is argued that product market regulation can influence investment in several ways. First, as Blanchard and Giavazzi (2001) emphasize in a non-competitive model of employment determination, changes in regulation affect the mark-up of prices over marginal costs, because of their impact, for instance, on entry barriers and, hence, on the number of firms. Second, regulation can influence the costs that even existing firms face when expanding their productive capacity. For example, red tape and other forms of regulatory burdens can increase firms' costs of adjusting the capital stock and hamper their capacity to react to changes in fundamentals. Third, for certain sectors, regulation imposes a ceiling on the rate of return on capital that firms are allowed to earn; this affects the demand for capital relative to labor. Finally, if product markets regulatory reforms occur together with privatization (or nationalization) policies, changes in ownership structure can also affect investment.

Regulation plays a central role in shaping the investment climate which is an important engine of growth. Indeed, regulatory environment in a country has significant impacts both on domestic and foreign investment. In this sense, various product market regulations have also particular influences on foreign direct investment (FDI). FDI increases the capital/labor ratio and it is also an important source of technological diffusion. Domestic product market regulations may take the form of entry liberalization. Thus, the component of regulations that plays the one of the most important role is lowering entry barriers. Product market regulations such as raising production costs or entry barriers can affect the level of FDI in conflicting ways (Nicoletti and Scarpetta, 2005:7-8): Firstly, regulations that increase production costs in the host country can hinder FDI by reducing its expected rate of return if the foreign subsidiary is used as a platform for exporting final or intermediate goods back home or to other less regulated countries. Secondly, if FDI aims at entering into

the local market, cost-increasing regulations in the host country may spur FDI because the foreign firm can take advantage of being efficient production structure if regulations in the investor country are more pro-competitive. Thirdly, regulations that raise entry barriers in host countries may deter FDI aimed at establishing new firms or creating new production plants. However, by endowing local firms with market power, they can actually encourage FDI aimed at acquiring existing local firms, or merging foreign large corporations with these firms.

ii. Productive Efficiency

Product market competition induced by regulatory reforms has a direct influence on the productive efficiency of existing firms. Productive efficiency may be improved by reducing slack, trim fat and by organizing the structure of workplace more efficiently. As emphasized in the theoretical literature, the essential influence of increasing product market competition on productive efficiency has been the incentive effect on managers and workers to reduce slack, trim fat and organization of work more efficiently. "The agency cost literature suggests that inefficiencies arise because managers (or workers) slack, there is a conflict of interest between owners and managers, and the owners cannot perfectly monitor the managers' effort. Product market competition can affect the incentives of managers to slack (positively or negatively) and the ability of the owner to monitor the manager (positively)" (Griffith and Harrison, 2004:14). There is also a direct relation between the level of competition and the workers' effort. This arose from the situation that product market rents (in the form of higher wages or reduced efforts) might be also shared by workers.

The main view in favor of a positive connection between the degree of competition and productivity performance depends on the opportunities for slack caused by monopoly power. As argued by Nickel et al. (1997) the impact of competition on firm performance is that the existence of monopoly rents gives

managers the potential to capture some of them in the form of slack. In short, the agency models of managerial behavior rationalizes why greater competition tends to reduce X-inefficiencies[5] and organize work more efficiently as follows (Nickell et al. 1997:785): First, in a more competitive environment it is easier for the owners or the market to monitor managers, as there are greater opportunities for comparison, which can lead to better incentives. Second, the costs and benefits of a reduction in costs or an innovation vary with the extent of competition. In more competitive markets characterized by higher demand elasticity, cost reduction will allow firms to lower prices which lead to a larger increase in demand and as well as profits. Third, it is plausible that more competition will increase the probability of bankruptcy at any given level of managerial effort and managers will work harder to avoid this outcome. Disney et al. (2000), by using a data set for UK firms, examined the impact of restructuring on UK manufacturing productivity growth in the 1980s and early 1990s and argue that restructuring can raise overall productivity in two different ways: (i) internal restructuring which is defined by the changes within existing enterprises, such as the introduction of new technologies and organizational change, (ii) external restructuring which is defined as the process of market selection which leads to the fact that low productivity firm exit and are placed by higher productivity entrants. They find that, for the period 1980-92, external restructuring accounts for around 50% of firm labor productivity growth and 80-90% of firm total factor productivity growth for the UK manufacturing.

On the other hand, privatization -the transfer of ownership from public to private sector- as a kind of regulatory reform may also have important effects on the incentives for managers and workers to reduce slack. Changes in ownership from public to private would be expected to lead to an increase in productive efficiency as it improves the incentives of owners to monitor managers. However, after privatization, the level of competition depends on the regulatory and institutional framework and whether these institutions create sufficient market pressure. Although the process of privatization is associated with productivity improvements, a lack of

[5] The sources of the X-inefficiency have been ascribed things such as overinvestment and empire building by managers, lack of motivation stemming from a lack of competition.

competition may reduce the incentives for productivity gains in privatized industries. In industries where there are natural monopolies the impact of privatization depends on the market structure and regulatory regimes that ensues post-privatization.

iii. Dynamic Efficiency

While gains through allocative and productive efficiency represent only changes to the level of productivity and output, improvements in dynamic efficiency, through innovation and the introduction of new products and new production processes, potentially have a much larger impact and are also likely to take much longer to accrue.

Since the potential gains from innovation in more competitive markets are lower, it is ambiguous that increasing product market competition increases firms' incentives to innovation. Increases in market size, for instance through trade liberalization, could have a positive impact on innovative process if the size of potential rents are increased. Moreover, the liberalization of trade may also lead to increases on technology transfer if it results in entry of new products or the entry of lower cost technology firms in the market. In the context of dynamic efficiency, competition policy is a crucial instrument that restricts the ability of dominant firms to guard themselves from competition and avoid the necessity to innovate in order to protect their share in the market.

Innovation and R&D are two of the most significant determinants of technological development and long-run growth. The dynamic aspects of the interactions between regulation and innovation are crucial. Innovation is a costly and complex activity, and during the innovative process firms may need some potential pay-off to be able to provide the necessary resources for innovations. Thus the issue of whether competitive pressures stimulate or impede innovative effort is central to the debate regarding the relationship between regulation and the innovative

capability of firms. The complexity of the regulation/innovation debate is illustrated by two-sided relationship between technology and regulatory reform; for instance, that new technologies can speed reform and the modification of regulations, while new regulations properly designed can encourage technological developments (Weinert, 1997:7).

The literature of endogenous growth and industrial organization point out that increased product market competition may decrease innovative activity. This is because increased competition reduces monopoly rents that reward original innovators and that there would be greater incentives to innovate when rents are higher. Thus, increasing product market competition lead to a reduction in the innovation rents so innovative activities are reduced. However, more recent endogenous models argue that innovation can be profitable for incumbent firms. "Competition may increase the incremental profits from innovating, and thereby encourage R&D investments aimed at 'escaping competition'. In these models product market competition will affect innovation to a larger extent in more 'neck-and neck' industries that is in industries in which oligopolistic firms face more similar production costs. The firm with lower unit costs is referred to as the technological leader, and the one with higher unit costs the follower, in the corresponding industry, and when both firms have the same unit costs they are referred to as neck-and-neck firms" (Griffith and Harrison, 2004:18).

On the other hand, Aghion et al., (2003) consider the relationships between product market reforms and performance and the impact of opening up of foreign competition on innovation activity in incumbent firms. The paper uses a model in which the various sectors of the economy differ with respect to their initial state of technological development, measured by their distance to the technological frontier (the most recent and advanced technology state). The empirical results suggest that entry has a positive effect on innovation in industries initially close to the technological frontier, but not on innovation in industries initially far below the technological frontier. Moreover, the effect of entry on productivity growth interacts positively with the distance of the firm's industry to the world technological frontier.

For instance, European Commission (2003) and Blanchard (2004) indicates the fact that in Europe post-war period growth and catching-up with the US was largely based on imitation and capital accumulation, while what is needed now is for European countries to move closer to the technology frontier and towards growth based on innovation.

There can also be another channel through which increased competition can have a beneficial effect on innovation and growth. When principal-agent considerations (for example owner-manager relations) are added, greater competitive pressure can provide an incentive for managers to speed up the adoption of new technologies in order to avoid bankruptcy and the loss of benefits from control associated with it.

Product market regulations may influence the rate of growth of productivity (the rate of innovation) through the effect that greater competition has on the incentives to introduce new products or production processes that replace the existing ones. Schumpeter (1942) defined that process as a process of creative destruction, in which the introduction of new products and production processes is associated with the destruction of old one. He also argues that the expectations of monopoly profits provide the crucial incentive for innovative activity. A decrease in monopoly profits following regulatory reform may, therefore, decrease the pace of innovation and therefore growth. In addition, the degree of market power also affects the ability to innovate since it allows the accumulation of internal financial resources that can be used to finance innovation. These internally generated funds are crucial in the presence of information asymmetries that may make it difficult or expensive to obtain external funds for innovation activities (quoted from Schiantarelli, 2005:7-8).

The importance attached to the incentive effects of regulation on R&D activities and R&D expenditures shows that a major impetus of productivity/competitiveness is a firm's R&D performance in the long run. A firm’s investment capacity is also a crucial component of its survival in a competitive environment. As Wienert (1997:31) argues, within the context of globalization, requirements such as joint industry research, greater skill-intensity in the production

of goods and services, the ability to form cooperative alliances such as technological links or R&D partnerships and the freedom to take advantage of opportunities coming from network-type linkages have become more important.

Hahn and Hird (1991) also claim that inappropriate regulation can have an adverse impact on innovation, particularly in areas such as telecommunications and pollution control where the pace and rate of technological change is rapid. In such industries it is difficult for a regulator to ascertain which production processes would be least costly, or which products would be best. Consequently, any attempt made by regulators to micro-manage the firm's production techniques, its product offerings, and its pricing decision through, for instance, a command-and-control type regulation, may result in substantially lower performance (quoted from Wienert, 1997:29).

Looking at empirical studies, for example, Blundell et al. (1999) analyze the effect of product market competition on innovation. They find, using UK firm level data that firms with higher market shares innovated more, but that more competitive industries produced more innovation. They also analyze the role of patents on innovation and find that the pharmaceutical industries, where patents are strong and well protected, show the strongest evidence of correlation between market share and innovation. A recent paper by Aghion et al., (2005) examine the relationship between competition and innovation by using UK data at firm level and exploit the major policy reforms undertaken over the 1970s and 1980s, which dramatically changed the nature and extent of competition across industries and overtime such as privatization efforts, Single European Market and competition policy reforms. They find evidence that there is a balanced inverted-U shape relationship between competition and innovation, with firms distributed across both the increasing and decreasing sections of the U-shape. On the other hand, Bassanini and Ekkehard (2002) find a negative effect of regulation on innovation on the basis of R&D data for 18 OECD countries and 18 manufacturing industries.

However, some other studies found that, in general, regulation stimulates innovation only to an insignificant extent. The preponderant effect of regulatory

restrictions is to distort the choice of technologies that are explored and developed, and by increasing the uncertainty and costs of the development process, create barriers to innovation. In the long term, this is expected to have negative effects on the competitiveness of the firms concerned.

The productivity effects of social regulations, including environmental protection, employment, health and safety standards, also differ. Regarding environmental regulations, some studies suggest that environmental compliance costs are not a significant factor affecting performance and competitiveness at the macro level. Moreover, negative effects tend to be offset by such factors as reduced input costs, innovation, and greater efficiency in production. A number of studies suggest that environmental regulation can also increase international competitiveness, when implemented to provide a firm with a strategic advantage in industries where environmental concerns are becoming increasingly important for consumer satisfaction, or because firms have, by means of such regulation, been able to increase efficiency in general.

In conclusion, there are many ways through which product market regulation may have an impact on overall economic performance. The regulation has certain impacts on allocative, productive and dynamic efficiency. Some studies suggest that the effects of product and labor market regulation on aggregate investment and employment are quantitatively considerable (Bayoumi et al., 2004:30). However, empirical studies often cannot separately identify the impact of product market regulations and reforms on allocative, productive and dynamic efficiency. In terms of the overall growth impact: there may be a substantial and long adjustment period, and there are likely to be winners and losers in the adjustment process. However, empirical studies have pointed to a positive impact of lower product market regulation or higher product market competition on productivity and growth, though a number of empirical issues remain unresolved; recent empirical work has found an inverted U shape relationship with both very high and very low level of competition being bad for innovation gains.

II. THE COMPETITION STRUCTURE OF THE EU MANUFACTURING INDUSTRY

2.1 Introduction

Since its establishment in 1957, the EU has developed a single market programme through a standardized system of rules and regulations which apply in all member states with the objective of guaranteeing the freedom of movement of people, goods, services and capital. As stated in the EC Treaty, the EU's system of economic governance is based on the "*principle of an open market economy with free competition*". Indeed, a competitive internal market provides the best environment for EU firms to increase their efficiency and innovative potential.

The European single market programme of 1986 principally aimed to remove tariff barriers to free trade within the EU, harmonize standards and regulatory structures and promote cooperation among EU firms. A cornerstone of market integration process was the adoption and the implementation of a major legislative programme. In order to create a single market free of restrictions on the mobility of goods, services, capital and people, a set of rules has been laid down to ensure that there was fair competition, prohibiting the prevention, restriction or distortion of competition within the single market. According to Ilkovitz et al. (2007:6) while the single market has contributed to promote economic integration and, to a certain extent, competition within the EU, its potential has not been fully exploited. Expectations along with efforts in this direction are that the EU will be a more dynamic, innovative and competitive economy.

During the last decades, concerns about European prospects for competitiveness, growth and jobs has been on the agenda of EU countries. Regulatory reforms imposed both at the EU and national levels are considered as an important instrument for improving the performance of EU economies. The establishment of single market has improved the performance of EU firms through the formation of a better integrated, more competitive and innovative market place within the EU. The economic impact of removing barriers to competition in industrial product markets within the EU promotes competition by increasing rivalry and boosting economic growth. Moreover, increased rivalry in imperfectly competitive markets can be expected to encourage firms to operate more efficiently. Firms take the advantage of changes in market structure and that the resulting improvement in productivity and competitiveness enhances economic welfare and macroeconomic structure.

Increased competition within the EU also provides macroeconomic benefits. Indeed, single market with increased competition is expected to have allocative and productive efficiency gains. Moreover, by providing increased incentives for European firms to invest in R&D and innovations, single market also improves the dynamic efficiency of the EU economy. The reduced barriers to cross-border flows of products and factors and the associated increase in price transparency across member states reinforce competition pressures within the EU and contribute to higher productivity levels and greater competitiveness via three main channels (Ilkovitz et al., 2007:27): (i) increased allocative efficiency (static), which results from forcing firms to set prices lower and closer to marginal costs, reducing monopoly rents and distortions in the allocation of resources while pushing total output closer to the social optimum level; (ii) increased productive efficiency (work organization), due to the fact that inefficiencies are more strongly penalized in the marketplace; (iii) enhanced dynamic efficiency (innovative products and processes), which results from the greater incentives to invest in the adoption and development of product and process innovations. Along with all these developments, it is thought that more competitive and innovative markets within the EU will be created.

Increased competition on better regulated markets is also expected to have positive effects on productivity and employment by improving allocative, productive and dynamic efficiency even though the effect on innovation is more ambiguous depending on market structures and on the distance of market participants to the technological frontier. Competition is of particular importance for the countries and industries close to the technological frontier for maintaining their edge (European Commission, 2007d:8). In this context, one of the central themes of the EU is a greater regulatory cooperation. Within the EU, differences in the competitive characteristics of member states led to different competitive environments. Although national rules and regulations often have legitimate objectives such as product quality and safety, as the process of economic integration progresses, disparities in such different rules and regulation may hinder market access and thus, restrict competition. In order to avoid this, member countries have been collectively involved in an exercise of regulatory rapprochement at the EU level to counterbalance the impeding loss of regulatory authority or sovereignty at the national level. However, diverse regulatory approaches of product markets are an increasingly visible source of conflict among the EU states. Thus, the EU both regulates the economic activity of firms and national governments. A well functioning single market requires also the transfer of regulatory powers to common supranational EU institutions.

The EU maintains various common policies such as competition, trade and industrial policy. Among them, competition policy, which has been regarded as an instrument that contributes to the creation of the single market, is also an essential instrument in prevention of anti-competitive behavior and in translation of efficiency gains into lower prices and better quality for consumers and also it is a key element impacting upon the economic performance of the EU that fosters the competitiveness of European industries and attains the goals of the Lisbon strategy[6].

[6] The Lisbon Agenda is a comprehensive 10-year strategy covering product, labor and capital market reforms which aim to transform the EU into the most competitive and dynamic knowledge-based economy in the world by increasing the employment rate and the level of labor productivity as well as contributing to raise the rate of potential output growth.

In order to understand the link between the regulatory policies and competition, in this chapter of the study, the industrial structure within the EU will be resolved. One of the measures that are related to industrial structure is firms' size. By observing the firms' size across industries, we can get some explanatory clues about their competitive degree of manufacturing industry in the EU. Next, in the global context, FDI inflows increase in both developed and developing countries. Along with the deepening of market integration, European markets become more attractive for foreign firms. Along with the US, the EU is a principal outflow and inflow area of FDI. Therefore, looking at the industrial structure of the EU that is affected by FDI is helpful to understand the competitiveness of the industry sector. Mergers are the most common way for multinationals to do FDI. The mergers activity in EU over time is also a sound measure to explore the structure of industry. Mergers determine the degree of concentration in any given industry, and hence the degree of competition. And innovation and R&D activities are also an important factor in determining industrial structure. Competitiveness of the EU is strongly linked to its position in R&D, innovation and technology. They play a key role in determining the structure and performance of EU industries. Firms' competitiveness is enhanced by a substantial R&D effort, which they may accomplish on their own or in conjunction with other firms and which gives them considerable innovative capacity and technological advantage.

The second chapter will start with the development of the European industrial policy and then the structure of the EU industry will be analyzed. After elaborating the industrial structure and hence performance of the industrial sector in the EU, the subject of regulation and its role in the formation of the competition policy will be analyzed. It is a well known fact that, regulatory policy is a crucial instrument in understanding the institutional arrangements that shape and influence economic behavior within the EU. In the field of competition, the EU countries need to have a uniform regulatory framework in order to allow the development of a level playing field among the firms of the member states. Indeed, the EU standardizes industrial regulations and removes barriers to competition among firms. Hence, it coordinates diverse national regulations, rules and standards to counteract against

inconsistent and anticompetitive practices. That is, the development of pro-competitive regulatory policies will be main concern of this chapter.

2.2 The Development of European Industrial Policy

Industrial policy of the EU plays a vital role for in both industrial development and economic competitiveness. In the context of internal market the existence of uncoordinated national industrial policies may seriously generate high costs for firms and introduce a wasteful duplication either of scarce resources for R&D, innovation or investment. Under these circumstances, a common industrial policy is justified since differences in industrial policy traditions in the nation states have also been an obstacle in the adoption of a common industrial policy.

Such differences are supported by varying conceptions of the merits of government intervention. For instance (Jamet, 2006:3-4), during the 1960s and 70s, in France the idea that the government should subsidize industrial projects whose technological potential appears to be decisive in improving or maintaining the competitiveness of the national economy has led to a policy of "grands programmes" in the railway, telephone and nuclear areas, to the creation of national champions such as Alcatel-Alsthom, Elf or Aerospatiale and more recently to the creation of an agency for the promotion of long term industrial technological programmes in the context of private/public partnerships (the Agency for Industrial Innovation). French industrial policy also provides ample room for aid to firms in difficulty in certain sectors such as coal, steel, textiles and ship-building. This type of interventionism, which exists to a lesser degree in Germany in the form of Federal State aid, is the source of suspicion on the part of some countries with a liberal tradition, such as the UK and Ireland who have focused their strategy on the attractive nature of their territories for industrial investment, notably via advantageous fiscal measures.

Thus, national and European industrial policy not only should be complementary but also it should be coordinated between the EU and national policies in order to avoid the implementation of conflicting instruments or measures even when there is an agreement about the major goals to be attained.

The broad principles of the European industrial policy were set out in a Communication on 'Industrial Policy in a competitive and open environment: guidelines for a Community approach' drafted in 1990. It aimed at creating framework conditions for firms to improve their competitiveness and which would compensate where necessary for market failure. The Treaty of Maastricht of 1992 (Article 157)[7] also provides a legal basis for a common industrial policy and explicitly regulates the EU's industrial policy powers. In addition, the Article makes the competitiveness of industry an objective of common action that must be continued through measures that aim to accelerate European industry's adaptation to structural change, to create a favorable environment for the dynamism of companies notably SMEs and exploit the industrial potential of innovation and research policies.

European Commission has been laying the basis for industrial policy since its Communication on *'Industrial Policy in an Enlarged Europe*' of 2002 which has triggered a broad debate on the sort of industrial policy EU needs and put industrial policy on the top of the EU agenda. European Commission (2002b: 9-12), identified a number of strengths and weaknesses of European manufacturing industry: In this context, there is a long lasting industrial culture in Europe, with large European networks, linking suppliers, manufacturers, services and user firms. Moreover, EU industry, in many respects, is considered as modern and competitive in which most sectors have the ability to upgrade their production in infrastructures and integrate

[7] Article 157 states that the Community and the Member States shall ensure that the conditions necessary for the competitiveness of the Community's industry exist. For that purpose, in accordance with a system of open and competitive markets, their action shall be aimed at:
- speeding up the adjustment of industry to structural changes,
- encouraging an environment favorable to initiative and to the development of undertakings throughout the Community, particularly small and medium-sized undertakings,
- encouraging an environment favorable to cooperation between undertakings,
- fostering better exploitation of the industrial potential of policies of innovation, research and technological development.

new forms of organization. On the contrary, in terms of productivity growth, EU manufacturing industry lags behind that of the US. Indeed, within the EU, increases in ICT and new technology spending seem not to be translated into productivity gains. The reason that lies behind this low productivity growth is the insufficient innovative activity and weak diffusion of new technologies. Further, structural problems in the EU economy remain such as fragmentation of research activities, obstacles to geographical mobility and pervasive skill gaps for many categories of worker.

Within the EU, there were also concerns about the risk that the EU is facing a process of deindustrialization, indicating a shift from manufacturing to services sector which reflects a shift in the pattern of domestic spending. This decline in manufacturing is not considered as a symptom of failure but more a natural outcome of a long-term process of economic development, where productivity in manufacturing industry rises more rapidly than services. The pace of deindustrialization can vary across countries, but, it should not be totally overlooked that the service sector can depend upon manufacturing.

In this context, European Commission provided an analysis of deindustrialization in its Communication of 2003 on the "Key Issues in Europe's Competitiveness – Towards an Integrated Approach". In its Communication, EU's competitiveness problems have been reflected in concerns about the risk that EU might be heading for deindustrialization (European Commission, 2003:7). The European Commission addressed the issue of deindustrialization in various documents. For instance, the European Commission Communication on "Fostering structural change: an industrial policy for an enlarged Europe" (2004d:2) indicate that there is no proof of a generalized process of deindustrialization within the EU. It concluded that, EU industry is having to face up to a process of structural change which is beneficial overall and which should be encouraged, in particular by policies that facilitate the development and the use of knowledge. From this point of view, the EU's disappointing performances, notably in terms of productivity, R&D and innovation, are worrying. In a similar manner, Maincent and Navarro (2006:7) also

indicate that although slow productivity growth in EU manufacturing is a worrying trend, the issue of deindustrialization should be regarded as a long term process of structural change which has to be anticipated and accompanied.

In 2004's Communication, it was aimed to establish an industrial policy that responds to the demands of competitiveness, so as to foster the structural changes required by industry in a knowledge-based EU. Later in 2005, in setting out its renewed Lisbon Strategy, European Commission declared its commitment to focusing on partnership for growth and employment on a Communication called *'Common Actions for Growth and Employment: The Community Lisbon Programme'*. In this context, the priorities of the EU were (European Commission, 2005b:3-4);

(i) making EU a more attractive place to invest and work,

(ii) putting knowledge and innovation at the centre of European growth,

(iii) shaping policies to allow businesses to create more and better jobs.

From this point of view, in 2005, in the face of globalization and intense international competition, the European Commission has set out a new integrated approach for industrial policy to improve the coherence between different policy dimensions, to increase their relevance to individual sectors and to create better framework conditions for European manufacturing industries. In order to achieve these goals, the European Commission adopted a Communication on *'Implementing the Community Lisbon Programme: A Policy Framework to Strengthen EU Manufacturing - towards a more integrated approach for Industrial Policy'* which includes seven new cross-sector initiatives on competitiveness, energy and the environment, intellectual property rights, better regulation, industrial research and innovation, market access, skills, and managing structural change.

In addition, the European Commission proposes seven new, tailor-made initiatives for specific sectors which are (European Commission, 2005e:3-4);

- Setting up of a new pharmaceuticals forum with government ministers, senior industry representatives and other stakeholders will concentrate on R&D, national regulations and the development of a single market.
- Mid-term reviews of life sciences and biotechnology strategy which will involve closer cooperation with industry through the Competitiveness in Biotechnology Advisory Group and a regular annual triangular dialogue with industry and Member states in order to help identify problems, propose priorities, and make recommendations for actions.
- New High-Level Groups on the chemicals and the defense industry which will be established to focus on the impact of the REACH directive on the competitiveness of the chemical sector and to consider procurement and standardization in the defense area.
- European Space Programme which lies down common, inclusive and flexible programmatic basis for the activities of European Space Agency, EU and their respective Member states.
- Taskforce on information and communication technologies (ICT) competitiveness is a taskforce with stakeholders representatives will be set up that will focus on identifying and removing the obstacles that inhibit ICT take-up. It will also draw attention of Member states to the barriers to the competitiveness of ICT manufacturing in Europe and the obstacles to wide and effective take-up.
- Mechanical engineering policy dialogue consists of separate forums which will examine the sectors' strengths and weaknesses and propose remedies.
- A series of competitiveness studies, including for the ICT, food, and fashion and design industries analyzing the trends affecting the competitiveness of industrial sectors with a view to deriving further proposals for concrete policies and actions where necessary.

Whilst the manufacturing industry is currently facing major challenges, it needs a favorable business environment to continue to develop and prosper. Promoting the conditions to ensure increased adaptability and structural change is essential to ensure the competitiveness of EU manufacturing, especially in the light

of increasing intense competition from countries such as China, India and other fast growing economies.

As set out in a Communication from European Commission (2005a:3) the main role of European industrial policy is to provide the right framework conditions for enterprise development and innovation. The aim is to make the EU an attractive place for industrial investment and job creation. It is evident that it is primarily private sector businesses that create economic growth, not the public sector. Businesses have the responsibility to develop their products and processes and to improve skills in order to unlock new markets and find new opportunities resulting from technological developments and internationalization. In exploiting such opportunities, corporate social responsibility and sustainable development play a key role.

2.3 The Structure of the EU Manufacturing Industry

Manufacturing industry is essential for EU's ability to grow and to enhance and sustain its economic and technological leadership. In this section, mainly the structure of the EU manufacturing industry will be analyzed. By the structure, the general structural trends and properties of the industry are considered. The purpose of this section, hence, is to explain the developments and the structure of EU industry. In order to measure the size and structure of an economic activity, the most commonly used indicators are the number of firms, turnover, value added and the number of persons employed.

EU has a thriving manufacturing sector and a substantial part of the world's industrial production taking place in the EU. However, it is a well known fact that, over the last decades the services sector has been growing more rapidly than manufacturing and agriculture in developed countries. On the contrary, in the rest of

the world, in particular in developing countries, the most dynamic sector has been manufacturing. In other words, there has been a gradual shift of manufactured productions towards low and middle income countries from high income countries. Thus, European manufacturing is currently undergoing important changes and facing major challenges and it needs a favorable business climate to continue to develop and prosper.

Manufacturing industry still plays a crucial role in EU's prosperity. Besides, at the international level, it has been successful in maintaining its leadership. However, European manufacturing is facing challenges and its position has been threatened by two factors. On the one hand, EU manufacturing industry faces continuing competition from the other developed economies such as the US and Japan, particularly in the high-technology sector. On the other hand, low-wage economies such as China and India are increasingly threatening the more traditional manufacturing sectors.

As of 2005, manufacturing industry was the main activity of 2.3 million enterprises with a turnover of about EUR 6 323 billion. In the same year, manufacturing industry produced a value added of about EUR 1 630 billion, and employed about 34 million persons (Johansson, 2008:2). Looking at the breakdown of value added and employment, as seen in Table 2.1, within the EU, manufacturing has decreased in terms of its share of total value added, while services have gained an increasing share of value added. The decline in the share of the economy accounted for by manufacturing has to be considered in the context of long term structural change. This development is a reflection of a process of reallocation of resources to services in developed countries, in particular Europe, the US and Japan. The relative share of manufacturing in total value added and total employment has decreased, while that of services has increased steadily. Accordingly, looking at the value added shares of each sector within the European economy as of 2006, it is seen that the highest share of value added was recorded for financial, real estate, renting and business activities, which is 27.6 %. The share of industry (20.3 %) is almost the same as of that of distribution; hotels, HORECA, communications and transport

services, which accounts for around 21.4 % of economic output. Between 1996 and 2006, it is seen that the share of industry in total value added of EU-27 declined by 3%. On the contrary, in the same period, the largest relative gains were concentrated within services sector in general and in financial, real estate, renting and business activities in particular. Indeed, the financial, real estate renting and business activities reported a 3% increase in its share of total value added between 1996 and 2006.

On the other hand, in terms of employment, the situation was quite different. As of 2006, the business economy (NACE Sections C to K) accounted for 75.7 % of the total value added generated. However, in 2006, the business economy accounted for just 64.6 % of the total workforce, thus some 11.1 % lower than its corresponding share of total value added. As represented in the Table 2.1, which shows the detailed breakdown of employment by specific sectors, public administration, health, education, other services (29.1 %); and households and distribution, HORECA, communications and transport (24.9 %) accounted for the largest shares of workforce. Employment in industry sector accounted for 17.9 % of total employment in 2006.

Table 2.1: Breakdown of value added in current prices and employment, EU-27, (% of total)

	Value added		Employment	
	1996	2006	1996	2006
Financial, real estate, renting and business activities	24.6	27.6	11.7	14.7
Public admin.; health; education; other services; households	22.4	22.4	27.8	29.1
Distribution; HORECA; communications and transport	20.9	21.4	24.4	24.9
Industry	23.3	20.3	21.2	17.9
Construction	5.8	6.4	6.8	7.2
Agriculture, hunting, forestry and fishing	2.9	1.9	8.1	6.4

Source: European Commission (2007b) European Business Facts and Figures, 2007 Edition, p.8.

Elaborating the value added at the subsector of manufacturing industry, as shown in Table 2.2, the largest manufacturing activity at sub-sector level in terms of value added was basic metals and fabricated metal products (13.6 %), followed by food products, beverages and tobacco (12.2%) and electrical and optical equipment

(11.6 %) in 2005. This order was the same in terms of employment rates of 14.6 %, 13.6 % and 10.6 % respectively. Moreover, the seven largest of the manufacturing activities by subsector accounted for 73.3 % of the persons employed. The difference in shares of EU value added and employment indicates differences in apparent labor productivity (value added per person employed) among the activities. In the same year, EU-27 apparent labor productivity in manufacturing was EUR 47 000. The sub-sectors with the highest apparent labor productivity are; coke, refined petroleum products and nuclear fuel which displayed a level of EUR 227 200 and chemicals, chemical products and man-made fibres which displayed a level of EUR 94 500 in 2005. As shown in Table 2.2, the gross operating rate was highest other non-metallic mineral products (12.5 %), chemicals, chemical products and man-made fibres (12.0 %) and pulp, paper and paper products; publishing and printing (11.5 %), while the least profitable was transport equipment (3.1 %).

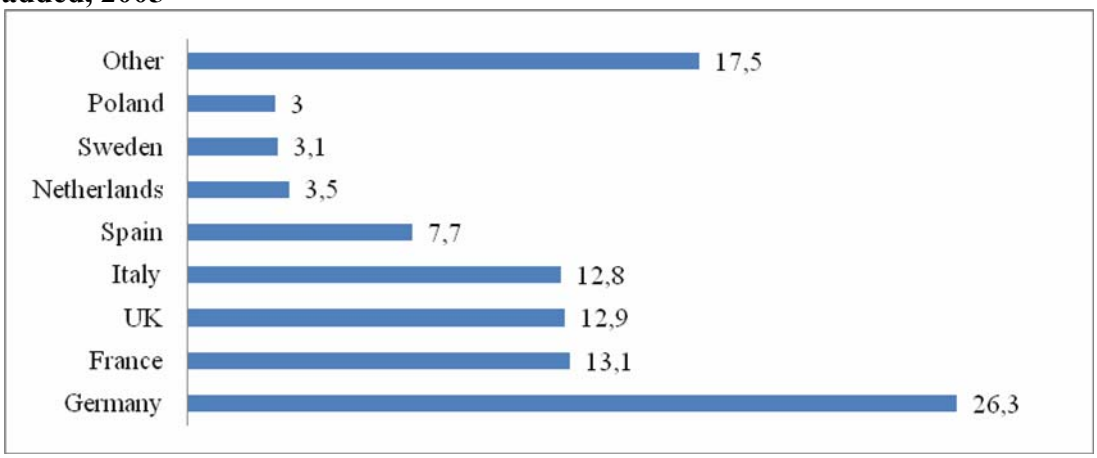
Table 2.2: Main indicators of manufacturing, by sub-sector, EU-27, 2005*

	Value added	Employment %	Apparent labor productivity EUR thousand	Gross operating ratio %
Manufacturing	**100**	**99.8**	**47.0**	**8.3 %**
Food products; beverages and tobacco	12.2	13.6	42.0	9.2 %
Textiles and textile products	3.3	7.5	20.4	8.1 %
Leather and leather products	0.7	1.6	20.3	8.1 %
Wood and wood products	2.2	3.7	27.5	9.9 %
Pulp, paper and paper products; publishing and printing	8.3	7.4	52.6	11.5 %
Coke, refined petroleum products and nuclear fuel	2.4	0.5	227.2	6.3 %
Chemicals, chemical products and man-made fibres	10.9	5.5	94.5	12.0 %
Rubber and plastic products	4.7	4.9	43.9	8.8 %
Other non-metallic mineral products	4.5	4.6	46.0	12.5 %
Basic metals and fabricated metal products	13.6	14.6	44.0	9.2 %
Machinery and equipment n.e.c.	10.9	10.5	49.1	6.9 %
Electrical and optical equipment	11.6	10.6	51.8	7.9 %
Transport equipment	11.2	9.1	57.7	3.1 %
Manufacturing n.e.c.	3.5	5.7	29.0	8.7 %

Source: Johansson, U. (2008) The Main Features of the EU Manufacturing Industry Statistics in Focus, 37/2008, p.2 *Difference between totals and components are due to rounding.

As shown in Figure 2.1, in 2005, Germany is the biggest contributor to the total EU-27 value added produced by manufacturing industries with a share of 26,3 %. Germany's contribution is around double that of the other EU countries such as France (13,1 %), the UK (12,9 %) and Italy (12,8 %). Thus, the four largest Member States (Germany, France, Italy and the UK) generated 65.1 % of total value added within the EU-27's manufacturing industry in 2005.

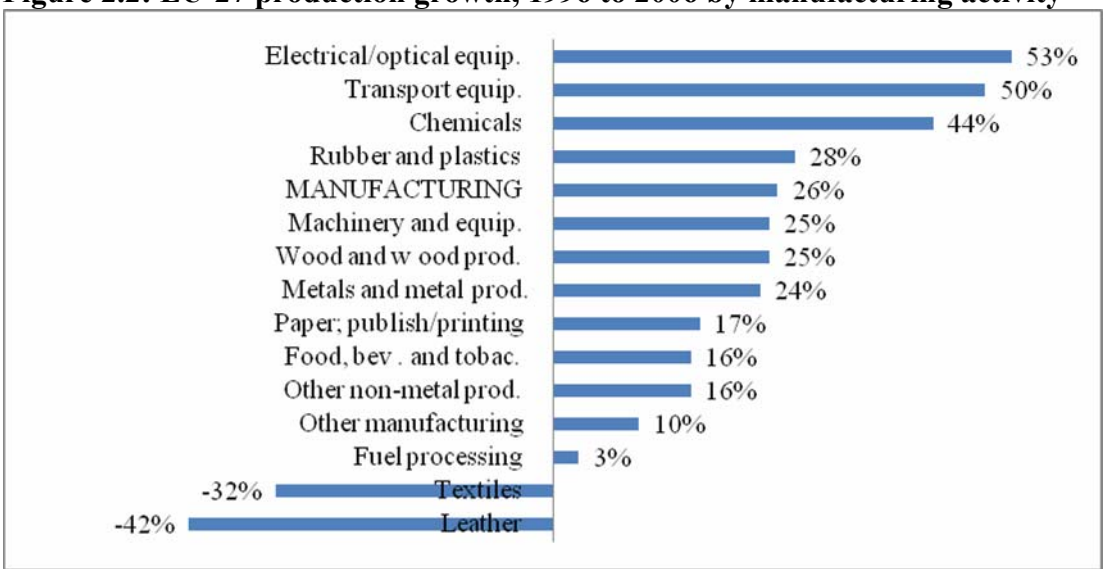
Figure 2.1: Main contributing Member States to EU-27 Manufacturing value added, 2005



Source: Johansson, U. (2008) The Main Features of the EU Manufacturing Industry Statistics in Focus, 37/2008, p.2.

As shown in Figure 2.2, between 1996 and 2006, production in EU's manufacturing industry grew by 26 % on average, with a rise in 12 of the 14 manufacturing activities, notably in electrical and optical equipment (53 %), transport equipment (50 %), and chemicals (44 %). Only textiles (-32 %) and leather (-42 %) contracted during the same period, two manufacturing activities which were relatively small in the EU as a whole. This mainly stems from the basic labor intensive and lower value-added manufacturing production is increasingly performed by developing countries such as China and India, where the production costs -mainly labor- are respectively low.

Figure 2.2: EU-27 production growth, 1996 to 2006 by manufacturing activity

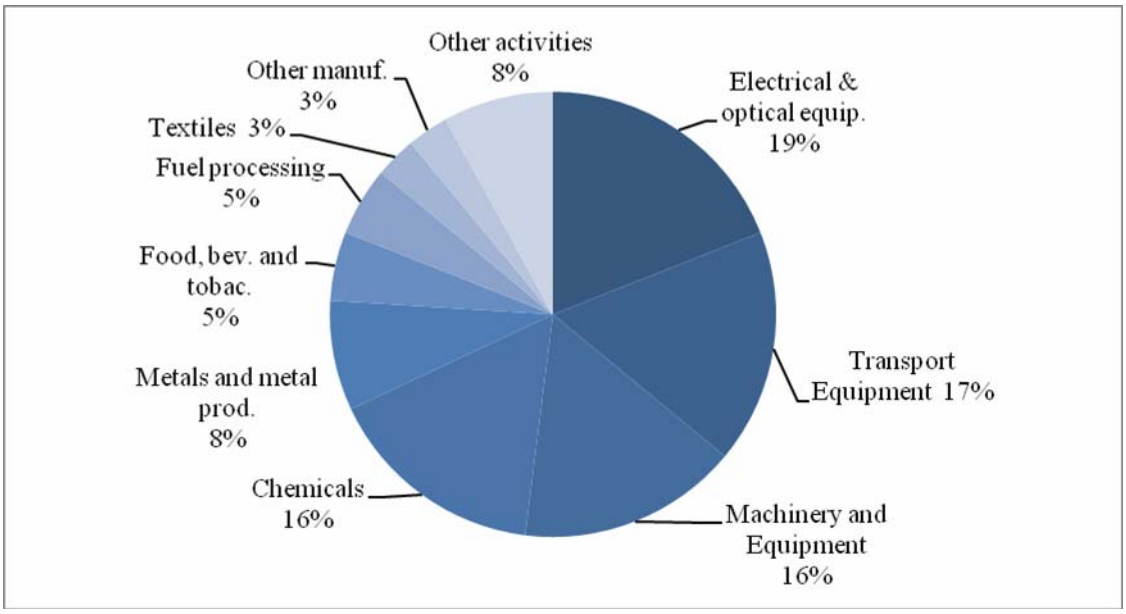


Source: Johansson, U. (2008) The Main Features of the EU Manufacturing Industry Statistics in Focus, 37/2008, p.5.

On the other hand, with respect to foreign trade, EU-27 exports of manufactured goods generated EUR 1 061 billion in revenues, with imports valued at EUR 952 billion, yielding a trade surplus of EUR 109 billion in 2006. Between the periods 2001-2006, exports of manufactured products grew at a rate of 7.3 % annually on average and imports of manufactured products increased by 7.1 % (Johansson, 2008:6).

As shown in Figure 2.3, electrical and optical equipment accounted for the largest share of manufacturing exports (19 %), ahead of transport equipment (17 %), machinery and equipment (16 %) and chemicals (16 %).

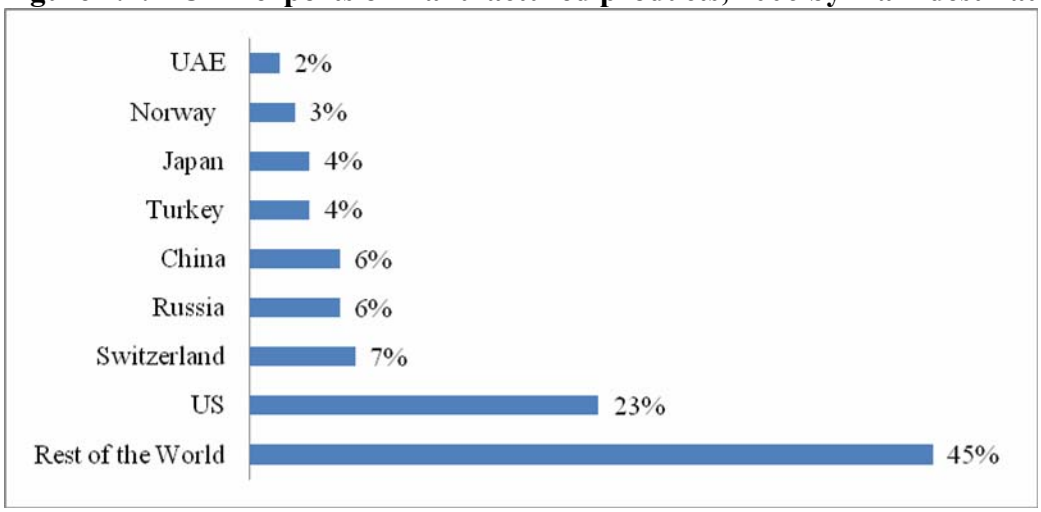
Figure 2.3: EU-27 exports of manufactured products by product group, 2006



Source: Johansson, U. (2008) The Main Features of the EU Manufacturing Industry Statistics in Focus, 37/2008, p.6.

The successive removal of barriers to trade (particularly under the World Trade Organization) and increasing trade openness (with respect to the trade volumes compared to GDP) illustrate the acceleration of globalization. In general, although the global market shares have been redistributed in favor of the emerging economies such as China and India, the EU-27 has been relatively successful in maintaining its position in the global markets. Indeed, the EU-27 is a major player in world trade on manufacturing goods. In 2006, the main destination of EU-27 exports of manufactured goods is the US accounting for 23 % of total exports, followed by Switzerland (7 %), Russia (6 %) and China (6 %) (Figure 2.4).

Figure 2.4: EU-27 exports of manufactured products, 2006 by main destination



Source: Johansson, U. (2008) The Main Features of the EU Manufacturing Industry Statistics in Focus, 37/2008, p.6.

EU exports are mainly concentrated among medium-high technology products that are produced with low to intermediate labor skills. Thus, the EU is exposed to competition from producers in emerging economies, resulting in some EU producers trying to shift their output to higher value, specialist products (European Commission, 2007b:38). As for the size of export and imports of industrial products by the EU-27, as shown in Table 2.3, the EU-27 exported industrial products worth 1082.5 billion euro and imported products worth 1 252 billion euro, resulting in an extra-EU-27 trade deficit of 169.5 billion euro. Electrical and electronic equipment and chemicals, rubber and plastics were the two most exported product groups, representing 18.3% and 18% respectively of total industrial exports. Machinery and equipment (96.4 billion euro) and transport equipment (74.4 billion euro) had the largest surpluses. On the other hand, the most imported product groups were energy products and electrical-electronic equipment, representing 25.7 % and 21.3% respectively of total industrial imports. On the contrary, energy products (-264.9 billion euro) and electrical and electronic machinery (-69.4 billion euro) also had the largest deficits.

Table 2.3: External Trade in Industrial Products, EU-27, 2006

	Exports (EUR billion)	Imports (EUR billion)	Balance (EUR billion)	Share in total industrial exports (%)	Share in total industrial imports (%)
Industrial products	1 082.5	1 252.0	-169.5	100.0	100.0
Food, beverages and tobacco	54.0	48.2	5.9	5.0	3.8
Textiles, clothing, leather and footwear	45.8	97.5	-51.7	4.2	7.8
Wood and paper	29.2	21.4	7.8	2.7	1.7
Chemicals, rubber and plastics	194.8	129.0	65.8	18.0	10.3
Other non-metalic mineral products	17.6	10.4	7.2	1.6	0.8
Metals and metal products	90.1	104.5	-14.3	8.3	8.3
Machinery and equipment	171.1	74.7	96.4	15.8	6.0
Electrical, electronic and optical equipment	197.6	267.0	-69.4	18.3	21.3
Transport equipment	176.3	101.9	74.4	16.3	8.1
Furniture; other manufactured goods n.e.c.	29.5	40.7	-11.1	2.7	3.3
Non-energy mining and quarrying	13.7	31.8	-18.1	1.3	2.5
Energy products, steam and hot water	56.3	321.2	-264.9	5.2	25.7

Source: Eurostat (2008a) European business - Facts and figures, A statistical portrait of European business, 7/2008 - 15 January, p.4.

2.3.1 Firm Size in the EU Manufacturing Industry

The size of firms plays an important role in the development of new activities, innovation, R&D and development of new products and production processes. The size of firms has also implications on the strength and the vulnerability of sectors and firms. The distribution of economic activity (value added) by firm size reflects the major characteristics of sectors and also determines the sectoral performance and the competitiveness.

Within the EU, small and medium sized enterprises[8] (SMEs) play a major role in the business economy by providing a potential source for jobs and economic growth. After the mid-1980s, many industrial policy programmes started to support SMEs. Additionally, in recent years, the European Commission has also given high priority to promoting SMEs. In 2000, the EU adopted the European Charter for Small Enterprises[9] in order to encourage and support the SMEs[10]. In this context, enterprise policy is also a key area that plays a crucial role in setting the conditions for Lisbon objectives to be met in order to contribute to the implementation of the strategy to strengthen European competitiveness. European SMEs face increasing competitive pressure stemming from globalization, enlargement and opening up of markets spurred by new technologies and innovation. Further, the other challenges faced by SMEs include the lack of skilled labor, difficulties with accessing finance, bureaucracy and regulations. Indeed, one of the most important business constraint reported by SMEs is the compliance with administrative regulations. Around 36% of European SMEs reported that the issue of administrative regulations constrained their business activities over the past two years. Moreover, 44% of European SMEs consider themselves as operating in an over-regulated environment. Furthermore, SMEs perceive an overall deterioration in terms of administrative regulations[11]. In relation to that, European Commission policy on SMEs is mainly concentrated in

[8] A Commission Recommendation of 3 April 1996 (COM(96) 261 final) provides a definition of small and medium-sized enterprises, namely:
- Micro-enterprises: employ fewer than 10 persons;
- Small enterprises: employ fewer than 49 persons and have either an annual turnover not exceeding 7 million EUR, or an annual balance-sheet total not exceeding 5 million EUR;
- Medium-sized enterprises: employ fewer than 249 persons and have either an annual turnover not exceeding 40 million EUR, or an annual balance-sheet total not exceeding 27 million EUR.
- Large scaled enterprises are defined as all enterprises employing 250 or more employees.

[9] The Charter aims to focus on factors that are considered critical to the development of SMEs, including: education for entrepreneurship; cheaper and faster business start-up; better legislation and regulation; increasing the availability of skills; improving on-line access; getting more out of the Single Market; taxation and financial measures; strengthening the technological capacity of small enterprises; making use of successful e-business models; developing top-class small business support; and developing stronger, more effective representation of small enterprises' interests.

[10] Firms classified as SMEs are defined officially by the EU as those with fewer than 250 employees and which are independent from larger companies. Moreover, their annual turnover may not exceed €50 million, or their annual balance sheet total exceeds €43 million. This definition is critical in establishing which companies may benefit from EU programmes aimed at SMEs, and from certain policies such as SME-specific competition rules.

[11] European Commission, Analysis of Competitiveness, The Observatory of European SMEs http://ec.europa.eu/enterprise/enterprise_policy/analysis/observatory_en.htm

five priority areas, covering the promotion of entrepreneurship and skills, the improvement of SMEs' access to markets, cutting red tape, the improvement of SMEs' growth potential and strengthening dialogue and consultation with SME stakeholders (Schmiemann, 2006:1).

Within the EU, SMEs account for 99 % of all enterprises. SMEs provide about 100 million jobs and in some sectors account for more than three-quarters of all jobs (Table 2.4). Within European firms, the vast majority (%80.5) are micro enterprises. By contrast, large enterprises accounted for only 0.8 % of all enterprises. So, the vast majority of enterprises in EU-27 are (99 %) are SMEs. In 2005, SMEs represented 99.0 % of all enterprises, employing 59.3 % of workforce and generating 57.6 % of its value added. The relatively few large enterprises employed 40.6 % of the workforce within the EU's manufacturing industry. A micro enterprise creates 20.9 % of value added, while LSEs creates the highest value added (42.4 %) than SMEs. Although LSEs represent only 0.8 % of the total number of enterprises in 2005, this suggests that LSEs create relatively more value added than do their smaller counterparts.

Table 2.4: Key Indicators for Enterprises in Manufacturing Industry, EU-27, 2005 (% of total)

	Micro	Small	Medium	SMEs	Large
Number of enterprises	*80.5*	*15.0*	*3.6*	*99.0*	*0.8*
Persons employed	*14.0*	*20.5*	*24.8*	*59.3*	*40.6*
Value added at factor cost	*20.9*	*18.9*	*17.8*	*57.6*	*42.4*
Apparent labor productivity (Gross value added per person employed)	*52.8*	*75.7*	*90.4*	*76.4*	*134.7*

Source: Eurostat, Industry, Trade and Services Statistics, Annual enterprise statistics broken down by size classes, Summary Indicators: employment size classes for EU25/EU27 (all Nace activities) http://epp.eurostat.ec.europa.eu/

As shown in Table 2.5, sectors of industry differ significantly, primarily as a result of the nature of the production processes in these industries. Within the industry, metal products; food products and beverages; furniture and publishing and printing are the industries with the largest number of enterprises. Further, besides

recycling, the manufacture of fabricated metal products and of wood products recorded high shares of sectoral employment and value added among SMEs.

Table 2.5: Key indicators on SMEs in the EU's manufacturing industry, 2005*, % share of SMEs in sectoral total

	Number of enterprises	Number of persons employed	Value added
-Industry	**99.0**	**57.1**	**42.3**
Coal & lignite; extraction of peat	94.8	5.3	7.1
Extraction of crude petroleum & natural gas	93.6	:	29.5
Mining of uranium & thorium ores	:	:	:
Mining of metal ores	90.9	7.9	:
Other mining & quarrying	99.2	81.1	74.8
Food products & beverages	99.1	63.0	47.1
Tobacco products	79.0	15.6	6.3
Textiles	99.2	71.5	72.3
Wearing apparel; dressing; dyeing of fur	99.7	73.6	73.3
Tanning, dressing of leather; luggage	99.7	79.1	78.3
Wood & wood products	99.5	84.4	78.1
Pulp, paper & paper products	97.3	53.4	41.5
Publishing, printing, repro. of recorded media	99.4	72.1	59.8
Coke, refined petroleum & nuclear fuel	89.8	13.9	6.9
Chemicals & chemical products	95.8	35.5	25.6
Rubber & plastic products	98.9	35.5	25.6
Other non-metallic mineral products	99.1	63.2	53.4
Basic metals	95.4	32.9	25.8
Metal products, except machinery & equip.	99.8	83.2	78.4
Machinery & equipment n.e.c.	98.8	57.1	51.2
Office machinery & computers	99.1	47.2	33.3
Electrical machinery & apparatus n.e.c.	99.2	43.0	37.8
Radio, TV & communication equipment	98.4	34.4	23.2
Medical, precision & optical instruments	99.4	65.5	51.8
Motor vehicles, trailers & semi-trailers	93.9	17.3	12.3
Other transport equipment	98.2	27.7	16.3
Furniture; manufacturing n.e.c.	99.1	75.8	73.0
Recycling	100.0	88.5	86.7
Electricity, gas, steam & hot water supply	96.3	16.8	17.6
Collection, purification & distribution of water	96.5	35.8	33.1

Source: Schmiemann, M. (2008) Enterprise by size class- overview of SMEs in the EU, Eurostat Statistics in Focus, 31/2008, p.2 *Including rounded estimates; the rounding of estimates may result in differences between aggregate totals and the sum of their component activities.

2.3.2 Industrial Concentration in the EU Manufacturing Industry

Industrial concentration which is mainly defined as the number of buyers and sellers in a market, indicates the potential degree of competition in the market. In the EU, the establishment of the single market have changed the conditions of competition by facilitating market entry by new firms, elimanating the least efficient firms and by reducing the ability of European firms to segment national markets geographically. Thus, the net effect of an increase in market size must be a rise in firm numbers and thus, reduced concentration.

At the national level, market entry of foreign firms would probably be a more important factor than the elimination national firms and a decline in overall concentration levels should be expected. At the EU level as a whole, however, mutual entry does not imply an increase in the total number of firms. Firm failures or take-overs associated with market integration are therefore expected to lead to an increase in industrial concentration. Nevertheless, the smaller number of firms present on European markets would be expected to compete more heavily across borders.

Matraves and Rondi (2005) shows that the concetration tendency by using the indicator of C5[12] in the EU between 1987 and 1997 remained relatively stable over the decade (one percentage point of increase), inter-industry differences in changes and levels of concentration reveal considerable variation between industry types. They also find that EU concentration is much higher in Type 2 than in Type 1 industries, a result consistent with the standard results on the determinants of concentration[13] (Table 2.6).

[12] The size of the firm's operations in any given industry is the value of sales of goods produced in that industry - i.e. the firm's output in that industry. Using Eurostat data on aggregate industry turnover, the 5-firm concentration ratio (CR5- the five largest EU producers in at least one manufacturing industry) for each industry in 1987 and in 1997 is calculated.

[13] Manufacturing industries can be split into two types: Type 1 and Type 2. Type 1 industries are characterized by homogeneous and horizontally differentiated products, Type 2 industries by vertically differentiated products.

Table 2.6: Concentration by Industry Type (1987 and 1997)

	Number of Industries	$C5_{87}$	$C5_{97}$
Full sample	67	0.253	0.263
Type 1 – Homogenous Products	30	0.169	0.180
Type 2 – Differentiated Products	37	0.321	0.333

Source: adopted from Matraves, Catherine and Rondi, Laura (2005) Product Differentiation, Industry Concentration and Market Share Turbulence, *Ceris-Cnr, W.P. No. 14/2005*, p.22.

It can be analyzed industry by industry and so it can be seen whether industries have become more or less concentrated. Midelfart-Knarvik et al. (2000) divide the 36 manufacturing sectors into 5 groups according to the following criteria: first they took the twelve most concentrated industries in 1970/73; then they divided this group between those that were still among the twelve most concentrated in 1994/97, and those that had left the top 12. Similarly, they took the 12 least concentrated industries in 1970/73 and divided them into those which remained among the 12 least concentrated in 1994/97, and those which had left this group. Industries that meet none of these criteria form a residual group. Table below lists the industries that form each group. Industries in the category CC were the most spatially concentrated in both 1970/1973 and 1994/1997, and industries in category CD were initially concentrated but became dispersed by 1994/1997.[14]

Table 2.7 shows the changes in concentration ratios in European manufacturing industry. The six industries in this group, motor vehicles, motorcycles, aircraft, electrical apparatus, chemicals nec. and petroleum and coal products were among the most concentrated industries in 1970-1973 and have remained so through to 1994-1997. However, there are some differences within the group. Thus, while motor vehicles, motorcycles and petroleum and coal products experienced a slight increase in concentration after 1991, aircraft, electrical apparatus and chemicals have recently become slightly more dispersed.

[14] This empirical analysis is conducted with a large hand-collected database comprised of the 223 manufacturing firms that are the industry leaders in the EU in 1987 and 1997.

Table 2.7: Industries grouped by levels and changes in concentration

Concentrated industries that have remained concentrated over time; (CC)	*Concentrated industries that have become less concentrated; (CD),*
Motor Vehicles Motor Cycles Aircraft Electrical Apparatus Chemical Products NEC Petroleum & Coal Products	Beverages Tobacco Office & Computing Machinery Machinery & Equipment Radio-TV & Communication Professional Instruments
Dispersed industries that have become more concentrated over time; (DC)	*Dispersed industries that have stayed dispersed; (DD)*
Textiles Wearing Apparel Leather & Products Furniture Transport Equipment NEC	Food Wood Products Paper & Products Printing & Publishing Metal Products Non-Metallic Minerals NEC Shipbuilding
Residual group (R).	
Footwear Industrial Chemicals Drugs & Medicines Petroleum Refineries Rubber Products Plastic Products Pottery & China Glass & Products Iron & Steel Non-Ferrous Metals Railroad Equipment Other Manufacturing	

Source: Midelfart-Knarvik, K-H., Overman, Henry G., Redding, Stephen and Venables, Tony (2000) The Location of European Industry. Technical Report. Number 142. European Commission, Directorate-General for Financial Affairs, Brussels. p.19.

There is also a group of industries that were initially very concentrated, but which have become more dispersed over time. This group comprises office and computing machinery, machinery and equipment, radio, TV and communication equipment, professional instruments, beverages and tobacco. Textiles, wearing apparel, leather and products, furniture and transport equipment form the third group of industries. In 1970-1973 they were all among the most dispersed industries in the EU, but have become increasingly geographically concentrated up till 1994-1997. Most of the increase took place prior to 1991. The first three industries are those where European integration appears to have allowed the Southern European countries to exploit their comparative advantage. Food products, wood products,

paper and products, printing and publishing, non-metallic minerals nec., metal products, and shipbuilding were initially among the 12 least concentrated EU manufacturing industries, and have remained so throughout the 1980s and 90s. The residual group contains the industries that were the 12 medium concentrated industries in 1970. A number of these industries, like railroad equipment, glass and products, iron and steel and plastic products have remained in this medium concentrated group up till 1997.

2.3.3 FDI in the EU Manufacturing Industry

Foreign direct investment (FDI) is also an important indicator that provides information regarding the structure of manufacturing industry. The size and composition of FDI is important in the competitiveness of the manufacturing sector.

Investing abroad has been an important factor in the internationalization of economic activities. Hence it represents the international dimension of sectoral competitiveness. FDI is the category of international investment in which an enterprise resident in one country acquires a stock or an asset ownership of at least 10 % in an enterprise resident in another country. FDI may take place through the complete or partial purchase of an existing firm via a merger or an acquisition or through the establishment of an entirely new firm. Mergers are the most common way for multinationals to do FDI. In the global context, FDI inflows increase in both developed and developing countries in recent years. Similarly, as market integration becomes more efficient, European markets become more attractive for foreign firms. The EU is a principal outflow and inflow area of FDI.

In the past decades, the geography of FDI has undergone some major shifts. For instance; the share of the EU, Japan and the US (the Triad) in total world inward FDI flows and stocks has fluctuated at around 60-70%. Most notably, within these

countries, there has been a marked shift towards the EU. Within the EU, market integration fosters the flows of international investments, where a significant part of EU FDI consists of intra-EU investment. For instance, new member states received huge amount of FDI coming from the EU states. On the contrary, the importance of the US has declined both in terms of inward and outward FDI flows and stocks. On the other hand, Japan, which had emerged as an important source of FDI in the 1980s, has declined considerably in importance as an outward investor, but gained somewhat as a recipient over the last decades.

Table 2.8: Extra-EU FDI inflows by economic activity, 2001–2004 (EUR million)

	2001	2002	2003	2004	2001-2004
Mining and quarrying	-388	2 992	-1 037	-3 086	-1 519
Manufacturing	15 033	20 703	17 633	10 850	63 949
-Food products	-878	1 778	3 306	3 862	8 068
-Textiles and wood activities	1550	10 221	5 561	-5 763	11 569
-Petroleum, chemical, rubber, plastic products	369	1 161	9 041	5 797	16 368
-Metal and mechanical products	2 747	4 213	245	1 007	8 212
-Vehicles and other transport equipment	309	2 261	-4 383	2 652	839
Services	131 483	96 671	102 891	34 292	365 337
Rest of the sectors*	-22 350	6 201	4 054	11 286	-809
Total	123 778	126 567	123 541	53 072	426 958

Source: Eurostat (2007b) European Union foreign direct investment yearbook 2007, Data 2001-2005, p.96 * Rest of the sectors includes: agriculture and fishing, electricity, gas and water, construction, private purchases and sales of real estate, and unallocated.

As shown in Table 2.8, EU FDI inflows from extra-EU countries amounted to EUR 53 billion in 2004, after a sharp decrease from EUR 123 billion in 2003. This drop was due to a general decrease in almost all sectors of the economy and particularly in services which is accounted for the largest share of total FDI inflows. Services accounted for a large proportion of inflows and share of services in extra-EU inflows reached an average of almost 86 % in the period 2001-2004. On the contrary, the share of manufacturing sector in extra-EU inflows received only 15 % of total FDI flows. In 2004, manufacturing sector accounted for the second largest share of total extra-EU inflows. In the period 2001-2004, the most targeted industry by foreign investors in manufacturing sector was petroleum. In short, observing EU

FDI by industry, services sector ranked first in terms of importance and manufacturing industry ranked in the second place for the period 2001-2004.

Table 2.9: EU-FDI inward flows from major partners 2001-2004 (EUR million)

		2001	2002	2003	2004	2001-2004
Extra-EU	Manufacturing	12%	16 %	14 %	20 %	15 %
	Services	106%	76 %	83 %	65 %	86 %
	Other Sectors	-18%	7 %	2 %	15 %	-1%
	Total	123 778	126 567	123 541	53 072	426 958
US	Manufacturing	12%	12 %	10 %	48 %	13%
	Services	85%	78 %	84 %	41 %	81 %
	Other Sectors	3%	10 %	5%	11 %	6 %
	Total	83 182	57 609	51 935	9 292	202 018
	% of extra-EU	67%	46%	42 %	18 %	47 %
Canada	Manufacturing	17%	4%	6 %	-5 %	11 %
	Services	88%	78%	94 %	119 %	83 %
	Other Sectors	-6%	18%	0 %	-14 %	5 %
	Total	5 825	4 019	12 699	-3 802	18 741
	% of extra-EU	5 %	3 %	10 %	-7 %	4 %
Japan	Manufacturing	18 %	27 %	32 %	10 %	21 %
	Services	83 %	73 %	61 %	77 %	75 %
	Other Sectors	-1 %	0 %	7 %	13 %	4 %
	Total	7 988	8 331	4 002	7 513	27 834
	% of extra-EU	6 %	7 %	3 %	14 %	7 %
EFTA	Manufacturing	23 %	8 %	12 %	27 %	16 %
	Services	206 %	95 %	90 %	65 %	93 %
	Other Sectors	-129 %	-4 %	-2 %	8 %	-9 %
	Total	4 377	15 566	22 235	16 418	58 686
	% of extra-EU	4 %	12 %	18 %	31 %	14 %
Other partner countries*	Manufacturing	7 %	25 %	23 %	3 %	17 %
	Services	178 %	67 %	76 %	79 %	93 %
	Other Sectors	-85%	8 %	1 %	18 %	-10 %
	Total	22 406	41 042	32 580	23 651	119 679
	% of extra-EU	18 %	32 %	26 %	45 %	28 %

Source: Eurostat (2007b) European Union foreign direct investment yearbook 2007, Data 2001-2005, p.101, * Other partner countries is the difference between extra-EU and United States, Canada, Japan and EFTA. The negative percentages in the table are due to disinvestments./ Due to rounding, the sum of all shares does not always equal 100 %.

Over the period 2001-2004, EU FDI flows were characterized by the strong preference for the services sector shown by all the major partners. Thus, services accounted for 86 % of total FDI inflows, followed by manufacturing with a share of only 15 % of total FDI inflows. In 2004, the EFTA countries, Canada and Japan had high FDI inflows to services in 2004; 65%, 119% and 77% respectively. The manufacturing attracted high EU FDI inflows from Japan with an average of 21 %, followed by the other partner countries with an average of 17 % for cumulated flows. In 2004, 48 % of FDI inflows from the US targeted manufacturing activities, whereas EFTA invested 27 % (Table 2.9).

2.3.3 R&D, Innovation and Technology in the EU Manufacturing Industry

The rapid pace of technological development and the need of remaining competitive in an increasingly knowledge-based global world requires firms to focus even more on R&D, innovation and technology in order to achieve the transition from resource based to knowledge-based manufacturing. The economic performance of countries is not only determined by macroeconomic structure but also by knowledge-related factors such as technical change or human capital in the long run. In this context, innovation, R&D and technology play a key role in determining the structure and performance of EU industries. Moreover, they are essential components of competitiveness. R&D efforts are considered to be one of the keys to future competitiveness of the EU. In March 2000, the Lisbon European Council set the objective of becoming *the most competitive and dynamic knowledge-based economy in the world by 2010*. Two years later the Lisbon objectives are set, in March 2002, Barcelona European Council agreed that investment in European R&D must be increased with the aim of approaching 3 % of GDP by 2010. Furthermore, it called

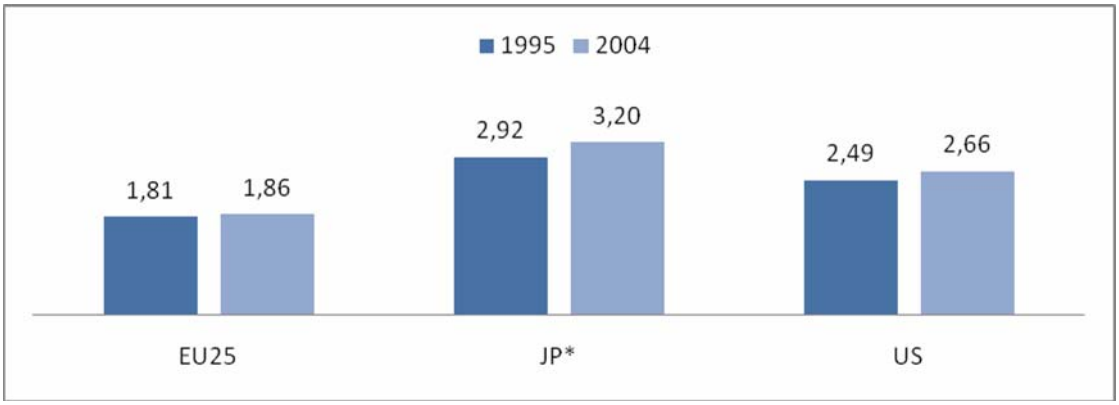
for an increase of the level of business funding to two-thirds of total R&D investment. Thus, competitiveness of the EU is also strongly linked to its position in R&D, innovation and technology. Indeed, technological differences of countries may explain much of the variation in productivity between them.

Over the recent years, R&D efforts and technological innovation have been one of the crucial determinants that have contributed substantially to the strong US economic performance. According to European Innovation Scoreboard[15] (EIS) 2007, Sweden, Finland, Denmark, Germany and UK are the most innovative EU countries and ahead of the US. According to EIS, the innovation gap between the EU and the US and Japan has been decreasing but remains significant. The comparison with the US shows that an important overall lead continues to exist over the EU and that the overall positive catching up process visible in particular in ICT investments, broadband penetration, early stage venture capital and international patenting has recently slowed down.

Indeed, as shown in Figure 2.5, R&D expenditures are lagging behind in the EU compared to the US and Japan. According to the Eurostat data, R&D expenditure as a percentage of GDP in the EU-25 stood at 1.86 % in 2004. R&D intensity has remained significantly lower in the EU than in both Japan (3.20) and the US (2.66). Thus, as EEAG report (2007:37) state that with only three years to go until 2010, the EU is still far off meeting Lisbon target for R&D spending and the progress made so far is very modest. R&D expenditures in both the government and the business sector still need to rise substantially.

[15] The European Innovation Scoreboard is the instrument developed at the initiative of the European Commission, under the Lisbon Strategy, to provide a comparative assessment of the innovation performance of EU-27. It includes innovation indicators and trend analyses for the EU-27 as well as for Croatia, Turkey, Iceland, Norway, Switzerland, Japan, the US, Australia, Canada and Israel. The EIS indicators are grouped in different categories to capture key dimensions of the innovation process and are assigned to five dimensions: Innovation drivers, knowledge creation, innovation and entrepreneurship, applications and intellectual property.

Figure 2.5: R&D expenditure relative to GDP, 1995 and 2004 (%)



Source: Eurostat (2006) Statistical Portrait of the European Union 2007, 50 years of the Treaty of Rome establishing the EEC, p.31 *2003, instead of 2004.

The EU countries spent around 2 % of their GDP on R&D in 2003. As seen in Table 2.10 variation within the EU is large. Among EU states Sweden (3.82 %), Finland (3.45 %), Denmark (2.43 %), Germany (2.51 %), France (2.12 %) and Austria (2.45 %) spend more than 2%, with the three Nordic countries as the biggest R&D spenders. On the contrary, the southern member states and the new members spend much less on R&D. The Member States with the lowest R&D intensity were Southern Cyprus (0.42%), Romania (0.46%), Bulgaria (0.48%) and Slovakia (0.49%). It is a fact that, these countries have some distance to meet the 3% Lisbon target on R&D.

Table 2.10: National R&D Expenditures in 2006 (as a percentage of GDP)

Country	R&D Expenditures	Country	R&D Expentidures	Country	R&D Expenditures
EU-27	**1.84**	Ireland	1.32	Finland	3.45
Germany	2.51	Austria	2.45	Bulgaria	0.48
France	2.12	Greece	0.57	Estonia	1.14
UK	1.76*	Portugal	0.81*	S.Cyprus	0.47
Italy	1.10*	Poland	0.56	Romania	0.46
Spain	1.16	Hungary	1.00	Lithuania	0.80
Belgium	1.83	Slovakia	0.49	Latvia	0.69
Luxembourg	1.47	Slovenia	1.59	Sweden	3.82
Denmark	2.43	Malta	0.55		
Netherlands	1.72	Czech Republic	1.54		

Source: Eurostat (2008c) Science, Technology and Innovation in Europe, New Release, 34/2008 - 10 March, p.2, *Data for 2005.

Within the EU, sectoral variation in R&D is also large. As shown in Table 2.11, 60% of all R&D expenditures in the EU take place in medium-high technology manufacturing which consists of machinery and equipment, excluding electronic equipment, and chemicals, rubber and plastics. High technology manufacturing which is the most R&D intensive sector as a share of value added and consisting of electronic equipment is 21.3% of all R&D expenditures. R&D is also relatively intense in medium-high technology manufacturing. In the energy sector and medium-low technology manufacturing the R&D intensity is about the macro average. R&D expenditure is substantially lower in services.

Table 2.11: R&D expenditures in the EU per sector, 2003

Sector	R&D intensity (% of sectoral value added)	Share of total R&D expenditures
Agriculture	0.9	1.1
Energy	1.8	1.8
Low tech manufacturing	0.7	2.7
Medium-low tech manufacturing	1.9	3.5
Medium-high tech manufacturing	12.9	60.0
High tech manufacturing	21.1	21.3
Transport services	0.2	0.5
Other commercial services	0.3	5.9
Other services	0.3	3.2
R&D	0.0	0.0
Total	2.0	165.5 (billion)

Source: Gelauff, G.M.M. and Lejour, A.M. (2006) The New Lisbon Strategy: An Estimation of the Economic Impact of Reaching Five Lisbon Targets, Report prepared for the Enterprise and Industry Directorate-General of the European Commission, Brussels, p.82.

As set by the Lisbon strategy, the EU's 2010 targets in R&D, is to achieve R&D intensity of 3 % of GDP as well as having two thirds of R&D spending coming from the private sector. However, according to Gelauff and Lejour's projection (2006:82-83), the overall R&D intensity in the EU falls from 2% in 2003 to 1.1% in 2040 for three reasons: Firstly, the EU economy shifts towards a services economy between now and 2040. This restructuring explains about half of the decline. Services sectors are less R&D intensive than manufacturing. The shares of high

technology and medium-high technology manufacturing in the economy are more or less halved thereby reducing the demand for R&D substantially. The second reason is about the aggregation over EU member states. Since new member states grow faster than the older states, their R&D intensities are lower. So that, the sectoral R&D intensity in the EU will fall over time even if the R&D intensities of the individual countries remain constant. The third reason is related with increasing costs of R&D. As a result, the volume of R&D investment falls because of substitution from R&D towards labor in production. Therefore, the R&D expenditure share (investment price times R&D volume divided by the value of GDP) declines. Quantitatively, the R&D intensity in high technology manufacturing decreases from 21.1% in 2003 to 17% in 2040 and in medium-high technology from 12.9% to 11%. This third effect is smaller for a lower elasticity of substitution between R&D on the one hand and capital and labor on the other hand.

2.3.4 Specialization in Manufacturing Industry in the EU

In a general manner, specialization is expected to increase productivity and thus competitiveness. Indeed, specialization affects the level of welfare, economic growth, competitiveness, as well as the degree of macroeconomic convergence across economies. On the contrary, specialization might have some negative impacts if industrial structures become too asymmetric, making vulnerable to industry specific shocks. Aiginger (2000:82) defines specialization of a country as 'the distribution of the shares of an industry in total manufacturing in a specific country'. For instance, in Sweden paper industry has a high share in the value-added of total manufacturing, thus Sweden is said to be specialized in paper industry.

The EU, in general, is highly specialized in machinery and equipment, fabricated metal products, food and beverages and chemicals. As of 2001, the largest

share of value-added within total manufacturing was generated by manufacture of food products and beverages with a share of 11% on the EU-level. On the other hand, there is a similar pattern in terms of persons employed. For the case of EU-25 however 13% of the persons employed are active in manufacture of food products and beverages with the largest share of value-added (Storm, 2004:3).

Table 2.12 provides the top-2 countries contributing to EU-25 value-added per NACE Rev. 1 2-digit level. Among the EU states, Germany, France, the UK and Italy are found to be the countries contributing most to the total value-added of the EU-25. Germany does not belong to the top-2 countries contributing to the EU value-added for manufacture of wearing apparel; dressing and dyeing of fur and tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear; for divisions 21 out of 23 divisions of the manufacturing sector, Germany however contributes most or second-most. France can be found for 7 divisions among the two countries contribution most to the total value-added of the EU whereas for the UK this is 10 times out of the 23 divisions and for Italy 8 times.

Table 2.12: Top-2 countries contributing to EU-25 value-added per NACE division

NACE Rev.1 Division	Country	Share (%) of EU-25 value-added in division
Manufacture of food products and beverages	Germany UK	18.5 17.3
Manufacture of tobacco products	Germany UK	21.5 18.9
Manufacture of textiles	Italy Germany	29.0 14.0
Manufacture of wearing apparel; dressing and dyeing of fur	Italy France	32.0 12.7
Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear	Italy France	45.2 11.7
Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	Germany Italy	20.4 15.2
Manufacture of pulp, paper and paper products	Germany UK	20.7 12.5
Publishing, printing and reproduction of recorded media	UK Germany	26.5 21.5
Manufacture of coke, refined petroleum products and nuclear fuel	Germany UK	24.3 17.1
Manufacture of chemicals and chemical products	Germany France	24.9 15.3
Manufacture of rubber and plastic products	Germany UK	27.0 16.8
Manufacture of other non-metallic mineral products	Germany Italy	20.9 16.4
Manufacture of basic metals	Germany Italy	29.2 12.6
Manufacture of fabricated metal products, except machinery and equipment	Germany Italy	27.5 18.5
Manufacture of machinery and equipment n.e.c.	Germany Italy	37.4 17.2
Manufacture of office machinery and computers	Germany UK	22.3 22.0
Manufacture of electrical machinery and apparatus n.e.c.	Germany France	39.0 12.0
Manufacture of radio, television and communication equipment and apparatus	France Germany	17.6 17.4
Manufacture of medical, precision and optical instruments, watches and clocks	Germany UK	32.7 17.7
Manufacture of motor vehicles, trailers and semi-trailers	Germany France	47.1 14.3
Manufacture of other transport equipment	UK Germany	31.1 20.7
Manufacture of furniture; manufacturing n.e.c.	Germany UK	21.3 17.7
Recycling	France Germany	25.3 19.9

Source: Storm, H. (2004) Specialization in manufacturing in the EU, Statistics in Focus, 41/2004, p.5

There are substantial disparities between European countries as regards the importance of different activities within the economy. In most cases, in particular, within industrial activities, these disparities has widened with the recent enlargement of the EU. Table 2.13 shows which two divisions for each EU state contribute most to the total value-added for that division on EU level. For Germany, the highest contribution came from manufacture of motor vehicles, trailers and semi-trailers with 47% whereas for Malta it is manufacture of radio, television and communication equipment and apparatus with 0.4% of the EU total.

Table 2.13: Top-2 NACE divisions per country contributing to EU-25 value-added

Country	NACE Rev.1 division	Share of EU-25 value-added in division (%)
Belgium	Manufacture of chemicals and chemical products Recycling	5.6 5.3
Czech Republic	Manufacture of other non-metallic products Manufacture of basic metals	1.8 1.6
Germany	Manufacture of motor vehicles, trailers and semi-trailers Manufacture of electrical machinery and apparatus n.e.c.	47.1 39.0
Denmark	Manufacture of furniture; manufacturing n.e.c. Manufacture of tobacco products	2.8 2.7
Estonia	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials Manufacture of wearing apparel; dressing and dyeing of fur	0.4 0.3
Greece	Manufacture of coke, refined petroleum products and nuclear fuel Manufacture of wearing apparel; dressing and dyeing fur	3.9 1.5
Spain	Manufacture of other non-metalic products Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear	13.1 10.1
France	Recycling Manufacture of office machinery and computers	25.3 21.7
Ireland	Manufacture of office machinery and computers Manufacture of chemicals and chemical products	11.3 7.6
Italy	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear Manufacture of wearing apparel; dressing and dyeing of fur	45.2 32.0
S.Cyprus	Manufacture of tobacco products Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	0.2 0.2
Latvia	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials Manufacture of textiles	1.0 0.3
Lithuania	Manufacture of wearing apparel; dressing and dyeing of fur Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	0.5 0.3
Luxembourg	Manufacture of basic metals Manufacture of rubber and plastic products	0.8 0.5
Hungary	Manufacture of coke, refined petroleum products and nuclear fuel Manufacture of radio, television and communication equipment and apparatus	1.5 1.5
Malta	Manufacture of radio, television and communication equipment and apparatus Manufacture of wearing apparel; dressing and dyeing of fur	0.4 0.2
Netherlands	Publishing, printing and reproduction of recorded media Manufacture of coke, refined petroleum products and nuclear fuel	5.8 5.4
Austria	Manufacture of radio, television and communication equipment and apparatus Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	5.1 4.9
Poland	Manufacture of wearing apparel; dressing and dyeing of fur Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	5.5 5.4
Portugal	Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear Manufacture of wearing apparel; dressing and dyeing of fur	5.4 4.6
Slovenia	Manufacture of wearing apparel; dressing and dyeing of fur Manufacture of textiles	0.6 0.5
Slovakia	Manufacture of basic metals Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear	0.9 0.6
Finland	Manufacture of radio, television and communication equipment and apparatus Manufacture of pulp, paper and paper products	14.5 10.6
Sweden	Manufacture of pulp, paper and paper products Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	9.4 5.4
UK	Manufacture of other transport equipment Publishing, printing and reproduction of recorded media	31.1 26.5

Source: Storm, H. (2004) Specialization in manufacturing in the EU, Statistics in Focus, 41/2004, p.5.

2.4 Regulatory Policies to Guarantee Competition within the EU

Over the last decades, European integration process had led to dramatic policy changes in the EU member states. Those policy changes perceived as a necessary reaction to the loss of competitiveness and the pressures of economic globalization. In order to increase their competitiveness, the EU member states have been engaged in product market regulations with notable reforms including the Single Market Program in 1992 and the Lisbon Agenda in 2000.

Within the EU, the interest in the politics of regulation took off with the single market initiative which is regarded as the most far reaching and ambitious regulatory project in Europe: the creation of a common market and the full accomplishment of the four freedoms. With the launch of the Lisbon Agenda, the key competitiveness objective shifted toward the quality of the regulatory environment at both national and EU level. Subsequently, work aimed at achieving 'better regulation' began in 2002 under a European Commission action plan[16] which is an important element in improving the regulatory environment of the EU that supports European firms to compete more effectively in a highly competitive global environment. As laid down in a Communication on '*Better Regulation for Growth and Jobs in the European Union'* (European Commission, 2005c:3), the need to produce better regulation and improve the quality of regulation is an important element of EU competitiveness strategy. From this point of view, Better Regulation boosts productivity and employment significantly, thus contributing to EU's growth and competitiveness.

The EU has developed a broad regulatory strategy to create an improved regulatory system and thus provide a more effective, efficient and transparent competitive environment over the last decades. The initiative on better regulation has first started in the Edinburgh European Summit of December 1992 when the heads of

[16] European Commussion (2002a) Action Plan "Simplifying and Improving the Regulatory Environment", Communication from the Commission, COM(2002) 278 final, Brussels

governments pledged to improve the regulatory environment as one of the EU's main priorities. The 1990s, however, were disappointing years. Proposals, ideas, pilot projects failed to produce a coherent set of actions around specific problems at the EU level (Radaelli, 2006:5). In the years that followed, European Commission developed a strategy for further coordinated action to simplify and improve the EU's regulatory environment. In June 2001, in its White Paper on European Governance, the Commission laid the foundations for the development of simplified and improved EU regulatory environment (European Commission, 2001:24). Later in June 2002, the Commission adopted a Better Regulation Action Plan for simplifying and improving the regulatory environment.

In a general context, better regulation is a broad strategy to improve the regulatory environment in Europe. Better regulation strategy aims to simplify existing legislation and improve the quality of new legislation by better evaluating its possible impacts on economic social and environmental issues. Additionally, the internal market needs to be supported by better regulation; in particular with strong enforcement of competition rules, an efficient merger control regime and less and better targeted state aid. Much of European rules and regulations were developed to make the single market work efficiently. European legislation has been effective in removing barriers to competition and diverse national regulations.

In the EU, the development of regulation as a policy evolves much further than simply liberalizing markets. It includes important shifts in public ownership and emergence of regulatory agencies. Also, the EU has turned into a "regulatory state" over time. Regulation, in addition to correct market failures, concerns provision of rights, which is mainly about the distribution of income and wealth. In line with market integration process, regulations have played a crucial role in European politics and there has been an impressive growth of EU regulation. Thatcher (2001:304) emphasize that the rapid and sustained expansion of regulation in Europe was driven by two factors: (i) in a number of risk-associated policy areas (such as labor and health policy and consumer and environmental protection), protective norms and standards have taken a greater importance. (ii) with the privatization of

public enterprises and the liberalization of markets, the regulatory monitoring of market power become more significant (quoted from Eberlein and Grande, 2005:89-90).

The EU regulatory governance has witnessed also an extensive EU product market reforms such as the elimination of barriers to trade, the liberalization of network industries, reductions in state aid, reforms of the competition policy and the deregulation of product markets. As Cincera and Galgau (2005:3) suggest that one of the main aims of these reforms were to increase productivity. Indeed, since 1995, the sharp decrease in the EU productivity growth rates (compared with those of the US) has led the EU GDP per capita to be only 70% of the US levels. It has been recognized that anticompetitive regulatory policies in product markets have a negative impact on productivity. As Nicoletti and Scarpetta (2003:12) indicate, regulatory reforms are likely to affect corporate governance structures, including public versus private ownership, entrepreneurial partnerships and market access. In turn, good governance, strong incentives and competitive pressures are likely to encourage innovation and the adoption of productivity enhancing improvements.

The regulatory environment is developed both by the EU and its member states. In the context of the EU, national markets have developed different regulations. Thus, as a complement to EU action, Member States should also pursue their own better regulation initiatives. In this context, the European Commission gives high priority to simplify and improve the regulatory environment within the EU. Thus, the process of economic integration in Europe has aimed to overcome the different national rules and regulations that existed in the member states through market intervention since harmonization has been a key feature of the market integration process. However, a Communication on *'A pro-active Competition Policy for a Competitive Europe'* (2004c:5), cites that although important progress have been achieved in terms of market integration, many economic sectors in the EU remain fragmented and are characterized by weak competition and persistently high prices that harm industries and consumers alike. In this context, it is important to mention that one of the main motivations behind the single market programme is

intended to overcome these differences. Indeed, the EU countries would benefit from a uniform regulatory framework allowing a level playing field among European firms. However, even though the single market has standardized economic regulations and removed barriers to competition among European firms, Blanchard (2004:4) argues that the EU clearly still suffers from inefficient regulations in goods, financial and labor markets. Thus, the focus of this part is to analyze the efforts of the EU to harmonize the diverse array of national regulations and standards that affect the competitive environment of industry sector.

Most government policies and measures affect industries in some way; so that, the boundaries between industrial, regulatory and competition policy and other policies (such as regional policy, structural policy, macroeconomic policy and technology policy) are not always clear. Indeed, the effect of industrial and regulatory policies is a controversial topic, whether in the EU or the rest of the world. The creation of a single market with common rules has considerable industrial policy implications. Pelkmans (2006) defines industrial policy as government incentives for the supply side. In other words the definition of industrial policy comprises all government interventions aiming specifically at influencing industrial change by affecting the incentives to produce industrial goods or incentives to enter/exit specific industrial goods markets[17] (Pelkmans, 2006:272). Industrial policy refers to a set of measures taken by a government that aim at influencing a country's (industrial) performance towards a desired objective and the measures they take to implement this objective. On the other hand, competition policy refers to the stance governments adopt towards competition (and cooperation) between firms and (in) industries and the measures they take to implement their objectives. And it usually attempts to influence the degree of competition (or monopoly) in industries. From this point of view, the main objective of industrial policy is to create a competitive and efficient industrial structure. In the case of the EU, in the last decades this process has been strengthened by privatization efforts that switch less efficient nationalized industries from the public to the private sector and ensuing regulatory

[17] Industrial policy has several dimensions and it is necessary to be explicit about how it is defined and what falls outside its scope. In this study, we will exclude services.

efforts such as reduction of barriers to market entry. Still there are grounds for governmental intervention (thus regulations) to improve industrial performance and competitiveness by overcoming market failures. In the case of the EU, lagging competitiveness of European firms relative to the US firms spurred interest in establishing an active industrial policy at the EU level.

2.4.1 The Process of Europeanization of Regulatory Policies and Agencies

Since the mid 1980s, the regulation of markets in the EU has been transformed. In particular, market integration process has affected the relationship between the state and the market within the EU countries. In order to create a single market, the EU has sought to limit the ability of member states to exercise regulatory sovereignty. Thus, it shifted authority from the member states to the EU. As a consequence, a crucial issue for the EU has been division of decision-making power between the EU and the national levels. Decision-making power over some national policy areas has gradually been transferred from the national level to the EU level. Indeed, a key characteristic of the EU has been its unique combination of national and supranational rules and institutions.

In this context, increased attention was given particularly to the disparities between national standards and regulations. Within the EU there has been increased number of disparities at both national and regional level. Disparities over domestic regulations and standards affecting production and process methods or imports are becoming increasingly controversial. On the other hand, diverse national approaches to the regulation of products and production processes are an important source of trade conflict among member states. The effort of the EU is to coordinate the diverse national regulations, rules and standards that affect the trade and distribution of

goods and services in the region. Thus, European market integration is sought to overcome these disparities through sustained market regulation, since the positive impact of single market may be countered by national regulations which are inconsistent with single market rules or by anticompetitive business practices. Since the EU markets would be fragmented without efforts to harmonize diverse national regulations or standards and there would be no single market, EU countries have coordinated their regulatory frameworks for both products and services at the EU level. Thus, an important feature of the EU regulatory system is that it brings together different regulatory traditions.

It is an important question that who regulates in the EU: is it the nation-states or the supranational regulatory bodies? There are two main competing cases, thus Europeanization versus nationalization. According to Majone (1997:2) Europeanization of policy making is meant the increasing interdependence of national and supranational policies within the EU. In the recent years, the notions of Europeanization and regulatory state have become increasingly crucial and have been on the agenda of EU countries. Moreover, there is also increasing interest in issues of regulatory framework and in the number of regulatory institutions and in the scope of their authority. According to Olsen (2003:343) one of the conceptions of Europeanization focuses on changes to domestic institutions of governance and politics.[18] The Europeanization thesis, as put forward recently is apparently based on a delegation perspective. Scholars assert that the transition from the 'positive state' to the 'regulatory state' in EU has resulted in a transfer of governmental powers from national to supranational levels. The alternative thesis to Europeanization of regulations is the nationalization thesis. While this perspective does not dispute the necessity to regulate markets, but it maintains that regulation of markets should be at the national level. This is mainly concerned with centre around national activities and national politics. Thus, in this context, the 'regulatory state' is primarily the nation-state.

[18] For more information about different concepts of Europeanization, see Olsen, J.P. (2003) Europeanization, in European Union Politics, (ed) Cini, M., Oxford University Press, Great Britain

In Europe, the rise of the regulatory state has taken place within a unique institutional framework; a multi-level policy-making system. This has given rise to the questions of institutional design (who is to regulate?). In addition, the territorial distribution of regulatory authorities (which level should be responsible for regulation?) has become a major issue. Recently, the issue of distributing regulatory authority in the EU has mainly been analyzed through the means of delegation. In this context, why and how do the EU states delegate political authority to the supranational 'regulatory state' has been another major issue. In spite of pressures to delegate powers upwards, much of the powers are still located at the national level. Furthermore, the political resistance of member states has not allowed any far-reaching transfer of regulatory powers to a supranational level; while the EU framework of rules to which member state regulatory regimes are subject does not fully match the functional need for uniform EU rules. The resulting regulatory gap is partly filled by new types of informal institutions, the transnational regulatory networks. In certain circumstances, these regulatory networks give rise to the informal Europeanization of public regulation.

Delegation of regulatory powers at the EU level might arise some advantages. For instance, regulation at the EU level is less exposed to political pressure and it meets with greater credibility among members. For this reason, regulation at the EU level is considered as being more effective than national rule-making. Empirically, the emergence of the European regulatory state is associated particularly with the creation of independent regulatory authorities at the EU level and the strengthening the powers of the European Commission in the field of regulation.

European regulatory agencies are a crucial feature of regulatory framework in the EU and their importance has grown in recent years. Such agencies are seen as key elements of a new mode of governance[19] and they cumulate several powers such as making and enforcing rules, monitoring and control, and sanctioning. Delegating powers to independent agencies is crucial to enhance the credibility of long-term

[19] In Europe, the new model of governance which includes privatization, liberalization, welfare reform and deregulation were emerged in the late 1970s.

policy commitments. Thus, an effective way of enhancing the credibility of long-term policy objectives is to delegate the implementation of regulatory objectives to politically independent institutions. The creation of such agencies generates legal issues about these agencies legal basis, institutional structure, accountability, organization and the level of independence.

In the context of competition issues, European Commission (The Directorate-General for Competition) is the institution that is responsible for the implementation of EU competition policy. European Competition Network (ECN), established in 1 May 2004, is a network through which the European Commission and the national competition authorities (NCAs) in the EU states cooperate with each other. In order to enhance cooperation and ensure that the EU competition rules are applied effectively and consistently, the European Commission and the NCAs designated by the member states form together a network of competition authorities for the application in close cooperation of Articles 81 and 82 of the Treaty. The ECN consists of the 27 competition authorities within the EU and the DG Competition of the European Commission. The European Commission and the national competition authorities in all EU states cooperate with each other through the ECN. All competition authorities within the ECN are independent from one another and the decentralization of the implementation of the EU competition rules strengthens the position of the NCAs. In the field of antitrust, national competition authorities must closely co-operate with the European Commission in EU competition procedures. Since 1 May 2004, all national competition authorities are also empowered to apply fully the provisions of the Law in order to ensure that competition is not distorted or restricted. National courts may also apply directly EU antitrust rules so as to protect the individual rights conferred to citizens by the Treaty.

On the other hand, there is an increasing pressure for the establishment of common standards for the enforcement of competition policy at the international level. In addition, the EU seeks to expand multilateral cooperation on competition policy issues. Thus, the increasing importance of cooperation between competition agencies in different countries has led to the establishment of International

Competition Network (ICN) in 2001, in which the European Commission plays an active role as a founding member. The European Commission has also been among the main advocates of negotiations within the institutions such as World Trade Organization (WTO), Organization of Economic Cooperation and Development (OECD) and United Nations Conference on Trade and Development (UNCTAD) on a framework agreement on competition.

In developing common standards in the global context, the European Commission and other competition agencies around the world have made substantial progress within the ICN. In addition, it has also been among the main advocates of negotiations within WTO on a framework agreement on competition. Owing to extensive international co-operation on competition policy, driven principally by the European Commission's efforts, there is growing convergence of enforcement standards and practices across the continents.

2.4.2 Competition Policy in the EU

Economic integration widens markets for the participating countries and has dynamic effects in the field of competition. In this respect, competition encourages firms to perform profitably in wider markets. Competition policy not only promotes competition but also protects it. It creates a level playing field for the firms in the internal market and thereby also encourages new entry into markets or more efficient competitors. Furthermore, a competitive environment, protected by an effective competition policy, offers lower prices, improved products and processes, better quality and greater choice. Well-functioning markets, supported by sound competition policy frameworks at the national and EU level, are an effective system for the efficient allocation of resources. For instance, competition policy contributes to the liberalization of network industries such as telecommunications, postal

services, energy, and transport by delivering significant economic benefits to consumers and increasing innovation and investment.

Competition policy is a combination of two contrasting forces (Jovanovic, 2005:270). On the one hand, there is an argument for the concentration of business, which rationalizes production and enables economies of scale. On the other hand, it is the case for an antitrust policy, which prevents monopolization through increased competition and welfare. Thus, the challenge for governments is to achieve and maintain a dynamic balance between these two tendencies. They need to keep the best parts of each of the two opposing tendencies, avoid excessive regulation that interferes with the freedom to contract which may impair competitiveness, and employ competition policy as a tool to increase the standard of living.

Competition policy is also one of the primary economic policies of the EU impacting upon the economic performance of Europe. Indeed, it is a crucial element of a coherent and integrated policy to foster the competitiveness of the EU industries. It is the aim of the competition policy to organize the enforcement of competition rules in a pro-active way in order to create more competition and help to increase economic efficiency, productivity growth and the competitiveness of the EU economy. When the EU established in the mid 1950s, among the founding states only Germany had an anti-trust policy and a regulatory institution (Federal Cartel Office). After around fifty years of its establishment all member states have competition law and policies and regulatory institutions to implement such regulations. The establishment of the single market increased the importance of competition policy. Indeed, not only the abolishment of barriers to internal trade, but also the promotion of competition in the EU is an essential part of the Single Market Programme. Increased competition within wider European market was supposed to stimulate economies of scale, removal of X-inefficiency, exit of weak and growth of strong firms, innovation, R&D and breakdown of collusive behavior.

European competition law and policy have undergone a significant change in recent years. The new competition regulatory framework enhances the basis for a pro-active competition policy with the objectives of supporting the competitive

process in the internal market and inducing European firms to engage in competitive and dynamically efficiency-enhancing behavior. As stated in a Communication from the European Commission on *A pro-active Competition Policy for a Competitive Europe* (2004c:2) competition policy is characterized by;

(i) improvement of the regulatory framework for competition which facilitates vibrant business activity, wide dissemination of knowledge, a better deal for consumers, and efficient economic restructuring throughout the internal market; and

(ii) enforcement practice which actively removes barriers to entry and impediments to effective competition that most seriously harm competition in the internal market and imperil the competitiveness of the EU firms.

The application of EC competition rules underwent a major change as of 1 May 2004 with the introduction of the new implementing regulation, Council Regulation (EC) No 1/2003 which replaces the Regulation 17/62[20]. The implementing regulation contains procedural rules on how to apply the main EU competition provisions such as Articles 81 and 82 of the EC Treaty. European Commission is empowered to apply the prohibition rules and enjoys a number of investigative powers such as inspection in business and non business premises, written requests for information. The European Commission may also impose fines on undertakings that violate EU competition rules. Since 1 May 2004, all national competition authorities are also empowered to apply fully the provisions in order to ensure that competition is not distorted or restricted within the EU. Besides, national courts may also apply these prohibitions so as to protect the individual rights conferred to citizens.

As stated in Articles 2 and 3 of the Treaty, one of the key activities of the EU is to ensure that competition in the internal market is not distorted. In addition, Articles 81, Article 82, Article 86 and Article 87 of the Treaty deal with the

[20] Council Regulation (EEC) No. 17/62 of 6 February 1962: First Regulation implementing Articles 85 and 86 (now 81 and 82) of the Treaty, *Official Journal 013 , 21/02/1962 p.204 – 211.*

competition issues[21]. To that end, Articles 81 and Article 82 regulate the behavior of firms. Those Articles are applied by both the European Commission and the NCAs (Article 85). Article 81 refers to restrictions on competition. Article 82 prohibits the abuse of a dominant position by one or more firms. Abuses are generally grouped as exclusionary abuses, which exclude competitors from the market, and exploitative abuses, where the dominant firm exploits its market power by, for instance, charging excessive prices. On the other hand, governments may also pose a threat to the process of competition as in the case with state aids/subsidies. Thus, Article 87-9 governs the state aids issue.

Article 87 (1) concern the prohibition of state aid that distorts competition in the single market, while Article 87 (3) gives the European Commission the power to make exceptions to this prohibition. The European Commission must be notified of all cases of state aid above a certain level to be able to examine its legality and compatibility with the EU goals. Further, a special regime applies to mergers under Regulation 139/2004, the so-called EC Merger Regulation. In short, competition rules prohibit the abuse of a dominant (or monopoly) position or the creation of such a position by a merger and ensure that governments do not distort or impede competition by granting state aids.

The new regulatory setting has introduced a unified framework for the assessment of restrictive agreements affecting businesses within the EU (Art. 81) which have beneficial effects for cooperative agreements in technology licensing, distribution and other agreements concluded within the whole of the enlarged internal market. Moreover, it enables NCAs and courts, alongside the European Commission, to apply all EU antitrust rules in their entirely. The new framework is a good example of reducing the regulatory uncertainty for European industry by replacing diverse national standards by one European rule (European Commission, 2004c:9). In short, the introduction of a common single framework for competition strategies at the EU level facilitates the conclusion of cooperation agreements,

[21] The competition law of the EU, as established in Articles 85, 86, 90 and 92 of the EC Treaty, was subsequently restated (and renumbered) in Articles 81, 82, 86 and 87 of the 1999 Treaty of Amsterdam.

merger transactions and distribution and technology licensing agreements. This new regulatory framework also lead to a new economic governance in the EU for antitrust and merger control rules. Thus, it is likely to remove bureaucratic procedures, simplify the application of competition rules and reduce the administrative burden on business. The EU also aims to promote the removal of disproportionate restriction of competition in order to meet the Lisbon Strategy objectives.

Another foremost feature of EU competition policy is that it is an area where centralization of authority makes full sense and, thus, the European Commission has special responsibility for the proper operation of competition within the EU. The European Commission's approach to competition policy is based on strict rules. Thus, the EU has its own rules and regulations for market behavior which refer to the restriction of competition, abuse of the dominant position and state aids. In the following, barriers to competition, which are, cartels, abuse of dominance, state aids and mergers, will be explained in the context of the EU.

(i) Cartels

The primary objective of competition rules is to guarantee that firms compete rather than collude. Restrictive agreements such as cartels distort resource allocation and increase inefficiency. European Commission defines cartels as *"an illegal secret agreement concluded between competitors who in coordination fix or increase their prices, restrict supply by limiting their sales or their production capacities, and/or divide up their markets or consumers"*[22]. A cartel agreement may take several forms but mostly relates to *"sales prices or increases in such prices, restrictions on sales or production capacities, sharing out of product or geographic markets or customers, and collusion on the other commercial conditions for the sale*

[22]European Commission, Competition, Cartels: Overview, http://ec.europa.eu/comm/competition/cartels

of products or services"[23]. Such practices are among the most serious violations of Article 81 of the EC Treaty that prohibits agreements and concerted practices between firms that distort competition within the single market. Thus, fighting cartels has become the priority for the EU over the last decades. European Commission is the main enforcer of the rules and regulations against cartels in the EU and it has extensive investigatory powers that are established by Regulation 1/2003. Moreover, it is an administrative authority whose decisions can be appealed to the European Community Courts, namely the Court of First Instance and the European Court of Justice. These courts are both empowered to annul decisions in whole or in part and to reduce or increase fines, where this is deemed appropriate. The European Commission gives a high priority to the detection and deterrence of cartels and focuses its actions on significant hard-core cartels of mainly worldwide or European scope and involving a number of economic entities.

Exemptions to Article 81 behavior fall into three categories. Firstly, Article 81(3) which creates an exemption where the practice is beneficial to consumers, for instance, by facilitating technological advances, but without restricting all competition in the related area. In practice very few official exemptions were given by the Commission and a new system for dealing with them is currently under review. Secondly, the Commission has agreed to exempt 'Agreements of minor importance' (except those fixing sale prices) from Article 81. This exemption applies to small companies, together holding no more than 10% of the relevant market. In this situation as with Article 82, market definition is a crucial, but often highly difficult, matter to resolve. Thirdly, the Commission has also introduced a collection of block exemptions for different types of contract. These include a list of contract terms which will be permitted and a list of those which are banned in these exemptions.

As Motta (2006:16) indicates, two important changes which are worth stressing have emerged in the EU competition law. First, the European Commission has spurred a process of modernization which has led to some of its powers being

[23] European Commission, Competition: Commission action against cartels, http://europa.eu/rapid/press

given to national competition authorities and national courts, with the purpose of better employing its resources and devoting them to fundamental cases (such as cartels) rather than on minor agreements. Second, it has introduced a leniency policy which has arguably been the main novelty in the fight of cartels.

Leniency policy, first introduced in 1996, remains a very important enforcement tool in cartel cases. Under the European Commission's leniency policy, immunity from fines can be available for the first undertaking to provide evidence of a cartel to the European Commission, and a substantial reduction in fines for any subsequent applicant. Leniency programme encourages firms to provide European Commission with insider information on cartel agreements. The first firm to do so is granted total immunity from fines and the other firms that follow suit may be granted a reduction in the amount of the fine. The leniency policy has resulted in numerous applications for immunity and/or reduction of fines since 1996. The leniency programme established that a fine might have been very substantially (75-100%) reduced if a firm informed the European Commission before an investigation started; and substantially (50-75%) reduced if co-operation took place after an investigation had started, but before the European Commission had obtained sufficient grounds for initiating the procedure; in both cases, the firm had to be the first to report, terminate all cartel activities and must not have been the leader of the cartel. The fine might have been significantly (10-50%) reduced if the firm cooperated with in the investigations (for instance by not challenging the European Commission findings and allegations) without the previous conditions for more generous reduction of fines being met (Motta, 2006:16). However, this policy did not give the results the European Commission hoped for, mainly for two reasons (Motta, 2006:16); First, leniency was given in a discretionary way by the EU (rather than being automatic like in the US), and firms did not know what fines they would get until the final decision was adopted by the European Commission. This clearly reduced the benefit from disclosing evidence. Second, firms did not receive immunity if an investigation had already begun.

The Leniency Notice of 1996, which resulted in more than 80 applications, was replaced by a new Leniency Notice of 2002 under which the European Commission received a total of 104 applications for immunity and 99 applications for a reduction of fines as of 2006. In the period from 19 February 2002 until the end of 2006, the European Commission granted conditional immunity in 51 cases. Over the same period, the European Commission rejected or decided not to deal any further with 34 applications and had 13 more recent applications under scrutiny (European Commission, 2007h:12). However, it is necessary to indicate that, while the leniency programme has been a successful tool for detecting and terminating cartels, the leniency applications do not reflect the total number of cartel investigations. In December 2006 the European Commission took an important step towards uncovering and putting an end to hard-core cartels and adopted a revised Leniency Notice[24] in order to provide more guidance to applicants and to increase the transparency of the procedure.

Fines are of central importance in deterring firms from breaking competition rules and the European Commission imposes heavy fines on firms involved in a cartel agreement. Regulation 1/2003 establishes that fines of up to 10% of firm's worldwide turnover may be imposed on the guilty parties. For instance, in 2001, the European Commission fined eight vitamin companies, led by Hoffman-La Roche and BASF, a total of 855 million Euros for participating in eight distinct secret market-sharing and price-fixing cartels affecting vitamin products. The Hoffman-La Roche was imposed a fine of 462 million Euros by the European Commission, which is the second largest fine. In 2007, the European Commission has fined eleven groups of energy companies[25] a total of 750 million Euros for participating in a price-fixing cartel for gas insulated switchgear projects. Between 1988 and 2004, the companies rigged bids for procurement contracts, fixed prices, allocated projects to each other, shared markets and exchanged commercially important and confidential information. The firm ABB received full immunity from fines under the European Commission's

[24] Notice on Immunity from Fines and Reduction of Fines in Cartel Cases. For more details see; Commission Notice on Immunity from fines and reduction of fines in cartel cases (OJ C 298, 8.12.2006)

[25] The firms are ABB, Alstom, Areva, Fuji, Hitachi, Japan AE Power Systems, Mitsubishi Electric Corporation, Schneider, Siemens, Toshiba and VA Tech.

leniency programme, as it was the first company to come forward with information about the cartel. In 2007, the European Commission has imposed a record fine of 992 million Euros on four lift and escalator manufacturers[26] in clear violation of EC Treaty rules that outlaw restrictive business practices (Art. 81). The group fixed prices, rigged bids and allocated projects in four EU countries namely Belgium, Germany, Luxembourg and the Netherlands between 1995 and 2004. Otis was fined 225 million Euros, Schindler was fined 144 million Euros, Kone was fined 142 million Euros and ThyssenKrupp was fined 480 million Euros for their part in the cartel. It is the largest ever fines imposed by the European Commission for cartel violations and ThyssenKrupp was handed the biggest fine in EU history for a single firm.

Table 2.14: Ten Highest Cartel Fines (since 1969) (as of 28 Nov. 2007)

Ten Highest Cartel Fines per Case*			
Year	**Case Name**		**Amount in Euros****
2007	Elevators and escalators		992.312.200
2001	Vitamins		790.505.000
2007	Gas insulated switchgear		750.712.500
2006	Synthetic rubber (BR/ESBR)		519.050.000
2007	Flat glass		486.900.000
2002	Plasterboard		478.320.000
2006	Hydrogen peroxide and perborate		388.128.000
2006	Methacrylates		344.562.500
2007	Hard haberdashery: fasteners		328.644.000
Ten Highest Cartel Fines per Undertaking			
Year	**Undertaking*****	**Case**	**Amount in Euros****
2007	ThyssenKrup	Elevators and escalators	479.699.850
2001	F.Hoffman-La Roche AG	Vitamins	462.000.000
2007	Siemens AG	Gas insulated switchgear	396.562.500
2006	Eni SpA	Synthetic rubber	272.250.000
2002	Lafarge SA	Plasterboard	249.600.000
2001	BASF AG	Vitamins	236.845.000
2007	Otis	Elevators and escalators	224.932.950
2007	Heineken NV	Dutch beer market	219.275.000
2006	Arkema SA	Methacrylates	219.131.250
2006	Solvay SA/NV	Hydrogen peroxide	167.062.000

Source: *European Commission, Competition Policy, Cartel Statistics, http://ec.europa.eu/comm/competition/cartels/statistics/statistics.pdf, p.5 *Amounts corrected for changes following judgments of the CFI and ECJ. *** European Commission, Competition Policy, Cartel Statistics, http://ec.europa.eu/comm/competition/cartels/statistics/statistics.pdf **Amounts corrected for changes following judgments of the CFI and ECJ. ***If more than one legal entity of the same group were subject to the decision, they are counted as one undertaking for the purpose of this table.

[26] The firms are Germany's ThyssenKrupp, US-owned Otis, KONE of Finland and Swiss firm Schindler.

(ii) Abuse of Dominance

According to EU competition law, abuse of dominant position is prohibited on the basis of Article 82 of the EC Treaty. If a firm (or group of firms)[27] has a large proportion of the business in a particular market, it is likely to have a dominant position in the market. Thus, the abuse of a dominant position may occur when a dominant firm maintains or increases its share in a market by using business practices which restrict competition.

A firm is in a dominant position if it has the ability to behave independently of its competitors, customers, suppliers and, ultimately, the final consumer. A dominant firm holding such market power would have the ability to set prices above the competitive level to sell its products or to reduce its rate of innovation below the level that would exist in a competitive market. Under EU competition law, it is not illegal to hold a dominant position, since a dominant position can be obtained by legitimate means of competition, for example by inventing and selling a better product. Instead, competition rules do not allow companies to abuse their dominant position. The European merger control system differs insofar from this principle, as it prohibits merged entities from obtaining or strengthening a dominant position by way of the merger. Mergers will be analyzed in more detail in the following section.

(iii) State Aids

State aids may be described as a serious barrier to competition. A firm which receives government aid or subsidy obtains an advantage over its rivals. Therefore, the aim of state aid control is to ensure that government interventions do not distort competition and trade between member states.

[27] A dominant position may also be enjoyed jointly by two or more firms in a specific market. This situation is called collective/joint/oligopolistic dominance.

In this context, state aid is defined as *"an advantage in any form whatsoever conferred on a selective basis to undertakings by national public authorities"*[28]. "There is ample evidence that member states often subsidize industries in an inefficient manner, and do not sufficiently address market failures in areas such as R&D, training, innovation, and venture capital" (European Commission, 2004c:6). Thus, in order to create an undistorted competition in the single market, it was necessary to subject state aid to common competition policy[29]. The EU generally prohibits state aids unless it is justified by reasons of general economic development and the European Commission is in charge of watching over the compliance of state aid with EU rules.

There was a significant increase in the state aid control workload, with 921 new cases registered in 2006, a 36 % increase compared with the previous year. Of these cases, 54 % concern largely the manufacturing and service sectors, 34 % agriculture, 9 % transport and 3 % fisheries. In 2006, The European Commission took 710 final decisions[30], compared with an increase of 12 % in 2005. In the vast majority of cases, the European Commission approved the measures, concluding that the examined aid was compatible with the State aid rules (91 % of all decisions in 2006) or did not constitute state aid (4 % of all decisions). Where the European Commission has doubts whether certain aid measures comply with the rules, it carries out a formal investigation during which third parties and all Member States are invited to provide observations. At the end of this investigation procedure, the European Commission either takes a positive, conditional or no aid decision (3 % of all decisions) or finds that the measure does not comply with state aid rules and hence is not compatible with the internal market and takes a negative decision (2 %

[28] European Commission, Competition: State Aid Control: Overview http://ec.europa.eu/comm/competition/state_aid/overview/index_en.cfm

[29] In 2005, the Commission launched its State Aid Action Plan (SAAP) in order to modernize the framework of the state aid rules. SAAP is a comprehensive reform programme that aims to transform state aid into an effective EU policy tool for growth and jobs. There are four guiding principles underpinning the reform programme (European Commission, 2007b:30): (i) less and better targeted State aid; (ii) greater emphasis on economic analysis; (iii) more effective procedures, including better enforcement , higher predictability and enhanced transparency; and (iv) shared responsibility between European Commission and the member states.

[30] Excluding decisions to open the formal investigation procedure, corrigenda, injunctions, proposals for appropriate measures.

of all decisions) (European Commission, 2007h:16; European Commission, 2007a:35).

From a sectoral perspective, it is observed that there are significant differences between EU states in the sectors to which they direct state aid. Table 2.15 shows the sectoral distribution of state aid by EU states. As shown in the Table, state aid directed at the manufacturing and service sectors represented 80% or more of overall aid in Denmark, Portugal, Slovakia and Sweden. State aid to the agricultural and fisheries sectors accounted for 60% or more of total aid in Estonia, Latvia and Finland, while the share of aid to the coal industry was relatively high in Spain (22%), Germany (11%) and Poland (7%).

Table 2.15: Sectoral distribution of state aid by Member State, 2006

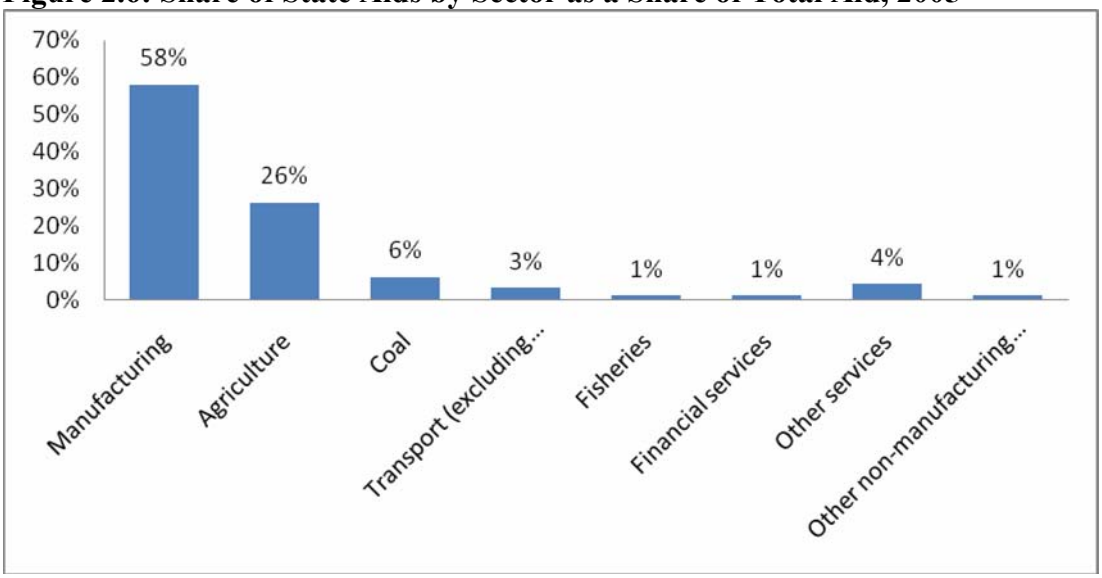
	as a percentage of total								Million Euro
	Manufacturing sectors	Financial services	Other services	Agriculture	Fisheries	Coal	Other non-manufacturing sectors	Transport excl.railways	Total
EU-25	58	3	4	24	0	5	1	3	66723
Belgium	70	0	2	25	0	0	0	3	1225
Czech Republic	73	0	4	22	0	0	0	1	755
Denmark	77	0	3	10	4	0	0	7	1289
Germany	66	0	3	20	0	11	0	1	20219
Estonia	14	0	6	79	1	0	0	0	54
Ireland	38	0	12	48	2	0	0	0	988
Greece	49	2	6	37	1	0	1	5	556
Spain	49	0	8	18	1	22	0	2	4879
France	65	0	6	23	0	0	0	5	10389
Italy	60	0	9	21	1	0	0	8	5511
S.Cyprus	27	0	36	35	0	0	0	2	111
Latvia	8	0	0	67	0	0	0	25	291
Lithuania	35	0	7	58	1	0	0	0	128
Luxembourg	29	0	12	59	0	0	0	0	110
Hungary	55	0	1	34	0	3	0	7	1407
Malta	74	0	3	19	0	0	0	4	115
Netherlands	65	0	3	23	1	0	0	8	1865
Austria	19	32	4	32	0	0	11	1	2310
Poland	46	0	0	46	0	7	0	0	2310
Portugal	13	84	1	1	1	0	0	0	1450
Slovenia	47	0	4	42	0	6	0	0	254
Slovakia	86	0	1	11	0	2	0	0	223
Finland	22	0	1	74	0	0	0	3	2552
Sweden	79	0	3	12	0	0	0	5	3515
UK	60	4	1	21	0	0	7	5	4215

Source: EUROPA, European Commission, Competition, State aid control, Studies and Reports, Scoreboards-Statistical Tables www.europa.eu.int

On the other hand, in 2005, total state aid granted by the Member States was estimated at Euro 64 billion and in relative terms, state aid amounted to 0.6% of EU

GDP (Parlasca, 2007:1). Although the data do not provide an accurate picture of the final recipients of the aid, they nevertheless give some indication as to which sectors are favored by each member state. As shown in the Figure 2.6, manufacturing was the favored sector and received 58% of total state aid in 2005.

Figure 2.6: Share of State Aids by Sector as a Share of Total Aid, 2005



Source: Parlasca, P. (2007) State aid in the European Union, Statistics in focus, 125/2007, p.5 * Other non-manufacturing includes aid for mining and quarrying, oil and gas extraction, aid for electricity gas and water supply and aid for construction.

(vi) Mergers and Acquisitions

Mergers (named as "concentrations" in the Community legislation)[31] play an important role in a market economy and can bring benefits to competition and in turn consumers as discussed in Chapter I. Nevertheless a merger might have negative

[31] A "concentration" arises under ECMR Art. 3 where a change of control on a lasting basis results from: (i) the merger of two or more previously independent undertakings, (ii) the acquisition of one or more persons already controlling at least one undertaking, or by one or more undertakings, whether by purchase of securities or assets, by contract or by any other means, of direct or indirect control of the whole or parts of one or more other undertakings, or (iii) the creation of a joint venture performing on a lasting basis all the functions of an autonomous economic entity. For more details see Parisi, 2007:4.

effects on competition, for instance, a merger may lead to a reduction in competition by the creation of a dominant firm. Thus, it is necessary to distinguish merger activity that harms competition from those that bring more competition.

Merger control is an important element of competition policies. Although the Treaty of Rome creating the EC and its institutions included articles concerning anti-competitive agreements and abuse of a dominant position, the articles did not mention about the merger regulations. As a consequence, the EU existed without any effective merger control regime until the beginning of the 1990's except for that existing in a small number of member countries. EU member states considered merger control regime as a key instrument of national industrial policy. Thus, the negotiations that were ultimately to lead to a form of EU level merger control regime were lengthy and laborious (Slot and Johnston, 2006:141). However, merger control regime developed at the EU level was regarded as one of the necessary measures that would facilitate the creation of the single market. A compromise on EU level merger control was reached in December 1989 when the Member States adopted Regulation 4064/89[32] on the control of concentrations between undertakings that provided the framework for merger control by the European Commission. It was designed to protect consumers from the potential negative impact of concentrations on the competitive process.

Although the results obtained by the application of 1989 Merger Regulation can generally be regarded as positive, the high level of industrial concentration in the European economy has increased the complexity of the economic analyses and thus leads to the necessity of some flexibility in the system of merger control system. Regulation 4064/89 was amended and replaced by Regulation 139/2004, the so-called new EC Merger Regulation (ECMR) that entered into force on 1 May 2004. The New Regulation strengthens the "one-stop shop" principle[33] and provides a

[32] The Regulation is based on the premise that the Treaty states that freedom of competition is one of its goals and as an instrument to be used to promote a smooth and economic development. It also considers that the completion of the single market provided for in the Single European Act requires a reorganization of industrial activities and that is in turn presupposes a dynamic view of competition (Bianchi, 1998:99).

[33] The European Commission is the single body in charge of receiving notifications, investigations and decisions.

positive incentive for NCAs to participate and simplifies the procedure for notifications and investigations. In Europe, merger control authority is divided between the European Commission and the member states. The ECMR also imposes a compulsory system of prior notification of concentrations with a Community dimension[34]. Mergers generally must not be put into effect before notification or before declared compatible with the common market by European Commission decision[35].

The European Commission's implementation and application of the Merger Regulation is considered as having been successful. In the years since its adoption, the Merger Regulation has not only evolved into an integral part of EU antitrust practice, but also it has produced a rich and extensive jurisprudence that provides guidance on a range of issues, including the competitive assessment of a wide variety of transactions affecting a broad array of product and geographic markets. In addition, the European Commission has adopted an open, pragmatic, and informal approach to the application of Merger Regulation.

One of the main purposes of the internal market is to secure an expanded European market. With this purpose it also aims to ensure a level playing field for European firms across the EU by encouraging them to engage in cross-border activities. Attracting firms across the world is also another objective of this process. Indeed, establishment of the single market in general and creation of the single

[34] "Community dimension" is delineated in Article 1 of ECMR by worldwide and EU wide turnover of the undertakings concerned. Concentrations are of a "Community dimension" either where the merging parties' (the "undertakings concerned"): (i) combined world-wide turnover is > € 5 billion and each of at least two of the merging parties realized > € 250 million turnover in the EU, or (ii) combined world-wide turnover is > € 2.5 billion; their combined turnover is > € 100 million in each of at least 3 Member States; in each of those 3 Member States, the turnover of each of at least two of the merging parties is > € 25 million; the Communitywide turnover of each of at least two of the merging parties is > € 100 million unless each of the merging parties obtains more than 2/3 of its EU turnover in one and the same Member State (Parisi, 2007:4).

[35] The Commission must start an initial examination within 25 working days (Phase I) to justify whether the merger falls within the scope of the Regulation and if so whether serious doubts are raised as to its compatibility with the common market. If such doubts exist, a further examination (up to a further 90 working days in length—Phase II) is carried out in motion to determine whether the concentration "would significantly impede effective competition, in the common market or a significant part of it, in particular by the creation or strengthening of a dominant position.

currency have stimulated intra-EU cross-border M&A activity and enhanced the attractiveness of the EU business environment for non-EU multinational firms.

As Garnier (2007:11-12) suggests, European single market policy may have three main effects on M&A activity involving EU firms.

(i) Firstly, European integration process is expected to boost the number of cross-border M&As within the EU. Since the market integration process changes the nature of competition it leads European firms to become more efficient. Thus, such firms may enter new markets through an M&A activity with the objective of increasing their sales, thereby reducing their average costs. On the other side, increased competitive pressures may also lead to defensive M&A activity as firms can be motivated by strategic concerns (avoiding being taken over by foreign firms or eliminating potential or actual competitors) in order to restore market power that has been weakened by economic openness.

(ii) Secondly, market integration process should also attract entry into the single market of non-EU firms. In the short run, it is expected that market integration will lead to fewer firms that are larger in size as a result of restructuring within the EU. In the medium to long run, entry of non-EU low cost producers attracted by the larger integrated EU market can be expected. Moreover, M&As are also a means of breaking down the barriers to the transfer of technology by national frontiers. Thus, as the EU becomes a more integrated market, M&As in the EU by non-EU firms might be explained by the opportunities they offer for technology transfer and innovation.

(iii) Thirdly, entry of foreign firms into the European market gives impetus to increased competition. Thus it results in efficiency gains in the EU and able EU firms to expand their activities in the global markets. This might have two consequences; on the one hand, as European firms become more competitive they may enter new foreign markets in order to exploit their competitive advantage. On the other hand, as a consequence of increased competitive environment in the domestic market, these firms may try to enter the markets -such as developing

countries with cheaper inputs or developed countries with advanced technologies- in order to further increase their competitiveness.

European integration process is expected to increase the number of M&A activities. In the late 1980s the introduction of the single market programme coincided with an M&As wave, largely triggered by cross-border acquisitions of EU firms (both intra-EU deals and acquisitions by non-EU firms). What's more, during the 1990s developments such as the introduction of the single currency, the globalization process, technological innovation, deregulation and privatization spurred European firms to take part in M&As. During this period cross-border M&As increased at a much faster rate than domestic M&As. It is because they were increasingly used as a channel for market access rather than as a means for domestic restructuring. Meanwhile, it has been observed that the 2004 enlargement also triggered M&A activities in the new member states. Thus, the share of M&A involving firms in the new member states and the EU-15 in total M&A involving EU-15 firms increased from 6% in 1992 to 17% in 2003 (Ilkovitz et al., 2007:35).

Table 2.16: Decomposition of intra-EU M&A deals by sector, 2006

	Bidder sector											
Target sector	Agriculture, Forestry and Fishing	Mining	Construction	Manufacturing	Network industries	Wholesale trade	Retail trade	Finance, insurance and real estate	Other services	Public administration	Total	%
Agriculture, forestry and fishing	21	0	0	10	0	6	0	14	4	0	55	0,6
Mining	0	61	4	10	6	0	4	22	4	0	111	1,3
Construction	0	0	127	24	7	1	4	89	28	1	281	3,2
Manufacturing	11	10	40	1319	38	89	16	825	122	5	2475	28,6
Network industries	0	8	31	55	567	19	8	239	67	8	1002	11,6
Wholesale trade	2	5	6	123	10	164	26	118	25	0	479	5,5
Retail trade	2	2	0	37	16	16	211	154	15	0	453	5,2
Finance, insurance and real estate	0	1	24	22	10	2	6	1272	57	5	1399	16,2
Other services	2	9	26	186	131	28	21	644	1319	11	16	0,2
Public administration	0	0	0	1	5	0	0	6	3	1	16	0,2
Total	38	96	258	1787	790	325	296	3383	1644	31	8648	100
%	0,4	1,	3,0	20,	9,1	3,8	3,4	39,1	19,0	0,4	100	

Source: Garnier, G. (2007) Mergers and Acquisitions: Note, No:4, DG Ecfin European Commission, p.8.

From a sectoral perspective, Table 2.16 displays the deals that were occurred inside the EU (both domestic and cross-border) in 2006 according to respective sectors of the bidding and the targeted firms. The manufacturing industry accounted for 28 % of targeted firms. Off all bids recorded, 66.2% targeted services, in particular other services (27.5%) and finance, insurance and real estate (16.2%). Network industries, which have been liberalized over the last decades also represents 11.6% of targeted firms. On the other hand, in 2006, 39.1% of bids originated in the financial sector, 20.7 in manufacturing and 19% in the other services sector.

III. THE COMPETITION STRUCTURE OF TURKISH MANUFACTURING INDUSTRY

3.1 Introduction

Relations between Turkey and the EU goes back to a long history. Turkey applied for an association agreement with the European Economic Community (EEC-the EU as formerly called) in 1959, shortly after its establishment in 1958. After lengthy negotiations, an association is established between the EEC and Turkey with the signing of the Agreement Creating an Association between the Republic of Turkey and the EEC, the so-called Ankara Agreement, in 1963 which aimed at securing Turkey's full EU membership.

Ankara Agreement aimed at securing Turkey's full membership in the EEC through "promoting continuous and balanced strengthening of trade and economic relations between parties"[36] and "the establishment of a customs union in three stages (preparatory-transitional and final stage)"[37]. The first phase, started in December 1, 1964 with Ankara Agreement's entry into force, aimed to reduce economic differences between the parties in order to carry out the obligations that Turkey would assume in the following stages. The "preparation phase" was completed and the conditions of the "transition phase" were regulated with the signature of the Additional Protocol in 1970. The Additional Protocol which entered into force in 1973 established a timetable for the abolition of tariffs and quotas on goods traded

[36] Article 2 (1) of Ankara Agreement.
[37] Article 2 (2) and 2 (3) of Ankara Agreement.

between Turkey and the EEC by ensuring the establishment of a CU. In this context, it provided that the EEC would abolish tariffs and quantitative restrictions to its industrial imports from Turkey, whereas Turkey was granted a longer time period to remove customs duties on industrial imports from the EEC based on a timetable containing two calendars set for 12 and 22 years. For industrial sectors in which Turkey was more competitive, tariffs were to be eliminated over 12 years. For other goods the tariff reductions were to be spread over 22 years. The abolition of all tariff restrictions on Turkish industrial exports to the EEC took effect immediately when the Interim Agreement entered into force on September 1971. However, during the first half of the 1980s, relations between Turkey and the EEC come to a virtual freeze due to Turkey's political and economic conditions. Later in 1987, after the political crisis, Turkey officially applied for membership but the EC stated that although Turkey was eligible for full membership, but she had not yet fulfilled the necessary conditions. In March 1995 Turkey-EU Association Council[38] adopted its Decision 1/95 on the completion of the CU between Turkey and the EU in industrial and processed agricultural products by 31 December 1995. The Association Council Decision 1/95 lays down the rules for implementing the final phase of the CU which as it was foreseen in the Ankara Agreement and thus finalizes the agreement on the CU which enters into force on 1 January 1996.

On 1 January 1996, the Customs Union (CU) between the EU and Turkey came into effect, which has proved a critical stage in preparing Turkey for full EU membership at an unspecified future date. However, in December 1997 the European Council decided not to include Turkey among the list of candidate countries for the next wave of enlargement. The Helsinki Summit of December 1999 declared that Turkey was accepted as a candidate for full membership of the EU and it marked the beginning of a new era for both parties. As a consequence of the Helsinki Summit, the Commission prepared an Accession Partnership for Turkey and Turkey adopted its own National Program for the Adoption of the EU acquis in March 2001. Finally, the decision of the European Council meeting in December 2004 approved to start

[38] The Association Council is the highest ranking organ of the association and is composed of the Foreign Ministers of Turkey and the EU member states.

accession negotiations with Turkey on October 3, 2005 give impetus to political and economic reform efforts to enable the adoption of the acquis in different areas. Since then, The Turkish membership bid has become the central controversy of the ongoing EU enlargement process.

Over the last decade, Turkey has undergone a very comprehensive economic and political reform process triggered by the convergence process with the EU. Adoption, implementation and enforcement of the EU rules and regulations are a necessary condition that must be accepted by any country that wants to be a member of the EU. Thus, the European Commission assists Turkey in further aligning its rules and regulations with the EU acquis. It might be considered to link regulatory reform process of Turkey with the EU's Lisbon Strategy. On the one hand, with the CU agreement, Turkey already competes in the European single market. On the other hand, in the context of Copenhagen economic criteria, EU membership is conditional on the existence of a functioning market economy as well as the capacity to cope with competitive pressure and market forces within the EU. Thus, as Lisbon strategy is designed to strengthen the competitiveness of EU economies, Turkey must keep up with the reform programme in the process of accession.

3.2 The Development of Industrial Policy in Turkey

Industrial development is considered as an essential element of both economic and social development of Turkey. As a result, in Turkey, industrial development strategies have always been one of the main priority areas. Since 1960s, industry based growth has been one of the main objectives in Turkey. Until 1980 Turkey implemented an import substitution policy and the industries where domestic production had been deemed sufficient, were subsidized in different ways by the state and protected from international competition (Emek, 2004: 101). However,

after 1980, significant progress has been made towards establishing the principles and fundamentals of a free market economy through the introduction of an export oriented industrialization strategy. In other words, since 1980, the acceleration of industrialization period has been characterized in an export oriented way. Such developments made significant contributions to the dynamism of manufacturing industry in particular and Turkish economy in general.

The liberalization efforts of the 1980s made significant contribution to the dynamism of the private sector and improved the adaptability of national economy to internal and external impacts. In addition to the dynamism of the private sector, increased investments have been the main sources of industrial growth. Private sector has enhanced quality improvement-oriented modernization investments, thereby increasing the competitiveness of industry (SPO, 2003:38). In this context, it is also crucial to note that the share of public sector in the manufacturing industry has been decreased through privatization efforts in recent years. According to a report on Sector Profiles of Turkish Industry (SPO, 2004b:1) more than 80 % of production and about 95 % of gross fixed investment in the manufacturing industry is realized by the private sector. At the beginning of 1980s, these figures were 57 % and 63 % respectively.

Turkish industrial policy is a not a separate policy area, thus it includes policy areas such as foreign trade, investment, energy, technology, quality improvement, environment, labor, SMEs and competition. Moreover, sectoral policies are also included into the industrial policy due to the specific needs of individual sectors. However, according to Screening Report on Enterprise and Industrial Policy (2006:4) Turkey does not have separate sector-specific strategies or action plans, for instance, strategies concentrating on one sector only. In the context of manufacturing industry, Turkey is implementing a number of sector-specific policy measures notably in strongly export-oriented sectors that are exposed to global competition such as textiles and clothing. Measures in the textile sector include for instance the promotion of textile clusters, training and networking promotion and establishing trade defense mechanisms.

One of the most serious problems of Turkey's industrialization process is that it was not successful in achieving its structural transformation. The employment share of the agriculture sector in the total employment is still high. Furthermore the natural resources and labor constitute a big share in manufacturing. And from the beginning of the 1980's, the Turkish manufacturing, along with outward-oriented economic policies, became an industry in which low-wage workers have been employed.

The start of accession negotiations with the EU has been an important development in influencing the development of industrial policy. During the period of accession negotiations with the EU, while realizing harmonization requirements and taking into consideration the CU, the need for structural adjustment should be taken into account and relevant measures for increasing competitiveness should be put into operation. Table 3.1 demonstrates the strong and weak sides of Turkish manufacturing industry. One of the strong sides of the Turkish manufacturing is that it has an experienced and dynamic entrepreneurship. Additionally, the Turkish manufacturing has talented and educated labor force. In addition to this, the existence of flexible and dynamic SMEs in Turkey, the production capacity of goods that require intermediate technology and adaptability to changes in demand and the variety of products are strong sides of the Turkish manufacturing. The geographical location and historical background of Turkey is important factor in supply of resources, marketing and distribution of goods.

The EU process and the preparatory works done during that process give an impetus to the Turkish economic reform process. The quality and productivity perception that changed along with the EU process make great contributions to the Turkish manufacturing sector. Additionally, the improvement of investment environment urged both the foreign and domestic to invest more.

In addition to strong sides and emerging opportunities, the Turkish manufacturing has also weak sides and threats coming out of this process. Although Turkey have had structural transformations that led to an improvement

macroeconomic indicators after the crisis in 2001, the uncertainty about the reform process affects the competitiveness of the manufacturing sector.

The macroeconomic uncertainties experienced during the previous periods did not improve strategic behavior in the manufacturing sector. For instance, the inadequate formation of industrial policy, inadequate institutionalization of the public administration in managing the manufacturing sector, especially in forming the infrastructure and regulatory force were the main reasons.

The Turkish manufacturing sector has several weaknesses in technological infrastructure. For instance, the manufacturing sector uses low and intermediate technology. The main reason for this is the insufficiency of private and public R&D expenditures. Especially the R&D activities for high technology are extremely low. In addition to the fact that the private sector does not give the required importance to these activities, the non-private institutions that are interested in the R&D activities such as universities and TUBITAK are conservative about these kinds of activities. Hence, the Turkish manufacturing sector that needs advanced technological production techniques to compete the high technology producing countries (the US and EU countries) suffers the lack of this. The lack of innovation and productivity hampers the competitiveness of the Turkish manufacturing in the international markets.

On the other hand, the Turkish manufacturing sector has problems in terms of input cost and production capabilities. To a large extent, the Turkish manufacturing has been dependent upon imported inputs. Especially the low level of the exchange rate in the recent periods increased this dependency. The high cost of energy sources, the high taxes imposed on employment and high premium of social security, a low rise in productivity are other factors that hampered the competitiveness of the manufacturing. This in turn led to low value-added production in the manufacturing.

Table 3.1: The Strong and Weak Sides of the Turkish Manufacturing

The Strong Sides of the Turkish Manufacturing (i) The potentiality of entrepreneurship and the ability to invest abroad (ii) The flexibility and dynamics of the SMEs and their adaption ability to changes in demand (iii) Turkey's geography and historical structure- closeness to the markets in Middle East, Caucasian, Balkan and the historical relationships with these geographies (iv) The positive impact of the EU process and the improved understanding of quality and productivity along that process (v) The ability to produce intermediate level technology (vi) The increased improvement in abilities and talents of labors with an increase in education (vii) Relatively increased economic and political stability
The Weak Sides of the Turkish Manufacturing (i) The insufficient legal and institutional framework a. The lack of selective industrial policy and industrial targeting b. The absence of strategic thinking due to economic and political instability coming from the past c. Macroeconomic instability that still exists and its negative impact on investments d. The problems faced in juridical process and the lack of confidence for the juridical system, the problems in the enforcements of law e. Lack of sound legal basis and enforcement for copyright and patent rights (ii) Technology a. The insufficiency of R&D activities in high technology b. The lack of link between industry and university or research institutions c. The low expenditures of firms in R&D d. The low share of R&D expenditures allocated by the goverment e. The weakness in innovation (iii) Unfair Competition a. Informal employment b. The dominance of international firms in some sectors, like pharmacy and information technology c. Differences in firms within the sector (iv) Marketing and Financing a. The lack of educated personnel in exporting sectors b. The lack of experience and ability in marketing abroad c. The deficiency of capital and difficulties with obtaining foreign capital (v) Production Problems and Subsidy Mechanism a. The dependency on imports in intermediate and capital commodities b. The low-value added production in manufacturing c. Difficulties with accommodating to international production standards d. Low productivity e. High cost of basic inputs like energy f. The cost imposed on employment (like social security premiums) g. High tax rates h. The lack of non-selective subsidy policy and uncoordination between subsidy agents

Source: adopted from TEPAV (2007a) Türkiye'nin Rekabet Gücü için Sanayi Politikası Çerçevesi, Türkiye Ekonomi Politikaları Araştırma Vakfı, Ekonomi Etütleri 2007-07, IX. Kalkınma Planı Sanayi Politikası Özel İhtisas Komisyonu Raporu p.86-88.

A report called “Industrial Policy for Turkey: Towards EU Membership”, published by State Planning Organization (SPO, 2003:29), draw a general framework for Turkish industrial policy largely by following the EU's industrial policy principles with the main objectives as; (i) to increase competitiveness and productivity of the industry, and (ii) to promote and maintain sustainable growth within an outward oriented structure, in the face of increased global competition. In that respect, industrial policy aims to improve the business environment favorable to industrial competitiveness and productivity, in which entrepreneurs and enterprises can take initiatives, create opportunities and use their potential. In addition, it seeks to encourage SMEs and new entrepreneurship and support innovation and R&D by improving the business environment. Indeed, it is a well known fact that, it is vital for firms to converge into a structure with high technological capability, skilled labor force, adaptability to changing economic conditions and competitiveness in both national and global markets. In a similar manner, in the medium term programme of 2007-2009, the main objective, as regards to manufacturing industry, is to increase the production of high value added products with an outward-oriented perspective. In this context, policies oriented to increase the share of medium- and high-technology industries, and adapt to international competition in traditional industries like textiles, wearing apparel, leather and footwear (SPO, 2006a:42).

According to Şenses and Taymaz (2003:11-12), Turkey can benefit from the industrialization experiences of the East and South Asian countries post-II World War for transforming her industrial policy in forthcoming years. Turkey can takes some lessons and derive some results from these. They are categorized under some headings below:

(i) The manufacturing industry has to increase its share in production and the use of labor and resources in the manufacturing has to diminish and the conventional sectors of the manufacturing industry has to shift toward more specialized sectors that use high technology. This in turn will increase the value added and productivity in the Turkish manufacturing sector, with positive repercussions on employment and economic growth.

(ii) The success of industrialization depends on an improvement in human capital in addition to an increase in accumulation of physical capital. Especially in the last decade, it is recognized that the technological advance have been the precondition for international competition. This situation has threatened the competitive strength of developing countries that were clustered in low-wage sectors.

(iii) In the industrialization process, while the government can participate in some sectors directly, it can play a critical role in guiding or subsidizing private sectors. In order to select such sectors, the government should follow the developments in the world economy closely and the government in response to these developments should make sector targeting. Furthermore, subsidies should be temporary and targets should be defined for the selective sectors.

(iv) Along with neoliberal policies applied in the several developing countries since the 1980's, the industrialization process in these countries slowed down. The countries that became relatively successful in the industrialization mainly could not shift toward the production of intermediate and investment commodities and they could not stand the competition of international firms.

(v) The manufacturing industry is the sector which has been affected heavily during the financial crises. Since especially the SMEs give a significant loss in employment and production during crises, the preemptive policies should be followed to reduce them.

In the context of accession negotiations, an important feature of Turkey's competitiveness is considered in Chapter 20 on 'Enterprise and Industrial Policy'. In the Screening Report on Turkey's Enterprise and Industrial Policy, the EU criticizes Turkey that, although it has produced an industrial strategy; the operational value of this strategy is questionable. In the context of industrial strategy, although the policy priorities are clearly established, their value as instrument of policy coordination and ensuring policy coherence remains weak. In addition, in the Progress Report it was indicated that Turkey needs to update its industrial strategy and SME strategy documents.

As stated in Turkey's 2007 Progress Report, Turkey has made some progress in the field of enterprise and industrial policy and achieved a good alignment with the EU acquis in this field. This development especially relates to the Investment Support and Promotion agency becoming operational and the increase in FDI. Thus, in order to establish an appropriate policy framework, the focus of Turkish industrial/enterprise policy should be to increase the competitiveness and productivity of enterprises by improving the business environment, supporting SMEs and new entrepreneurship, supporting innovation and R&D, and by promoting an outward-looking economy. EU process will also help the transformation of the Turkish manufacturing in these respects (TEPAV, 2007a:32):

(i)The EU process transforms the decision-making process of the public administration. By this, the public administration that will base its decisions on impact factor analysis will be more effective. Furthermore since the public administration during this process will treat all the agents in the market equally, the functioning of firms will be more productive.

(ii) The arrangement of the state aids in line with the EU acquis, which is one of arguable subjects, is also important. The state aids should in general be compatible with competition policy. Additionally, the changes that will be done in public procurement system.

(iii) The EU process will also accelerate the reduction in informal economy, the development of environmental standards, an increase in the quality of production. Although these requirements are costly in the short-run, they are expected to increase competitiveness and productivity in the Turkish manufacturing industry in the long-run.

(iv) Along with the EU process, the financial opportunities of the national firms will expand in the future. After Turkey became a candidate country accepted for negotiations with the EU, it is expected that the foreign capital and foreign direct investment (FDI) will flow to Turkey. So the cost of finance will decrease due to the

fall in risk premium and long-term investments will increase employment and fasten technological transfer to the country.

The sustainability of the relative stability in Turkey depends on the competitiveness of the Turkish manufacturing against the EU. Along with the CU in 1996, the integration of the Turkish manufacturing to the global economic system accelerated. However, in this process, the growth in subsectors was not symmetric. Rising competition from the Asia (China and India) led to the fact that while the conventional sectors (textile, clothing) got stagnant, new manufacturing sectors developed fast (machinery, automotive). Those sectors which produce at large scale and use high technology need more inputs that have to be imported. This leads to the fact (i) current account increases (ii) even though this development causes economic growth, this does not increase the employment due to high productivity in those sectors.

The new developments in Turkey and in the world have changed the objective and extent of the industrial policy. In the past, the main objective was just to industrialize but presently the policies that increase the competitiveness are on the agenda. While Turkey tries to integrate with the most developed economic system, she faces the competitive pressure coming out of the countries that use the cheap labor such as China and India.

Indeed, the global economy has been transformed in recent years by the opening of national borders and by a marked acceleration in the pace of technological and scientific progress. Technological advances, in particular, have created new opportunities for businesses against the background of an increasingly complex global economic system. This process has also led to a remarkable expansion of international trade and resulted in important efficiency gains in resource allocation. The ongoing process of liberalization of trade and investment provides new opportunities for firms. Firms derive benefits from globalization by taking more direct advantage of markets which are expanding or having appreciable technological potential.

With the globalization of industry, the Turkey's prosperity and its ability to increase its performance and competitiveness depend on its capacity to compete in the global markets. For this reason, it is necessary to measure the position of Turkish economy in terms of competitiveness. Competitiveness creates the necessary conditions for economic performance and productivity growth, for creation of new products, production processes and new jobs. Turkey's economic challenge is to strengthen and maintain its position in both in EU's single market and in international markets and emerging economies of Asia, notably China and India. In this context, globalization and rising international economic integration has increased the competitive pressures faced by Turkish firms. In general, the manufacturing industry in the Turkey is not as strong technologically and efficient as in the EU.

In the context of competitiveness, according to the 2007/2008 Global Competitiveness Index (GCI) data[39] the US is the world's most competitive economy, just ahead of Switzerland, and four EU member states namely Denmark, Sweden, Germany and Finland. The US is endowed with a winning combination of highly sophisticated and innovative firms operating in very efficient factor markets. This is buttressed by an excellent university system and strong collaboration between the educational and business sectors in R&D. These characteristics, combined with the scale opportunities afforded by the sheer size of its domestic economy, come together to make the US arguably the country with the most productive and innovative potential in the world.

[39] The Global Competitiveness Index (GCI), introduced in 2004 by World Economic Forum, is a highly comprehensive index for measuring national competitiveness, taking into account the microeconomic and macroeconomic foundations of national competitiveness. The GCI is based on 12 pillars of competitiveness: Institutions, Infrastructure, Macroeconomic Stability, Health and Primary Education, Higher Education and Training, Goods Market Efficiency, Labor Market Efficiency, Financial Market Sophistication, Technological Readiness, Market Size, Business Sophistication and Innovation.

Table 3.2: Global Competitiveness Overall Index Rankings

	2007-08*	2006-07**	2005-06**		2007-08*	2006-07**	2005-06**
Country	Rank	Rank	Rank	Country	Rank	Rank	Rank
US	1	6	1	China	34	54	48
Switzerland	2	1	4	Lithuania	38	40	34
Denmark	3	4	3	Slovenia	39	33	31
Sweden	4	3	7	Portugal	40	34	31
Germany	5	8	6	Slovak Republic	41	37	36
Finland	6	2	2	Latvia	45	36	39
Singapore	7	5	5	Italy	46	42	38
Japan	8	7	10	Hungary	47	41	35
UK	9	10	9	India	48	43	45
Netherlands	10	9	11	Poland	51	48	43
Austria	15	17	15	Turkey	53	59	71
France	18	18	12	S.Cyprus	55	46	41
Belgium	20	20	20	Malta	56	39	44
Ireland	22	21	21	Croatia	57	51	64
Luxembourg	25	22	24	Greece	65	47	47
Estonia	27	25	26	Romania	74	68	67
Spain	29	28	28	Bulgaria	79	72	61
Czech Republic	33	29	29				

Source: * World Economic Forum (2007) The Global Competitiveness Report 2007-2008, p.14-16, ** World Economic Forum (2006) The Global Competitiveness Report 2006-2007, p.14-16.

Table 3.2 shows the GCI rankings and scores of the EU members, Turkey and some top performers in the world. Comparisons with EU member states provide an idea of Turkey's economic preparedness to join the EU on a mutually beneficial basis. The Table shows that Turkey has seen an impressive improvement in competitive performance over the past years, rising 18 places in the GCI between 2005 and 2007. This confirms the pace and importance of the progress made, placing the country 53rd out of 131 countries, well ahead of Bulgaria (79th), Romania (74th), Greece (65th), Croatia (57th), Malta (56th) and Southern Cyprus (55th) but still behind most of the EU countries.

This development mainly stems from the macroeconomic and political stability that have led to a structural change in the economic structure triggered by the economic reforms introduced after the financial crisis in 2001. This has been

reinforced by the EU process that supported this structural transformation and improved investment environment that withdrew a large amount of FDI.

3.3 The Structure of the Turkish Manufacturing Industry

This section will analyze the present situation of manufacturing industry in Turkey. In general, Turkish manufacturing industry has performed well, except the years in which economic and financial crises occurred. According to Screening Report on Enterprise and Industry (2006:3) industry is a key contributor to the economic growth: industrial growth averaged 5.2 % from 1980-2005 increasing the industry's share in overall GDP from 18.3% in 1980 to 25.4% in 2005 in current prices. Key sectors such as textile and clothing and steel are in need of restructuring and/or adaptation. Indeed, considerable increases were recorded in industrial value added, in the volume of exports as well as the share of manufacturing industry in total exports. As a result of economic growth, the volume of imports especially for investment and intermediate goods has also increased. In addition, due to recovery in domestic demand and sustained export performance, there has been a considerable increase in production and capacity utilization in the manufacturing industry (SPO, 2004b:1).

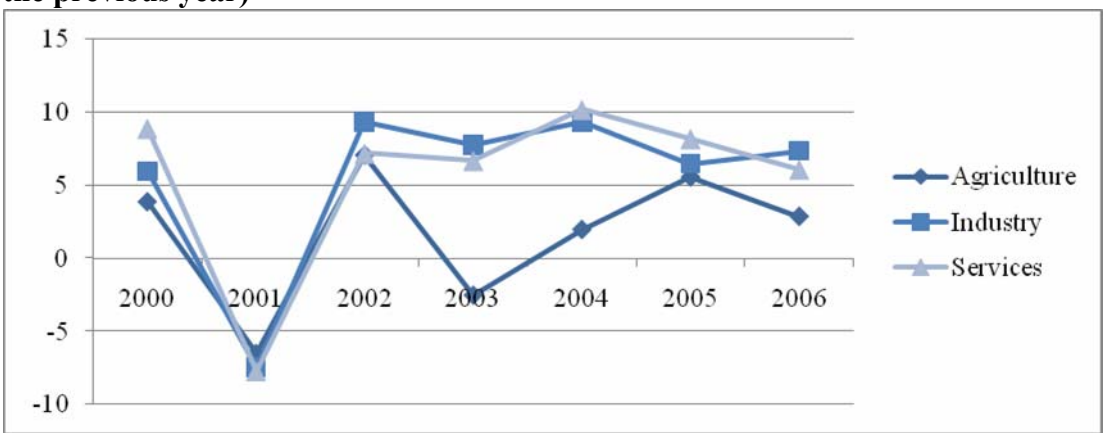
Strengthening the role of the private sector is an essential part of the overall macroeconomic stabilization programme. Public sector plays an accelerating role in the growth of private sector by means of regulations and infrastructure investments, and promote private sector to intensify more on sectors that produce high value added (SPO, 2007b:5). In the context of manufacturing industry, privatization has been a major concern. Over the last decades, the privatization of SOEs in many areas such as food, cement, electronics, automotive, textile, paper, petrochemicals, iron and steel, tobacco and beverages, chemistry and wood products sectors have been

carried out over the last decade. It is of great importance that private sector gives emphasis to investments, which aim at creating high value added, enhancing competitiveness, increasing employment, productivity and exports and enabling development and/or transfer of appropriate technologies (SPO, 2003:45). It is crucial to note that, with the privatization process of recent years, the share of public sector in the manufacturing industry has been decreased.

Regarding manufacturing industry there are some structural problems such as inadequacy in production of technology, inability of spreading modern technology usage rapidly, lack of skilled labor force, limited production capability in high value-added products, inability to undertake sufficient investments in emerging sectors, need for improvement in production and management structures of facilities, difficulties in investors' access to information, inability to establish organized industrial zones as much as needed and unfair competition resulting from informal economy and imports (SPO, 2006a:43).

Over the last years, the Turkish economy has also been pursuing a progressive growth in most sectors and industry based growth has been one of the main goals. According to sectoral composition of GDP, value added in agriculture, industry and services declined by 6.5, 7.5 and 7.7 %, respectively in 2001 crisis (Figure 3.1). As a result of the structural reforms and macroeconomic policies, which were implemented in the aftermath of the financial crisis, a considerable economic recovery was observed. In 2006, the production of the manufacturing industry has grown by 7,4 %. In addition, it is observed that the industrial production has increased since 2002. Indeed, for the period including the years between 2002 and 2006, manufacturing industry became the main source of the total national growth by growing 8,1 % annually.

Figure 3.1: Sectoral growth rates (% change compared with the same period of the previous year)



Source: Republic of Turkey, Pre-Accession Economic Programmes various issues, Data for 2005 and 2006: Pre-Accession Economic Programme 2007, p.4, Data for 2003 and 2004: Pre-Accession Economic Programme 2005, p.3, Data for 2000, 2001 and 2002: Pre-Accession Economic Programme 2002, p.3.

In Turkey, manufacturing industries are diverse and growing. Key industries such as automotive, textile, iron and steel, machinery and chemical have great importance in terms of both production and exports. Looking at the breakdown of sectoral development in terms of number of enterprises and contribution to the employment industrial production is considered as one of the most important sectors. As of 2006, 498 000 out of 6 697 000 enterprises (around 7 % of the active enterprises) were in manufacturing industry; they employed around 18 % of persons (Table 3.3). Among the manufacturing industries the highest number of enterprises and employees were recorded in the textile industry. Indeed in 2006 around 20% of manufacturing enterprises were active in textile industry, while it employed around 28 % persons. The second important subsector in terms of the number of enterprises and employees were the basic metals industry with a share of 16 % and 12 % respectively (Table 3.3).

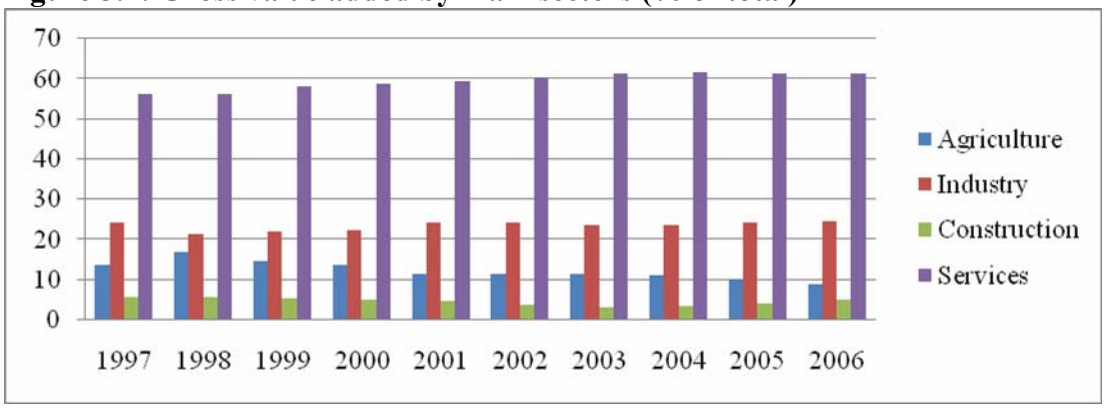
Table 3.3: Breakdown of sectoral development in manufacturing, 2006

	Number of enterprises (thousands)	Number of employees (thousands)
TOTAL	**6 697**	**22 330**
Manufacturing	**498**	**4 186**
Food products, beverages and tobacco	64	603
Textiles and textile products	103	1 177
Leather and leather products	12	71
Wood and wood products	44	101
Pulp, paper & paper products; publishing & printing	20	140
Coke, refined petroleum products & nuclear fuel	0	10
Chemicals, chemical products and man-made fibres	5	150
Rubber and plastic products	20	187
Other non-metallic mineral products	21	248
Basic metals and fabricated metal products	87	535
Machinery and equipment n.e.c.	29	291
Electrical and optical equipment	9	166
Transport equipment	8	226
Manufacturing n.e.c.	75	281

Source: UniCredit Group/Bank Austria Creditanstalt Aktiengesellschaft (2007a) Sectoral Analyses, Outlook 2008–2009, Analyses of the UniCredit Group New Europe Research Network, December, p.64.

Figure 3.2 demonstrated the gross value added by main sectors in Turkey during the periods 1997-2006. As shown in the Figure, within this period, value added in the agriculture decreased around 4 percentage points, while the increases in services sectors' value-added were around 5 percentage points. In industry sector the gross value added was around 23.5 % on average in the same period.

Figure 3.2: Gross value added by main sectors (% of total)



Source: European Commission (2007e) Turkey 2007 Progress Report accompanying the Communication from the Commission to the European Parliament and the Council Enlargement Strategy and Main Challenges 2007-2008, {COM(2007) 663 final}, Brussels, p.78.

In terms of employment, although agricultural employment shrunk over 10 percentage points over the period 2001 and 2007 the sector still employs 26.4 % of the labor force. Nearly half of the employed are in the services sector (48 %). On the other hand, the ratio employed in the industrial sector is 19.7 % (Table 3.4).

Table 3.4: Employment by Economic Activity, Share in Total (%)

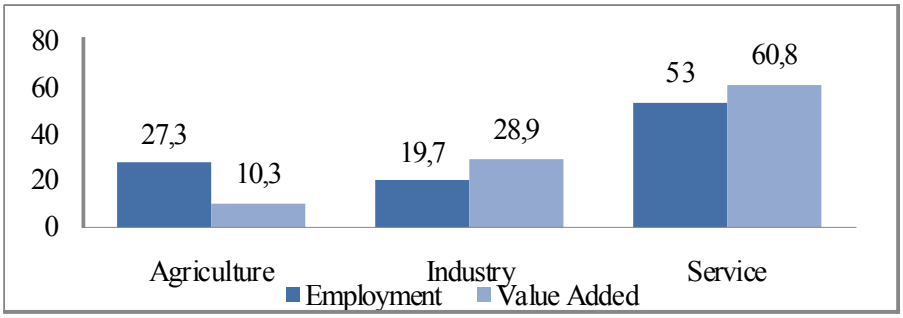
	Agriculture	Industry	Construction	Services
2001	37,6	17,5	5,2	39,7
2002	34,9	18,5	4,5	42,1
2003	33,9	18,2	4,6	43,4
2004	34,0	18,3	4,7	43,0
2005	29,5	19,4	5,3	45,8
2006	27,3	19,7	5,7	47,3
2007	26,4	19,7	5,8	48,0

Source: Undersecretariat of Treasury, Indicators and Statistical Data, available at www.hazine.gov.tr

One of the serious structural problems of the Turkish economy is the sectoral distribution of employment. Although the value added of agriculture is low, the agricultural sector continues to employ as much as one third of the Turkish workforce and low productivity has been entrenched to date by a protective policy regime. Establishing a more competitive environment would help to modernize

agriculture and raise output growth and productivity. In 2006, the shares within the total employment were 27.3 percent for agriculture, 19.7 percent for industry and 53 percent for services sectors (Figure 3.3).

Figure 3.3: Sectoral Distribution of Employment and Value Added in Turkey, 2006



Source: Republic of Turkey (2007) Pre-Accession Economic Programme 2007, p.8.

Table 3.5 presents the main indicators of manufacturing industry for the years 2000 and 2005. The share of Turkish manufacturing industry in GDP was 19.2 % in 2000 and it increased to 20.8 % in 2005. In the context of manufacturing industry, significant increases have been observed both in investments (from 26,5 % in 2000 to 41,4 % in 2005) and exports of manufacturing industry (from 6,7 % in 2000 to 15,2 % in 2005).

Table 3.5: Main Indicators of Manufacturing Industry (%)

	2000	2005	2001-2005 Average	EU (2004)
Share in GDP	19,2	20,8	20,4	20,5**
Production increase (at constant prices)*	6,5	4,8	4,9	2,8***
Export increase (at current prices)	6,7	15,2	21,9	9,5****
Import increase (at current prices)	29,8	16,6	16,3	8,8****
Share in private sector investments	26,5	41,4	35,5	-
Private sector capacity utilization rate	74,6	78,9	74,6	-
Partial productivity increase per worker	8,8	5,6	6,0	-0,3*****

Source: SPO (2006b) Ninth Development Plan 2007-2013, p.43 *The rate of increase in industrial production index is used; **EU-25 Industrial data; ***EU-25 Manufacturing industry data for the year 2005; ****EU-25 SITC Classification; *****EU-15.

As illustrated in Table 3.6 developments have been observed in industrial exports in medium and high technology sectors in 2005. On the other hand, the share of medium and high technology sectors in the manufacturing industry rose significantly due to high increases in exports and production in automotive, machinery and electronics industries. However, when compared with the EU, the share of these sectors still remains low. On the other hand, because of high dependency on imported inputs in these sectors, the increase in value-added cannot be realized at the expected level (SPO, 2006b:44).

Table 3.6: Structure of Manufacturing Industry Production and Exports (%)

Technology intensity*[40]	Turkey						EU Exports****
	Production			Exports			
	2000**	2002	2005	2000	2002	2005	2003
High	5,9	5,1	6,3	7,8	6,2	6,0	21,5
Mid-High	22,5	18,2	25,3	20,4	24,3	28,5	41,9
Mid-Low	30,4	26,7	27,0	20,5	22,8	26,9	15,9
Low	41,2	50,0	41,4	51,3	46,8	38,7	20,7
Total	100,0	100,0	100,0	100,0	100,0	100,0	100,0

Source: SPO (2006b) Ninth Development Plan 2007-2013, p.44 * OECD Science, Technology and Industry Scoreboard classification is taken as reference. ** It covers the businesses, which employ more than 10 people. *** Forecast of SPO at 2002 prices **** EU countries, which are OECD members.

[40] According to OECD Science, Technology and Industry Scoreboard classification; (available at http://oberon.sourceoecd.net/pdf/ann-a.pdf)
High-technology industries include Aircraft and spacecraft, Pharmaceuticals, Office, accounting and computing machinery, Radio, TV and communications equipment, Medical, precision and optical instruments
Medium-high-technology industries include Electrical machinery and apparatus, n.e.c., Motor vehicles, trailers and semi-trailers, Chemicals excluding pharmaceuticals, Railroad equipment and transport equipment, n.e.c., Machinery and equipment, n.e.c.,
Medium-low-technology industries include Building and repairing of ships and boats, Rubber and plastics products, Coke, refined petroleum products and nuclear fuel, Other non-metallic mineral products, Basic metals and fabricated metal products
Low-technology industries include Manufacturing, n.e.c.; Recycling, Wood, pulp, paper, paper products, printing and publishing, Food products, beverages and tobacco, Textiles, textile products, leather and footwear

As shown in Table 3.7, Turkish manufacturing production index followed an upward trend. For the period 1998 and 2007, the manufacturing industry sector index rose from 100.1 to 143.3, around 40 % increase. However, overall manufacturing production fell because of Turkey's financial crisis in 1999 and 2001. Looking at the sub sector level of manufacturing industry, the highest rates of increase were in the manufacture of office accounting, computing machinery; manufacture of motor vehicles and trailers, radio, TV and communication apparatus; wood products (except furniture), rubber and plastics products, non-metallic mineral products and chemicals (Table 3.7).

Table 3.7: Production Index in the Manufacturing Industry (1997=100)

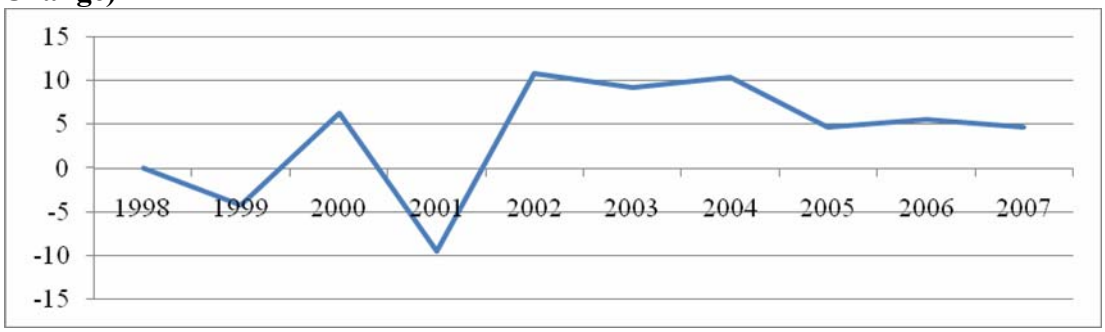
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Food Products and Beverages	100,8	100,4	104,1	101,7	104,6	112,6	112,1	119,0	126,1	129,1
Tobacco Products	109,4	104,0	112,4	115,1	121,7	116,0	91,4	103,5	126,5	114,1
Textile Industry	93,6	87,0	95,7	90,9	102,3	104,4	102,9	90,7	89,8	91,8
Wearing Apparel	106,7	102,0	108,7	105,3	108,8	110,7	114,6	100,4	95,5	97,6
Dressing of Leather	85,8	86,6	92,4	73,1	84,1	82,8	92,5	75,0	85,7	85,2
Wood Products (Except Furniture)	95,0	99,7	115,0	98,3	116,1	114,1	133,7	154,9	158,7	186,4
Manufacture of Paper and Paper Products	100,3	95,9	87,6	83,8	101,2	110,9	113,6	119,1	120,2	128,8
Publishing and Printing	91,9	89,9	108,8	84,2	77,1	96,1	128,8	129,9	135,5	137,1
Manufacture of Coke, Refined Petroleum Products	102,1	98,0	86,8	92,0	100,4	103,5	98,7	98,6	100,9	103,0
Manufacture of Chemical Industry	100,3	101,7	111,0	97,0	110,8	120,5	139,9	148,6	158,0	173,2
Rubber and Plastics Products	103,9	98,0	112,5	109,2	122,7	141,9	160,0	191,6	169,1	188,0
Manufacture of Non-metallic Mineral Products	106,8	100,5	108,2	92,0	102,0	112,2	122,5	135,0	140,9	140,8
Basic Metal Industry	100,5	98,7	102,3	97,3	107,1	119,8	133,7	138,2	152,9	170,8
Metal Product (Except Machinery)	88,4	87,1	85,4	74,1	74,5	76,9	84,1	111,0	132,0	151,0
N.E.C. Machinery and Equipment	97,4	86,6	92,4	73,5	89,2	109,2	143,0	144,8	176,7	184,7
Office Accounting, Computing Machinery	103,2	286,3	144,1	54,6	85,8	89,0	159,6	196,8	434,8	282,5
N.E.C. Electrical Machinery Apparatus	91,4	86,3	90,3	75,6	84,3	86,6	82,6	96,8	116,6	144,7
Radio, TV and Communication Apparatus	124,6	134,1	163,8	149,0	225,2	269,0	363,0	380,3	320,0	224,7
Medical, Precise, Optical Instruments	90,0	77,5	77,5	55,8	63,9	61,2	69,1	95,3	96,7	85,4
Manufacture of Motor Vehicles and Trailers	96,3	78,4	115,9	63,5	80,7	119,1	182,6	200,2	219,5	242,0
Other Transportation Equipment	97,3	60,9	47,9	77,2	85,3	54,9	53,6	49,7	78,9	87,4
N.E.C. Manufacture of Furniture	123,6	138,1	165,1	148,5	131,5	123,1	118,6	166,4	177,7	153,2
MANUFACTURING INDUSTRY	**100,1**	**95,9**	**102,1**	**92,4**	**102,5**	**112,0**	**123,6**	**129,6**	**136,8**	**143,3**

Source: Undersecretariat of Treasury, Indicators and Statistical Data, available at www.hazine.gov.tr

On the other hand, Figure 3.4 shows the change in production index over the period 1998-2007. As can be seen in the Figure, the fluctuation in production is apparent. The production of manufacturing declined dramatically in the crisis periods

of 1999 and 2001. However, in the other years it showed a large increase in manufacturing production.

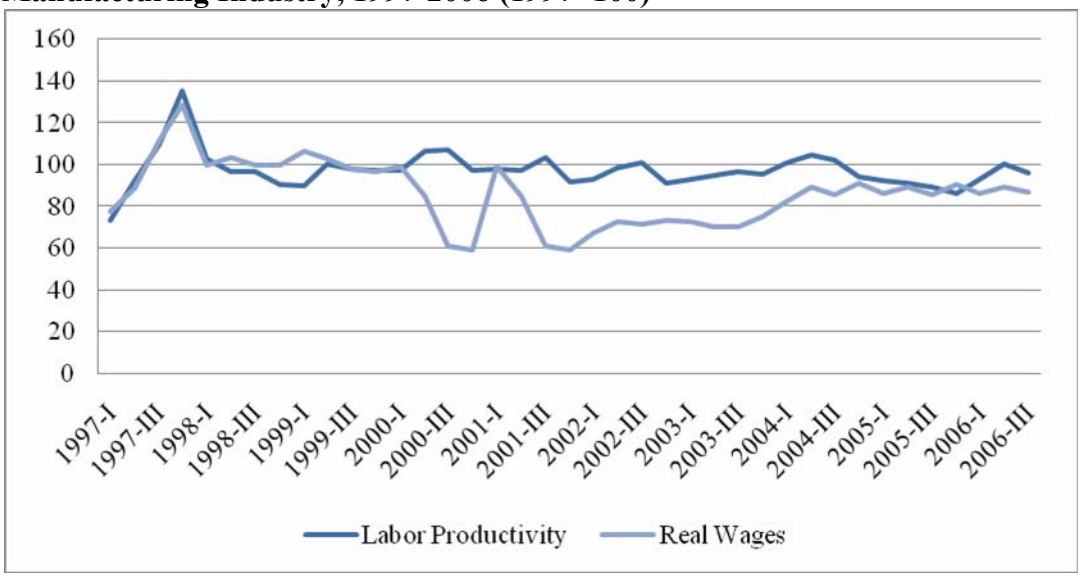
Figure 3.4: Production Index in the Manufacturing Industry (1997=100, % Change)



Source: Undersecretariat of Treasury, Indicators and Statistical Data, www.hazine.gov.tr

Rising labor productivity provides a basis for increases in real wages. However, data from the Turkish manufacturing industry shows the absence of such a link in the Turkish economy. Productivity has been improving in private Turkish manufacturing industry while real wages have been going down. Real wages in manufacturing fell significantly following the 2001 crisis, and have only recently started to recover (Figure 3.5). Indeed, it is a well-known fact that real wages have been inelastic with respect to labor productivity, leading to a trade-off between real wage determination and competitiveness.

Figure 3.5: Labor Productivity and Real Wages in Turkish Private Manufacturing Industry, 1997-2006 (1997=100)



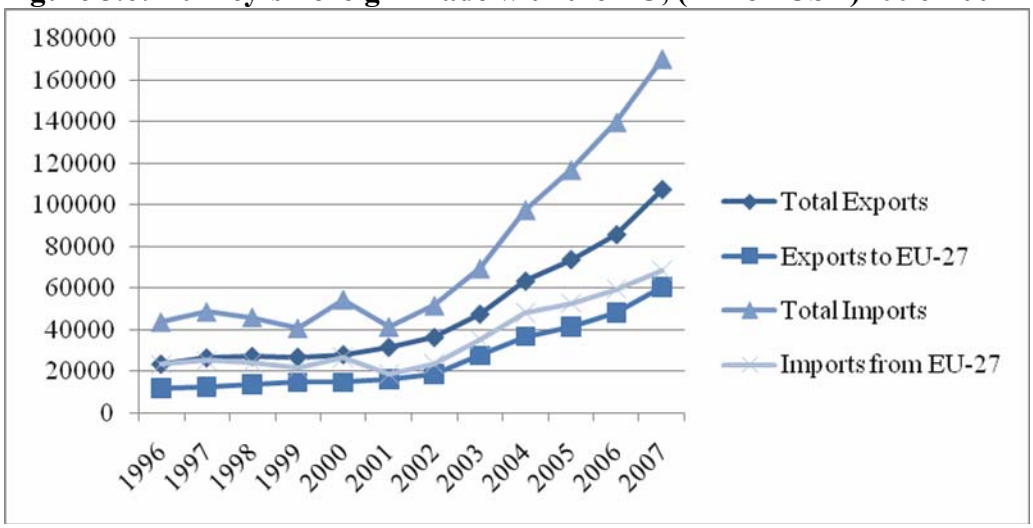
Source: National Productivity Center of Turkey, Manufacturing Industry Statistics, http://www.mpm.org.tr/

On the other hand, the contemporary Turkish economy that has been characterized by the export-oriented strategies introduced in the beginning of the 1980s becomes more an open economy over decades. Export oriented policy regime of 1980s and the CU agreement of 1996 has opened up the Turkish manufacturing industry to foreign competition. As a consequence of CU agreement, Turkey is almost part of the European single market with respect to trade in manufacturing goods. In other words, most importantly, the CU represents Turkey's first step towards full integration into the single market.

In terms of external trade, the EU has been a key trading partner for Turkey ever since its establishment in the late 1950s. The EU ranks by far as number one in both Turkey's imports and exports while Turkey ranks seventh in the EU's top import and fifth in export markets[41]. In 1996 the trade volume between Turkey and the EU was around 34.6 billion USD and it rose to 129 billion USD in 2007. Turkey's total trade volume was 66,8 billion USD and 272,2 billion USD respectively. Figure clearly demonstrates this increasing trend.

[41] European Commission, Trade Issues, Bilateral Trade Relations: Turkey, http://ec.europa.eu/trade/issues/bilateral/countries/turkey/index_en.htm

Figure 3.6: Turkey's Foreign Trade with the EU, (Billion USD) 1996-2007



Source: Turkstat (2007b) Turkey's Statistical Yearbook, p.251-252 Data for 1996-2002; Togan, S., Nebioğlu, H and Doğan, S. (2005) Integration and the Manufacturing Industry, in Turkey: economic reform and accession to the European Union / edt, Bernard Hoekman and Sübidey Togan, Washington, DC: World Bank: London: Centre for Economic Policy Research, p. 93.

As illustrated in Figure 3.6, the volume of bilateral trade has considerably increased especially following the completion of the CU. However, the CU agreement did not noticeably increase the share of Turkish exports going to the EU since the EU had already opened its markets for Turkish exports long before the CU agreement was concluded. Indeed, as Togan et al. (2005:94) indicate the completion of the CU between Turkey and the EU did not lead initially to considerable increases in trade with the EU. One of the reasons behind this was that the formation of the CU did not lead to considerable reductions in trade barriers on the EU side, because the EU had abolished the nominal tariff rates on imports of industrial goods from Turkey on September 1, 1971, long before the formation of the CU.

As previously mentioned, with the establishment of the CU, Turkey and the EU have removed all barriers in front of trade excluding service and agricultural products. Table 3.8 shows Turkey's foreign trade of manufactured products with the EU for the period 1999 and 2007. It is seen that the volume of bilateral trade of manufacturing goods has considerably increased during the period considered. Although, Turkish manufacturing industries export capacity has been growing, the

volume of imports from the EU has increased more than that of exports. Hence the balance of payments deteriorated further. Furthermore, for the period 1996-1999, it is also difficult to say that the rise in imports originated from the CU since there occurred real depreciations in the European currencies during the period considered, which in turn led to the fact that the European products became cheaper (TEPAV, 2007b:14).

Table 3.8: Turkey's Trade of Manufactured Products with the EU and the World (SITC 5 to 8), 1999-2007 (Billion Euros)

Turkey's Trade of Manufactured Products with the World*												
	SITC 6+8			SITC 5			SITC 7			SITC 5+6+7+8		
	Imports	Exports	Trade Balance	Imports	Exports	Trade Balance	Imports	Exports	Trade Balance	Imports	Exports	Trade Balance
1999	8.70	14.28	5.56	5.89	1.05	-4.84	14.42	4.71	-9.70	29.03	20.06	-8.96
2000	12.77	17.48	4.70	8.02	1.34	-6.68	22.19	6.21	-15.98	43.00	25.04	-17.95
2001	10.23	19.61	9.36	6.96	1.51	-5.43	14.18	7.98	-6.18	31.39	29.13	-2.26
2002	12.46	21.81	9.34	8.35	1.60	-6.74	16.49	9.12	-7.37	37.33	32.56	-4.76
2003	13.62	23.01	9.38	9.21	1.67	-7.54	19.00	10.93	-8.07	41.85	35.63	-6.22
2004	17.58	26.84	9.25	11.42	2.05	-9.35	27.09	14.68	-12.39	56.10	43.59	-12.50
2005	21.45	29.30	7.84	13.20	2.45	-10.74	30.56	17.36	-13.19	65.23	49.12	-16.10
2006	26.13	32.33	6.18	14.65	3.12	-11.53	34.27	21.00	-13.26	75.07	56.46	-18.59
2007	30.66	36.48	5.80	16.12	3.45	-12.66	36.37	24.99	-11.38	83.18	64.93	-18.24
Turkey's Trade of Manufactured Products with the EU**												
	SITC 6+8			SITC 5			SITC 7			SITC 5+6+7+8		
	Imports from EU	Exports to EU	Trade Balance	Imports from EU	Exports to EU	Trade Balance	Imports from EU	Exports to EU	Trade Balance	Imports from EU	Exports to EU	Trade Balance
1999	4.77	9.31	4.54	3.63	0.39	-3.24	10.32	3.48	-6.84	18.72	13.18	-5.54
2000	6.67	11.14	4.47	4.92	0.50	-4.42	16.52	4.24	-12.28	28.11	15.88	-12.23
2001	5.48	12.74	7.26	4.21	0.55	-3.66	9.44	5.52	-3.92	19.13	18.81	-0.32
2002	6.59	14.01	7.42	5.04	0.63	-4.41	11.65	6.91	-4.74	23.28	21.55	-1.73
2003	7.22	15.33	8.10	5.64	0.67	-4.97	14.09	8.14	-5.94	26.95	24.14	-5.01
2004	9.11	17.13	8.03	7.00	0.80	-6.20	19.45	11.11	-8.35	35.56	29.04	-6.52
2005	10.23	17.90	7.66	7.86	0.91	-6.95	21.05	12.73	-8.33	39.14	31.54	-7.62
2006	11.69	19.96	8.26	8.70	1.19	-7.51	23.57	15.27	-8.30	43.96	36.42	-7.55
2007	12.97	22.95	9.98	9.14	1.35	-7.78	24.16	17.43	-6.73	46.27	41.73	-4.53

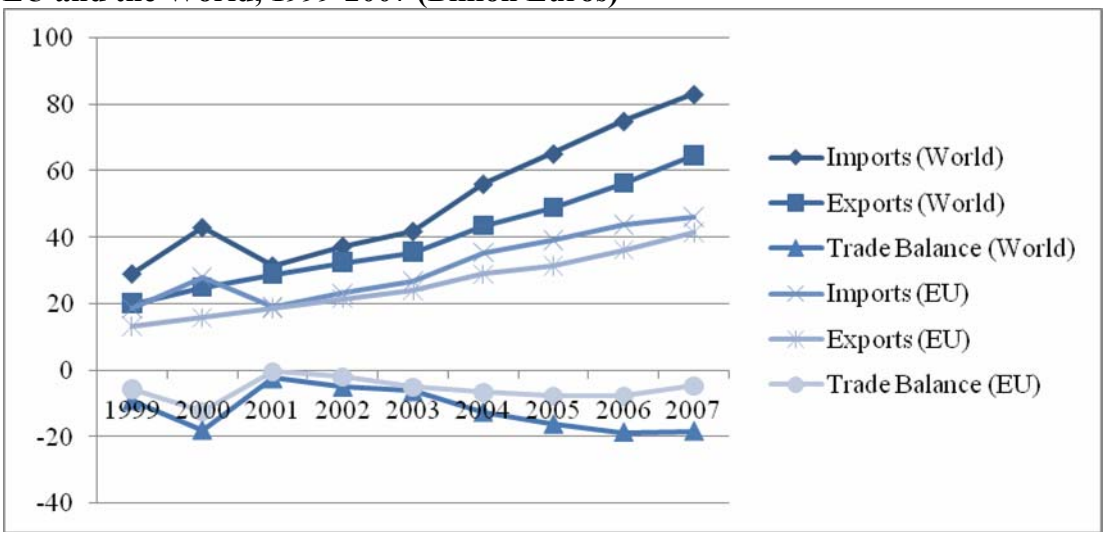
Source: *TurkStat, Foreign Trade Statistics, Foreign Trade by Standard International Trade Classification (SITC.Rev.3) available at www.turkstat.gov.tr, ** Eurostat, External Trade Aggregated Data, Long Term Indicators, Extra-EU Trade by Main Partner Countries, available at http://ec.europa.eu/eurostat/. (Data include the trade of chemicals and related products (SITC 5), other manufactured goods (SITC 6+8) and machinery and transport equipment (SITC 7)).

Basic data on Turkey's trade of manufactured products with the EU and the World are shown in Table 3.8. While Turkey's trade balance by the SITC 6+8, which includes more traditional industries, gives a surplus, the trade balance of SITC 5 and 7 gives a deficit, which contains medium and high technology products such as chemicals and machinery.

Thus, the Table further reveals that the manufacturing exports with the highest shares were SITC 6+8. Low technology and unskilled labor intensive manufactured products (SITC 6+8) still remain Turkey's major specialization in EU markets. In other words, Turkey has a strong revealed export specialization in EU markets for such manufactured products, whose value added is relatively small. On the other hand, manufacturing imports with the highest shares were SITC 7. The value of imports of medium and high technology products (SITC 5 and SITC 7) exceed the exports for the period considered. That is, while the EU specializes in the industries of SITC 5 and 7, Turkey specializes in the industries of SITC 6 and 8.

Although Turkey's export basket is still dominated by low technology and unskilled labor intensive products, it has been moving towards products characterized by medium and high technology products. Since technological characteristics of the manufacturing industry plays an important role in the trade structure of the country, in order to increase its competitiveness Turkey has a to alter problems such as low R&D activities, lack of specialized human capital, and lack of modern infrastructure in the Turkish manufacturing industry.

Figure 3.7: Turkey's Trade of Manufactured Products (SITC 5 to 8) with the EU and the World, 1999-2007 (Billion Euros)

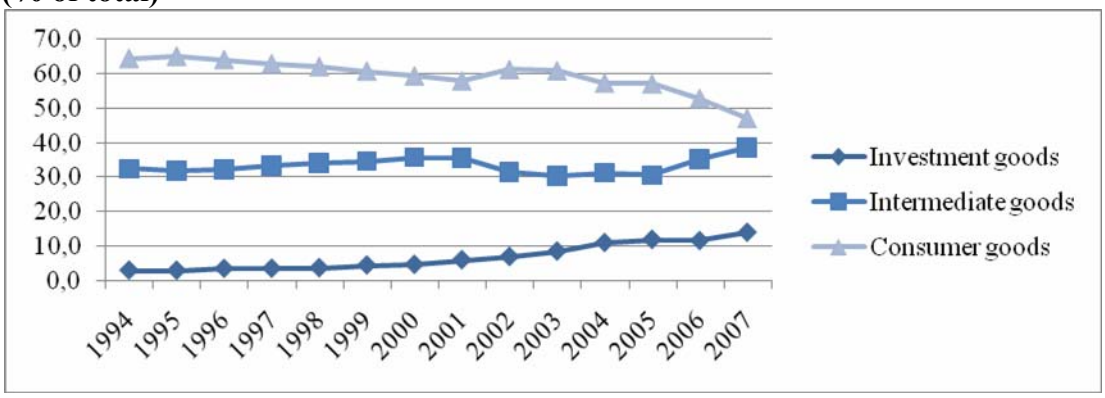


Source: Data for Turkey's Trade with the World; TurkStat, Foreign Trade Statistics, Foreign Trade by Standard International Trade Classification (Sitc.Rev.3) www.turkstat.gov.tr Data for Turkey's Trade with the EU; Eurostat, External Trade Aggregated Data, Long Term Indicators, Extra-EU Trade by Main Partner Countries, http://ec.europa.eu/eurostat/

Figure 3.7 clearly demonstrates Turkey's foreign trade with the world and the EU. As shown in Figure, Turkey has achieved significant success and increased its trade volume dramatically. Indeed, Turkey's exports to and imports from both EU and non-EU countries have increased steadily between the period 1999-2007, conforming to the global trends towards growing economic integration. It is seen that the CU agreement has also contributed to the increasing volume of trade between Turkey and the EU. For instance, the specific effect of CU upon the Turkish exports and imports is analyzed in Neyapti et al. (2004) and they conclude that the CU between Turkey and the EU has led to a significant increase in Turkey's trade. By using panel data regression model, Akkoyunlu et al. (2006) show that the economic reforms of 1980s and the CU agreement of 1996 exerted positive impact on the intra-industry trade between Turkey and its trading partners. Moreover, they find that the impact of the 1980s liberalization efforts is stronger as it affects the intra-industry trade of Turkey with all partners, whereas the impact of the CU is only noticeable in the intra-industry trade with the EU member states, as expected. They concluded that, although the CU covers mainly the industrial goods, it appears to exert similar effect upon the intra-industry computed both for the whole trade and for the trade in manufacturing goods only.

Figure 3.8 shows decomposition of Turkey's exports to the EU in terms of commodity groups. It is seen that the share of investment goods increased from 3,4 % in 1996 to 14 % in 2007. The share of intermediate goods increased from 32,8 % in 1996 to 38,7 % in 2007, higher than the value in pre-CU period. However, the share of consumer goods decreased from 64,3 % in 1996 to 47,1 % in 2007, much lower.

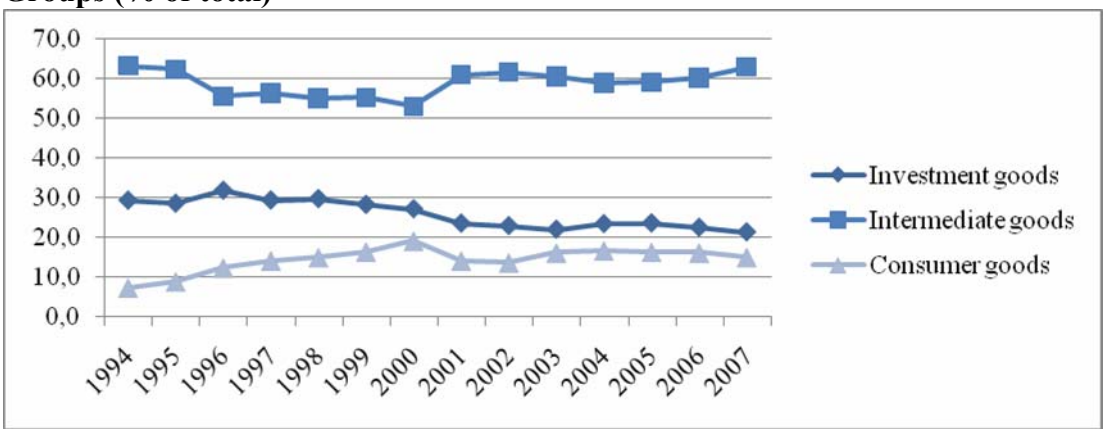
Figure 3.8: Decomposition of Turkey's Exports to the EU- Commodity Groups (% of total)



Source: Undersecretariat of the Prime Ministry for Foreign Trade, Turkey-EU Relations, Turkey-EU Trade Statistics: Decomposition of Turkey's Trade to the EU, www.dtm.gov.tr

On the other hand, Figure 3.9 shows decomposition of Turkey's imports from the EU in terms of commodity groups. As seen in the Figure, the volume of imports of consumer goods increased from 12,6 % in 1996 to 19,2 % in 2000 while the amount of investment goods decreases just after the CU but then becomes stable and rises. The share of investment goods decreased from 31,9 % in 1996 to 21,4 % in 2007. After 2001, Turkey experienced high growth rates continuously and the increasing input needs of the growing domestic manufacturing sector led to a rising imports of intermediate and investment goods, while postponed purchases started to be realized and imports of consumer goods rose as well.

Figure 3.9: Decomposition of Turkey's Imports from the EU- Commodity Groups (% of total)



Source: Undersecretariat of the Prime Ministry for Foreign Trade, Turkey-EU Relations, Turkey-EU Trade Statistics, Decomposition of Turkey's Trade to the EU www.dtm.gov.tr

The CU has affected Turkish economy positively in terms of trade liberalization and integration into the EU and world markets. Another possible significant impact of the CU is that the CU diverts the Turkish trade (thus trade is diverted from a more efficient exporter towards a less efficient one by the formation of a CU agreement). However, taking into account the relatively low common customs tariff and size of the EU, unchanging share of the EU in the Turkish trade gives an impression that trade creation impact outweighs trade diversion (TEPAV, 2007b:15).

On the other hand, the CU has also affected the pricing behaviours of the Turkish firms and the competition and the productivity in the manufacturing industry in Turkey. One of the most apparent changes in the transformation during the post-CU period is that the import penetration rate increased from levels of about 20% in the 1990s to about 30% in the post-CU period. However, the rapid entry of foreign products to the domestic market along with the CU and free trade does not mean that the domestic production does vanish (TEPAV, 2007b:12-13).

According to a recent study on the impacts of the CU agreement, Akkoyunlu-Wigley and Mihci (2006) show that increasing imports from EU countries reduced the sectoral concentration ratio and thereby sectoral market power

in Turkish manufacturing industry. Thus, increasing trade volume with EU countries during the CU period created beneficial effects on Turkish economy especially by means of increasing competitive pressure for falling mark-ups and market power. Hence, it is clear that there are welfare impacts as a result of such changes in the pricing behavior and market structure of the Turkish manufacturing industry. Another recent study by Taymaz and Yılmaz (2007) show that productivity actually increased in the manufacturing sectors examined along with increased import penetration rates after completion of the CU agreement in 1996. The study finds that productivity in import-competing sectors increased 14 % from 1995 to 2000 whereas it stagnated in export-oriented and non-traded manufacturing industries.

During the same period, there have been dramatic increases in the export-output ratio. The export-output rate, which was 17% in the pre-CU, increased significantly in the first five year after the CU, amounting to 23,4%. It seems that the increase in the import of intermediate and investment goods also led to an increase in export (TEPAV, 2007b:13). Thus, import penetration and export-output ratio in Turkey increased in all subsectors of the manufacturing sector but at different rates in each. While export-output ratio increased in traditional sectors such as textile and clothing sector much more, it also increased significantly in the sectors of machinery, electrical machines and transportation vehicles. However, what is important is that the trading performance of the manufacturing sectors converges into each other during the CU period (TEPAV, 2007b:15).

3.3.1 Firm Size in Turkish Manufacturing Industry

SMEs are a crucial part of the Turkish economy because of their large share in the total number of firms and in total employment. Due to the prominent position of SMEs in the economy, Turkish government has embarked upon economic

strategies (both medium and long term) in order to support SMEs either directly or indirectly. This process began in 1960s and was reinforced in 1980s by the liberalization efforts. A crucial step in this process was the establishment of a CU with the EU in 1996 which intensified the influence of competition on Turkish manufacturing industry and thus on SMEs. As a consequence of CU agreement and later Turkey's candidate status for EU membership, the policies for supporting SMEs was coordinated in line with the EU in order to sustain strong competition with their European counterparts[42]. Due to their importance on Turkish economy, governments have carried out various programmes to support SMEs. SME Strategy and Action Plan of 2004 have been prepared with the objective of applying the policies on SMEs at the national level and enhancing competitiveness of SMEs in the process of harmonization with the EU policy. In Turkey, the number of SMEs (including SMEs in the service sector) constitutes 99.8% of total enterprises and 76.7% of total employment. The share of SME investments within total investments is around 38%, with a share of 26.5% of the total value added (SPO, 2004a:8; OECD, 2004:27).

However, as stated in Annual Programme (SPO, 2008:91) SME support programs in Turkey, when compared to practices in EU and other developed countries, are not at the level of meeting the needs of enterprises. In addition to this, lack of sources and insufficiency of institutional capacities constitute an important barrier for achieving concrete results from programs in short or medium term. In order to increase effectiveness of SME support programs it is necessary to increase coordination among institutions and transform supports to an integrated structure. Turkish SMEs[43] average profiles differ from their European counterparts, thus, their average workforce and turnover are much smaller. In particular, SMEs lag well behind in terms of know-how, skill levels, access to new technologies and capital

[42] Parallel to its relations with the EU, Turkey signed the European Charter for Small Enterprises in April 2002 and agreed to take concrete steps to develop policies and programmes for SMEs. Turkey participates in the Multi-annual Programme for Enterprise and Entrepreneurship (MAP), in addition to the BEST (Business Environment Simplification Taskforce) Programme.

[43] Regulation No. 2005/9617 of 16 November 2005 introduced a uniform definition of SMEs consistent with the EU. In line with the EU definition of SMEs, the new definition distinguishes between micro, small and medium-sized enterprises but sets significantly lower limits on turnover and total assets than the EU. This definition has again been modified effective 18 May 2006 to eliminate differences in SME definitions used by various institutions in Turkey.

investment to support their activities (OECD, 2004:9, SPO, 2004a:34). Turkish industrial SMEs had to operate in an unstable macroeconomic environment for many years with a series of financial crisis. Additionally, they had to face strong competition as a result of the establishment of the CU agreement with the EU in 1996. Indeed, the adoption of the EU's common external tariffs for industrial products were major steps triggered a sharp reduction in tariff barriers and greatly altered the competitive environment in which SMEs operate.

Thus, in order to improve the productivity of Turkish SMES and enhance their competitiveness in the global markets, a range of policy initiatives has been laid down in the Ninth Development Plan 2007-2013. Thus, in order to strengthen SMEs; it is aimed to facilitate the access of SMEs to financial sources under affordable conditions; to foster the availability of venture capital, start-up capital and credit guarantee systems and to reduce bureaucratic formalities by simplifying legislation concerning business environment.

The low contribution of SMEs to economic activity is related to limited market competition and barriers to entry, operation and exit, together with lack of integration with larger firms (except in a few specific sectors) (World Bank, 2006b:104). In developed countries such as the US, SMEs are truly an integral part of the economy. For instance; in the US manufacturing sector, SMEs constitute 64 % of total establishments, 16 % of employment, 10 % of revenues, and 10 % of the value added. Thus, when comparing the labor productivity of SMEs in Turkey to their counterparts in the US, it is seen both that Turkish SMEs are significantly less productive at every size level and that the productivity shortfall is inversely proportional to size – the smaller the company, the larger the shortfall (McKinsey Report, 2004:42-43).

Both in Turkey and the EU, SMEs have positive effects in providing and maintaining balanced economic development. In order to increase SMEs' access to finance and their utilization rate of bank credits, various credit programs are

implemented by particularly KOSGEB[44] and Halkbank with supports of related institutions. For instance, KOSGEB has significantly simplified its application procedures for SME support by reducing required documents on average from 48 to 5 and increased support incentives (European Union Twinning Project for Turkey, 2006:156).

Table 3.9: Manufacturing Enterprises in Turkey

Size category by number of workers	Number of enterprises		Workers (000)		Value added (USD millions)	
	1992	2001	1992	2001	1992	2001
1 to 9	186 900	199 737	523 117	500 738	2 874	1 632
10 to 49	7 970	7 260	175 646	183 694	2 506	1 947
50 to 249	2 434	3 127	225 650	343 023	6 678	6 187
250 and over	795	912	553 626	570 083	26 952	18 988
Total	198 097	211 046	1 478 039	1 597 538	39 011	28 754
Share of SMEs in total enterprises (%)	99.6	99.6	62.5	64.3	30.9	34.0

Source: OECD (2004) Small and Medium Enterprises in Turkey: Issues and Policies, Paris: OECD, p.29.

As seen in the Table 3.9, there were around 210 000 SMEs (1-250 workers) in the manufacturing sector, which corresponds to 99.6% of the total number of the firms in the sector, which is a little higher than that in the EU, about 99% (Table 2.4). These SMEs employ 64.3% of the total workers in the manufacturing sector and they also accounted for 34.5% of the sector's value added.

Manufacturing sector SMEs are broken down across industries as follows: metal industry (26.1%), textile, clothing and leather industry (26.6%), wood and furniture industry (24.3%), food and drink industry (12.7%), paper industry (3.9%) and other industries (7.4%). An interesting feature of these sectors is that they are generally very small: the average number of workers employed by SMEs in the manufacturing is 4.8 %. This feature of the Turkish manufacturing industry (small

[44] Small and Medium Industry Development Organization (KOSGEB) established in 1990, acts as a provider of consultancy services and as a technology supplier to SMEs in Turkey. KOSGEB operates a wide range of support for SMEs, some in the form of grants and others in the form of repayable interest free loans to cover a proportion of the cost of approved projects.

size of the SMEs) can also seen in international comparisons. For instance, the share of SMEs with fewer than 100 workers is higher in Turkey in many OECD countries (except for Italy) (OECD, 2004:29). Furthermore, the Turkish manufacturing sector has the highest share of enterprises with fewer than ten workers (34%). However, this is on average 14% in the EU (Table 2.4).

According to an OECD Report on 'Small and Medium Enterprises in Turkey: Issues and Policies' (2004:49), since SMEs are so numerous, small in size and dispersed throughout the country, they are not directly affected by the competition law. However, it plays a crucial role in safeguarding SMEs against monopolistic tendencies and in ensuring a high level of competition in all markets. The Report also stated that the implementation of competition policies therefore has a beneficial impact on SMEs (and on overall economy) by ensuring markets work more effectively. Making it illegal to enter into anti-competitive agreements, form cartels or abuse of dominant positions protects the public interest and thus the interests of SMEs. Thus, SME-related regulatory reform must be part of overall Turkish regulatory reform. Beyond the regulatory reform, special measures are being implemented to allow SMEs easier access to sources of financing and special aid system.

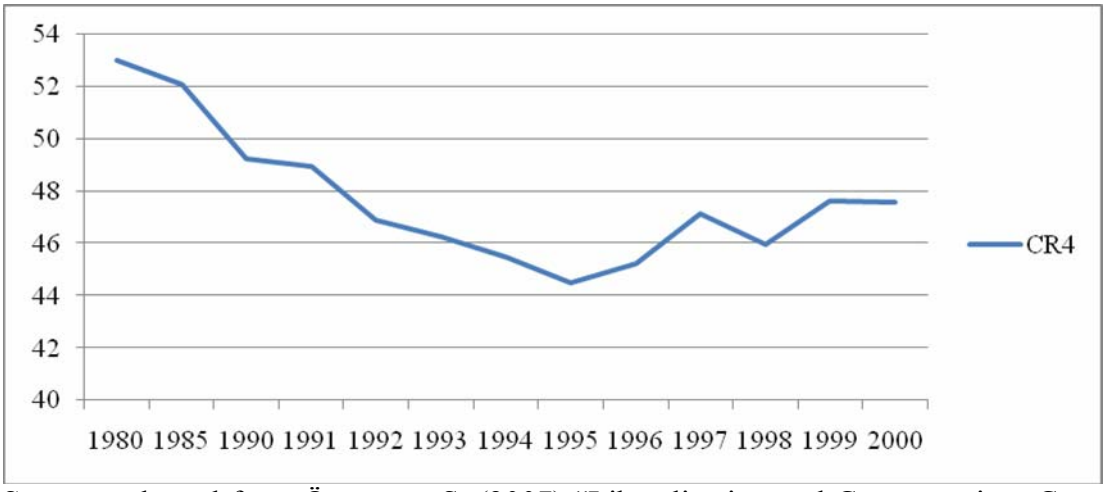
3.3.2 Industrial Concentration in Turkish Manufacturing Industry

The liberalization efforts of 1980s and the establishment of CU led to a decline in concentration ratio in manufacturing industry. For instance, Özmucur (2007) shows that the level of concentration in the manufacturing has decreased with the liberalization measures taken in post-1980 period. Similary, Akkoyunlu-Wigley and Mihci (2004) show that the CU has had a pro-competitive impact on the Turkish

economy and thus the increase in imports from the EU led to a decline in concentration ratios in Turkey's manufacturing industry.

Figure 3.10 below shows the trends in industrial concentration by looking at the four-firm concentration ratio (CR4). As shown in Figure, the concentration ratios for the manufacturing sector in 1980 were: CR4 = 53.04. The four-firm concentration ratio dropped to 49.25 in 1990 and 47.62 in 2000. Overall concentration in 1980 and 2000 indicates the negative trend in industrial concentration, and hence possible increase in competition. Thus, the four-firm concentration ratio decreased by 1.16 from 1990 to 2000.

Figure 3.10: Concentration in Turkish Manufacturing Industry, 1980, 1985 and 1990-2000



Source: adopted from Özmucur, S. (2007) "Liberalization and Concentration: Case of Turkey", *The Quarterly Review of Economics and Finance*, 46 (2007) 762–777, p.765.

On the other hand, Table 3.10 shows the low and high concentration industries in Turkish manufacturing sector as of 2001. As shown in Table, for instance, in the production of metallic goods, concentration is relatively low. In the manufacturing of other fabricated metal products and in the manufacturing of structural metal products, the joint share of the eight largest companies is less than 40%. In basic iron and steel, the branch with the highest revenues within this group

(EUR 5.4 billion), the degree of concentration was moderate: of 184 market participants, the eight largest had a joint market share of 52%.

In the textiles and clothing sector more than 3,500 companies were active in 2001. Two smaller sub-sectors are highly concentrated, whereas in most of the others concentration is low. This is especially true for the largest sub-industry, preparation and spinning of textile fibres and weaving of textiles as well as for manufacture of wearing apparel. In these two branches, the shares of the eight largest players were 21% and 12% respectively, whereas the branch revenues were EUR 7.7 billion and 6.4 billion, ranking them second and third on the list of industries with the highest revenues.

As of 2001, in the production of wood products, where 450 enterprises were operating and concentration ratios were not as low as in textiles industry. In the large sub-industries, the eight largest companies had market shares of around 60%.

In the context of food, beverages and tobacco sector, 25 companies participated in tobacco production, the branch with by far the highest revenues in the whole sector with around EUR 3.4 billion revenue. The eight largest companies accounted for a joint market share of 89 %. Concentration was also high in the production of beverages with a total revenue of EUR 1.8 billion. In all of them, the eight largest companies had market shares ranging between 80% and 100%. Among the larger subsectors of the food industry, the manufacture of cocoa, chocolate and sugar confectionery was highly concentrated, but less so the sugar industry where 39 companies were operating. The large food-processing branches with very low concentration ratios were processing and preserving of fruit and the vegetables and manufacture of grain mill products.

Table 3.10: Concentration in Turkish Manufacturing Industry, 2001

Activity	Number of establishments	CR4	The industry's total revenues (million EUR)
Low concentration industries (joint market share of the 4 largest companies below 50%)			
Manufacture of wearing apparel, except fur apparel	1,485	7.88	6,427
Preparation and spinning of textile fibres; weaving of textiles	825	13.89	7,674
Manufacture of plastics products	487	14.76	2,016
Manufacture of knitted and crocheted fabrics and articles	310	16.86	1,187
Manufacture of grain mill products	264	18.07	1,008
Processing and preserving of fruit and vegetables	234	20.00	2,578
Manufacture of other fabricated metal products n.e.c.	298	23.57	1,004
Manufacture of cement, lime and plaster	82	30.44	1,626
Manufacture of pharmaceuticals, medicinal chemicals and botanical products	75	33.98	2,404
Production, processing and preserving of meat and meat products	99	34.68	1,255
Manufacture of basic iron and steel	184	34.97	5,426
Manufacture of vegetable and animal oils and fats	95	35.08	1,515
Manufacture of sugar	39	35.88	1,523
Manufacture of glass and glass products	103	40.05	1,091
Manufacture of parts and accessories for motor vehicles and their engines	171	44.97	1,113
High concentration industries (joint market share of the 4 largest companies above 50%)			
Manufacture of basic precious and non-ferrous metals	117	55.46	1,343
Manufacture of cocoa, chocolate and sugar confectionery	85	61.42	1,013
Manufacture of domestic appliances n.e.c.	136	63.31	1,998
Manufacture of tobacco products	25	66.69	3,361
Manufacture of soap and detergents, cleaning and polishing preparations, perfumes and toilet preparations	71	66.78	1,313
Manufacture of motor vehicles	26	71.11	3,907
Manufacture of refined petroleum products	37	89.19	15,546
Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy	16	92.50	1,042
Manufacture of television and radio receivers, sound or video recording or reproducing apparatus, and associated goods	30	98.64	1,395
Manufacture of man-made fibres	5	99.85	1,394
Publishing of recorded media	1	100.0	(*)
Reproduction of recorded media	2	100.00	(*)
Manufacture of industrial process control equipment	2	100.00	(*)
Manufacture of watches and clocks	2	100.00	(*)
Manufacture of other transport equipment n.e.c.	1	100.00	(*)
Manufacture of sports goods	1	100.00	(*)

Source: Pöschl et al. (2005) Turkey: Macroeconomic Vulnerability, Competitiveness and the Labour Market, Turkish Economic Association, Discussion Paper, 2005/5, p. 42 (*) Hidden due to code of confidentiality.

The most important activity among the highly concentrated industries was the manufacture of refined petroleum products. 37 companies were listed, but the largest four had a joint market share of close to 90%. Another important and highly concentrated branch was the manufacture of motor vehicles: the revenues of 26 participants totaled EUR 3.9 billion, but the joint market share was 71% for the four and 90% for the eight largest. Of the larger industries, other high levels of concentration were also to be observed in the manufacture of domestic appliances n.e.c., the manufacture of TV and radio receivers and video recorders, and the manufacture of man-made fibres.

3.3.3 FDI in Turkish Manufacturing Industry

FDI flows have been increasingly considered as an important tool for industrial growth. In fact, FDI highly contributes to economic growth, employment, technological development and helps to create a more competitive business environment for firms. In order to attract FDI, there should be well-functioning market economy with minimum bureaucratic requirements. Indeed, the SPO Report on Industrial Policy for Turkey: Towards EU Membership (2003:47) stated that;

In the manufacturing industry, investments in R&D especially with respect to ICT, new product and technology generation, protection of the environment, improvement of SMEs, creation of employment and decreasing regional disparities should be supported. In that respect, investments in industrial zones and techno parks should be encouraged. Utilization of more effective instruments, reduction of bureaucracy and enhancing transparency, generality and impartiality will be the basic principles in supporting investments.

Turkey had difficulties with attaining an appropriate level of FDI in order to ensure its growth and development. Although Turkey has a large and dynamic market with a relatively high quality labor force and economic location advantages with easy access to regional markets, it has always attracted relatively low FDI inflows because of several reasons such as macroeconomic and political instability, structural barriers, excessive bureaucratic requirements and corruption.

Improvement in macroeconomic stability, positive effect of the EU membership negotiations on predictability, rigorous structural reform programmes and efforts of improving the investment environment has highlighted Turkey as an attractive investment location for foreign investors over the past years. For instance, Turkey has attracted high levels of FDI which is a significant sign of the improved macroeconomic environment in Turkey.

In addition to improved macroeconomic environment, Turkey has initiated a series of reform programme in order to attract more FDI and to improve the general business and investment climate for both domestic and international entrepreneurs. Since then a number of developments such as introduction of new FDI law and establishment of Investment Support and Promotion Agency took place. In 2003, the ineffectiveness of the former existing Foreign Investment Promotion Law No. 6224 has led to the introduction of FDI Law No. 4875[45]. Accordingly, the law on the Establishment of Investment Support and Promotion Agency of Turkey[46] adopted in June 2006 in order to provide the legal basis for Turkey to develop its own investment promotion agency, similar to most EU countries. Turkey has enacted FDI Law No. 4875 in order to open the investment environment especially by reducing bureaucratic barriers that foreign investors face. The new law, which is mainly built on the principles of Freedom to Invest and National Treatment (Article 3(a)), allows

[45] Article 1 of FDI Law No.4875 indicate the objective of the Law as; to regulate the principles to encourage FDIs; to protect the rights of foreign investors; to define investment and investor in line with international standards; to establish a notification-based system for foreign direct investments rather than screening and approval; and to increase FDIs through established policies. This Law establishes the treatment to be applied to FDIs.

[46] Law No. 5523 of 21.06.2006

foreign investors to make FDI in Turkey. Moreover, both domestic and foreign investors operate and compete within the same regulatory framework. Thus, foreign investors are subject to equal treatment with domestic investors in the context of national treatment concept. As indicated in EU Twinning Project for Turkey (2006:114) the FDI law should primarily be regarded as a transition law transforming the Turkish FDI regime from an interventionist one into a genuine market economy system where all investors, domestic and foreign, operate and compete in the same legal and institutional framework.

In recent years, measurable progress has been achieved in numerous policy reform areas that affect the legal, regulatory and administrative framework of the investment climate in Turkey. For instance, in Turkey the total FDI inflow which was USD 1,7 billion in 2003 reached to USD 22 billion in 2007 (Undersecretariat of Treasury, 2008:14). The sectoral breakdown of the FDI inflows in Turkey has been parallel to the developments in the world economy especially in the last few years.

As shown in Table 3.11, financial intermediation and transport, storage and communications have been the sectors that attracted the most FDI in both 2006 and 2007. In addition, chemistry and food products and beverages production as subsectors of manufacturing have recorded notable increases in terms of FDI inflow in 2007.

Table 3.11: International Direct Investment Inflow by Sector (Million USD)

Sectors	**2002***	**2003**	**2004**	**2005**	**2006**	**2007**
Agriculture, hunting and forestry	--	1	4	5	5	2
Fishing	--	--	2	2	1	3
Mining and Quarrying	2	14	73	40	122	333
Manufacturing	110	448	190	785	1 866	4 208
-Manufacture of food products and beverages	14	249	78	68	608	760
-Manufacture of textiles	10	8	9	180	26	233
-Manufacture of chemicals and chemical products	9	9	38	174	601	1 101
-Manufacture of machinery and equipment n.e.c.	13	17	6	13	54	47
-Office machinery and computers	2	4	2	13	53	97
-Manufacture of motor vehicles, trailers and semi-trailers	33	145	27	106	63	65
-Other Manufacturing	19	14	30	231	461	1 905
Electricity, gas and water supply	68	86	66	4	112	567
Construction	3	8	3	80	222	283
Wholesale and retail trade	89	92	72	68	1 166	182
Hotels and restaurants	0	4	1	42	23	27
Transport, storage and communications	1	2	639	3 285	6 696	1 117
Financial intermediation	260	51	69	4 018	6 957	11 451
Real estate, renting and business activities	0	6	3	29	99	909
Health and social work	5	23	35	74	265	176
Other community, social and personal service activities	84	10	33	103	105	12
Total	**622**	**745**	**1 190**	**8 535**	**17 639**	**19 270**

Source: Undersecretariat of Treasury (2008b) International Direct Investment Information Bulletin, General Directorate of Foreign Investment, May;
*Undersecretariat of Treasury (2007) International Direct Investment Information Bulletin, General Directorate of Foreign Investment, October;

Chemistry, the largest FDI attracting subsector of manufacturing, represented an increase of almost two-fold in 2007. The highest region of origin of the investments in the sector is the EU. For instance, in 2007, one of the biggest transactions completed and announced in Turkey (USD 17 billion) is Czech Republic based Zentiva's acquisition of Eczacıbaşı Pharmaceuticals (USD 602 million). This transaction was the noteworthy investment in pharmaceuticals sector in 2007 (Undersecretariat of Treasury, 2008a:57-58).

As of 2007, 66.1% of the total inflows realized come from the EU countries and 21.9% comes from the USA. Thus, the first three origin countries for 2007 FDI inflows were the Netherlands (29.6%), the USA (21.9%) and Greece (11.8%) (Undersecretariat of Treasury, 2008a:12). However, as stated in Demianova (2008:3), no sectoral breakdown is available for FDI outward stocks and flows to Turkey for the EU aggregates. However, from the data of certain important EU Member States in terms of FDI investment stocks, the relative importance of manufacturing can be observed. In the context of manufacturing industry, Germany

invested around EUR 1.3 billion in that industry both in 2005 and 2006. Manufacturing was also the most important activity for Dutch investors in Turkey and they held stocks of EUR 845 million in 2006 in the industry. As regards France, the predominant activity was services, with an annual growth of 112% between 2004 and 2005 and outward stocks reaching EUR 1.8 billion in 2005. Investors from the UK invested a considerable amount (EUR 2.6 billion) in private real estate in Turkey in 2006, reflecting the change introduced by the new FDI Act from 2003, which allowed foreign investment in real estate in Turkey.

In line with its Lisbon Strategy, the EU gives high priority in improving the business climate in Europe, since FDI is an important tool in creating jobs and increasing competitiveness. The fulfillment of necessary requirements to improve the investment climate is also a crucial part of Turkey's negotiation process with the EU. During the negotiations, Turkey is required to establish the necessary legal, administrative and regulatory structures for implementation. In this context, especially free movement of capital, enterprise and also industrial policy are the chapters that are directly related with the investment climate and FDI. Free movement of capital requires the removal of barriers or limitations on foreign ownership, which Turkey still has in several sectors. Acquisition of real estate is another type of FDI, for which restrictions against the EU nationals will need to be removed. Nationality requirements for certain professions or for managerial positions will have to be phased-out. In addition, the Turkish legislative framework in the area of state aid control needs to be aligned with that of the EU. This will contribute to the creation of a level playing field in Turkey for future investments by EU companies. To attract new international, licensing requirements will have to be reviewed and intellectual property rights protected, in particular through effective enforcement. These steps will further improve the business environment and enable Turkey to attract higher and more sustainable FDI inflows in the future.

Looking at the administrative regulations, it is seen that recently, a significant progress has been recorded in improving the business climate and an escalation in investments has been accomplished with the realization of various

regulations, primarily ensuring macroeconomic stability in Turkey. As stated in Medium Term Programme 2008-2010, it is aimed to improve the business climate by sustaining a competitive structure. Within this framework; for instance, (i) accession of firms (in particular SMEs) to financial resources will be facilitated, (ii) efforts to reduce bureaucracy and simplify the procedures will be continued (iii) efforts to ensure an effective state aid system and to create a State Aid Monitoring and Supervising Board will be continued (iv) in order to ensure the efficiency of the intellectual property system, institutional capacity will be strengthened.

According to World Bank's "Doing Business 2008" report, which is prepared annually to provide measures for business environment regulations and their enforcement, and to make comparisons across countries, Turkey was ranked 57 out of 178 countries in terms of ease of doing business. As shown on the Table 3.12, Singapore tops the rankings on the ease of doing business. New Zealand, the US and Hong Kong, China follow close behind. Denmark is next, demonstrating that countries can be business friendly and provide strong social protections. According to the World Bank "Ease of Doing Business Indicators", in most EU countries, it is more difficult to start a new business than in the US and most EU countries underperformed relative to the US and Japan. Entry and exit rates continue to differ significantly between countries. As seen on the Table 3.12, among EU member states, the front runner is the Denmark, followed by the UK and Ireland. On the other hand, EU states like Italy, Slovenia, Czech Republic, Poland and Greece are lagging well behind. The same report indicated that Turkey improved in the ease of doing business (World Bank, 2007:2). As seen in Table, however, international indices in most cases rank Turkey lower than most EU and EU accession countries. Indeed, Turkey lags behind most EU countries except for Poland and Greece.

Table 3.12: Rankings on the ease of doing business, 2008

Rank	Economy	Rank	Economy	Rank	Economy	Rank	Economy
1	Singapore	11	Norway	21	Netherlands	46	Bulgaria
2	New Zealand	12	Japan	22	Latvia	48	Romania
3	US	13	Finland	25	Austria	53	Italy
4	Hong Kong, China	14	Sweden	26	Lithuania	55	Slovenia
5	Denmark	15	Thailand	31	France	56	Czech Republic
6	UK	16	Switzerland	32	Slovakia	57	Turkey
7	Canada	17	Estonia	37	Portugal	74	Poland
8	Ireland	18	Georgia	38	Spain	100	Greece
9	Australia	19	Belgium	42	Luxembourg		
10	Iceland	20	Germany	45	Hungary		

Source: World Bank (2007) Doing Business 2008, p.6

Compared to the report of 2007, besides general ranking, improvements are observed in Turkey's situation in the areas of starting a business, closing a business and paying taxes indicators. However, during the start-up period, issues such as intensive bureaucracy, the ambiguity and redundancy of the permits, approvals and licenses are ongoing problems even though various arrangements are introduced. Moreover, the needs for efficient sectoral inspections, encouraging formalization, reducing labor costs by enlarging the tax payer's base, increasing efficiency by enhancing the labor force quality in accordance with the market requirements and improving insured elasticity in the labor market still exist.

The ease of doing business covers only business regulations. A high ranking on the ease of doing business does mean that the government has created a regulatory environment conducive to operating a business. The indicators are used to analyze economic outcomes and identify what reforms have worked, where and why. These indicators are shown for Turkey in Table (3.13).

Table 3.13: Business Climate Indicators*

	Starting a Business		Dealing with Licenses		Hiring-Firing Difficulty Index (0-100)		Closing a Business
	Procedures (No)	Duration (Days)	Procedures (No)	Duration (Years)	Hiring	Firing	Duration (Years)
OECD Average	6	14.9	19.3	1.3	15.1	46.2	1.3
EU Best Practice	3 (Belgium)	4 (Belgium)	6 (Denmark)	0.4 (Ireland)	11 (Austria, Ireland, UK)	10 (Belgium, Denmark, Ireland, UK)	0.4 (Ireland)
Turkey	6	6	25	3.3	56	30	3.3
	Registering Property		Paying Taxes		Enforcing Contracts		
	Procedures (No)	Procedures (No)	Payments (No by year)	Total tax rate (% of profit)	Procedures (No)	Duration (Days)	
OECD Average	4.9	4.9	15.1	46.2	31.3	443.3	
EU Best Practice	1 (Sweden)	1 (Sweden)	8 (Spain, Portugal, UK)	27,2 (Ireland)	20 Ireland	210 (Lithuania)	
Turkey	6	6	15	45.1	36	420	

Source: World Bank (2008) Doing Business Indicators, *own calculations for OECD Average and EU Best Practice.

Turkey has significantly reduced the time for business registration, but the cost is still high (World Bank, 2006b:108). According to Doing Business Indicators 2008, in 2007, the business registration process was further streamlined. As a result, it now takes on average only 6 days to open a business, one of the fastest registrations in the world. However, registration costs (20.7 % of income per capita) are relatively high. Turkey is ranked 43 overall for Starting a Business (in which Australia is the top ranked economy followed by Canada, New Zealand and US). According to World Bank Country Economic Memorandum (2006b:108) the main reasons for Turkey's high startup costs are fees for notarizing the company's articles and accounting books (US$250) and fees related to the trade registry (US$750), both well above the administrative costs that notaries and the trade registry incur for these procedures. Turkey ranked 128 overall for Dealing with Licenses and St. Vincent and the Grenadines is the top ranked economy followed by New Zealand, Belize and Marshall Islands. It requires 25 procedures and takes 188 days to deal with the licenses which are well above the EU-best practice. Doing Business also examines government regulation in the area of employment and social security laws. Each index (hiring and firing indexes) takes values between 0 and 100, with higher values indicating more rigid regulation. As shown on the Table 3.13 both hiring and firing index is well above the EU-best practice. Next, Turkey ranked 31 overall for

Registering Property index which requires 6 procedures and takes 6 days to register the property in Turkey. On the other hand, Turkey improved its tax system and ranked 54 overall for Paying Taxes. Maldives is the top ranked economy followed by Singapore, Hong Kong, China and United Arab Emirates. Turkey cut its corporate income tax from 30% (in 2005) to 20% (in 2006) and introduced electronic customs procedures, reducing the time to export by 6 days and the time to import by 10 (World Bank, 2008:3). Countries in which contract enforcement is efficient, businesses are more likely to engage with new borrowers or customers. Turkey is ranked 34 overall for Enforcing Contracts. Hong Kong, China is the top ranked economy followed by Luxembourg, Latvia and Singapore. Further, closing a business is expensive and time consuming in Turkey. It takes around 3.3 years to close a business in Turkey. In 2005 the recovery rate was low around 11%. Reforms of the bankruptcy law that were undertaken in 2003 and 2004, aimed at strengthening creditors' rights, streamlining court processes and enforcement, and ensuring compliance with EU. The recovery rate has increased to 20.3 % in 2007. Turkey is ranked 112 overall for Closing a Business (in which Japan is the top ranked economy followed by Singapore, Norway and Canada).

3.3.4 R&D, Innovation and Technology in Turkish Manufacturing Industry

R&D, innovation and technology policies are determining factors in global competition. In addition, R&D, innovation and technological capacity are considered as the most important factors of competitive advantage and economic development. R&D and innovation not only enhances productivity and competitiveness but also cuts down costs. Countries with insufficient R&D investment fall behind the competition. In the case of Turkey, for instance, production processes and technologies are considered important for the sustainability of competitiveness in

areas such as automotive engineering, textiles and the production of household goods.

In Turkey, the first attempts for policy formulations on science and technology started during 1960s. The Scientific and Technical Research Council of Turkey (TUBITAK) was established in 1963 in order to prepare and coordinate implementation of science and technology policies in Turkey. The basic policy during this period has been characterized by the promotion of basic and applied research in natural sciences. The concept of technology policy was first mentioned in the 4th Five year Development Plan 1973-1977 and the integration of the technology policy with other policy areas such as industry, employment and investment policies and the enhancement of the technological abilities of certain industrial sectors were envisaged. Later in 1983 a new institutional setting has been established: Supreme Council for Science and Technology (SCST) which is considered as the highest policy making body in the field of science and technology. According to the SCST Decision on 13 December 2000, a new national science and technology policy document 'Vision 2023: Strategies for Science and Technology' was prepared for the period 2003-2023 to build a welfare society by 2023. The aim of the programme is to implement a long term technology policy for establishing a strategy, considering scientific, technological, socioeconomic and political trends in the EU and in the world.

Turkey, however, has suffered from a low level of funding for R&D activities due to lack of political support and lack of resources to support the proper development of science and technology policies. The implementation of science and technology policies had always been problematic in Turkey, because of the lack of ownership, society involvement and political support; isolated science and technology policies and the fragmentation of researchers and resources. As shown in Table 3.14, the share of R&D expenditures in GDP, which was 0.58 % as of 2006, is quite low when compared to the EU-27 (1,84 %). On the other hand, although the business enterprise sector leads in R&D expenditure in developed nations such as EU, the situation in Turkey is just the opposite. Indeed, around 63 % of R&D

expenditures in the EU-27 is undertaken by the private sector, while in Turkey the figure is at around 34 % as of 2005. In Turkey, as stated in the 9th Development Plan, R&D activities are designed as to produce innovations and to be market oriented. In this context, measures are taken to increase both the share of R&D expenditures in GNP and the share of the private sector in the expenditures. Thus, Turkish government aims is to increase Turkish Gross Expenditure on Research and Development (GERD) from 0.48% in 2000 to 2% by the year 2010.

Table 3.14: R&D expenditure by sector (% of GDP)

	All sectors		Business enterprise sector		Government sector		Higher education sector		Private non-profit sector	
	EU-27	TR	EU-27	TR	EU-27	TR	EU-27	TR	EU-27	TR
2000	1,85	0,48	1,20	0,16	0,25	0,03	0,38	0,29	0,1	0
2001	1,86	0,54	1,21	0,18	0,25	0,04	0,40	0,32	0,1	:
2002	1,87	0,53	1,20	0,15	0,24	0,04	0,41	0,34	0,2	:
2003	1,86	0,48	1,19	0,11	0,24	0,05	0,41	0,32	0,2	:
2004	1,82	0,52	1,16	0,13	0,24	0,04	0,40	0,35	0,2	:
2005	1,82	0,59	1,15	0,20	0,25	0,07	0,40	0,32	0,2	:
2006	1,84	0,58	1,18	0,21	0,24	0.07	0,40	0,30	0,2	:

Source: EUROSTAT, Data Navigation Tree, Research and Development expenditure, by sectors of performance, available at http://ec.europa.eu/eurostat/

Looking at the breakdown of business R&D expenditure by sector of activity based on NACE Rev 1.1, manufacturing sector is by far the most important sector of activity both in the EU-27 (accounting for 81,8 % of the total) and in Turkey (accounting for 86,6 % of the total). Manufacturing is followed by services sector both in EU-27 and Turkey with approximately 16,1 % and 11.7 % of the total respectively.

Table 3.15: Business enterprise R&D expenditure in EUR million, by sector of activity

	Total	Agriculture, hunting, forestry and fishing	Mining and quarrying	Manufacturing	Electricity, gas and water supply	Construction	Services
EU-27*	123 582	837	478	101 132	797	416	19 922
Turkey**	367	3	1	318	3	0	43

Source: Eurostat (2008b) Science, Technology and Innovation in Europe, Statistical Books, Luxembourg, p.36, *2004; **2002.

In a similar manner, according to European Innovation Scoreboard (EIS) 2007, Turkey is currently performing below the other countries included in the EIS. Indeed, Turkey lags behind the EU-27 in all selected indicators. The report also indicates, although Turkey's overall performance is below that of EU states, it has a stronger performance than some member states on knowledge creation (European Commission, 2008:8).

R&D, innovation and technology policies is a priority of Turkey as a candidate state. Since Turkey is not a full member of the EU, it is not required to have a National Reform Plan in line with the EU's Lisbon Strategy. On the other hand, the Lisbon Strategy has been influential in setting R&D targets in Turkey. For instance, government investment in R&D has increased, and actions are being taken to establish the Turkish Research Area. Principal objectives of Turkish Research Area[47] are to increase the share of R&D expenditures in GDP, to increase the demand for R&D and to increase the number and the quality of R&D personnel with an intension to integrate with the European Research Area.

Turkey participates in innovation-related activities under the EU's 6th Framework "Research and innovation" programme as an associate country. Even though Turkey has fully participated in the 6th Framework Program of the EU in the field of science and technology, the share received from the projects compared to the contribution to the Program has remained quite low. According to 9th Development Plan (2006:40) the most important reasons for this situation is the weak relation with the EU research network, and inadequacies in the R&D infrastructure and the number of researchers. Recently, along with 7th framework programme, Turkey joined the Competitiveness and Innovation Programme 2007-2013[48] under which the

[47] Within the scope of the Turkish Research Area Program, which was put into implementation by TUBITAK in 2005, the programs of "Academic and Applied R&D Support", "Public R&D Support", "Industry R&D Support", "Defense and Space R&D Support", "Increasing Science and Technology Awareness" and "Scientist Raising and Improving" have been started.

[48] The Competitiveness and Innovation Programme, which runs from 2007 to 2013 with a budget of Euro 3.6 billion, contains the following 3 pillars: (i) Entrepreneurship and Innovation Framework Programme which fosters the competitiveness of enterprises for example by providing co-guarantees and co-investments for local banks and risk capital funds so that they can improve access for SMEs to loan and venture capital finance. EIP also supports providers of business and innovation services in all EU regions or helps to link innovation actors and clusters in European networks. (ii) Information and

European Commission promotes innovation, entrepreneurship and growth in SMEs. The Programme aims to stimulate the competitiveness and productivity of European businesses (especially SMEs), foster and promote eco-innovation, energy efficiency and renewables, and accelerate the process leading to a fully-fledged information society.

In Turkey, R&D activities are mostly carried out by universities and public research institutions. However, a strong network has not been established between such institutions and as a result the outcome of most R&D activities cannot be put into practice. Thus, in order Turkey to increase its R&D expenditure to desired levels, an intense and balanced cooperation between public and private sectors should be coordinated.

3.4 The Development of Competition Policy in Turkey

The CU agreement signed between Turkey and the EU called for the harmonization of Turkish legislation with that of the EU in many issues. Thus, it has worked as a catalyst for Turkish institutional reforms in different areas. In this wider context of the CU, Turkey has adopted a considerable amount of the acquis and established necessary institutions to implement relevant regulations. In this context, especially the regulations accompanied by the CU such as the adoption of competition law in 1994 and establishment of Competition Board in 1997 will be examined and to what extent the effort to access to EU, which can be regarded as an active regulator, has changed the Turkish regulatory regime will be assessed. In this section, firstly the evaluation of competition policy in Turkey will be discussed, and

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Communication Technologies Policy Support Programme which accelerates the development of a sustainable, competitive, innovative and inclusive Information Society stimulating a wider adoption and more efficient take up and better use of ICT. (iii) Intelligent Energy-Europe Programme which promotes energy efficiency and new and renewable energy sources in all sectors including transport.

then the limits and policy options of the Turkish competition policy will be addressed.

3.4.1 A Short History of Competition Policy in Turkey

In Turkey, legislative activities concerning competition issues date back to 1970s when it signed the Additional Protocol with the EEC in 1971. The Turkish Ministry of Trade prepared a legislative draft for regulating activities concerning commercial goods and services for the protection of consumers[49] in the same year. Although the draft law was mainly intended to protect consumers and regulate domestic markets, it was far from being a competition law. Another draft law on regulating commerce and protecting consumers, followed the first one in 1975[50]. It included the first provisions on competition law in Turkey, in which it stated to abolish the entire barrier to competition, like monopolization, implicit agreements and mergers (Kulaksızoğlu, 2006:4).

After a period of economic and political turmoil in the second half of 1970s, Turkey set on a course of market-oriented reforms by the early 1980s. Reform of the Turkish trade regime was at the core of the reform program which involved commitment to a more flexible exchange rate policy and abandoning of import substitution policies through promotion of exports as well as liberalization of imports. Another main objective of the 1980 reform was to reduce the size of the public sector and to allow more freedom to private sector and markets in determining resource allocation in the economy (Mumcu and Zenginobuz, 2001:2). From this point of view, two crucial aspects of this process were the privatization of SOEs and the liberalization of financial markets. In this context, the primary goal of the

[49] "The Bill on the Regulation of Activities Concerning the Traded Goods and Services for the Protection of Consumers"
[50] "The Bill on the Regulation of Trade and Protection of Consumers"

privatization efforts of the 1980 was to eliminate state owned monopolies and to reduce the government's share in the overall economy.

However, the 1980s' liberalization efforts were not followed by an extensive regulatory reform. Indeed, 'the dominance of the state in the economy continued in many aspects of economy' (OECD, 2002c: 23). Moreover, 'the reforms also paid little attention to the fact that the governance of a well functioning market economy required well functioning institutions and an efficient and accountable system of government' (OECD, 2002c: 23). There were other two general problems in the implementation of liberalization essentially due to 'the persisting legacy of populism and patronage politics' (Eder, 2003: 223). According to Eder (2003:223) firstly, liberalization was not complemented by the reform of inward economic regulation. Secondly, regulatory authorities were set up with delay.

In parallel to these developments, new legislative drafts concerning competition policy were designed in the early 1980s. The Draft Law on Protection Consumers" of October 1983 handled regulations concerning cartels and monopolies in a separate section for the first time. Later in November 1984, 'The Bill on Agreements and Practices Restricting Competition' in order to prevent the monopolization and cartelization that would arise in markets (Turkish Competition Authority, 2001:3). Article related to cartel prohibition outlawed making implicit or explicit agreements to become dominant in markets, increase prices, or reduce the supply of goods and services with the intention of decreasing or eliminating competition in the market. In addition, the draft law also stated some exemptions for the first time. Exemptions included agreements that regard delivery of and payments for goods, which are likely to bring forth new technologies and to increase productivity, that are to public's benefit during periods of recession in the economy, and that will help whether an economic depression that affects most of the businesses in an industry. On the contrary, the draft law neither contained any articles about M&As (Kulaksızoğlu, 2006:5).

Liberalization efforts of the 1980s have led to serious changes in Turkish manufacturing industry which had to go through a fundamental reorientation after

decades of protection under import substitution policies. As Mumcu and Zenginobuz (2001:2-3) indicate, protected by import restrictions and high tariff barriers, many sectors of the manufacturing industry had been highly concentrated, and SOEs had dominated many important sectors. In addition, export-oriented policies led to a new set of incentives for the manufacturing industry, and the share of manufacturing in exports has drastically increased in a short period.

It was expected that liberalization of import policies and export orientation policies of the 1980s would also transform the structure of the Turkish manufacturing industry and lead to less market concentration. However, the evidence available on the evolution of market concentration in Turkish manufacturing industries since 1980s point at the persistence of monopolization and high concentration in the Turkish manufacturing industry despite expectations of competitive pressure from foreign markets (Mumcu and Zenginobuz, 2001:3). This fact also represents the essentiality of a solid and integrated competition policy.

Competition policy in fact became a priority of the Turkish economy in the 1990s. The development of competition legislation has been supported by both internal and external forces. Internal developments, as mentioned above, were that the Turkey pursued outward-oriented policies and restructured her economy, i.e., substantial moves toward liberalization in the 1980's. The external forces were more about the relationship of Turkey with the EU. Indeed, Turkish competition law was being developed while Turkey was negotiating a CU with the EU which entered into force in 1996. The CU agreement included the EU's standard substantive provisions about competition, and obligated Turkey to enact those provisions as part of its own law (and also establish a competition authority to enforce them) prior to the agreement's effective date of December 31, 1995 (OECD, 2005c:11). As a result, the Act on the Protection of Competition (No. 4054) adopted by Turkey at the end of 1994, just a year before the completion of the CU. The Law created the Turkish Competition Authority (TCA) as an autonomous antitrust enforcement agency, with a Competition Board to resolve cases and set policy.

The enactment of the competition law and the establishment of the regulatory agency have largely been due to Turkey's obligation under the Association Agreement of 1963 between Turkey and the EU. In fact, 'Article 16 of the Ankara Agreement envisaged that principles referred to in the provisions of the Rome Treaty concerning competition, tax and the alignment of legislation be applicable within the association relationship' (Turkish Competition Authority, 2001: 2). In a similar manner, as Mumcu and Zenginobuz (2001:2) stated the Association Agreement requires that the parties should adapt the necessary provisions of the Treaty of Rome for the harmonization of their competition legislation. Pursuant to the agreement reached at the Association Council meeting of March 1995, Turkey and EU established a CU starting January 1, 1996. The CU agreement required that Turkey undertook all necessary measures to enact and implement the competition law and policies of EU. As the requirements of CU agreement with EU, Turkish Competition Law is mainly an adaptation of the EU competition law. Thus, enactment of Turkish Competition Law was a prelude on Turkey's part to the signing of the CU agreement with EU. In the next section, Turkish competition law and its implementation will be reviewed.

3.4.2 The Law on the Protection of Competition

The Law on the Protection of Competition (Law No. 4054) constitutes the legal basis to protect competition in Turkey. The Competition Law's declared purpose (Article 1) is *'to prevent agreements, decisions and practices preventing, distorting or restricting competition in markets for goods and services, and the abuse of dominance by the undertakings dominant in the market, and to ensure the protection of competition by performing the necessary regulations and supervisions to this end'*. The Competition Board conceives as protecting the entire competitive process, not simply rivalry among firms. The TCA sees its ultimate target as

promoting efficient markets and consumer welfare, consistent with provisions in Turkey's Constitution requiring the state to prevent monopolies and protect consumers.

CU agreement not only obliged Turkey to enact the EU's competition legislation as its own regulation but also obliged to establish a regulatory agency to enforce them. As mentioned above, although the Law has been enacted in December 1994, Competition Board was not appointed until 1997 and finally began its operations in November 1997. The Competition Law establishes the TCA as an autonomous enforcement agency. According to Article 20 of the Law, the TCA is a functionally independent body with full financial and administrative autonomy and it is responsible for the enforcement of Turkish Competition Law. It investigates actions giving rise to anticompetitive behavior and industry structures and engages in advocating pro-competition policies. Competition Board is the decision making organ of TCA. It has seven members (reduced from 11 by a recent legislation) serve for staggered terms of six years and may be removed from office only for cause. Law enforcement procedures can be triggered by a complaint or at the Competition Board's own initiative. The TCA has broad investigative powers, including authority to obtain a court order permitting the search of corporate premises.

The Turkish Competition Law's substantive antitrust prohibitions appear in three articles. The first, Article 4, deals with agreements among two or more firms (and parallels Article 81 of the EU law). The second, Article 6, deals with abuse of dominance by one or more firms (parallel to EU Article 82). The third, Article 7, focuses on mergers and acquisitions (following the EU merger regulation). Article 4 prohibits 'agreements, concerted practices, and decisions' that prevent, distort or restrict competition, or that have the potential to do so. The law includes a non-exclusive list of anticompetitive practices that constitute potential violations. The Act empowers the Competition Board to issue individual and block exemptions from Article 4, as well as case-specific 'negative clearances' if the given case does not violate the Law.

3.4.2.1 Agreements Restricting Competition

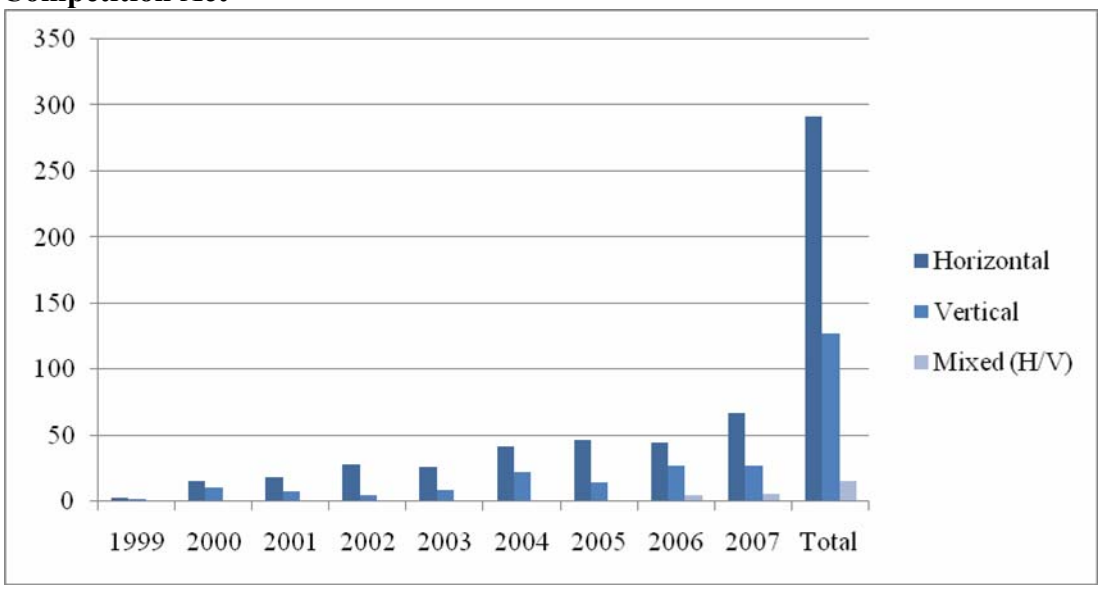
The definitions and examples of practices under Article 4 of the Turkish Competition Law are almost identical to Article 81 of EU Competition Law. The Article covers anticompetitive business practices such as price fixing cartels, allocating markets and/or customers, bid-rigging, tying agreements, and other collusive forms of behavior that impede or restrict the ability of existing or new firms to enter and expand their business. Article 4 deals with agreements taken by two or more undertakings. It is plainly stated in the Article that all agreements that are likely to restrict competition cannot be proven.

Anticompetitive agreements can be grouped as horizontal and vertical. Horizontal agreements are agreements in the same stage in a chain of transactions. Vertical agreements are agreements in the different stages in a chain of transactions. It might be the case that an agreement has both horizontal and vertical aspects. Anticompetitive horizontal agreements in Article 4 include price fixing, market division, concerted control of outputs or inputs and entry deterrence. The Competition Act's prohibition against anticompetitive agreements is slightly broader than the EU model.

Agreements and concerted actions that prevent, distort, or restrict competition, or that have the potential to do so, are prohibited. The text of the prohibition does not distinguish between agreements in the horizontal and vertical dimensions, but the TCA concentrates its enforcement attention on price-fixing and market division cartels that restrict horizontal competition.

Horizontal agreements, as can be seen in the Figure 3.11, have an upward trend since 1999, reaching 67 in 2007, from 16 in 2000. It is notable that more cases relate to horizontal than vertical agreements.

Figure 3.11: Horizontal and Vertical Agreements under Article 4 of the Competition Act



Source: OECD (2008) Annual Report on Competition Policy Developments in Turkey 2007, Directorate for Financial and Enterprise Affairs Competition Committee, DAF/COMP(2008)9/20, 6 June, p.13.

Looking at the enforcement experience under Article 4 with respect to horizontal agreements, it is seen that there are persistent problems of cartel behavior in some sectors of the economy. Prior to the establishment of the TCA in 1997, the General Directorate of Consumer and Competition Protection prosecuted cartel cases against the cement industry, bakeries, bus companies, the poultry industry, distributors of periodical publications, and the association of corrugated container manufacturers. Subsequently, between 1997 and 2002, the Competition Board gave decisions against anticompetitive agreements among bakeries, periodical distributors, and cement producers, including a 1999 case in which five cement companies were fined for a price-fixing and market-division agreement in the Aegean region. Since 2002, additional cases have been filed with respect to bakeries (Ankara, Gaziantep, Kütahya) and buses (Konya), while yet another cement prosecution involving the Ankara and South Marmara markets resulted in fines against 18 firms (OECD, 2005c:17).

Elaborating the content of horizontal agreements since 1999, it is seen that while 70 percent (225) of all cases are about concerted agreements, the remaining 30

percent (100 cases) is about decisions of associations of undertakings (Table 3.16). As indicated in the OECD report (OECD, 2002a:11) the conduct of associations of undertakings was not a serious concern of the TCA in the beginning due to their quasi-public status and statutory responsibilities. However their services have become a more important part of the economy. As shown in Table 3.16, decisions of TCA about acts of associations that restrict competition increased over time.

Table 3.16: Contents of Horizontal and Vertical Agreements Examined Under Article 4 of the Competition Act

Year	Files of Horizontal Agreements		Files of Vertical Agreements	
	Agreement-Concerted Practice	Decision of Association of Undertakings	Resale Price Maintenance (RPM)	Files Outside the Scope of RPM
1999	3	-	1	2
2000	12	5	2	11
2001	9	10	2	7
2002	20	10	-	6
2003	19	10	3	8
2004	35	11	2	22
2005	35	17	3	15
2006	40	10	13	29
2007	52	27	7	31
Total	225	100	33	131

Source: OECD (2008) Annual Report on Competition Policy Developments in Turkey 2007, Directorate for Financial and Enterprise Affairs Competition Committee, DAF/COMP(2008)9/20, 6 June, p.14.

In the area of vertical restraints, the TCA has generally played a less active role in prosecuting matters. This situation is quite appropriate given the pro-competitive, investment and efficiency enhancement aspects of many voluntary vertical contractual relations between upstream and downstream suppliers of goods and services (Khemani, 2005:25). The list of anticompetitive vertical practices in Article 4 states resale price fixing, discrimination between similarly situated parties, tying, and actions designed to impede competitors or prospective entrants (OECD, 2005b:19). The relatively few cases that have been investigated pertain primarily to resale price maintenance which dictates minimum prices retailers can charge for products, restrictive distribution arrangements which prevent dealers from making sales in territories of other dealers and suppresses ‘intra-brand’ competition, and

tying contracts. The Competition Board for example ruled against the exclusive requirements imposed by manufacturers that prohibited cigarette retailers from displaying brands of competing manufacturers on the same display racks (Khemani, 2005:25).

3.4.2.2 Exemptions and Negative Clearances

Article 5 regulates the exemptions from Article 4. The Article empowers the Competition Board to issue both individual and block exemptions (a group exemption, which automatically exempts agreements falling within its terms). The criteria under Article 5 for granting both individual and block exemptions are parallel with the Article 81 (3) of the EU competition law. Upon application from undertakings, the Competition Board may exempt agreements, concerted practices, and decisions from Article 4 if they (Kulaksızoğlu, 2004:8); (i) improve production or distribution, or promotes technical or economic progress; (ii) allow consumers a fair share of the benefit; (iii) are indispensable to attaining the beneficial results, and (iv) do not eliminate competition for a substantial part of the affected product market. The maximum duration for an individual exemption is 5 years, subject to renewal.

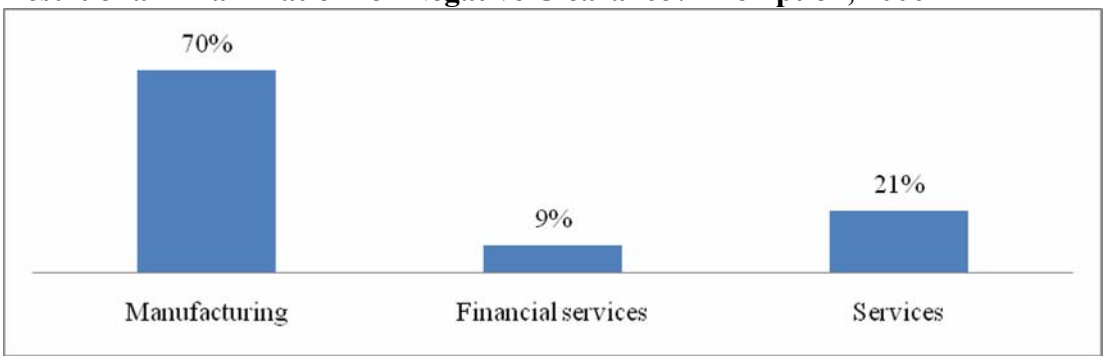
On the other hand, Article 8 deals with negative clearances. The Article states that upon application by undertakings or associations of undertakings, the Competition Board may issue a negative clearance document stating that an agreement, decision, concerted practice, or M&A is not contrary to Articles 4, 6, and 7 of the Competition Law.

Both individual exemptions and negative clearances may be revoked if circumstances change, or if the parties fail to honor commitments or make misrepresentations in applying for the exemption. Block exemptions may be made applicable indefinitely or for any duration that the Competition Board specifies, and

may be revoked as to a particular agreement if the Competition Board determines that the agreement has effects "incompatible" with the Article 5 standards (OECD, 2005:15).

Looking at the sectoral breakdown of negative clearance/exemption cases, it is observe that most of the cases concentrated on manufacturing sector, with about 70%. The remainder is distributed between service sector (21%) and financial sector (9%) (Figure 3.12).

Figure 3.12: Distribution by Sectors of Files Resolved by a Final Decision as a Result of an Examination for Negative Clearance / Exemption, 2006



Source: Own calculations from Turkish Competition Authority Statistics, http://www.rekabet.gov.tr/eistatistik/index.htm

Table 3.17 demonstrates the distribution of files resolved in the manufacturing industry. As shown in the Table, petroleum, petro chemistry and petroleum products, printing and publishing, reproduction of long plays, cassettes and food products and beverages are sectors of manufacturing about which the TCA made decisions for negative clearance/exemption.

Table 3.17: Distribution by Manufacturing Industry of Files Resolved by a Final Decision as a Result of an Examination for Negative Clearance / Exemption, 2006

Petroleum, petro chemistry and petroleum products	23%
Chemistry and chemical products (other than those which are the subject of fast moving consumer goods), human medication	4%
Printing and publishing, reproduction of long plays, cassettes	19%
Office machines and computer	9%
Electronics	4%
Health, medical precision and optical instruments, medical expenditure material	4%
White goods, furniture, TV and so forth	4%
Food products and beverages	13%
Textile and ready-made clothing, leather and leather products	4%
Land, air, sea and railway vehicles	13%

Source: own calculations from Turkish Competition Authority Statistics, available at http://www.rekabet.gov.tr/dosyalar/belgeler/belge92/11.pdf

Although the principal features of the Turkish exemption and negative clearance scheme are modeled on the EU system, a significant difference between the two has arisen due to recent changes in the EU's enforcement structure. As stated in the OECD report (OECD, 2005b:15) the EU eliminated the system of case specific exemptions under Article 81 effective May 1, 2004, while retaining the block exemption system. The EU "negative clearance" system, which enabled parties to obtain a declaration that there were no grounds for prosecution of an action under Article 81 or Article 82, was likewise eliminated effective May 1, 2004. Turkey, in contrast, retains both individual exemptions and negative clearances, in addition to block exemptions.

In 2003, the TCA issued a Communiqué on R&D Agreements which established a block exemption for R&D agreements. The TCA exemption differs in several ways from the comparable EU exemption. They are as follows (OECD, 2005c:16-17):

(i) For projects in which the results of the R&D are jointly exploited, the EU exemption continues to apply for seven years after the products are first launched in the single market, and thereafter for so long as the combined market share of the

participants does not exceed 25 % of the relevant market for the contract products. On the contrary, the TCA exemption for projects involving joint exploitation continues to apply for only five years after product launch in Turkey.

(ii) The EU exemption requires that, where at least two of the project participants are competitors, the total market share of all project participants must not exceed 25 % of the relevant market at the time that the R&D agreement is commenced. The TCA, in contrast, employs a scheme under which the total market share of the participants must not exceed 40% if project products are jointly marketed by competitors, and must not exceed 20% if the project products are marketed solely by one of the participants or by a firm controlled by the participants.

(iii) The EU block exemption specifically permits project participants to fix prices, or implement customer marketing restraints for the first seven years after the product launched. On the contrary, the TCA exemption prohibits all such contract provisions unconditionally.

Small business has no general exemption. In this context, the Competition Board is considering adopting a 'de minimis' exemption covering agreements among small businesses- thus giving exemptions small enterprises whose scale are below the defined threshold. Such an exemption would be designed to cover agreements that, even if producing some anticompetitive effect, were of trivial significance in the relevant market. This would be parallel to the EU regulation, and thus based on market share thresholds, of 5% for horizontal agreements and 10% for vertical ones (OECD, 2005c:22).

In 2007, the TCA attached great importance on eliminating barriers to entry created by the powerful undertakings. From this perspective, a market share threshold of 40% (this threshold is 30% in the EU) was introduced for the scope of Block Exemption Communiqué on Vertical Restraints No 2007/2 on 1 July 2007. The Communiqué aims to prevent those undertakings with market power from establishing contracts that create barriers to entry into the market (Republic of Turkey, 2007:56). In this respect, the examination of markets (raki market and soft

drinks market) where vertical agreements created competitive concerns which started before the introduction of the threshold, was concluded on the basis of the market share threshold. The TCA determined that these agreements were excluded from the coverage of the Communiqué and further rejected to grant individual exemption due to existing competition concerns (OECD, 2007:2).

3.4.2.3 Abuse of a Dominant Position

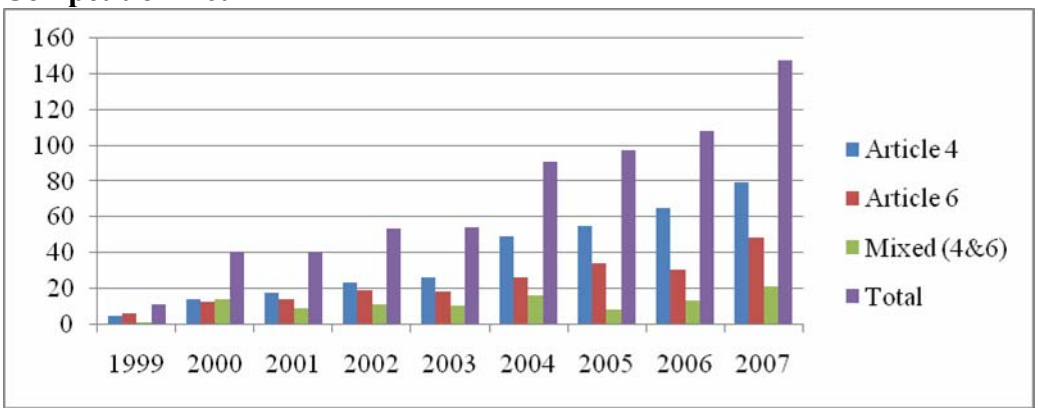
Article 6, deals with abuse of dominance by one or more firms acting jointly and is parallel to Article 82 of EU competition law. Article 6 states that *the abuse, by one or more undertakings, of their dominant position in a market for goods or services within the whole or a part of the country on their own or through agreements with others or through concerted practices, is illegal and prohibited.* In other words, it is forbidden for a dominant firm in a market to abuse its position to prevent, restrict, or distort competition. As stated in the second paragraph of Article 6 anticompetitive business practices include such as the creation of entry barriers, the impediments to the activities of other firms already in the market, the discrimination among peer buyers, tying, limiting resale conditions, taking actions to obstruct competition in a market using a dominant position in another market, and restricting production, marketing or technical progress in a way that harms consumers. A firm, in some cases, may gain a dominant position through protection provided by the competition law. For instance, industrial and trade property rights may provide such a protection to a firm. In such cases, the use of these rights must not limit, eliminate and/or distort competition.

In the area of abuse of dominant market position, the cases that the TCA has primarily focused on relate to practices which raise entry barriers or exclude competition. In the major cases litigated, the dominant firms abusing their market position have been operating primarily in regulated sectors and are presently, or previously state owned/controlled entities (Khemani, 2005:26).

On the other hand, the TCA fully recognizes the importance of preserving incentives for firms to improve their market position by introducing efficiencies and innovation, and is therefore cautious in pursuing abuse of dominance investigations.

Figure 3.13 gives the number of accepted cases about articles 4 (concerted practices) and 6 (abuse of a dominant position) of the Law and mixed cases. The cases where undertakings have concerted practices are more than both the other cases.

Figure 3.13: Files Brought to a Conclusion under Articles 4 and 6 of the Competition Act



Source: OECD (2008) Annual Report on Competition Policy Developments in Turkey 2007, Directorate for Financial and Enterprise Affairs Competition Committee, DAF/COMP(2008)9/20, 6 June, p.13.

3.4.2.4 Mergers and Acquisitions

Article 7 and the Communiqué on the Mergers and Acquisitions of 1997 mainly deals with M&As accomplished by the transfer of stock, assets, or managerial authority following the ECMR. However, besides M&As, joint ventures and privatizations are also covered under Article 7. The Article prevents any merger or acquisition from creating or strengthening a dominant position of one or more

undertakings in a relevant market. The TCA mostly have dealt with acquisitions since 1999 (Table 3.18). Since increased privatizations movements as of 2003, many files concerning them came also before the TCA.

Table 3.18: Number of M&A Files Concluded

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007
Merger	5	13	6	14	7	7	5	4	6
Acquisition	56	70	73	83	76	88	122	138	193
Joint Venture	5	11	7	6	9	8	8	23	22
Privatization	2	6	-	-	14	19	35	21	11
Total	68	100	86	103	106	122	170	186	232

Source: OECD (2008) Annual Report on Competition Policy Developments in Turkey 2007, Directorate for Financial and Enterprise Affairs Competition Committee, DAF/COMP(2008)9/20, 6 June, p.16.

The Communiqué on the Mergers and Acquisitions of the TCA mainly establishes the details of the merger review process and also specifies the factors activated in the merger assessment process. The Competition Board applies a standard multi-element analysis to mergers, evaluating market structure, the parties' economic and financial situation, alternatives available to purchasers, probability of entry, legal or other barriers to entry, technological developments, supply and demand trends, and the interests of intermediaries and ultimate consumers. The Communiqué contemplates approval of transactions that establish efficient-scale operations that are able to compete with imports. The Competition Board has in the past also approved acquisitions of failing firms where there were no alternative purchasers.

The Communiqué also lists the types of M&As that require notification to Turkish Competition Authority and its authorization for validity. The Communiqué imposes two different groups of criteria (OECD, 2005b:27): market share and aggregate size. If the total market share of the resulting undertaking exceeds 25 percent of the relevant market, they must notify and obtain authorization from the TCA. And regardless of market share, parties must notify and obtain authorization if their aggregated turnover exceeds TRL 25 million (USD 16.75 million).

As mentioned in the second chapter of this study, the EU had issued a new merger regulation in 2004 which mainly based on the EU's merger regulation of 1989. The EU changed its merger control regime in order to deal with the M&As that showed the risk of anticompetitive 'unilateral' effects even though if it is not leading to dominant position[51]. According to merger regulation, M&As that create oligopolistic market structures that lead to anticompetitive coordination among the existing firms could effectively be addressed under the dominance clause of the existing merger regulation. However, the regulation could not be used against combinations that merely presented a risk of anticompetitive effects arising from 'the non-coordinated behavior' of the remaining firms. As a result, the EU decided to make dominance an example of a significant anticompetitive effect arising from a merger, rather than demanding the creation of dominance as a prerequisite for illegality (OECD, 2005b:27-28). As is typical for changes in EU's competition, the TCA has this amendment under consideration for inclusion in Article 7 of the Turkish Competition Act.

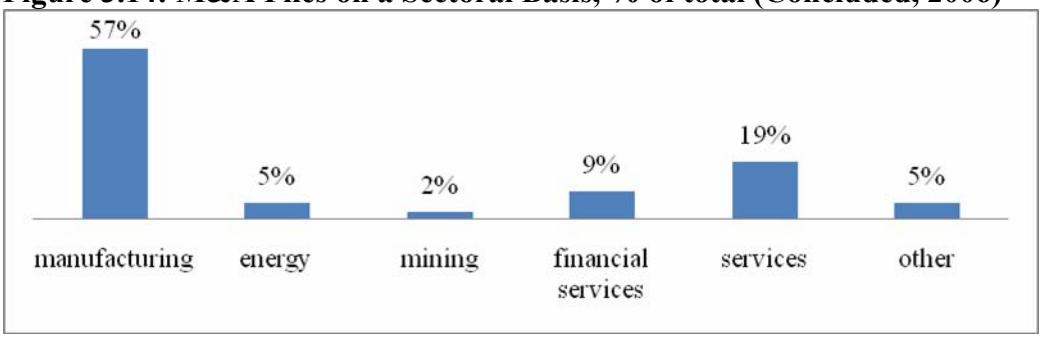
The TCA can approve transactions either conditionally and unconditionally or reject them. Table 3.18 shows that vast majority of merger, acquisition, joint venture and privatizations are allowed to proceed. Only 8% of all transactions have been approved conditionally by the Competition Board since 1999. However, most transactions (92%) have been approved without conditions. Looking these figures, as stated in Khemani (2005:24) some critics said that the TCA has a lax treatment towards M&A activity. A counter-argument would be that M&A activity represents an important instrument for restructuring industry, exploiting economies of scale, entry into markets, and both domestic and foreign investment.

By giving some examples, it is better understand the nature of conditions (OECD, 2005b:26): For instance, in 2004, Syngenta (a manufacturer of seeds and crop protection products) was permitted to acquire Advanta, subject to divestiture of Advanta's operations in the sunflower seed market. Another example is Cargill's acquisition of Cerestar, Montedison's starch and sweeteners subsidiary in 2002. The

[51] The definition of dominance in the EU, which is similar to the definition in Turkey's law, includes market control formed in the hands of either one or a group of firms.

Competition Board approved the acquisition, but required that a non-compete provision against Cerestar be reduced from three to two years because the transaction involved no transfer of specialized know-how. Another provision that prohibited Cerestar from taking more than a 5 % share in any rival firm was altered to prohibit only the taking of a controlling share. On the other hand looking at the breakdown of M&As of sectors, it is seen that they were spread over quite a few sectors. Figure 3.14 displays the distribution by sector and type of activity of applications regarding mergers and acquisitions in 2006.

Figure 3.14: M&A Files on a Sectoral Basis, % of total (Concluded, 2006)



Source: own calculations from Turkish Competition Authority Statistics, http://www.rekabet.gov.tr/dosyalar/belgeler/belge90/9.pdf

Within manufacturing industry, the highest number of applications was especially in chemical and petroleum products and, food products and beverages, and printing and publishing (Table 3.19).

Table 3.19: M&A Files on Manufacturing Industry (Concluded, 2006)

Iron and steel	5%
Petroleum, petrochemistry and petroleum products	5%
Plastic and rubber products	2%
Cooked clay and ceramics	2%
Chemistry and chemical products (other than those which are the subject of fast moving consumer goods), human medication	19%
Printing and publishing, reproduction of long plays, cassettes	10%
Office machines and computer	5%
Construction, cement and other construction materials	7%
Electronics	3%
Cellulose, paper and paper products	2%
Machinery, equipment manufacturing and defense industry	3%
Health, medical precision and optical instruments, medical expenditure material	5%
White goods, furniture, TV and so forth	3%
Food products and beverages	13%
Textile and ready-made clothing, leather and leather products	3%
Tobacco products	1%
Chemical products which are subject of fast moving consumer goods, and medication, fertilizers	3%
Land, air, sea and railway vehicles	6%

Source: own calculations from Turkish Competition Authority Statistics, available at http://www.rekabet.gov.tr/dosyalar/belgeler/belge90/9.pdf

Privatization is a special type of acquisition. In Turkey, although privatization is administered by the Prime Ministry Privatization Administration, the privatization cases also fall under the TCA's jurisdiction. In this context, before an actual privatization transaction takes place, TCA has to issue an authorization that privatization does not hinder competition in the relevant market. In order for an acquisition by way of privatization to be legally valid, the relevant law determines the necessary methods and principles to be pursued during the process of pre-notifications and applications to the TCA.

The TCA has reviewed 108 privatization transactions under Article 7 since 2000 (Table 3.18). Especially the privatizations kept increasing as of 2003, reaching a peak of 35 transactions in 2005. For instance, a major privatization case of 2003 was TEKEL's (which had previously been a SOE of alcohol and tobacco products) alcoholic beverages division. The monopoly of TEKEL was eliminated prior to the tender when TCA approved a block sale of TEKEL's alcoholic beverage production facilities to a joint venture group. The TCA found that, in the three relevant markets - namely beer, raki and other high alcohol drinks, and wine- TEKEL's share was either

less than dominant or exposed to vigorous new entry that made maintenance of dominant power unlikely (OECD, 2005c:29).

3.4.3 Implementation of Turkish Competition Policy

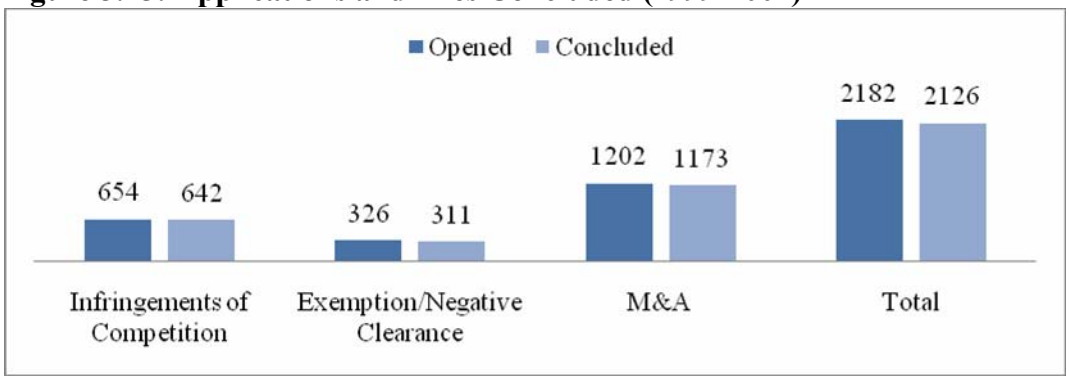
The TCA, in each year concludes a significant number of cases, while new cases are opened. The proportion of files carried over from one year to the other, have been declining suggesting that as experience has developed, there is increased efficiency in handling cases (Figure 3.8) (Khemani, 2005:23). However, a high percentage of the decisions by the Competition Board are appealed, and there are a large number of cases that are pending in the judicial review process. According to Kulaksızoğlu (2004:38) one of the major challenges the TCA faces is the slow appeal process, which basically depreciates any monetary penalties. Firms appeal every decision and try to get advantage of the slowness of the Turkish justice system. As a consequence, the TCA has not been able to collect any administrative fines to date and does not function effectively.

An overly aggressive application of competition law can adversely impact on investment and economic efficiency. In this connection M&A activity is an important vehicle for restructuring industry, facilitating entry of domestic and foreign investment, exploiting scale economies and other synergies between firms. The pattern of cases reviewed, including the level and diversity of M&A activity, suggests that the enforcement actions of the TCA are balanced, with focus on the most anticompetitive practices of illegal agreements, concerted actions and abuse of dominance by firms.

The majority (90%) of the cases investigated by the TCA are complaint driven (Khemani, 2005:28). Figure 3.15 presents data on the caseload handled by the TCA during 1999-2007. Some 2182 petitions were filed during this period of time.

This is a substantial number of cases. Of this, 654 or about 30% were regarding infringement of competition (Articles 4 and 6), 326 or 10% were regarding M&As (Article 7), and 1202 or 60% were applications for exemptions and negative clearance (Article 5).

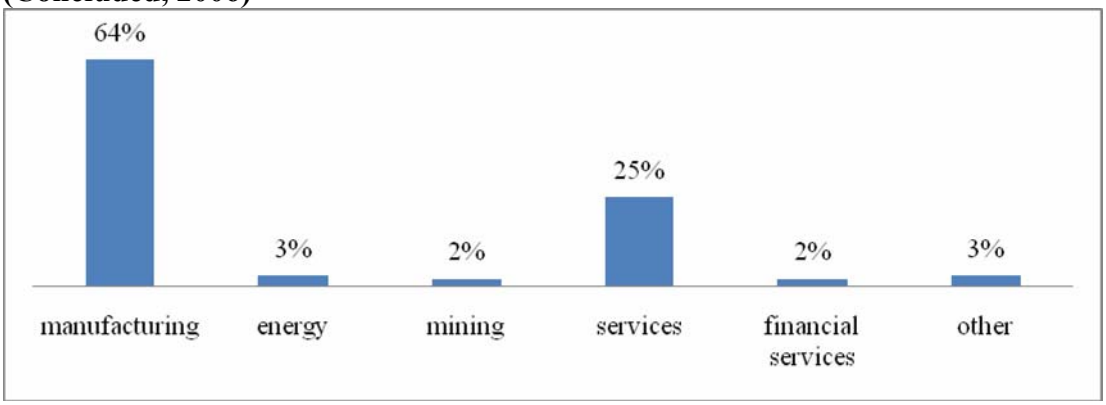
Figure 3.15: Applications and Files Concluded (1999-2007)



Source: OECD (2008) Annual Report on Competition Policy Developments in Turkey 2007, Directorate for Financial and Enterprise Affairs Competition Committee, DAF/COMP(2008)9/20, 6 June, p.12.

Figure 3.16 gives an overview of the sectors where applications of infringement of the competition law have been investigated. As shown in the Figure, around 65 % of files have been investigated were related to manufacturing industry.

Figure 3.16: Files for Infringements of Competition on a Sectoral Basis (Concluded, 2006)



Source: own calculations from Turkish Competition Authority Statistics, http://www.rekabet.gov.tr/

The most frequent and highest incidence of infringements in manufacturing sector occurs in food and beverage products, construction, cement and other construction materials, the chemical and petroleum products. It is crucial to note that sectors such as chemical and petroleum products have high levels of concentration, barriers to entry and are SOEs (Table 3.20).

Table 3.20: Files for Infringements of Competition on a Sectoral Basis (Concluded, 2006)

Iron and steel	2%
Petroleum, petrochemistry and petroleum products	15%
Chemistry and chemical products (other than those which are the subject of fast moving consumer goods), human medication	12%
Printing and publishing, reproduction of long plays, cassettes	4%
Office machines and computer	4%
Construction, cement and other construction materials	17%
Electronics	4%
Machinery, equipment manufacturing and defense industry	2%
White goods, furniture, TV and so forth	1%
Food products and beverages	20%
Textile and ready-made clothing, leather and leather products	1%
Tobacco products	2%
Glass and glass products	1%
Chemical products which are subject of fast moving consumer goods, and medication, fertilizers	1%
Land, air, sea and railway vehicles	9%

Source: own calculations from Turkish Competition Authority Statistics, available at http://www.rekabet.gov.tr/dosyalar/belgeler/belge85/4.pdf

On the other hand, in the cases for infringements Competition Board is empowered to levy fines (Articles 16 and 17). Undertakings which have committed behavior prohibited in Articles 4 and 6 and those who have failed to comply with regulations regarding notification filing of written and oral statements (Article 11) are liable to pay fines in the amount up to ten percent of the gross revenues that had been generated since the end of the previous financial year by real and legal entities involved in the punishable undertaking, associations of such undertakings, or members of their associations (Mumcu and Zenginobuz, 2001:26). As shown in Table 3.21, in terms of sources of fines, most of penalties imposed are on account of

substantive violations (98%), the other reasons are minor, just comprising 2% of them.

Table 3.21: Penalties Imposed under article 4 and 6 of the Act* (1/1/1999 - 31/12/2006)

	Infringements	M&A	Exemption/Negative Clearance	Total	%
Penalty Imposed on account of Substance (16/2)	174,964,076			174,964,076	98%
Penalty Imposed on Managers (16/3)	202,995	23,737		269,139	0.15%
16(a) Penalty-Misleading and False Information in Applications	5,816	3,184	3,184	12,184	0.0068%
16(b) Penalty-Misleading and False Information during On-the-Spot Inspection	136,321			136,321	0.76%
16(c) Penalty-Failure to Notify	716,579	75,311	117,002	908,896	0.51%
17(a) Penalty-Failure to Comply with the Decision related to Article 9	809,798			809,798	0.45%
17(d) Penalty- Article 15 Obstruction of On-the-Spot Inspection	191,206			191,206	0.10%

Source: Turkish Competition Board, Turkish Competition Board Statistics, available at http://www.rekabet.gov.tr/ *Amounts of penalties have been shown in YTL.

The Turkish Competition Act establishes two kinds of fines. Article 16 specifies one-time fines for committing various wrongful acts, while Article 17 provides daily accumulating fines for continuing violations (OECD, 2005c:39):

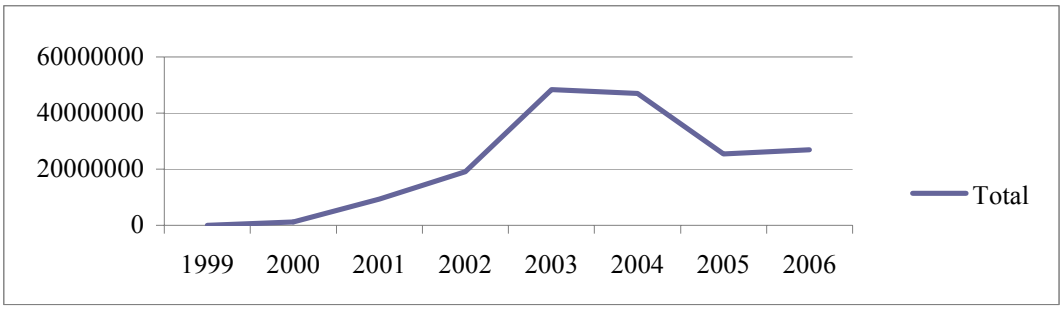
(i)Article 16 specifies that the Competition Board shall impose administrative fines on natural and legal persons having the nature of undertakings, and on associations of undertakings or the members of such associations where; (i) incorrect or misleading information or document is provided in exemption and negative clearance applications as well as in applications for permission to M&As; (ii) M&As subject to authorization are carried out without the authorization of the

Competition Board; (iii) incomplete, incorrect or misleading information or document is provided or the information or document is not provided within the time specified or at all, during the application of Articles 14 and 15 of the Act and (iv) on-the-spot inspection is prevented or made difficult. In this context; the Competition Board impose fines under the subparagraphs (i), (ii) and (iii) equaling one thousandth of the annual gross revenue of the undertakings and associations of undertakings or the members of such associations which generated by the end of the fiscal year preceding the decision, or where it cannot be calculated, which generated by the end of the fiscal year closest to the date of decision, as calculated by the Competition Board. On the other hand, under the subparagraph of (iv) the Competition Board issues fines equaling five thousandth of their gross revenues to be determined in the same manner. There are two points that has to be noted that; firstly, the fine to be determined by this principle may not be less than ten thousand Turkish Liras and secondly, in the case of M&As (subparagraph (ii)) administrative fines are imposed on each party in mergers, whereas they are imposed solely on the acquirer in acquisitions.

(ii)According to Article 17, the Competition Board shall impose administrative fines on undertakings and associations of undertakings per day which amounts to five per ten thousand of the annual gross revenue of the undertakings concerned, and of associations of undertakings and/or the members of such associations, which is generated by the end of the preceding financial year and where it is not possible to calculate such revenue, of the revenue which is generated by the end of the closest financial year and which shall be determined by the Competition Board.

TCA uses its power to levy fines regarding infringement of competition cases. In the years 1999 through 2006, the Board assessed a total of YTL 174.9 million (USD 74.6 million) in fines for substantive violations of the Competition Law. Figure 3.17 shows that fines increase each year until 2003, but then it declines.

Figure 3.17: Total penalties Imposed under article 4 and 6 of the Act* (1/1/1999 - 31/12/2006)



Source: own calculations from Turkish Competition Board Statistics, http://www.rekabet.gov.tr/dosyalar/belgeler/belge94/13.pdf *Amounts of penalties have been shown in YTL.

The minimum fine required by Article 16 also means that the Competition Board cannot relieve a cooperating firm in a cartel investigation from monetary penalties (OECD, 2005c:40). The TCA staff's draft statutory amendments would eliminate the mandatory minimum clause, and add language providing for the abatement of criminal sanctions against firms that cooperate actively with the TCA by disclosing unlawful conduct. That is, an important enforcement tool against cartels is the promise of lenient treatment to the first member of a cartel that confesses to the competition authorities. About two-thirds of the OECD countries have set up their leniency programmes (Hoj et al. 2007:16).

As a consequence, integration of competition policy into the general regulatory policy framework might take some time. However, since its inception in 1998 the performance of TCA has been considered promising. The 2002 OECD Report on competition policy (2002a:29) stated that the TCA and the Competition Board was 'off to a good start'. In a similar manner, 2005 OECD Report on competition policy (2005c:63) remarked that the TCA has continued to make excellent progress and has played a critically important role in moving the Turkish economy forward to greater reliance on 'competition-based' and 'consumer-welfare oriented' market mechanisms. However, the 2005 report added that the TCA encounter problems that often confront competition agencies in economies with a long tradition of strong government control, including deficiencies in public

understanding of and appreciation for competition policy, inexperienced (and slow) judicial review organs, and less than complete support from other parts of the government. It is, however, aided by the fact that an improved competition policy framework will advance Turkey's objective of full membership in the EU.

3.4.4 Limits and Policy Options of the Turkish Competition Policy

Integration of competition policy into the general regulatory policy framework might take some time. However, since its inception in 1998 the performance of TCA has been considered promising. The 2002 OECD Report on competition policy (2002a:29) stated that the TCA and the Competition Board was 'off to a good start'. In a similar manner, 2005 OECD Report on competition policy (2005c:63) remarked that the TCA has continued to make excellent progress and has played a critically important role in moving the Turkish economy forward to greater reliance on 'competition-based' and 'consumer-welfare oriented' market mechanisms. However, the 2005 report added that the TCA encounter problems that often confront competition agencies in economies with a long tradition of strong government control, including deficiencies in public understanding of and appreciation for competition policy, inexperienced (and slow) judicial review organs, and less than complete support from other parts of the government. It is, however, aided by the fact that an improved competition policy framework will advance Turkey's objective of full membership in the EU.

The TCA, however, faces a number of serious issues:

i. Despite the fact that Turkey and the EC have been in CU since 1996, competition laws in Turkey still lack articles corresponding to articles regulating public undertakings and undertakings with special or exclusive rights (Article 86) and state aids (Articles 87-89) of the EC Treaty.

Article 34 of the CU agreement (tracks Article 87 of the EC Treaty), prevents Turkey and the EU from providing state resources to aid/subsidy undertakings or economic sectors where doing so "distorts or threatens to distort competition … between the Community and Turkey." Although this Article was included in the CU agreement, state aids are treated differently from the substantive antitrust provisions found in EC Treaty Articles 81 and 82. The CU Agreement required Turkey to adopt the competition provisions in Articles 81 and 82 as part of its own positive law, but imposes no such obligation for the state aid provision (OECD, 2005c:30). Instead, Article 39 of the CU agreement stated that Turkey's competition rules must compatible with EU standards. Further Article 37 of the CU agreement requires that Turkey adopt, within two years following the entry into force of the CU, the necessary rules for the implementation of the provisions relating to both antitrust and state aid.

The 2002 OECD Report on competition policy (2002a:30-31) made two related recommendations on the subject of state monopolies. The first recommendation is that any monopoly concessions and related special privileges (for instance, tax exemptions) held by SOEs should be withdrawn in order to private firms to enter the market. The second recommendation is that Turkey should consider adopting legislation equivalent to Article 86 of the EU Treaty that considers monopolies that provide public services. Article 86 prohibits EU member states from granting special or exclusive rights to public or private undertakings in such a manner as to create a Treaty violation. Article 86 moderates that prohibition with respect to "undertakings entrusted with the operation of services of general economic interest or having the character of a revenue-producing monopoly." Such enterprises are made subject to the competition rules only where application does not "obstruct the performance" of the particular tasks assigned to them (OECD, 2005c:52).

Although the Turkish government proposed a legislation in 2003 that would give primary authority into control anticompetitive state aid in the State Planning Organization, it is still pending. Thus Turkey has still not completed alignment with the EU's state aid system even though this has been a commitment of Turkey under

the Custom Union. There has been no progress in the legislative field or as regards the establishment of a state aid supervisory authority, which should operate entirely independently. Otherwise the transparency of current and future state aid measures cannot be guaranteed. In short, according to Turkey 2007 Progress Report although Turkey made further progress in the field of competition, no progress has been reported on in the field of state aids.

In Turkey, the implementation of antitrust and state aid provisions are still pending and this hinders the TCA's ability to establish a better cooperative arrangement with the EU on competition issues. Until Turkey establishes a system for controlling state aid programs, the TCA cannot fully realize the benefits of cooperation, in particular with respect to international cartels (OECD, 2005b:2).

ii. Since the law on the protection of competition was prepared from the EU competition laws, its general structure is well formed. However, it is crucial to point out a problem mentioned above. If TCA suspects that an infringement occurred but cannot prove it, it is up to the parties involved to prove that there is no such an infringement. This clause has no counterpart in the EU competition law. This is a particularly problematic clause from an economic point of view. As Kulaksızoğlu (2004:31) states there are many practical difficulties in implementing it. For instance, how will TCA decide that the price changes or the balance of supply and demand are similar to those of the markets where competition is prevented, distorted, or restricted? Moreover, is there a specific pattern in the price changes or the balance of supply and demand in the markets where competition is prevented, distorted, or restricted so that TCA will be able to compare the case at hand to it? In such situation, competition authorities have to compare the actual price changes or the balance of supply and demand to those of the markets where competition is prevented, distorted, or restricted. In short, this clause can be aligned with the EU competition law.

iii. In the context of competition policy implementation, there is a problem with the definition of the relevant geographic markets (Kulaksızoğlu, 2004:40).

Firstly, Small but Significant Non-transitory Increase in Price (SSNIP)[52] test has never been used in any case. The SSNIP test emphasizes demand substitution as the main element in defining the relevant geoFigureic market in the EU. On the contrary, the relevant geographic market definitions of the TCA were mainly supply sided. The arguments about market definition were restricted to a few short paragraph in most of the cases. Another problem is that it is stated that the largest geographical market is almost always Turkey. Thus Article 2 states that geographic markets can be defined larger than Turkey. There is a general consensus that the largest geographical market should be defined the whole country because the competition law cannot be applied outside Turkey (Kulaksızoğlu, 2004:40).

iv. The Turkish Competition Law seems to cover all forms of economic activity. There is one exemption, which applies to bank mergers. However, the competition law is not deemed applicable to state agencies and organs acting in a governmental capacity. Sectoral legislation that involves creating a regulatory agency may also effectively repel the TCA, by giving the regulator authority to control or approve various aspects of sector business operations. There are also state-owned/controlled commercial undertakings that claim the right to have anticompetitive conduct based on various statutory powers and privileges. The Law gives the TCA the right to express its opinion on the competition policy aspects of government legislation and regulations. A communiqué from the Prime Minister's office encourages other government agencies to consult with the TCA about proposed regulations and decisions with consequences for competition policy. The communiqué is not treated as compulsory, however, and there are no sanctions if

[52] In competition law, before deciding whether companies have significant market power which would justify government intervention, SSNIP test is used to define the relevant market in a consistent way. The SSNIP test is crucial in competition law cases accusing abuse of dominance and in approving or blocking mergers. Competition regulating authorities and other actuators of anti-trust law intend to prevent market failure caused by cartel, oligopoly, monopoly, or other forms of market dominance. In the EU it was used for the first time in the *Nestlé/Perrier* case in 1992 and has been officially recognized by the European Commission in its "Commission's Notice for the Definition of the Relevant Market" in 1997.

agencies fail to notify the TCA of an important regulation (OECD, 2005b:3-4). Thus, TCA should expand consultation with sectoral regulators such as Telecommunications Authority. For instance, that agency's overlapping jurisdiction with the TCA imposes uncertainty on private sector firms and, leads to distortions on competitive market operations. The TCA should address such problems, but not necessarily by a statutory amendment specifying precise jurisdictional boundaries. The affected agencies should consider the possibility of devising a more flexible solution, such as negotiating an expanded protocol that explicitly allocates enforcement authority.

3.5 Econometric Model

In the previous sections, the structure of manufacturing industry and the evaluation of competition policy are descriptively examined for Turkey. This section has two main objectives:

(1) to test whether there is impact of price-cost margin (mark-up), import penetration, export/output ratio and customs union/competition policy on productivity in the Turkish manufacturing data for the period 1992-2001

(2) to test whether there is impact of mark-up, trade structure and customs union/competition policy on productivity in the Turkish manufacturing data during the same period.

Firstly, the first case will be given by specifying the econometric model, and then the second econometric specification for the second case will be given in the following.

As mentioned in the first chapter of this study, it is generally accepted that, competition (as measured by lower levels of industrial price-cost margin) enhances productivity growth. This relationship between competition and productivity growth has attracted a great deal of attention in the empirical economic literature. For instance, in an international study, Aghion et al (2006) assess the effect on productivity growth and aggregate employment in South Africa of increasing product market competition and found that a reduction in price-cost margins (that is, an increase in product market competition) have large positive effects on productivity growth and employment in South Africa. This study is important because our model is mainly based on it.

3.5.1 Literature Survey

In fact, there are many empirical studies on other countries including Turkey. Regarding the empirical studies on Turkey, for example, Foroutan (1991) examines how the trade liberalization of 1980s in Turkey has affected the performance and competitiveness of the Turkish manufacturing industry for the period 1976-1985. The study shows that, international competition has decreased the price-cost margin and increased the rate of growth of productivity in the private sector during the period considered.

Bayar (2002) investigates the effects of foreign trade liberalization of Turkey after 1980 on the productivity of industrial sectors. The relationship is tested using panel data of twenty-eight ISIC three-digit industrial sectors for the 1974–1994 period. The study run two different regressions. The first regression's results show that there is a positive shift in productivity and a negative shift in industrial mark-ups after trade liberalization. The second regression explains price–cost margins with import penetration, capital/output ratio, and the Herfindahl index (as a measure of

industrial concentration) for the period 1980-1993. All of the explanatory variables seem to have a significant effect on price–cost margins. Import penetration has a positive effect on price–cost margins, which is contrary to our results.

Kıvılcım et al (2002) also, contrary to expectations, find that openness had very little impact on mark-ups within manufacturing industry for the period 1980-1996. Furthermore the trade-adjusting sectors shows a positive relationship between the profit margins and openness. They also find that profit margins are positively and significantly related to concentration ratio (thus competition).

According to a recent study on the impacts of the CU agreement, Akkoyunlu-Wigley and Mihci (2006) show that increasing imports from EU countries reduced the sectoral concentration ratio and thereby sectoral market power in Turkish manufacturing industry. Thus, increasing trade volume with EU countries during the CU period created beneficial effects on Turkish economy especially by means of increasing competitive pressure for falling mark-ups and market power. Hence, it is clear that there are welfare impacts as a result of such changes in the pricing behavior and market structure of the Turkish manufacturing industry.

On the other hand, there are some studies testing the import discipline hypothesis for Turkish manufacturing industry. Levinsohn (1993), for instance, studied the impact of trade liberalization on market discipline by using firm level data from 1983 to 1986 and concluded that imports were a source of domestic market discipline in Turkey. Thus, he found that trade liberalization was associated with lower industry markups in Turkish manufacturing industries where pricing above marginal cost was previously significant.

Another study that aims at exploring the relationship between the openness and competition, thus testing import discipline hypothesis in Turkey is that of Saatci and Aslan (2007). They used panel data econometrics for the Turkish two-digit manufacturing data in the period 1966-2001. They found that import penetration had an important disciplining effect on the manufacturing sector during the relevant period.

Taymaz and Yılmaz (2007) show that productivity actually increased in the manufacturing sectors along with increased import penetration rates after completion of the CU agreement in 1996. The study finds that productivity in import-competing sectors increased 14 % from 1995 to 2000 whereas it stagnated in export-oriented and non-traded manufacturing industries.

While analyzing the relationship between price-cost margin and trade liberalization in Turkish manufacturing industry for the period 1983-1994, Yalçın (2000) found that import penetration leads to a decrease in the price-cost margins in the entire private manufacturing industry, the price-cost margins in the highly concentrated private manufacturing industries increase by the import penetration. These results are similar to what we found.

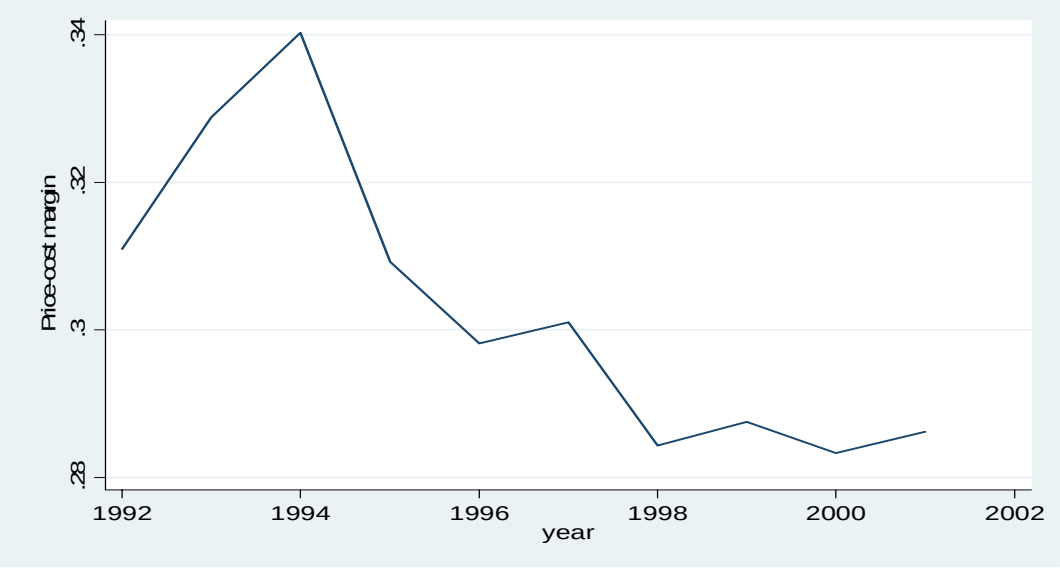
Çulha and Yalçın (2005) examine the determinants of the price-cost margins in the Turkish manufacturing firms for the period 1995-2003. Using panel data econometrics a large number of manufacturing firms by conditioning on their firm size, age, ownership and export orientation, they find that import penetration seems to be ineffective to reduce the price-cost margins of large, high market share and foreign partner firms.

Utilizing three-digit Turkish manufacturing industry level panel data, Erzan et al. (2003) analyze how increasing openness to international markets (including the CU with the EU) have affected the structure and performance of Turkish manufacturing industry over the period 1980-1999 with special emphasis on the market disciplining role of imports. They find that changes in import penetration had a significant positive effect on price-cost margins with a one-year lag in high price-cost margin industries and concluded that imports do not seem to provide discipline for manufacturing industries.

3.5.2 Descriptive Analysis

Before giving the estimation results of the econometric model, some descriptive indicators will be given below to observe the general tendencies in the Turkish manufacturing industry. The price-cost margins are generally used as a measurement of performance and competitive level of the domestic industry. The data of the private manufacturing industry indicate that price-cost margins have increased significantly in the private sector in the period 1992-1994 (Figure 3.18). However after 1994, it started to decline drastically.

Figure 3.18: Price-cost margin between the period 1992-2001

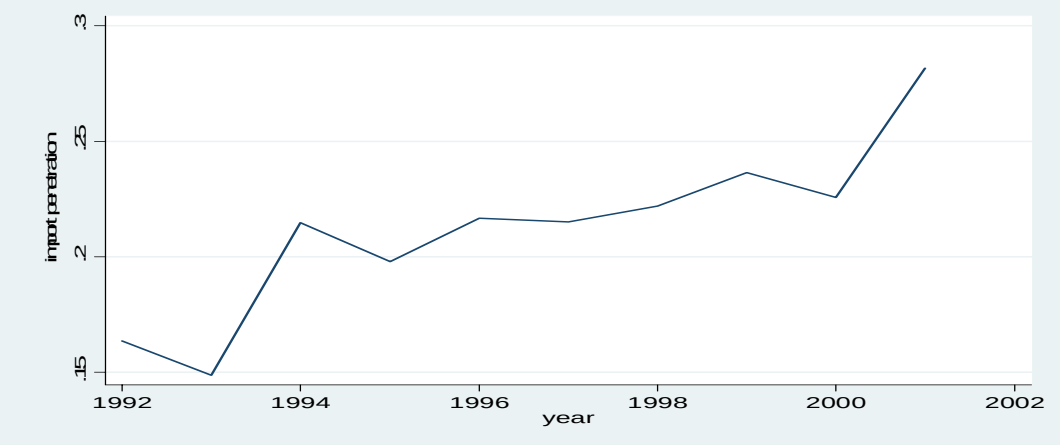


Source: own calculations from TurkStat Manufacturing Industry Annual Surveys

Import penetration confirms that the degree of openness of the manufacturing industry arose considerably during the period 1992-2001 (Figure 3.19). This has accelerated with the CU with the EU in 1996. It is generally expected

that openness of the industry has intensified domestic competition and improved the efficiency of the manufacturing industry in Turkey.

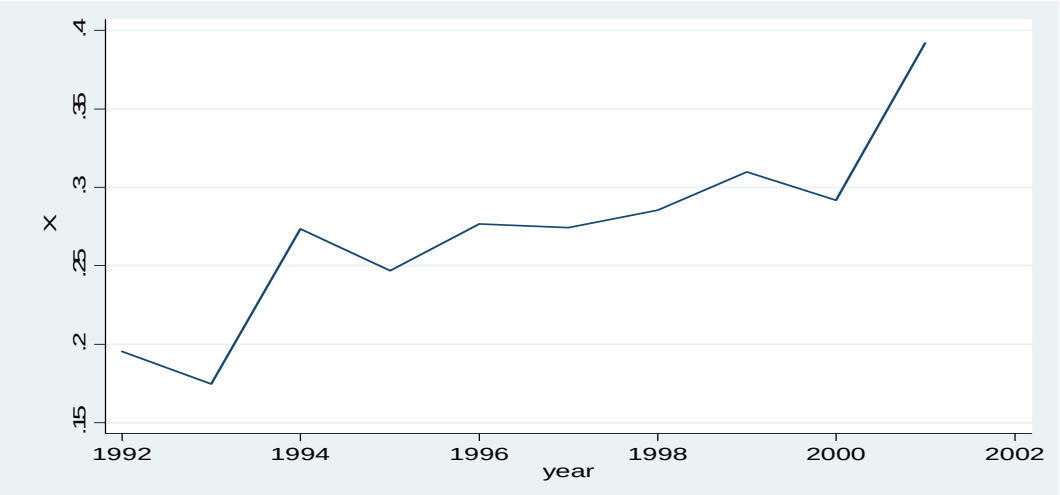
Figure 3.19: Import penetration ratios between the period 1992-2001



Source: Own calculations from TurkStat Manufacturing Industry Annual Surveys

As seen in the Figure 3.20, the export/output ratio (the share of exports in output) increased continuously as of 1992. This also implies the outward oriented development of the Turkish economy during the post-1980.

Figure 3.20: Export/output ratio between the period 1992-2001



Source: own calculations from TurkStat Manufacturing Industry Annual Surveys

Following tables gives the production growth, price-cost margin and import penetration ratios in manufacturing for the relevant two sub-periods of the period considered.

As shown in Table 3.22, while some industries grew in both periods, some industries grew in the first period and shrunk in the second period or vice versa. It is seen that the manufacture of textile, manufacture of coke, refined petroleum products and nuclear fuel and manufacture of electrical machinery increased dramatically during the second period. On the other hand, the production of tanning and dressing of leather, manufacture of luggage, manufacture of wood and of products of wood and cork and manufacture of furniture declined during the 1996-2001. More details are given in the Table 3.22.

Table 3.22: Production Growth for the period 1992-1995 and 1996-2001

ISIC Code	Description	1992-1995	1996-2001
15	Manufacture of food products and beverages	10%	2%
16	Manufacture of tobacco products	26%	9%
17	Manufacture of textiles	10%	191%
18	Manufacture of wearing apparel ; dressing and dyeing of fur	15%	27%
19	Tanning and dressing of leather; Manufacture of luggage. Handbags. 191addler. Harness and footwear	13%	-24%
20	Manufacture of wood and of products of wood and cork. Except furniture; Manufacture of articles of straw and plaiting materials	5%	-17%
21	Manufacture of paper and paper products	21%	-10%
22	Publishing. Printing and reproduction of recorded media	10%	-15%
23	Manufacture of coke. Refined petroleum products and nuclear fuel	-31%	202%
24	Manufacture of chemicals and chemical products	8%	27%
25	Manufacture of rubber and plastics products	14%	84%
26	Manufacture of other non-metallic mineral products	7%	13%
27	Manufacture of basic metals	18%	92%
28	Manufacture of fabricated metal products. Except machinery and equipment	7%	17%
29	Manufacture of machinery and equipment not elsewhere classified	4%	36%
30	Manufacture of office. Accounting and computing machinery	75%	16%
31	Manufacture of electrical machinery and apparatus not elsewhere classified	11%	198%
32	Manufacture of radio. Television and communication equipment and apparatus	-9%	3%
33	Manufacture of medical. Precision and optical instruments. Watches and clocks	10%	6%
34	Manufacture of motor vehicles. Trailers and semi-trailers	10%	28%
35	Manufacture of other transport equipment	9%	-17%
36	Manufacture of furniture. Manufacturing not elsewhere classified	11%	-2%

Source: own calculations from TurkStat Manufacturing Industry Annual Surveys.

In the following Table, the general mark-up levels in two digit manufacturing industries are demonstrated. As can be observed, the mark-up level is generally lower in the second period 1996-2001. Although the manufacture of tobacco products had a high mark-up (above 50%) during the period 1992-1995, it declined during the period 1996-2001, falling under 50%. Similarly, the mark-up ratio of the manufacture of other transport equipment has decreased from 61% in 1992-1995 period to 42% in 1996-2001 period.

Table 3.23: Price-Cost Margin (Mark-up) for the period 1992-1995 and 1996-2001

ISIC Code	Description	1992-1995	1996-2001
15	Manufacture of food products and beverages	0.28	0.26
16	Manufacture of tobacco products	0.57	0.46
17	Manufacture of textiles	0.24	0.29
18	Manufacture of wearing apparel; dressing and dyeing of fur	0.27	0.24
19	Tanning and dressing of leather; Manufacture of luggage. Handbags, saddlery, harness and footwear	0.27	0.27
20	Manufacture of wood and of products of wood and cork. Except furniture; Manufacture of articles of straw and plaiting materials	0.28	0.29
21	Manufacture of paper and paper products	0.34	0.33
22	Publishing. Printing and reproduction of recorded media	0.36	0.33
23	Manufacture of coke. Refined petroleum products and nuclear fuel	0.46	0.41
24	Manufacture of chemicals and chemical products	0.39	0.36
25	Manufacture of rubber and plastics products	0.37	0.31
26	Manufacture of other non-metallic mineral products	0.44	0.44
27	Manufacture of basic metals	0.25	0.20
28	Manufacture of fabricated metal products. Except machinery and equipment	0.34	0.33
29	Manufacture of machinery and equipment not elsewhere classified	0.34	0.32
30	Manufacture of office. Accounting and computing machinery	0.14	0.17
31	Manufacture of electrical machinery and apparatus not elsewhere classified	0.33	0.30
32	Manufacture of radio. Television and communication equipment and apparatus	0.41	0.31
33	Manufacture of medical. Precision and optical instruments. Watches and clocks	0.41	0.35
34	Manufacture of motor vehicles. Trailers and semi-trailers	0.29	0.24
35	Manufacture of other transport equipment	0.61	0.42
36	Manufacture of furniture. Manufacturing not elsewhere classified	0.36	0.31

Source: own calculations from TurkStat Manufacturing Industry Annual Surveys.

Liberalization of trade result in greater competition for domestic producers from imports. Import penetration put pressure on domestic producers, driving them to increase their efficiency or force them exit the industry. Table below shows the import penetration rates of Turkish manufacturing industry for the periods 1992-1995 and 1996-2001. As shown in the Table import penetration ratios have increased in almost every manufacturing industry in the period 1996-2001.

Table 3.24: Import Penetration for the period 1992-1995 and 1996-2001

ISIC Code	Description	1992-1995	1996-2001
15	Manufacture of food products and beverages	0,286	0,335
16	Manufacture of tobacco products	0,287	0,337
17	Manufacture of textiles	0,284	0,335
18	Manufacture of wearing apparel; dressing and dyeing of fur	0,285	0,334
19	Tanning and dressing of leather; Manufacture of luggage. Handbags, saddlery, harness and footwear	0,285	0,334
20	Manufacture of wood and of products of wood and cork. Except furniture; Manufacture of articles of straw and plaiting materials	0,289	0,334
21	Manufacture of paper and paper products	0,289	0,333
22	Publishing. Printing and reproduction of recorded media	0,291	0,333
23	Manufacture of coke. Refined petroleum products and nuclear fuel	0,291	0,333
24	Manufacture of chemicals and chemical products	0,296	0,333
25	Manufacture of rubber and plastics products	0,297	0,332
26	Manufacture of other non-metallic mineral products	0,298	0,332
27	Manufacture of basic metals	0,298	0,332
28	Manufacture of fabricated metal products. Except machinery and equipment	0,299	0,332
29	Manufacture of machinery and equipment not elsewhere classified	0,299	0,331
30	Manufacture of office. Accounting and computing machinery	0,301	0,331
31	Manufacture of electrical machinery and apparatus not elsewhere classified	0,301	0,331
32	Manufacture of radio. Television and communication equipment and apparatus	0,302	0,331
33	Manufacture of medical. Precision and optical instruments. Watches and clocks	0,304	0,331
34	Manufacture of motor vehicles. Trailers and semi-trailers	0,304	0,330
35	Manufacture of other transport equipment	0,305	0,330
36	Manufacture of furniture. Manufacturing not elsewhere classified	0,306	0,330

Source: own calculations from TurkStat Manufacturing Industry Annual Surveys.

3.5.3 Data and Estimation Results

3.5.3.1 Data

The econometric study employs industry-level panel data for Turkey from the Turkish Statistic Institute (TUIK) Manufacturing Industry Annual Surveys. The data employed for this study focus on the International Standard Industrial Classification (ISIC) four-digit manufacturing industries over 1992-2001. Since data for post-2001 has been conformed to the NACE standards, they have not been released yet. We prefer to examine private manufacturing industries since the public employment policy may not be rationally conducted. Our data covers the 1992-2001 period and consist of 102 industries, including Turkish manufacturing firms with ten or more employees, after excluding several industries due to lack of data. The methodology utilizes ordinary least square, fixed effect and random effects model for the estimation.

3.5.3.2 Model Specifications

This section of the study also aims at contributing to this empirical literature, that is, attempting to test the linkage between productivity growth and competition variables in private manufacturing industries in the context of Turkey. Hence productivity growth is regressed on the variables that reflect price-cost margins, import penetration and dummy variable that capture the impact of the customs union.

In the following econometric specifications, we check for two main points by using a rich data set based on industry level covering the years 1992-2001:

(i) First, was there a relationship between productivity and competition in Turkey during the period 1992-2001? For this we use the indicator of mark-ups, import penetration and the CU as a measurement of performance and competitive level of the domestic industry. Meanwhile, along with the CU, Turkey also adapted a new competition policy introduced in the year 1996. Thus the policy change coming with the CU might affect the productivity in Turkey but it is difficult to separate the impact of trade liberalization coming with the CU of the new competition policy.

(ii) Second, was the "import-discipline hypothesis" (the linkage between openness and competition) valid in the case of Turkey during the period 1992-2001? Import-discipline hypothesis mainly investigates the impact of imports on price-cost margins. In this context, the increase in imports (as a result of trade liberalization) causes a decline in the price-cost margin by reducing the market power of domestic firms through increase in competition. It is generally argued in the literature that increased imports increases competition in the national market, which encourages domestic firms to increase their efforts and improve productivity and quality in order to not lose market share. Protection by tariffs and non-tariff barriers leads to satisficing behavior in entrepreneurs, so they avoid technology-improving efforts. However, through entry of domestic and foreign firms into domestic oligopolized markets, mark-ups will decline dramatically.

3.5.4 Labor Productivity Growth Model

We estimate the general empirical specification given by:

$$g_{it} = \alpha_i + \beta_1 C_{it-1} + \beta_2 M_{it-1} + \beta_3 X_{it-1} + \beta_4 D_t + I_i + I_t + \varepsilon_{it}$$

where g_{it} denotes a measure of productivity rate in sector *i* at time *t*, C_{it-1} is price cost margin with one year lag that is used as a measure of competitive pressure in sector *i* at time *t*, M_{it-1} is the import penetration rate with one year lag in sector *i* at time *t*, X_{it-1} is the export/output ratio with one year lag in sector *i* at time *t*, D_t is the dummy variable that denotes the dummy variable that denotes Turkey's accession to the customs union in 1996 and I_i and I_t represent industry and year fixed effects. The dummy variable takes the value of one for 1996 till 2001 otherwise zero.

This is the baseline model that is estimated in the coming empirical analysis. The most appealing feature of this methodology is its simplicity. Although its simplicity, it is a very easy model to understand the relationship between productivity, mark-up, trade structure and the competitive regime shift.

There are various possible measures of performance such as productivity, job creation or profitability. In this study, we employ an empirical measure of productivity growth: labor productivity growth, which is calculated as real value added divided by labor. Value added is deflated by the total price index taking the base year as 1994. Since calculation of the total factor productivity (TFP) is problematic due to the unreliability of capital stock, TFP is not used in this study. In fact, although there are some other indicators of productivity in the literature, the simplicity of labor productivity and its being operational are reasons for this indicator to be used by economists.

Since it is not possible to observe or measure competition directly, proxies have to be used instead. The extent of competition in an industry is proxied by the pricing power in the industry. There are alternative measures of pricing power. There exists a literature that devotes to the estimation of the size of the mark-up. We follow Aghion et al (2006) in computing the extent of pricing power in an industry directly, by means of a proxy of the Lerner index. We use a proxy of the Lerner index, one given by the differential between value added and the total wage payment as a proportion of gross output:

$$C = \frac{Valueadded - Totalwages}{Output}$$

In general, there are two alternative measures that can be used to represent foreign trade: exports and imports. Trade liberalization is likely to result in greater competition for domestic producers from imports. One indicator of this for the manufacturing industry is the share of imports in domestic demand, defined as imports plus domestic production. Thus, we use import penetration rate, M, as an explanatory variable for productivity of industries. The import penetration rate, M, is defined as;

$$M = \frac{import}{import + output}$$

And the other explanatory variable for manufacturing industry is export/output ratio, X, which is defined as a the total exports divided by the total output value of Turkish domestic industries;

$$X = \frac{\exp ort}{output}$$

In this study, the total penetration rate is used rather than the European import penetration rate. The difference between the total and European import penetration rates is the penetration rates for imports from non-EU countries. The non-EU import penetration rates remained at almost the same level (around 5 %) during the 1990s. Thus, it can be concluded that the EU increased its market share, but not at the expense of imports from other countries. In a simplistic manner it can also be claimed that this is an indication that at the aggregate level there was trade creation without trade diversion (Taymaz and Yilmaz, 2007: 132).

3.5.4.1 Empirical Results

Concerning the econometric results, estimation procedure is carried out by using Ordinary Least Square (OLS) Fixed Effect (FE) and Random Effect (RE) Models in panel data analysis.

Table 3.25: Industry Evidence
Dependent Variable: Labor Productivity Growth

	OLS	FE	RE
Independent variables			
Constant	0.306 (0.055)	0.688 (0.164)	0.306 (0.048)
Price-Cost margin (C_{it-1})	-0.915*** (0.161)	-2.559*** (0.314)	-0.915*** (0.129)
Import penetration (M_{it-1})	0.048 (0.044)	0.623*** (0.223)	0.048 (0.039)
Export/output ratio (X_{it-1})	0.099* (0.056)	0.146 (0.101)	0.099** (0.050)
Dummy variable (D)	-0.076*** (0.025)	-0.158*** (0.021)	-0.076*** (0.017)
Diagnostic statistics			
R-square	0.0777	0.0636	0.0777
Observations	918	918	918
Hausman test		158.51***	

Note: Significance level: *10%, **5%, ***1%. Standard errors are given in parenthesis.

The same results are given in the following in an explicit equation forms. The values in the parenthesis are standard error of the coefficients.

$$g_{it} = 0.306 - 0.915C_{it-1} + 0.048M_{it-1} + 0.099X_{it-1} - 0.076D_{it} \qquad \text{(OLS)}$$

$$(0.055)\ (0.161) \qquad (0.044) \quad (0.056) \quad (0.025)$$

$$g_{it} = 0.688 - 2.559C_{it-1} + 0.623M_{it-1} + 0.146X_{it-1} - 0.158D_{t} \qquad \text{(FE)}$$

$$(0.164)\ (0.314) \qquad (0.223) \quad (0.101) \quad (0.021)$$

$$g_{it} = 0.306 - 0.915C_{it-1} + 0.048M_{it-1} + 0.099X_{it-1} - 0.076D_{t} \qquad \text{(RE)}$$

$$(0.048)\ (0.129) \qquad (0.039) \quad (0.050) \quad (0.017)$$

As shown in equations, in the OLS model, one unit increase in mark-up with one year lag (C_{it-1}) leads to about 0.915 unit of decrease in g_{it} (productivity

growth). One unit increase in import penetration with one year lag (M_{it-1}) leads to about 0.048 unit of increase in g_{it}. One unit increase in export/output ratio with one year lag (X_{it-1}) leads to about 0.099 unit of increase in g_{it} and the dummy variable customs union (D_t) has a negative effect on g_{it}.

In the FE model, one unit increase in C_{it-1} leads to about 2.559 unit of decrease in g_{it}. One unit increase in M_{it-1} leads to about 0.623 unit of increase in g_{it}. One unit increase in X_{it-1} leads to about 0.146 unit of increase in g_{it} and the dummy variable D_t has a negative effect on g_{it}.

In the RE model, one unit increase in C_{it-1} leads to about 0.915 unit of decrease in g_{it}. One unit increase in M_{it-1} leads to about 0.048 unit of increase in g_{it}. One unit increase in X_{it-1} leads to about 0.099 unit of increase in g_{it} and the dummy variable D_t has a negative effect on g_{it}.

Hausman specification (HS) test is the classical test that is used to compare the FE and the RE model. HS test compares the FE and RE model under the null hypothesis that the individual industry effects are uncorrelated with the other regressors in the model. If there is such correlation (the null hypothesis is rejected), the RE model would be inconsistently estimated and the FE model would be the model of choice. As shown in the results, the Hausman statistic is high enough to reject the null hypothesis so we adopt the estimates of the FE model.

As can be seen from the estimation results by the fixed effect model (FE) which captures the industry specificity, there is a negative and significant relationship between mark-up level and productivity. Thus, the competitive industries are more productive during the period considered.

There is a positive and significant linkage between productivity growth and import penetration in Turkish manufacturing industry during the period 1992-2001. Thus, as expected, it seems that import penetration increases the productivity. In a

similar manner, import penetration ratios are expected to affect productivity positively if industries lower costs and become more efficient when import competition increases. Thus, trade liberalization (opening up domestic markets to foreign competition) leads to improvements in the productivity of domestic industries in Turkey.

On the other hand, it is generally expected that increased export shares should associate positively with productivity. This is also true for Turkey that there is positive but insignificant relationship between productivity rate and export/output ratio. Thus, in the Turkish case, the export/output ratio had not any significant impact on productivity even though it was positively related to productivity.

However, Turkey's accession to the CU does have a negative impact on the productivity of the Turkish manufacturing. At this point it is necessary to indicate that the completion of the CU between Turkey and the EU did not lead initially to considerable increases in trade with the EU. One of the reasons behind this was that the formation of the CU did not lead to considerable reductions in trade barriers on the EU side, because the EU had abolished the nominal tariff rates on imports of industrial goods from Turkey on September 1, 1971, long before the formation of the CU[53] (Togan et al., 2005:94).

[53] In the 1970 Additional Protocol to the Association Treaty of 1963, Turkish imports from the EU were divided into two lists. There was a 12 year list for industrial products that Turkey was likely to reach international competitiveness relatively faster, and the rest of the manufactured goods were placed on a 22 year list. With the CU that went into effect in 1996 Turkey has reduced the nominal protection rates in trade with EU for all of the commodities in the 12 and 22 year lists.

3.5.5 Price-Cost Margin Model

On the other hand, as mentioned above, we look at the import penetration on price-cost margin for the same data during the same period by specifying the econometric model in the following:

$$C_{it} = \alpha_i + \beta_1 M_{it} + \beta_2 D_{it} + I_i + I_t + \varepsilon_{it}$$

where C_{it} is price cost margin as a measure of competitive pressure in sector *i* at time *t*, M_{it} is the import penetration rate in sector *i* at time *t*, D_{it} is the dummy variable that denotes Turkey's CU agreement with the EU and I_i and I_t represent industry and year fixed effects.

3.5.5.1 Empirical Results

The estimation results and equations are shown in the following:

Table 3.26: Industry Evidence
Dependent Variable: Price-cost margin

	OLS	FE	RE
Independent variables			
Constant	0.333 (0.006)	0.355 (0.017)	0.344 (0.013)
Import penetration (M_{it})	0.018 (0.012)	-0.0542 (0.054)	-0.018 (0.033)
Dummy variable (D)	-0.028*** (0.006)	-0.024*** (0.005)	-0.026*** (0.005)
Diagnostic statistics			
R-square	0.0197	0.0024	0.0109
Hausman test	3.67		

Note: Significance level: *10%, **5%, ***1%. Standard errors are given in parenthesis.

The same results are given in the following in an explicit equation forms. The values in the parenthesis are standard error of the coefficients.

$$C_{it} = 0.333 + 0.018M_{it} - 0.028D_t \qquad \text{(OLS)}$$

(0.006) (0.012) (0.006)

$$C_{it} = 0.355 - 0.054M_{it} - 0.024D_t \qquad \text{(FE)}$$

(0.017) (0.054) (0.005)

$$C_{it} = 0.344 - 0.018M_{it} - 0.026D_t \qquad \text{(RE)}$$

(0.013) (0.033) (0.005)

As shown in equations, in the OLS model, one unit increase in M_{it} (import penetration) leads to about 0.018 unit of increase in C_{it} (mark-up) and the dummy variable D_t (customs union) has a negative effect on C_{it}.

In the FE model, one unit increase in M_{it} leads to about 0.054 unit of decrease in C_{it} and the dummy variable D_t has a negative effect on C_{it}.

In the RE model, one unit increase in M_{it} leads to about 0.018 unit of increase in C_{it} and the dummy variable D_t has a negative effect on C_{it}.

According to Hausman statistics, the most appropriate model is random effect model. It is found that there is a negative but not significant relationship between price-cost margins and import penetration rates in the Turkish

manufacturing industry during the period 1992-2001 at RE model. International trade can have an impact on the mark-up since foreign competition makes domestic product markets more competitive. Higher international trade intensity tends to increase the degree of competition that the domestic firm faces. International trade, therefore, is expected to have an effect on the variations of the mark-up.

On the other hand, the accession to the CU have negative effect on the price-cost margin at all models, thus along with the customs union, the competition increased during the period 1992-2001. It requires an explanation here that the impact of the dummy variable gives the impact of the policy shift in 1996. This shift in the policy can stem from both channels: one is the direct impact of the customs union, the other one is the switch to the new competition policy which came along the customs union. Hence it is extremely difficult to observe the source of the change in 1996 on the price-cost margin.

3.5.6 A Summary of Empirical Results

In 1996, Turkey established a CU with the EU in accordance with the Association Agreement signed in 1963. The main aim of this section is to analyze the effect of that customs union/competition policy on the productivity and pricing behavior in the Turkish manufacturing industry for the period 1992-2001. In other words, testing the pro-competitive effect of the CU agreement which both liberalized trade and introduced a new competition policy framework similar to the European one has been the cornerstone of the study.

For this purpose, in order to illustrate which channels through the variables affect labor productivity, the productivity growth model is summarized in Table 3.25. The productivity growth equation of 102 manufacturing sub-sectors that cover 10 years are estimated using mark up ratios and trade variables as control variables.

The estimation results show that there is a negative and significant relationship between mark-up level and productivity. Thus, decreased mark up levels leads to an increase on the productivity of Turkish manufacturing industries. On the other hand, import penetration has a positive effect on the productivity of the manufacturing industry. It is concluded that trade with union countries created a beneficial wealth and efficiency effect in Turkish manufacturing industry due to falling price-cost margins. There is positive but insignificant relationship between productivity rate and export/output ratio. However, the export/output ratio had not any significant impact on productivity even though it was positively related to productivity. It can be concluded that trade liberalization (opening up domestic markets to foreign competition) leads to improvements in the productivity of domestic industries in Turkey. However, Turkey's accession to the CU and the introduction of competition policy does have a negative impact on the productivity of the Turkish manufacturing. One of the reasons behind this might be that the EU had abolished the nominal tariff rates on imports of industrial goods from Turkey on September 1, 1971, long before the formation of the CU.

Additionally, in order to illustrate which channels through the variables affect mark-up ratios, the mark-up model is summarized in Table 3.26. This second regression is estimated for mark up ratio by using import penetration ratios and a dummy variable as explanatory variables. The estimation results show that the import penetration have a negative effect on the price-cost margin in the manufacturing sector. Increasing imports with the EU countries caused a decline in the mark up level for manufacturing industry during the considered period.

To sum up, it can be argued that increasing competition through raising trade volume affected pricing behavior of the manufacturing industry. Moreover, trade liberalization created a beneficial wealth and efficiency effect in Turkish manufacturing industry due to increased productivity and falling price-cost margins.

CONCLUSION

The relations between Turkey and the EU have been a major issue of discussion over decades. The CU agreement has provided a degree of economic integration between Turkey and the EU. As a consequence of the CU agreement, Turkey is almost part of the European single market with respect to trade in manufacturing goods. Being part of the European single market, Turkey has regarded the EU as a crucial integrative mechanism for accelerating its economic development through obtaining access to large markets.

Moreover, the start of accession negotiations with the EU has been an important development in influencing the development of industrial policy. Industrial policies of the EU and Turkey play a vital role for both industrial development and economic competitiveness. In Turkey, industrial development strategies have always been one of the main priority areas. Since 1960s, industry based growth has been one of the main objectives in Turkey. However, after 1980, significant progress has been made towards establishing the principles and fundamentals of a free market economy through the introduction of an export oriented industrialization strategy. Such developments made significant contributions to the dynamism of manufacturing industry in particular and Turkish economy in general.

Turkish manufacturing industry is largely dominated by SMEs. The size of firms plays an important role in the development of new activities, innovation, R&D and development of new products and production processes. The size of firms has also implications on the strength and the vulnerability of sectors and firms. The distribution of economic activity (value added) by firm size reflects the major characteristics of sectors and also determines the sectoral performance and the competitiveness. Within the EU and Turkey, SMEs play a major role in the manufacturing industry by providing a potential source for jobs and economic growth. Although LSEs represent small share of the total number of enterprises, they

create relatively more value added than do their smaller counterparts. SMEs face increasing competitive pressure stemming from globalization, enlargement and opening up of markets spurred by new technologies and innovation. Further, the other challenges faced by SMEs include the lack of skilled labor, difficulties with accessing finance, bureaucracy and regulations.

FDI is also an important indicator that provides information regarding the structure of manufacturing industry. The size and composition of FDI is important in the competitiveness of the manufacturing sector. FDI flows have been increasingly considered as a crucial tool for industrial growth. In fact, FDI highly contributes to economic growth, employment, technological development and helps to create a more competitive business environment for firms. Turkey attracted relatively low FDI inflows because of several reasons such as macroeconomic and political instability, structural barriers, excessive bureaucratic requirements and corruption. In recent years, Turkey has been highlighted as an attractive investment location with the improvement in macroeconomic stability, positive effect of the EU membership negotiations on predictability, rigorous structural reform programme (such as the introduction of new FDI law in 2003 and establishment of Investment Support and Promotion Agency in 2006) efforts of improving the investment environment. Thus, along with positive effect of the EU membership negotiations on predictability, improvement in macroeconomic stability, rigorous structural reform programmes and efforts of improving the investment environment has highlighted Turkey as an attractive investment location for foreign investors over the past years.

Economic integration provides spillover of knowledge by expanding diffusion of innovation and technology which are determining factors in global competition. The expected diffusion of technology following economic integration would benefit Turkish industry and increase competitiveness. It is a well known fact that economic integration allows greater gains when economies are more competitive and diversified. Thus, R&D, innovation and technological capacity are considered as the most important factors of competitive advantage and economic development. Innovation and R&D activities are also an important factor in determining industrial

structure. R&D and innovation not only enhances productivity and competitiveness but also cuts down costs. Competitiveness of the EU and Turkey is strongly linked to their position in R&D, innovation and technology. They play a key role in determining the structure and performance of European and Turkish manufacturing industries. In the case of Turkey, for instance, production processes and technologies are considered important for the sustainability of competitiveness in medium and high technology industries such as automotive engineering, chemicals textiles and the production of household goods. However, Turkish manufacturing sector has also several weaknesses in technological infrastructure. For instance, the manufacturing sector uses low and intermediate technology. The main reason for this is the insufficiency of private and public R&D expenditures. Especially the R&D activities for high technology are extremely low.

The new developments in Turkey and in the world have changed the objective and extent of the industrial policy. In the past, the main objective was just to industrialize but presently the policies that increase the competitiveness ate on the agenda. While Turkey tries to integrate with the most developed economic system, she faces the competitive pressure coming out of the countries that use the cheap labor such as China and India. Turkey has a strong revealed export specialization in EU markets for such manufactured products, whose value added is relatively small. On the other hand, Turkey has been moving towards products characterized by medium and high technology products. Production processes and technologies are considered important for the sustainability of competitiveness in medium and high technology industries such as automotive engineering, chemicals, textiles and the production of household goods. Since technological characteristics of the manufacturing industry plays an important role in the trade structure of the country, in order to increase its competitiveness Turkey has to alter problems such as low R&D activities, lack of specialized human capital and lack of modern infrastructure in the Turkish manufacturing industry.

Manufacturing industry of a country is essential for its ability to grow and to enhance and sustain its economic and technological leadership. During the period of

accession negotiations with the EU, while realizing harmonization requirements and taking into consideration the CU, the need for structural adjustment should be taken into account and relevant measures for increasing competitiveness should be put into operation.

The economic impact of removing barriers to competition in industrial product markets within the EU promotes competition by increasing rivalry and boosting economic growth. One of the most important outcomes of the CU agreement between Turkey and the EU has been the adoption of Turkish competition policy in 1996. Competition policy not only promotes competition but also protects it. It creates a level playing field for the firms and thereby also encourages new entry into markets or more efficient competitors. Furthermore, a competitive environment, protected by an effective competition policy, offers lower prices, improved products and processes, better quality and greater choice. On the other hand, regulation and its effect on economic performance has also become a controversial issue. Intricate regulation and its arbitrary enforcement are among the key obstacles to growth especially in developing countries. By imposing extra costs, uncertainty and risks, heavy regulations hamper investment by erecting barriers to entry. The regulatory system is in general designed to be pro-competitive to improve the framework conditions for industrial competitiveness. Hence, regulatory reform should be treated as a fundamental element of structural reform. Improving the flexibility, simplicity and quality of regulations, establishing regulatory institutions that facilitate the diffusion of innovations and increase competition, and reforming the regulatory process is a crucial dimension of regulatory reform. Regulations are regarded as one of the most crucial institutional and structural aspects that influence the performance of product markets.

Competition and regulation can interact in several ways: Regulation can contradict competition policy and discourage competition, for instance, by allowing price co-ordination or preventing advertising. On the other hand, regulation can be in parallel to competition policy, producing the same results, for example especially where monopoly has appeared inevitable, regulation may try to control market power

directly, by setting prices and controlling market entry and exit. Moreover, regulation can use competition policy principles. Instruments to achieve regulatory objectives can be designed to take advantage of market incentives and competitive dynamics. The regulatory reforms should be designed to intervene in a manner that is complementary to competition policy objectives. Competition and regulatory policy are made complementary where the objectives of both are establishing competitive markets. Thus, competition policy is central to regulatory reform. In the sense of this interaction between regulation and competition, this dissertation aims at elucidating the structure of Turkish manufacturing sector. Thus, regulation and competition are mostly used in the same meaning throughout the dissertation, i.e., pro-competitive regulations.

Competition is essential both for Turkey and the EU for the achievement of key economic objectives and thus creation of a thriving manufacturing industry. Within the EU, differences in the competitive characteristics of member states led to different competitive environments. Although national rules and regulations often have legitimate objectives such as product quality and safety, as the process of economic integration progresses, disparities in such different rules and regulation may hinder market access and thus, restrict competition. In order to avoid this, member countries have been collectively involved in an exercise of regulatory rapprochement at the EU level to counterbalance the impeding loss of regulatory authority or sovereignty at the national level. Indeed, the EU gives high priority to simplify and improve the regulatory environment. Thus, the process of economic integration in the EU has aimed to overcome the different national rules and regulations that existed in the member states through market intervention since harmonization has been a key feature of the market integration process.

Well-functioning markets, supported by sound competition policy frameworks at the national and EU level, are an effective system for the efficient allocation of resources. In this context, competition policy is also one of the primary economic policies of the EU impacting upon the economic performance of Europe. Indeed, it is a crucial element of a coherent and integrated policy to foster the

competitiveness of EU industries. It is the aim of the competition policy to organize the enforcement of competition rules in a pro-active way in order to create more competition and help to increase economic efficiency, productivity growth and the competitiveness of the EU economy.

European competition policy, which has been regarded as an instrument that contributes to the creation of the single market, is also an essential instrument in prevention of anti-competitive behavior and in translation of efficiency gains into lower prices and better quality for consumers and also it is a key element impacting upon the economic performance of the EU that fosters the competitiveness of EU manufacturing industries and attains the goals of the Lisbon strategy.

Competition is also a controversial issue in Turkey. During the 1980's Turkey changed its course towards economic development. From state-led planning and strategic interventions, it embraced more free market-oriented economic policies to encourage private sector led economic activity. Hence the roots of current Turkey's regulatory reforms date back to 1980s. Prior to 1980, Turkey was following an economic policy based on import substitution and strict foreign exchange rate controls. In the beginning of 1980s Turkey has taken important steps in order to create an open and competitive macroeconomic structure by adopting the principles of free market economy. Trade liberalization has been an important aspect of Turkey's economic policy and in this context capital movements were liberalized, trade barriers were eliminated, and economic reform started in order to decrease government intervention in the economy.

With these internal developments and the external development of the relationship of Turkey with the EU, competition policy became a priority in the 1990s. The competition law was being developed while Turkey was negotiating a customs union with the EU (which entered into force in 1996). The customs union agreement included the EU's standard substantive provisions about competition, and it also obligated Turkey to adopt such a competition law as domestic legislation and to adopt implementing regulations consistent with the EU's competition law.

The regulatory impediments to competition have declined all over the world, especially in OECD and EU countries in recent years. The extent of government involvement in markets has fallen considerably. Further market regulations has become more homogenous across the developed countries, especially the EU countries, thus their relatively market regulations have moved towards the more liberal environment. In this process Turkey also reduced her restrictive regulation structure since the mid-1990's.

Improving market regulations in Turkey would strengthen the investment climate and thereby increase productivity and help Turkey achieve sustainable, long-term economic growth. However although Turkey has made progress on improving product market regulations in recent years in conformity with the EU legislation in terms of antitrust rules, there is still much to be done, particularly in monitoring and eliminating state aid with a distortive effect on competition, enhancing the antitrust regime and advocacy for competition, and attracting more FDI through promotion of foreign investment. As in other areas, continued progress requires firm commitments from and cooperation between the government authorities and the private sector.

Although a competition policy is not a solution for all of the problems in the Turkish economy, it is an important driver for fostering investment and increasing productivity. However, the adoption of competition policy does not ensure competition will occur, and competition may exist in industries and markets without having specific competition legislation in place. Moreover, empirical experience clearly indicates that it is very difficult to impose competitive discipline once firms are dominant or become dominant particularly when this occurs through poorly conceived and implemented public policies such as giving preferential treatment in privatization of SOEs. Thus, there should be a framework for protecting and promoting the process of competition and not competitors. Moreover, all firms should be treated fairly and equally, and there should be accountability and transparency in government and business relations.

In the relatively short span of about a decade, Turkey has made significant progress in the implementation of competition policy. It has played a critically

important role in moving the Turkish economy forward to greater reliance on competition oriented market mechanisms. The major provisions of the competition law parallel that of the EU, and the TCA has deservedly earned a reputation of being a well administered and competent authority in discharging its mandate. As various legal, institutional design and other problems have been encountered, the TCA has sought amendments and changed its administrative and other practices to improve its effectiveness. Through both enforcement actions and competition advocacy, it has not hesitated to rectify anticompetitive business practices and government policy interventions, and put forward more pro-competition alternatives. However, there are significant challenges in fostering competition in various segments of the Turkish economy, especially in manufacturing sector where anticompetitive conduct is likely to occur. The pro-competitive impact of the TCA is often hindered by other government economic policies and regulations. Turkey should accord priority to clarifying and delineating the role and functions of the TCA with other regulatory bodies in different areas. It also needs to adopt a more integrated approach towards developing competition, and where possible give priority to competition policy considerations in general and sector specific regulations and policy interventions. Given the expertise acquired by the TCA in assessing competition and efficient functioning of various industries and markets, the government should consider expanding TCA's role to include monitoring and controlling anticompetitive state aids, consistent with the CU agreement with the EU. It seems that the Turkish manufacturing industry has been influenced the most by the implementation of competition policy since its introduction in 1996.

This dissertation also tests some important linkages in the Turkish manufacturing industry concerning productivity, competition and trade (import penetration and customs union) by using panel data econometrics. The main findings of the econometric estimations are mainly: (i) There is a negative and significant relationship between mark-up level (competition) and productivity in the Turkish manufacturing during the period 1992-2001; (ii) it seems that import penetration increases the productivity; (iii) Turkey's accession to the customs union does have a negative impact on the productivity of the Turkish manufacturing; (iv) It is found

that there is a positive but not significant relationship between price-cost margins and import penetration rates at OLS model. In the FE and RE models, it is negative but it is also not significant; (v) The accession to the customs union have negative effect on the price-cost margin at all models, thus along with the customs union, the competition increased during the period 1992-2001. Along with the Customs Union, Turkey also adapted a new competition policy law introduced in the year 1996. Thus the change coming with the customs union might affect the productivity in Turkey but it is difficult to separate the impact of trade liberalization coming with the customs union from that of the new competition policy.

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