



FEMISE RESEARCH PROGRAMME

2004-2005

Competition, Efficiency and Competition policy in the MENA Region

Research n°FEM22-05

Directed By

***Khalid Sekkat, Département d'économie appliquée de
l'Université Libre de Bruxelles, Belgique***

In collaboration with:

INSEA, Rabat, Maroc

Université de Bretagne Sud Department of Economics, France

Faculty of Economics & Political Science, Cairo University, Egypte

July 2005



Ce rapport a été réalisé avec le soutien financier de la Commission des Communautés Européennes. Les opinions exprimées dans ce texte n'engagent que les auteurs et ne reflètent pas l'opinion officielle de la Commission.

This report has been drafted with financial assistance from the Commission of the European Communities. The views expressed herein are those of the authors and therefore in no way reflect the official opinions of the Commission.

Femise Coordinators



Economic Research Forum

Institut de la Méditerranée



Table of contents :

Competition, Competition Policy and Economic Efficiency in the MENA Region: The Case of Egypt	3
Competittion, Efficiency and Competition Policy in Tunisia	63
Competition, Efficiency and Competition Policy in Morocco	174
Competition, Competition Policy and Economic Efficiency in the MENA Region : Jordan's Country Report	249

Competition, Competition Policy and Economic Efficiency in the MENA Region: The Case of Egypt

By
Lobna Abdel Latif¹ and Ahmed Farouk Ghoneim²

Table of Contents:

Executive Summary.....	p. 2
Introduction.....	p. 7
Part I: Literature Review.....	p. 10
Part II: Main Features of the Egyptian Industry pertaining to Competition ..	p. 13
Part III: The Status of Competition in the Egyptian Industry.....	p. 33
Part IV: An Overview of the Egyptian Competition Policy and Law.....	p. 45
Part V: Main Findings and Conclusion.....	p. 56

¹ Professor of Economics, Faculty of Economics & Political Science, Cairo University. Email address: lobnama@aucegypt.edu

² Assistant Professor of Economics, Faculty of Economics & Political Science, Cairo University. Email address: aghoneim@gmx.de

Authors would like to thank Ms. Heba El-Deken for her superb research assistance and data computations.

Executive Summary

With most developing countries experiencing a transitional state to market economies, the need for a competition policy is indispensable. The breaking up of state monopolies and the privatization waves require a complementary institutional infrastructure that is able to ensure a healthy competitive environment. The case of Egypt reflects the importance of studying competition issues within the worldwide context. Starting the mid 1990s with the privatization process converting a large number of state monopolies to private monopolies, where the foundations for competition policy were not prevalent, the issue started to gain larger attention. Debates in the media, among academics, and in the governmental organizations as well as in the business community dealt with issues of competition law and policy and how to handle them.

The new cabinet that has been appointed in July 2004 has been trying to tackle issues related to improving the business environment and inducing more competition in the market where a new ministry for investment was established, which has a main goal of accelerating the privatization process. The Ministry of Finance reduced the tariff rates from 14.6% weighted average to 9% weighted average and reduced the tariff bands from 23 to 6. Several measures are being undertaken to lessen the red tape measures that hinder the flow of investments, and finally there is a huge tax reform project being prepared aiming at lowering tax rates and broadening the tax base. All such efforts are likely to improve the competition policy in Egypt. Trade facilitation measures (including customs administration, port facilities, etc.) still remain a major obstacle that needs to be addressed. Moreover, there are a number of regulatory measures that impede competition and are not tackled by competition law but rather related to trade facilitation: Examples include the technical standards which are predominantly related to food products, engineering goods, and consumer products. All such issues, besides others revealed in the study affect negatively the prevalence of efficient competition policy in Egypt.

The business community in Egypt is divided into various factions with conflicting interests. However, as identified by some observers such greater involvement of businessmen in the decision-making process has not precluded the state from acting unilaterally at its discretion, sometimes against business interest in pursuit of its own goals. Other commentators have argued that the lax consideration of enacting a competition law in Egypt was because of the pressure coming from the private sector which feared the enacting of such law for several reasons, on the top come lack of official technical capacity and the possible intrusion from the media

Consumers in Egypt can be described to have no direct role in enacting competition policy. There is no law for consumer protection, consumer protection NGOs are weak

and have no significant role in policy advocacy and they lack collective action initiatives.

Hence, it can be safely argued that the three main stakeholders (government, industrialists, and consumers) in enacting an efficient competition policy lack confidence and trust in each other, which hinders the fast enacting of the law.

The present study focuses mainly on local aspects of competition. This does not mean that international dimensions are neglected. They are considered as a leeway to increasing the room of competition from abroad. The study also considers the negative aspects that may be practiced in local markets (firms or consumers) due to collusion or any other anti-competitive actions. Nevertheless, doing that is confined to practices from within the local market.

The study consists of four main parts. Part I reviews the literature for Egypt on competition behavior and regulations. In part II, the study portrays the main features of Egypt's industries pertaining to competition and link that with market behavior and micro aspects of efficiency. Data available enabled us to undertake numerical analysis of competition aspects in the Egyptian manufacturing sector throughout the 1980s and almost the whole 1990s. The study continues to explore the issue through soft data collected via interviews with practitioners in seven sectors, namely textiles and ready made garments, beverages, home appliances, cement, steel, cars assembling, and pharmaceuticals, that are characterized by having high ratios of concentration which is undertaken in Part III. Finally, the study undertakes an analysis of the recently promulgated competition law in Part IV.

The literature review – in part I- on the relevant studies related to competition law and competition policy, reaches the conclusion that the literature on competition law and policy in Egypt is scarce. Some studies have tackled the issue of competition policy and competition law in general whereas few studies have focused on specific sectors. Results of the studies were controversial. One of the major themes that arise from the studies reviewed is that competition law is not enough to ensure the prevalence of competitive environment in the Egyptian markets. An overall competition policy is needed and a clear commitment from the government to preserve the independence of the Competition Authority is a must for the success of the competition law.

In part II, the study explores the main features of Egyptian industry that are related to the concept of competition. Egyptian industry while having a relatively wide number of activities, is characterized by a noticeable degree of specialization in very few industries, mostly related to natural resources (mining or agriculture) or to availability of low-skilled labor.

Most of the production is produced by large firms, indicating high degree of concentration for both employment and production. While the degree of concentration shows -in many industrial sectors- some reductions, we can not depict a considerable declining trend. One can say that both specialization and concentration are well established characteristics of the Egyptian industry. When investigating the relation between specialization in production and the structure of establishments, i.e. concentration; we could not find a clear relation. Sectors with high share in

generating industrial production, may or may not be characterized with high level of concentration. For example, food sector ranks second in generating production while having a few number of establishments. The first ranked sector in the structure of generating production, petroleum products, has the fifth rank in number of establishments.

The study finds that the structures of the industrial markets pave the way for practicing anti-competitive behavior. However, due to data unavailability we could not link the mark-up ratios with other features of the industry that configure the abuse of dominant position for large firms. There are no clear patterns of relationship between mark-up ratios with capital intensity or number of establishments. It would have been useful if we could plot the mark-up ratios with any of the ratios that describe the high degree of concentration in the industry instead of the number of establishments because the latter does not describe the concentration or the unbalanced size phenomenon of the market, but we could not produce these figures on the 3-digit classification due to data limitations.

However the only variable that could be linked to the mark-up ratios is the degree of satisfying the local consumption from local sources. The higher the level of imports, the less are the mark-up ratios. This indicates that when the local market demand is satisfied mainly from local production, the mark-up ratios would be higher.

We found that because studying market behavior and market power is something very new to the literature on Egyptian industry, the current study highlighted many voids in the field that are crucial to study competition such as turn over ratios, rent seeking behavior allowed by efficiency patterns of some firms, segmentation in the market with relation to pricing methods, etc....

The mark-up ratios simulate the relationship between price and marginal cost average over all firm sizes for each industrial activity. Hence, they cannot explain market power in each market relative to others. However, they are very useful device for comparison in the same sector across time.

Part III of the study focuses on identifying three related measures of competition (business to business), (business to consumers), and (consumers to business). The study explores the status of competition in seven leading industries; some of which constitute traditional industries; such as textiles, beverages. Others are considered relatively new ones; especially cars assembling. The market characteristics, especially those related to concentration, of each industry was analyzed followed by investigating the pattern of industrial relationships in these industries that mostly affect competition. The degree of government's intervention and its impact on such industrial relationships was also researched. Finally an impact assessment of market characteristics on competition was undertaken.

The study of the seven selected industries shows that market concentration by itself does not lead to lack of competition. Many factors determine the impact of concentration on competition; such as the share of imported component, the relation with multinationals, the strategic nature of the products, and the degree of market maturity (which determines the potentiality of collusion). Another factor that showed that it needs to be studied carefully is the skewness of the market.

The impact of the three patterns of relations introduced above (b2b, b2c, c2b) differs from one industry to another according to the market conditions of each industry. These market conditions include the number and position of firms, barriers to entry, government intervention, pricing techniques, and percentage of imported inputs. For example, the producers viewed the predatory pricing and quantity forcing practiced by the supplier in the beverages industry, home appliances industry, and car industry as positive aspects because they guarantee stable long-term relationships. All these features have led to the anti-competitive behavior of these sectors which included predatory pricing, quantity forcing, exclusive supply, collusions, barriers to entry related either to the market or the product, and government intervention.

The last part of the study (part IV) is devoted to analysis of the Egyptian Competition Law. The title of the Competition Law in Egypt is “Law of Protecting Competition and Preventing Anticompetitive Practices”. The law had other titles before which did not differ substantially from the aforementioned title, with the exception of one draft (No. 15) which added the phrase “Consumers’ Protection”. The title of the law is in line with the existing titles of competition and anti-trust laws prevailing around the world. What is interesting about the Egyptian title is that it couples between protecting competition and the struggle against monopoly. The majority of the laws either adopt the first half of the title, that is Safeguarding or Protection of Competition, or something alike such as the Prohibition of Unfair and Restrictive Market Practices or they adopt the second half that is Antimonopoly or Counteracting Monopolistic Practices.

Dominant position is defined as controlling 25% (down from 35% in the draft submitted by the government to the Parliament) of the relevant market. The per se rule is not complemented by any other criteria to explain dominance. As it is the case of many other countries, which complement it by a number of other criteria that assure the presence of effective dominance; such as the capacity to affect prices or to overlook competitors behavior- in other words a mixture of per se and rule of reason approaches is adopted. The Egyptian law adds to the 25% threshold, the ability to influence the prices or the amount of products available in the market without the competitors having the same ability.

Examples of illegal practices include the refusal to supply or purchase, which negatively affects prices, to be perceived as abuse of dominant position, tie –in arrangements which make the supply or purchase of a certain good dependant on the purchase or supply of another good. In this respect, the Egyptian law is in line with the UNCTAD model law of competition

The relevant market has been clearly defined from the product and geographical perspectives. The identification of the product market is based on the availability of the similar product or its close substitutes from the point of view of the consumer. The executive decree, which is not published yet, that determines which criterion (the reasonable interchangeability of use or cross elasticity) will identify the test used for identifying the relevant product market. The relevant geographic market takes in consideration the possibility of an extended market depending on the differences of competition status in each market. The law did not identify specific criteria other than the general competition status for determining the scope of the market. For example,

it did not include aspects of price disadvantages arising from transportation costs, degree of inconvenience in obtaining goods and services, choices available to consumers, or the functional level at which the enterprise operate. At this stage it cannot be predicted whether such aspects will be included in the executive decree or not. Nevertheless, it should be pointed out that if such specific issues are not mentioned it might give room to manipulating the definition of the relevant

Regarding the Competition Authority, there has been no wording that implies the independency of the Competition Authority (with the exception of its budget) in the Egyptian law. However it follows the Prime Minister as the concerned minister in charge. Penalties under the law have been confined to financial penalties with no imprisonment.

Finally, the law provided clear exemptions for public utilities and private businesses that result in more public interest benefit than their costs of anticompetitive behavior based upon a discretionary power allowed for the Prime Minister which is to be approved by the Competition Authority.

In general, the study provides an overview of the competition status in the Egyptian economy. It dealt with the issue from different perspectives including the actual play ground of firms in the market, the institutional infrastructure embedded in the law, and the analysis of relevant data. The conclusions reached pointed out that there is a move towards anti-competitive behavior in the Egyptian economy as a result of several institutional impediments, wrong sequencing of policies adopted and inefficient government intervention. The study pointed out that time horizon of capital turnover, as revealed by interviews, plays an important role in determining mark-up ratios, an issue that cannot be revealed by data. Hence, the interpretation of mark-up ratios should be dealt with cautiously to ensure proper interpretation of results. The main policy implications include a better undertaking of the grass roots of the anti-competitive behavior which cannot be any more cured by the trade liberalization or simply enacting a competition law. The issue was found to be deeper. What is needed is a better data set on a more disaggregated level that allows different stakeholders to identify the anticompetitive behavior. The dataset should not be solely controlled by the private businesses or any other stakeholder to avoid asymmetric information.

Competition, Competition Policy and Economic Efficiency in the MENA Region: The Case of Egypt

Introduction:

With most developing countries experiencing a transitional state to market economies, the need for a competition policy is indispensable. The breaking up of state monopolies and the privatization waves require a complementary institutional infrastructure that is able to ensure a healthy competitive environment. The case of Egypt reflects the importance of studying competition issues within the worldwide context. Starting the mid 1990s with the privatization process converting a large number of state monopolized sectors to private monopolized sectors where the foundations for competition policy were not prevalent, the issue started to gain larger attention. Debates in the media, among academics and in the governmental organizations as well as in the business community dealt with issues of competition law and policy and how to handle them.

The new cabinet has been trying to tackle issues related to improving the business environment and inducing more competition in the market where a new ministry for investment was established, which has a main goal of accelerating the privatization process. The Ministry of Finance reduced the tariff rates from 14.6% weighted average to 9% weighted average and reduced the tariff bands from 23 to 6. Several measures are being undertaken to lessen the red tape measures that hinder the flow of investments, and finally there is a huge tax reform project being prepared aiming at lowering tax rates and broadening the tax base. All such efforts are likely to improve the competition policy in Egypt. Trade facilitation measures (including customs administration, port facilities, etc.) still remain a major obstacle that needs to be addressed.

However, there are a number of regulatory measures that impede competition and are not tackled by competition law but rather related to trade facilitation: Examples include the technical standards which are predominantly related to food products, engineering goods, and consumer products. All such issues, besides others revealed in the study affect negatively the prevalence of efficient competition policy in Egypt.

The business community in Egypt is divided into various factions with conflicting interests. However, as identified by some observers such greater involvement of businessmen in the decision-making process has not precluded the state from acting unilaterally at its discretion, sometimes against business interest in pursuit of its own goals. Other commentators have argued that the lax consideration of enacting a competition law in Egypt was because of the pressure coming from the private sector

which feared the enacting of such law for several reasons, on the top come lack of official technical capacity and the possible intrusion from the media

Consumers in Egypt can be described to have no direct role in enacting competition policy. There is no law for consumer protection, consumer protection NGOs are weak and have no significant role in policy advocacy and they lack collective action initiatives.

Hence, it can be safely argued that the three main stakeholders (government, industrialists, and consumers) in enacting an efficient competition policy lack confidence and trust in each other, which hinders the fast enacting of the law.

The present study focuses mainly on local aspects of competition. This does not mean that international dimensions are neglected. They are considered as a leeway to increasing the room of competition from abroad. However the study also considers as much it is possible, the negative aspects that may be practiced on local markets (firms or consumers) due to collusion or any other anti competitive actions. Nevertheless, doing that is confined to practices from within the local market.

This study is part of a larger project comprising four countries, namely Egypt, Jordan, Tunisia and Morocco to investigate the status of competition in those countries. We include different dimensions of competition policy in studying the status of competition where we analyze the data related to concentration, markup, etc which are the indicators generally used in the literature to indicate the degree of competition prevailing in different markets. Moreover, we undertake a number of interviews in seven sectors, which were chosen specifically as sectors that enjoy relatively high degree of concentration. We complement the analysis by analyzing the different provisions of the competition law while taking in consideration the UNCTAD competition law as our benchmark.

The study is divided into four main parts. In Part I we undertake a literature review on different studies that have dealt with competition in Egypt. In general, the literature review showed that studies that have tackled the issue of competition are relatively limited. There are two types of studies, the first type is the one that deals with the issue of competition, whether law or policy, in general, and the other type is the one that have dealt with the issue on sectoral level. Moreover, the studies reviewed were all undertaken in the second half of the 1990s implying that the issue was relatively ignored by analysts before mid 1990s. In this regard the study represents an important contribution, first by undertaking the first literature review on this important issue, and secondly by updating the analysts and policy makers on the competition status in the Egyptian economy. There is no concrete result related to competition that the literature review pointed out. In fact, the literature review arrived at mixed results whether regarding the reasons behind the delay of enacting competition law or in dealing with the issue of competition on sectoral level.

In Part II we move to data analysis based mainly on the methodology used for the whole project. We estimate mark-up ratios, and technological progress. We depend on the UNIDO database where analysis for the period of the 1980s and 1990s up to 1995 is undertaken. We study the relationship between different variables related to competition and efficiency using two levels of disaggregating (ISIC 2 digits and 3

digits). We investigate the impact of important variables as trade liberalization by introducing some proxies such as by import penetration on the mark-up ratios.

In Part III, and to overcome the deficiency of data, we complement our analysis by undertaking intensive interviews, based on a questionnaire designed for the whole project, in seven sectors. The seven sectors, namely textiles and ready made garments, cement, steel, car assembling, beverages, home appliances, and pharmaceuticals, are chosen based on our belief that there is relatively high degree of concentration in such sectors. It is worth noting that the interviews do not correspond to the time horizon of the analysis undertaken in Part II. It provides a profile of the status of competition that has been prevailing in the period 2003-2004.

The mark-up ratios, despite used as a proxy of competition in different studies, should be dealt with cautiously in the Egyptian context. The fact that the time horizon of the capital turnover differs significantly from one sector to another, as emphasized by the interviews can result in different estimates when taken in consideration. However, we did not deal with such issue due to data limitations, however it is an important aspect that needs to be highlighted in the analysis.

Finally, in Part IV we analyze the different provisions of the competition law that was adopted in 2005. We benchmark our analysis using the UNCTAD Competition Model Law while emphasizing several characteristics of the Egyptian economy and the relevance of the law provisions to such characteristics. We conclude the study by summarizing the main findings.

Part I: Literature Review

The subjects of competition law and competition policy in Egypt are relatively understudied. There are limited number of studies that have dealt with such issues. Moreover, and according to the best of our knowledge very few research projects dealing with such issues are currently undertaken. In this section, we provide an overview of the existing literature and other research projects in the pipeline.

The first study that tackled the issue of competition law appeared in 1997 in a book that dealt with the Egyptian European Partnership Agreement³. The study included in this book dealt with competition law and policy as major issues that Egypt has to, seriously, consider when joining the free trade area with the European Union. The study emphasized that are some provisions in the criminal law that deal with anti-competitive behavior and such provisions and even cases date back to the early twentieth century. The study pinpointed the importance of Egypt adopting a competition law along the lines of the related Articles in the Treaty of Rome. Moreover, the study identified some reasons that might act against the adoption of a competition law in Egypt and especially the large size of the public sector, and the reluctance of some private sector dominant firms in initiating such law as it might act against their interest. In 2001, two studies raised the issue of competition law and competition policy⁴. They reviewed the different arguments for and against adopting a competition law in general with specific emphasis on Egypt. They identified the results that can happen if a competition law is enforced, however lacks good implementation. Among such results are the continued government interference in the name of protecting competition, abuse of the law by some dominant private firms, weak knowledge of the different aspects of competition among the staff of the competition authority that will be responsible for implementing the law, and restricted coverage of the law for the firms in the formal sector, while leaving those in the informal sector without being covered by the law. The authors argued as well what type of competition law will be relevant for Egypt and whether it should be a detailed rule of reason type law or a per se rule law. They concluded that a competition law is a necessary, but not a sufficient condition for achieving a healthy and effective competition policy in Egypt. The two studies identified the necessary pillars needed to

³ Moheildin, Mahmoud (1997), "On Competition Law: An Egyptian Perspective", in Samiha Fawzy (editor) "Egypt-EU Partnership Agreement", Cairo, Freidrich Ebert.

⁴ Ali El Dean, Bahaa and Mahmoud Mohieldin (2001), "On the Formulation and Enforcement of Competition Law in Emerging Economies: The case of Egypt", ECES Working paper o. 60, Cairo: ECES

See also Nassar, Heba (2001), "Competition Policy and Law in Egypt" report presented at the ESCWA in "Expert Group Meeting on Competition Laws and Policies: Identification of Common Groups in the ESCWA Region" published in 2002.

ensure an effective competition policy, among which is the less involvement of the government in the economic activity, and the independency of the Competition Authority. In the same year, another study concentrated on the design of the competition law after emphasizing that Egypt is in great need of a competition law due to the globalization including the commitments that WTO requires and the different regional trade agreements that Egypt is a member of⁵. Moreover, the study identified that the degree of concentration in the different industries is increasing which put pressure on the Government of Egypt (GOE) to issue such law. The paper argued that the design of the law is still not appropriate in dealing with the characteristics of the Egyptian economy and included a number of recommendations to be taken in consideration when drafting the law. In 2002, a study tackled the issues of competition law and competition policy in Egypt⁶. The study was skeptic arguing that adoption of competition law will not create a competitive environment in Egypt as long as the other pillars of competition policy are not enacted. It identified the main reasons that might have been behind the adoption of the law in Egypt using a new institutional economics approach. The study attributed the delay of enacting the law to absence of willingness among the dominant players in the private sector who believe that the law will affect negatively their interests. The increasing role played by the private sector since the inception of the Economic Reform and Structural Adjustment Program and the ability to affect the policy makers has been the main reason behind the delay of enacting such law. The study concluded by stating that a competition law given the prevailing existing conditions of the Egyptian economy will not have fruitful effects on the status of competition in the Egyptian market. It identified a prescriptive point of view on what model of law Egypt should adopt in case it has to due to its joining the Egyptian European Partnership Agreement where it stated that the law should be simple, progressive and of a per se type concentrating mainly on horizontal restraints while leaving vertical restraints to be introduced later. A recent study by Damien Geradin (2004) dealt with the issue of competition laws in Southern Mediterranean countries in the context of their Partnership Agreements with the EU. The Geradin study portrayed the status of competition in Southern Mediterranean countries, including Egypt, and recommended a number of steps to be undertaken to ensure effective and proper implementation of competition law in Southern Mediterranean countries in line with EU norms⁷.

A number of sectoral studies have dealt with the issue of competition. For example, a study in 2000 dealt with the status of competition in the steel industry⁸. The study reviewed the status of the steel industry in Egypt while tracing the development of the industry worldwide. It reached the conclusion that there is an increasing concentration happening in this industry, however this does not necessarily imply negative

⁵ Abdel Latif, Lobna (2002), "Competition Law and Globalization in the Egyptian Economy", Conference on Role of State Organized by Centre for Developing Countries, Centre for Public Administration, Centre for Economic and Financial Studies.

⁶ Ghoneim, Ahmed F. (2002), "Competition Policy or Competition Law: What Does Egypt Really Need", *Boletín Latinoamericano de Competencia*, No. 17, pp. 46-58. First presented at the ERF 9th Annual Conference held in Sharja, UAE, 26-28 October 2002.

⁷ Geradin, Damien (2004), "Competition Law and Regional Economic Integration: An Analysis of the Southern Mediterranean Countries" World Bank Working Paper No. 35 jointly financed by the European Commission and the World Bank

⁸ Abdel Latif, Lobna (April 2000), "Mergers, Acquisitions, and Collusions in the Egyptian Steel Industry", Centre for Developing Countries.

consequences on the status of competition in this specific market due to several reasons among which is the contestability of the market which enjoys free entry/exist conditions and the increasing number of new entrants to the market. The study emphasized that a competition law will help regulate the market as it will counteract the conventional wisdom that every dominant position implies undertaking anti-competitive behavior. On the contrary, the study emphasized that the law can help the efficient firms in this industry to enjoy economies of scale while ensuring that no anti-competitive behavior prevails. Similar sectoral studies have been undertaken in the field of financial sector. The financial sector has been among the most sectors studied with regards to competition as it enjoys a high degree of concentration with four dominant public banks that the government has failed to privatize since the mid 1990s. Most of the studies showed that there is a high degree of concentration in this sector, that competition is still unfair due to such high concentration, and that regulatory reforms need to be undertaken to ensure an effective competitive environment⁹. A study concentrating on merging of banks showed that the mergers and acquisitions in the field of banking in Egypt do not have negative impact on competition as long as there is strong and efficient regulatory supervision¹⁰. Contrary to the results obtained in the aforementioned studies, a study on the audiovisual sector showed that the absence of competition law in Egypt has resulted in the prevalence of anti-competitive behavior in the Film Industry¹¹.

According to the knowledge of the researchers, there is only one ongoing project on the issue of competition and competition policy that compares Egypt with six countries worldwide. The project is financed by IDRC¹² and tackles different issues of competition ranging from assessing the policies that are pro or anti competition in the selected countries, on the macro, industry and firm levels to other issues related to the quantitative measures of competition. This project is still ongoing and expected to be finalized in 2005.

To summarize, the literature on competition law and policy in Egypt is scarce. One of the major themes that arise from the studies reviewed is that competition law is not enough to ensure the prevalence of competitive environment in the Egyptian markets. An overall competition policy is needed and a clear commitment from the government

⁹ See for example, Roe, Alan (1998), "The Egyptian Banking System: Liberalization, Competition and Privatization", ECES Working Paper No. 28, Cairo: Egyptian Center for Economic Studies. See also, Mohieldin, Mahmoud (2000), "On Bank Market Structure and Competition in Egypt" paper presented at the Conference of Financial Innovation in Egypt. Caprio Gerard and Robert Cull (2000), "Bank Privatization and Regulation for Egypt" ECES Distinguished Lectures Series No. 15, Cairo: Egyptian Center for Economic Studies. Bahaa El Din, Ziad and Mahmoud Mohieldin (1998), "On Prudential Regulation in Egypt" in Mohamed El Erian and Mahmoud Mohieldin (eds) *Financial Development in Emerging Markets: The Egyptian Experience*, Cairo: Egyptian Center for Economic Studies

¹⁰ Hashad, Nabil (2003), "Mergers and Acquisitions of Banks in Egypt: Opportunities and Threats", ECES Working Paper No. 79, Cairo: Egyptian Center for Economic Studies

¹¹ Ghoneim, Ahmed F. (2005), "The Audio-visual Sector in Egypt", in Guerrieri, Paolo, P. Lelio Iapadre, and Georg Koopman, *Cultural Diversity and International Economic Integration: The Global Governance of the Audio-Visual Sector*, Edward Elgar.

¹² The title of the research project is "Promoting Competitive Markets in Developing Countries" and the team leader is Simon Evenett whereas the researcher undertaking the case study of Egypt is Ahmed Ghoneim.

to preserve the independence of the Competition Authority is a must for the success of the competition law.

Part II: Main Features of Egypt's Industry pertaining to competition

This part of the study is concerned with the relationship between market characteristics and competition. It is divided into three sections; each studies the topic from the point of view of a different level of the market. Section one is devoted to study main market features with relevance to competition. Section two focuses on market relationships and its potential impact on competition. In section three we undertake the analysis down to the micro level and study the likely impact on firm efficiency.

1- Specialization and Concentration

Industry in Egypt generated about 19% of GDP as of 2003. While the industrial base is relatively diversified, it is characterized by high dependence on natural resources and labor-intensive activities. As table (1) shows, more than half of the industry production is generated by two industrial sectors: Chemical products (35) and Food group (31). Both are resource-based industries. Adding textiles group, which contains activities that either resource-based (textiles 321) or labor intensive (wearing apparel 322) and engineering industries (labor intensive), we observe that almost 80% of the industrial production in Egypt is concentrated in four industrial groups (on ISIC 2 digits out of total ISIC 9 digits).

Table (1): Industrial Production Structure in Egypt

Code	Definition	Values (in million US\$)			Shares (%)		
		Average (81-89)	Average (90-94)	Average (95-98)	Average (81-89)	Average (90-94)	Average (95-98)
31	Food, Beverages & tobacco	5770	4365	5589	26.5	23.4	22.2
32	Textile, garments & leather	3776	2691	3198	17.8	14.5	12.7
33	Wood & furniture	241	127	201	1.1	0.7	0.8
34	Paper & products, printing & publication	858	641	939	4.0	3.5	3.7
35	Chemical & products, petroleum, coal, rubber & plastics	4123	5388	7639	18.7	29.1	30.4
36	Mining products, non-metal products, except petroleum & coal	1327	1329	1866	5.8	7.1	7.4
37	Basic metal products	2063	1507	1986	9.3	8.1	7.9
38	Metal products, machinery & equipment	3496	2526	3699	16.5	13.6	14.7
39	Other manufacture	44	32	31	0.2	0.2	0.1
3	Total	21699	18606	25149	100.0	100.0	100.0

Source: Calculated by the Authors based on UNIDO Industrial Statistics Database, 2002

It is interesting to note that these four groups also absorb almost 80% of the labor force employed in industry as a whole as shown in Table 2.

Table (2): Number and Share of Employees in Different Industrial Sectors

Code	Definition	Values (in thousands US\$)			Shares (%)		
		Average (81-89)	Average (90-94)	Average (95-98)	Average (81-89)	Average (90-94)	Average (95-98)
31	Food, Beverages & tobacco	191	236	223	20.2	21.6	19.7
32	Textile, garments & leather	305	312	342	32.4	28.6	30.3
33	Wood & furniture	14	15	21	1.5	1.4	1.8
34	Paper & products, printing & publication	36	39	40	3.8	3.6	3.5
35	Chemical & products, petroleum, coal, rubber & plastics	126	150	160	13.4	13.7	14.1
36	Mining products, non-metal products, except petroleum & coal	63	79	91	6.7	7.3	8.0
37	Basic metal products	69	70	71	7.3	6.4	6.3
38	Metal products, machinery & equipment	139	188	180	14.6	17.2	15.9
39	Other manufacture	1	2	3	0.1	0.2	0.3
3	Total	944	1092	1130	100.0	100.0	100.0

Source: Calculated by the Authors based on UNIDO Industrial Statistics Database, 2002

However, the degree of specialization is higher, when using a further disaggregated level, than it appears from the analysis on the 2-digit level of the industrial classification. Table (3) reveals that the industry in Egypt is almost specialized in two main activities: food products (311) and petroleum refineries (353); with a share reaching almost 35% for both of them when added together. Otherwise, there is an even distribution among other activities.

Table (3): Sectoral Production Structure Percentage of Total Industrial Production

Code	Definition	Average (80s)	Average (1990-1994)	Average (1995-1998)
311	Food products	19.1	19.5	19.4
313	Beverages	2.3	1.3	1.1
314	Tobacco	5.1	2.5	1.8
321	Textiles	16.2	12.6	9.7
322	Wearing apparel, except footwear	0.8	1.3	2.6
323	Leather products	0.3	0.2	0.2
324	Footwear, except rubber or plastic	0.5	0.3	0.2
331	Wood products, except furniture	0.5	0.3	0.3
332	Furniture, except metal	0.5	0.3	0.5
341	Paper and products	2.0	2.0	2.1
342	Printing and publishing	2.1	1.4	1.6
351	Industrial chemicals	4.3	4.5	4.0
352	Other chemicals	7.5	6.6	7.7
353	Petroleum refineries	2.1	15.4	15.4
354	Misc. petroleum and coal products	2.1	0.6	1.0
355	Rubber products	0.7	0.3	0.7

356	Plastic products	2.1	1.6	1.5
361	Pottery, china, earthenware	0.5	0.5	0.3
362	Glass and products	0.7	0.6	0.7
369	Other non-metallic mineral products	4.7	6.0	6.4
371	Iron and steel	4.8	5.4	5.4
372	Non-ferrous metals	4.5	2.8	2.5
381	Fabricated metal products	3.6	3.3	2.8
382	Machinery, except electrical	3.4	2.9	3.9
383	Machinery, electric	4.5	3.5	3.8
384	Transport equipment	4.6	3.5	4.0
385	Professional & scientific equipment	0.4	0.3	0.2
390	Other manufactured products	0.2	0.2	0.1
300	Total Manufacturing	100.0	100.0	100.0

Source: Calculated by the Authors based on UNIDO Industrial Statistics Database, 2002

Moreover, using GINI coefficient to measure the trend of specialization in the different industrial groups, we find that that concentration has been increasing in the majority of the industrial sectors. Figures based on table (4) display- that there is a tendency for more specialization which is increasing over time (see Figure 1.). For most industrial groups, the value of GINI coefficients is increasing rising for example from 0.45 in food, beverages, and tobacco to 0.55 and from a low 0.06 in the wood and furniture to 0.2 over the time period 1981-1998. The index is declining in just two industries: textiles and engineering. However, for the total of the industrial sectors concentration is decreasing.

Table (4) GINI Coefficient for Specialization in Industrial Activities

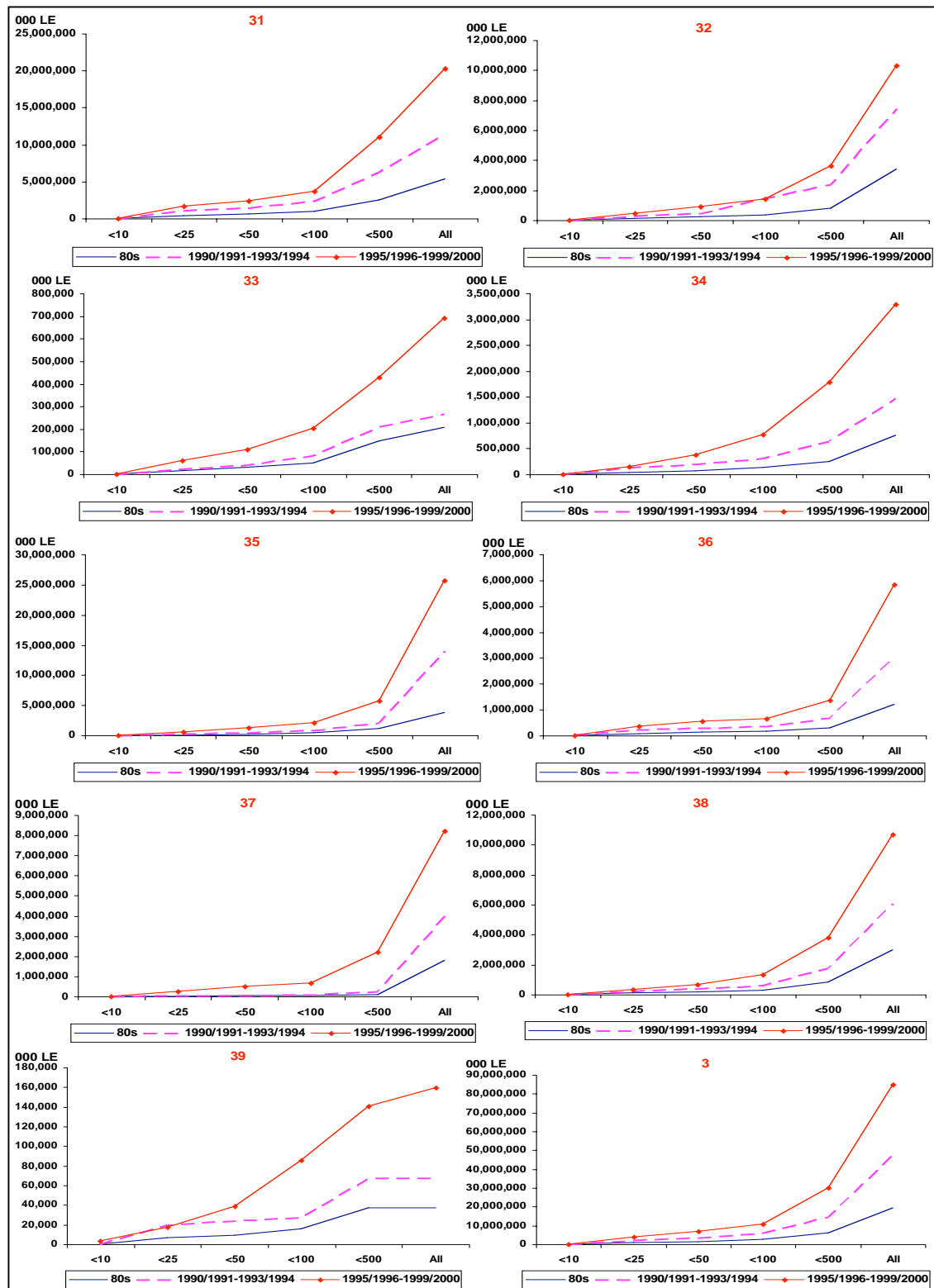
Code	Definition	1981	1985	1990	1995	1998
31	Food, Beverages & tobacco	0.45	0.31	0.48	0.44	0.55
32	Textile, garments & leather	0.69	0.70	0.68	0.57	0.60
33	Wood & furniture	0.06	0.06	0.06	0.11	0.20
34	Paper & products, printing & publication	0.25	0.07	0.03	0.27	0.13
35	Chemical & products, petroleum, coal, rubber & plastics	0.40	0.45	0.31	0.27	0.46
36	Mining products, non-metal products, except petroleum & coal	0.49	0.52	0.41	0.54	0.56
37	Basic metal products	0.20	0.24	0.14	0.03	0.25
38	Metal products, machinery & equipment	0.13	0.12	0.07	0.32	0.09

Source: Calculated by the Authors based on UNIDO Industrial Statistics Database, 2002

We can affirm that the high degree of specialization in few industrial activities is accompanied by the characteristic of being produced by a relatively small number of large (more than 500 employees) and medium-large firms (100-500 employees).

Figure (1) displays production by activity and firm size in a cumulative manner. It is obvious that larger firms dominate the market

Fig. (1): Cumulative Curves of Production by Activity and Firm Size



- 31: Food, beverages & tobacco
- 32: Textile, garments & leather
- 33: Wood & furniture
- 34: Paper & products, printing & publication

Nevertheless, it is an attention-grabbling phenomenon that the large-size lost part of its market shares in many of the industrial activities for the medium-large as of the second half of the 90s as revealed in Table 5 which is evident in the food sector where the share of medium size enterprises rose from 27.% in the 1980s to 36% in the period 1994/95-1999/2000 whereas the percentage has declined in the case of large-size enterprises from 54.8% to 46% over the same period.

Table (5): Share of Different Firm Size in Production (%)

Averages	ISIC	<10	10-	25-	50-	100-	500-	Total
80s	31	0.0	6.4	3.5	7.9	27.5	54.8	100.0
	32	0.0	3.2	3.1	3.8	13.5	76.3	100.0
	33	0.0	7.6	6.6	10.3	45.9	29.5	100.0
	34	0.0	6.2	4.2	7.3	16.1	66.3	100.0
	35	0.0	1.3	4.5	4.9	18.5	70.7	100.0
	36	0.0	7.4	6.3	3.7	11.0	71.6	100.0
	37	0.0	0.7	1.0	1.1	2.4	94.9	100.0
	38	0.1	2.6	3.0	3.4	16.6	74.3	100.0
	39	0.0	18.6	5.8	16.2	59.4	0.0	100.0
	3	0.0	3.8	3.5	5.0	18.1	69.6	100.0
1990/1991-1993/1994	31	0.2	8.5	2.8	8.6	34.9	45.0	100.0
	32	0.1	3.3	2.0	10.8	12.0	71.9	100.0
	33	0.5	6.4	8.0	16.7	47.5	20.8	100.0
	34	0.0	7.7	3.7	7.3	18.8	62.5	100.0
	35	0.1	2.2	1.1	2.8	9.3	84.5	100.0
	36	0.6	6.2	2.2	2.7	9.9	78.5	100.0
	37	0.0	0.9	0.5	0.6	3.4	94.6	100.0
	38	0.1	3.0	3.2	3.0	17.9	72.9	100.0
	39	0.1	21.9	5.0	4.3	68.7	0.1	100.0
	3	0.1	4.4	2.1	5.7	17.0	70.7	100.0
1995/1996-1999/2000	31	0.1	8.4	3.4	6.3	35.8	46.0	100.0
	32	0.1	4.4	4.1	5.0	21.8	64.6	100.0
	33	0.0	9.2	7.3	14.0	34.1	35.4	100.0
	34	0.0	4.5	6.6	11.9	31.0	46.0	100.0
	35	0.0	2.0	3.1	2.8	14.5	77.6	100.0
	36	0.0	6.3	3.1	1.7	12.3	76.5	100.0
	37	0.0	3.1	2.7	2.0	17.4	74.8	100.0
	38	0.0	3.1	2.9	6.6	23.0	64.5	100.0
	39	0.5	11.7	15.8	21.5	44.6	6.0	100.0
	3	0.0	4.5	3.4	4.7	22.5	64.8	100.0

Source: Calculated by the Authors based on UNIDO Industrial Statistics Database, 2002

It was shown in some previous studies that ERSAP that was applied at the outset of the 90s presented a major challenge to small and medium sized firms (SMEs) in the Egyptian industry due to currency correction and increase in prices of imported intermediates as well increase in the cost of finance and its availability. Many of them had to downsize their production or even to shut down (see table 6 for the growth of number of firms by size). This reflected itself in increasing the market share of the large firms. However, by the second half of the 90s SMEs were able to adapt to changes in the economic conditions. Also the reform had a slower pace than the preceding era. Therefore, SMEs were able again to restore their activity and claim more market share when compared to the larger firms category.

Table (6): Establishments (Growth Rates %)

	Code	<10	10-	25-	50-	100-	500-	Total
Average (80s)	31	7.9	9.2	0.0	4.7	6.0	5.1	7.1
	32	..	7.4	1.6	6.4	4.2	4.7	5.1
	33	..	8.4	2.8	-0.8	10.0	5.4	6.0
	34	..	0.1	7.9	13.1	13.6	5.4	3.7
	35	..	19.5	13.6	7.4	7.3	4.3	10.8
	36	-58.3	0.2	-10.6	5.6	4.3	7.5	-4.4
	37	..	10.7	9.5	18.7	36.4	3.2	9.5
	38	-69.8	8.2	7.2	16.9	15.7	5.5	8.9
	39	..	12.3	-8.4	40.6	20.3	0.0	8.3
	3	-21.4	7.3	-0.9	6.1	7.2	4.4	5.5
Average (1990/1991-1993/1994)	31	153.2	-19.5	-21.9	-4.5	-8.0	-6.4	-19.5
	32	-52.8	-25.1	-25.9	-18.1	-16.0	-4.8	-22.3
	33	-25.0	-22.9	-17.0	-7.4	-19.5	-41.7	-19.7
	34	..	-19.8	-26.5	-25.5	-14.6	-15.8	-21.2
	35	-88.9	-25.0	-27.1	-13.4	-14.9	-4.1	-19.7
	36	-56.7	-15.4	-13.8	-34.2	-15.4	-6.6	-16.9
	37	-50.0	-22.1	-4.6	16.7	-18.4	-1.2	-20.8
	38	35.4	-26.2	-19.0	-17.6	-6.3	-6.1	-18.1
	39	..	-18.9	19.4	-22.2	20.0	0.0	-20.8
	3	-39.8	-21.3	-22.7	-20.8	-12.0	-6.2	-19.9
Average (1995/1996-1999/2000)	31	32.9	2.5	19.7	4.1	0.0	-3.4	3.3
	32	-42.9	-3.3	1.7	-2.4	-3.4	1.6	-2.2
	33	-66.7	3.3	1.1	0.1	-6.1	-13.4	0.9
	34	..	-1.1	12.9	-6.7	8.7	5.3	1.9
	35	..	7.3	3.2	-6.8	7.7	-0.6	3.5
	36	80.0	-4.8	14.4	104.1	-10.6	8.1	-0.8
	37	8.3	3.0	-7.2	-9.9	-0.4	3.7	-0.4
	38	..	5.3	1.6	6.9	3.7	4.5	4.6
	39	..	-11.1	21.3	38.1	54.2	0.0	-0.7
	3	50.5	1.1	5.7	1.1	0.0	1.1	1.5

Source: Calculated by the Author from CAPMAS industrial Statistics Bulletins, different issues.

Another factor that supports the decline in shares of large firms' category is the privatization program. Table (7) shows the numbers and values of companies and productive units privatized during the period 1994-2004 according to privatization methods.

Table (7): Number and Values of Companies and Productive Units Privatized (1994-2004)

Million of Egyptian Pounds							Total Number of Companies and value of sale in parenthesis
Privatization Technique	1994- 1999	2000	2001	2002	2003	2004	
Complete or Majority Sale through Stock Offering	37 (5,105)	0 (542)	1 (41)	0 (663)	0 (0)	0 (0)	38 (6,351)
Sale to major investor	15 (2,666)	12 (3,819)	2 (178)	0 (58)	0 (0)	6 (544)	35 (7,265)
Sales to employees	27 (884)	3 (50)	0 (0)	1 (61)	0 (0)	2 (0)	33 (995)
40% Sale through stock offering	10 (719)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	10 (719)
Companies sold less than 50% (stock market)	6 (1,069)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	6 (1,069)
Liquidation	21	9	2	0	1	0	33
Sale/lease of factories and production units	16 (205)	16 (382)	4 (126)	3 (109)	7 (35)	12 (148)	58 (1,005)
Total	132 (10,648)	40 (4,793)	9 (345)	4 (891)	8 (35)	20 (692)	213 (17,404)

Source: Ministry of Finance (2005), Egyptian Economic Monitor, Volume 1, No. 3, March

As it appears from table (7), almost 40% of privatization in Egypt was undertaken through the sales to anchor investor method. The majority of sales led to downsizing the size or the market power of the privatized companies due to leasing or selling parts of them or distributing the voting power on a higher number of shareholders. This change in market shares reflected itself in the GINI coefficient. For most sectors the coefficient of the second half of the 90s is less than that of the first half of the 90s or at least less than its value of the 80s, as shown in table (8). However, the dominance of large firms is still apparent in the majority of sectors.

Table (8): GINI: Production (Size)

Code	Definition	Average (80s)	Average (1990/1991- 1993/1994)	Average (1995/1996- 1999/2000)
31	Food, Beverages & tobacco	0.57	0.51	0.52
32	Textile, garments & leather	0.69	0.66	0.63
33	Wood & furniture	0.44	0.39	0.43
34	Paper & products, printing & publication	0.61	0.58	0.52
35	Chemical & products, petroleum, coal, rubber & plastics	0.68	0.74	0.71
36	Mining products, non-metal products, except petroleum & coal	0.61	0.67	0.66
37	Basic metal products	0.80	0.80	0.69
38	Metal products, machinery & equipment	0.69	0.68	0.64
39	Other manufacture	0.22	0.23	0.22
3	Total	0.65	0.66	0.63

Source: Calculated by the Authors based on UNIDO Industrial Statistics Database, 2002

Another phenomenon that deserves attention is the continuous reduction in GINI coefficient for employment (table 9). This indicates that employment is being more equally distributed among different sizes of firms. Comparison between figures of table (8) and table (9) shows that, for each reduction in the level of concentration of production (measured by GINI coefficient) there is almost a higher reduction in the level of concentration of employment. Sometimes the reduction in GINI for employment is not matched by a similar movement in GINI for production. This implies that while smaller firms are acquiring higher shares of employment, they are producing less share in total production. Hence, larger firms in some industries, such as non-metal products (36) and chemical products (35) are producing more with relatively less employment- indicating adoption of more capital-intensive techniques for these industries.

Table (9): GINI: Employment (Size)

Code	Definition	Average (80s)	Average (1990/1991- 1993/1994)	Average (1995/1996- 1999/2000)
31	Food, Beverages & tobacco	0.44	0.43	0.36
32	Textile, garments & leather	0.73	0.71	0.65
33	Wood & furniture	0.46	0.36	0.31
34	Paper & products, printing & publication	0.65	0.62	0.55
35	Chemical & products, petroleum, coal, rubber & plastics	0.75	0.70	0.65
36	Mining products, non-metal products, except petroleum & coal	0.55	0.62	0.51
37	Basic metal products	0.80	0.79	0.66
38	Metal products, machinery & equipment	0.70	0.69	0.65
39	Other manufacture	0.25	0.27	0.09

3	Total	0.65	0.63	0.57
----------	--------------	-------------	-------------	-------------

Source: Calculated by the Authors based on UNIDO Industrial Statistics Database, 2002

Another implication is that production per employee - on average- is higher in large firms category than other firm sizes categories. Each increase by one percentage point of labor in large firms results in more than one percentage point of production.

This can be taken as an indicator for higher productivity per worker in large firms than that of other sizes. This phenomenon (see table 10.) was depicted in other studies (see for example Abdellatif 2005¹³).

Table (10): Productivity (000 LE)

Year	Activity	Small	Medium	Large	Total
90/91	Food, Beverages & tobacco	28.7	59.3	48.1	37.2
	Textile, garments & leather	20.7	33.2	40.0	34.9
	Wood & furniture	14.9	16.6	34.2	25.6
	Paper & products, printing & publication	49.6	41.6	39.4	41.7
	Chemical & products, petroleum, coal, rubber & plastics	46.0	61.3	92.0	77.8
	Mining products, non-metal products, except petroleum & coal	26.7	31.7	37.8	33.0
	Basic metal products	32.6	35.0	206.1	152.5
	Metal products, machinery & equipment	38.5	39.5	55.8	49.2
	Other manufacture	53.7	13.0	49.9	45.9
	Total	29.6	43.1	54.7	44.6
95/96	Food, Beverages & tobacco	37.8	44.6	103.3	70.5
	Textile, garments & leather	21.1	23.2	54.5	44.0
	Wood & furniture	12.9	34.0	61.0	32.1
	Paper & products, printing & publication	37.6	201.4	119.5	114.4
	Chemical & products, petroleum, coal, rubber & plastics	58.4	53.9	176.8	115.4
	Mining products, non-metal products, except petroleum & coal	19.0	33.7	68.4	51.9
	Basic metal products	8.8	47.5	313.7	155.6
	Metal products, machinery & equipment	54.9	69.9	102.0	89.6
	Other manufacture	18.2	43.9	26.1	23.0
	Total	32.7	54.6	94.0	71.9
1999	Food, Beverages & tobacco	39.3	174.6	157.4	107.7
	Textile, garments & leather	35.9	38.5	47.6	44.9
	Wood & furniture	25.6	57.6	55.0	45.2
	Paper & products, printing & publication	96.1	150.1	135.8	129.3
	Chemical & products, petroleum, coal, rubber & plastics	161.0	115.5	166.7	161.4
	Mining products, non-metal products, except petroleum & coal	45.8	29.5	93.9	75.0
	Basic metal products	41.8	70.7	343.5	253.1
	Metal products, machinery & equipment	88.9	113.1	140.0	130.7
	Other manufacture	44.1	440.1	52.0	88.7
	Total	52.9	99.5	118.9	100.3

Source: Abdellatif 2005¹⁴, based on UNIDO Industrial Statistics Database, 2002

To sum up, the Egyptian industry while has had a relatively wide number of activities, is characterized by a noticeable degree of specialization in very few industries, mostly related to natural resources (mining or agriculture) or to availability of low-skilled labor. Most of the production is produced by large firms, indicating high degree of

¹³ Abdellatif Lobna, *SMEs Adjusting to Trade Liberalization- Impact on Employment*, ILO, 2005.

¹⁴ Ibid.

concentration for both employment and production. While the degree of concentration shows -in many industrial sectors- some reductions, we cannot depict a considerable declining trend. One can say that both specialization and concentration are well established characteristics of the Egyptian industry.

2- Competition

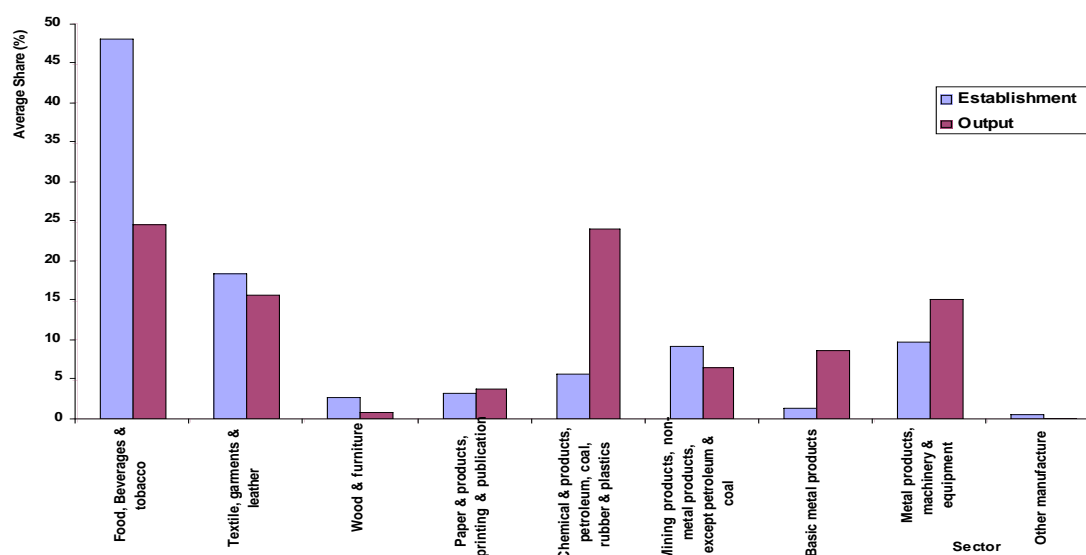
It is interesting to investigate the relationship between specialization and competition. Table (11) shows number of establishment working in industry over the period 1981-1998. As it appears from the three averages depicted in the table for the time intervals (81-89), (90-94), (95-98) numbers of firms in all industrial sectors have grown steadily over time with a total of more than 3200 firms over the period 1981-1998. Figure (2) displays the structure of specialization as well as that of establishments for each industrial sector.

Table (11): Number of Establishments

Code	Definition	Values (number)			Shares (%)		
		Average (81-89)	Average (90-94)	Average (95-98)	Average (81-89)	Average (90-94)	Average (95-98)
31	Food, Beverages & tobacco	2887	4160	4522	47.0	50.0	48.3
32	Textile, garments & leather	1154	1472	1741	18.8	17.7	18.6
33	Wood & furniture	177	228	292	2.9	2.7	3.1
34	Paper & products, printing & publication	215	257	293	3.5	3.1	3.1
35	Chemical & products, petroleum, coal, rubber & plastics	339	518	598	5.5	6.2	6.4
36	Mining products, non-metal products, except petroleum & coal	622	667	791	10.5	8.0	8.4
37	Basic metal products	93	129	148	1.5	1.5	1.6
38	Metal products, machinery & equipment	608	848	906	9.9	10.2	9.7
39	Other manufacture	25	42	60	0.4	0.5	0.6
3	Total	6121	8321	9352	100.0	100.0	100.0

Source: Calculated by the Authors based on UNIDO Industrial Statistics Database, 2002

Fig.(2): Average Shares of Production and Establishments (average 1981-1998)



Source, drawn based on calculation of tables (1, 11).

As it could be seen from the figure, there is no relationship between specialization in production and the structure of establishments. A sector may be characterized by a high share in production, however has few number of establishments. For example, food sector ranks second in generating production which is produced by around half of all firms working in the sector. The first ranked sector in the structure of generating production, petroleum products, has the fifth rank in number of establishments.

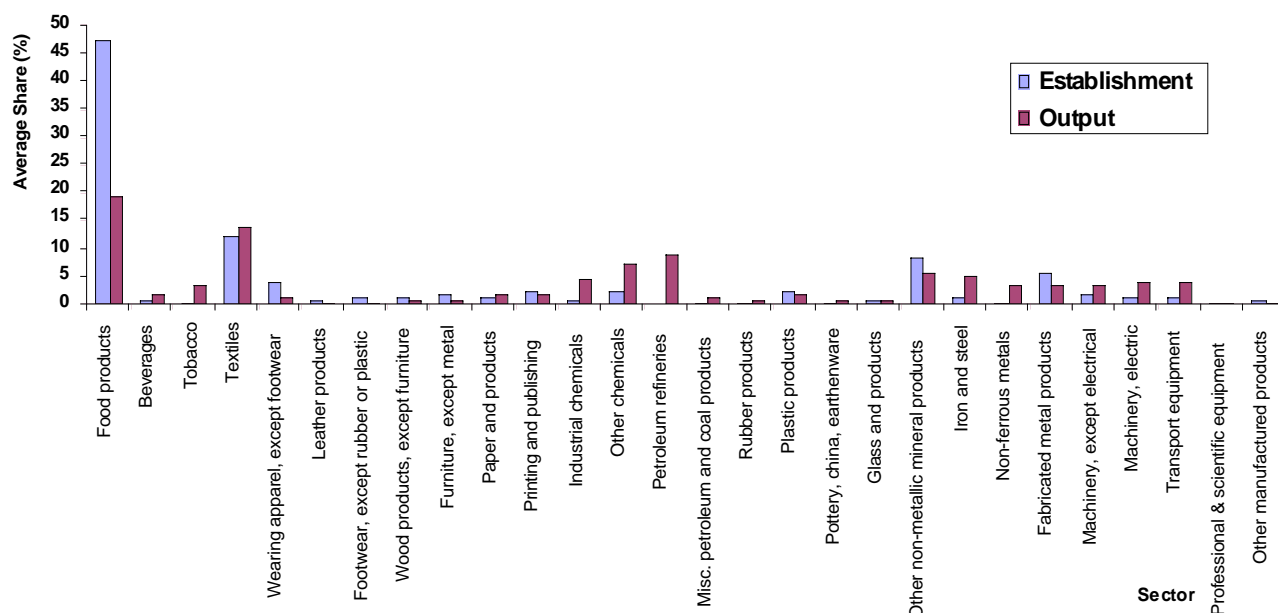
The same conclusion could be drawn from 3-digit data shown in Fig. 3. Wearing apparel, as an example for high specialization, has a very large number of establishments working in the sector. This implies that the average size of firms in that activity is small. Contrary to that, the share of petroleum products in establishments is just 0.2%; much lower than its share in production, indicating very large firm-size; i.e. the share of each establishment in the sector in generating production is large.

Table (12)- Establishment Structure (%)

Code	Definition	Average (80s)	Average (1990-1994)	Average (1995-1998)
311	Food products	45.8	49.2	47.8
313	Beverages	0.8	0.5	0.3
314	Tobacco	0.4	0.4	0.2
321	Textiles	13.5	11.1	10.8
322	Wearing apparel, except footwear	3.2	4.6	5.6
323	Leather products	0.8	0.7	0.9
324	Footwear, except rubber or plastic	1.4	1.2	1.4
331	Wood products, except furniture	1.5	1.3	1.2
332	Furniture, except metal	1.4	1.4	1.9
341	Paper and products	1.1	1.2	1.2
342	Printing and publishing	2.4	1.9	1.9
351	Industrial chemicals	0.7	0.7	0.7
352	Other chemicals	2.1	2.2	2.3
353	Petroleum refineries	0.1	0.1	0.2
354	Misc. petroleum and coal products	0.2	0.2	0.1
355	Rubber products	0.3	0.3	0.6
356	Plastic products	2.1	2.8	2.5
361	Pottery, china, earthenware	0.2	0.2	0.2
362	Glass and products	1.0	0.8	0.8
369	Other non-metallic mineral products	9.2	7.0	7.5
371	Iron and steel	1.2	1.2	1.2
372	Non-ferrous metals	0.3	0.3	0.4
381	Fabricated metal products	5.9	5.2	5.1
382	Machinery, except electrical	1.8	1.9	2.0
383	Machinery, electric	1.0	1.3	1.3
384	Transport equipment	1.0	1.6	1.0
385	Professional & scientific equipment	0.2	0.2	0.3
390	Other manufactured products	0.4	0.5	0.6
300	Total Manufacturing	100.0	100.0	100.0

Source: Calculated by the Authors based on UNIDO Industrial Statistics Database, 2002

Fig(3)- Structure of Production vs. Structure of Establishments (average 81-98)



Source: Based on calculations of tables (3,12)

The question that these examples pose is: do activities with more number of firms experience more competitive markets than others? Or it depends on the share of the large firms, i.e. when the activity is dominated by large firms that are producing a relatively high share of the total industrial production, then can we deduce that the link between concentration and specialization leads to lack of competition?

To answer these questions, we first should identify activities featured with large firms, then producing a measure to gauge their market power.

Table (13) shows the structure of establishments for each firm-size over the whole set of industrial sectors. Unfortunately, there is no dataset on the 3 digit level industrial classification that allow us to answer our question.

Table (13): Establishment (Structure %)

	Code	<10	10-	25-	50-	100-	500-	Total
Average (80s)	31	56.4	56.2	34.6	34.5	37.5	25.0	47.3
	32	1.8	17.6	20.8	24.9	21.6	19.7	19.1
	33	1.2	2.7	2.4	4.3	4.4	1.6	2.9
	34	0.0	3.1	3.9	4.6	3.3	5.3	3.4
	35	2.5	3.3	6.7	9.5	9.9	15.8	5.6
	36	11.7	7.9	17.9	8.4	7.1	7.5	9.7
	37	0.0	1.2	1.9	1.4	1.4	5.0	1.5
	38	26.5	7.7	11.4	11.7	14.3	20.1	10.0
	39	0.0	0.4	0.4	0.6	0.6	0.0	0.4

	Code	<10	10-	25-	50-	100-	500-	Total
	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average (1990/1991-1993/1994)	31	55.0	64.7	37.1	32.2	38.3	24.0	49.6
	32	4.6	12.0	17.2	25.4	17.8	21.3	16.4
	33	5.9	1.8	3.7	4.8	3.5	0.7	2.7
	34	0.3	2.0	3.9	4.1	3.3	3.9	2.7
	35	1.9	2.7	7.8	10.8	8.5	16.5	6.4
	36	11.5	7.3	12.0	5.3	6.4	7.4	7.3
	37	2.1	1.2	1.4	1.4	1.4	4.7	1.6
	38	18.5	7.7	16.5	15.7	20.3	21.5	12.7
	39	0.1	0.5	0.5	0.3	0.5	0.1	0.4
	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Average (1995/1996-1999/2000)	31	48.6	61.0	24.9	23.6	28.6	21.8	48.7
	32	10.5	15.2	23.5	26.0	24.9	24.8	18.4
	33	3.2	2.8	3.4	5.5	3.8	1.5	3.1
	34	0.5	2.3	5.1	5.3	4.8	5.1	3.2
	35	1.9	3.5	8.9	13.6	14.1	15.3	6.4
	36	19.4	6.6	19.0	8.2	4.9	8.2	8.4
	37	10.0	4.7	6.4	6.1	6.3	7.4	5.3
	38	5.2	3.4	8.0	11.0	12.1	15.9	5.9
	39	0.7	0.6	0.9	0.7	0.5	0.1	0.6
	3	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Calculated by the Author from CAPMAS industrial Statistics Bulletins, different issues.

The table shows that different firm sizes have their highest concentration in those sectors that ranked high in the structure of production except petroleum products, where only large firms have high level of concentration. This indicates that aside from petroleum products, specialization patterns in the Egyptian industry is the outcome of having relatively large number of firms working in these activities- as opposed to petroleum whose high rank in the structure of production is due to the dominance of large firms.

However, tracing figures of table (14), which display the structure of establishments but distributed over each industrial sector according to firm size, indicates an important feature of Egypt's industry. Two observations could be deducted. Firstly, while the structure of production is concentrated in larger firms (100-500 & 500<), that of establishments is concentrated in smaller ones. For example, food sector which generates the highest value of industrial production is characterized by the dominance of smaller firms (recalling that its production is concentrated in large firms (almost 50%) as figures of table (5) above show). That is to say the market of industrial sectors in Egypt is not only dominated by few number of establishments but also is characterized by being an unbalanced one. The market is almost distributed evenly among medium-large and large firms. While the market is tilted to large firms, the medium- large can affect the market in terms of product availability and hence prices. This may constitute a cap on prices put by large firms if they try to make use of their market position. However, in the case of collusion among large firms, it is doubtful that medium-large firms can stand any race of prices to the bottom.

Table (14)- Establishment Structure (%)

Averages	ISIC	<10	10-	25-	50-	100-	500-	Total
----------	------	-----	-----	-----	-----	------	------	-------

80s	31	0.4	70.6	12.3	6.1	7.9	2.7	100.0
	32	0.0	54.4	18.1	11.0	11.3	5.2	100.0
	33	0.1	55.0	14.2	12.7	15.3	2.7	100.0
	34	0.0	52.6	18.5	11.3	9.8	7.8	100.0
	35	0.2	34.5	19.3	14.2	17.6	14.2	100.0
	36	0.4	49.3	30.7	7.5	7.9	4.2	100.0
	37	0.0	46.9	20.1	7.9	8.7	16.5	100.0
	38	1.3	45.8	18.9	9.7	14.2	10.1	100.0
	39	0.0	58.9	13.2	12.8	15.1	0.0	100.0
	3	0.4	59.4	16.8	8.4	10.0	5.0	100.0
1990/1991-1993/1994	31	1.6	63.1	9.3	7.6	13.9	4.6	100.0
	32	0.2	42.6	12.4	14.2	17.1	13.4	100.0
	33	3.2	42.7	16.3	16.0	19.9	1.9	100.0
	34	0.2	39.0	16.2	13.0	17.6	14.0	100.0
	35	0.5	29.2	15.6	13.1	18.6	23.0	100.0
	36	3.0	46.6	19.6	5.1	15.0	10.6	100.0
	37	1.7	41.4	11.3	5.8	13.1	26.7	100.0
	38	1.5	32.2	16.8	11.3	24.5	13.6	100.0
	39	0.7	55.4	13.3	4.2	25.7	0.7	100.0
	3	1.4	51.2	12.4	9.5	16.3	9.2	100.0
1995/1996-1999/2000	31	0.4	81.9	6.8	3.5	5.5	1.9	100.0
	32	0.2	54.1	17.1	10.1	12.6	5.8	100.0
	33	0.5	58.5	14.8	12.8	11.5	1.9	100.0
	34	0.1	46.1	21.1	11.9	14.0	6.8	100.0
	35	0.1	35.4	18.5	15.3	20.5	10.2	100.0
	36	0.9	51.8	30.4	7.1	5.6	4.2	100.0
	37	0.6	56.5	15.6	8.3	10.8	8.3	100.0
	38	0.3	35.3	17.3	14.0	20.4	12.7	100.0
	39	0.4	64.2	18.6	8.1	7.9	0.8	100.0
	3	0.4	65.4	13.3	7.2	9.3	4.3	100.0

Source: Calculated by the Author from CAPMAS industrial Statistics Bulletins, different issues.

Secondly, the share of large firms in total number of establishments for any industrial activity declined in the second half of the 90's, indicating higher growth rates of other sizes. This highlights the fact of difficulty in entering the market as a large firm. The large amount of finance needed for the start-up of the business presents a crucial constraint and attributes to the phenomenon of unbalancing the market.

To sum up, the structures of the markets of the industrial sectors is conducive for practicing anti-competitive behavior. However, matters are not that simple. We have explored just the supply side in a closed context. To factor the pattern of satisfying the domestic consumption into our analysis, we have to explore some indicators related to demand gap and trade barriers.

For example, Egypt has been characterized by having relatively high tariff rates, which have been recently reduced to reach an average weighted tariff rate of 9% down from 14%. The non weighted average rate has been higher due to the presence of tariff peaks. Moreover, several non tariff barriers used to prevail for a long period ranging from cumbersome customs procedures to non-transparent inspection methods, etc. Such environment has created an anti-export bias and protected the Egyptian local

producers in different fields from foreign competition. The situation started to change recently by the lowering tariff rates as mentioned above, embankment on several measures to dismantle non tariff barriers and enhance trade facilitation, and finally by the entering into force of several regional trade agreements (RTAs) that Egypt has signed starting the mid 1990s. Such RTAs include among others the EU-Partnership Agreement and the Pan Arab Free Trade Area (PAFTA). This implies two major effects on the demand side. First, the market will experience more competition from imported goods whether as a result of the lower MFN tariff rate or due to the enactment of several RTAs. Second, the market for the Egyptian produced goods will expand which is likely to increase economies of scale and reduce the anti-export bias that used to prevail.

Table (15) shows the ratio of import penetration measured by the ratio of imports to apparent consumption. The ratios in all sectors except textiles are relatively high. Given the long history of industry in Egypt and the absence of the applications of global factory phenomenon, one does not expect higher import ratios than those appeared in the table.

Table (15): Exposure to International Competition (Import Penetration Ratio)

Code	Definition	Import Penetration (ratio)		
		Average (81-89)	Average (90-94)	Average (95-98)
31	Food, Beverages & tobacco	0.24	0.24	0.25
32	Textile, garments & leather	0.05	0.10	0.10
33	Wood & furniture	0.65	0.76	0.78
34	Paper & products, printing & publication	0.23	0.36	0.36
35	Chemical & products, petroleum, coal, rubber & plastics	0.29	0.24	0.26
36	Mining products, non-metal products, except petroleum & coal	0.26	0.08	0.13
37	Basic metal products	0.26	0.33	0.39
38	Metal products, machinery & equipment	0.46	0.53	0.53
39	Other manufacture	0.42	0.61	0.78
3	Total	0.30	0.30	0.33

Source: Calculated by the Authors based on UNIDO Industrial Statistics Database, 2002

However, attributed to relatively high import tariff for the periods presented in our tables, it is expected that the domestic market may have a rental benefit due to artificially high price of imports. That is to say that mark-up ratios may be higher. To test this hypothesis we measure the mark-up ratio according to the methodology used in the research project. Results are presented in table (16).

Table (16): Mark-up ratios

Code	Definition	γ	μ
311	Food products	0.42	1.73
313	Beverages	0.15	1.18
314	Tobacco	0.43	1.74
321	Textiles	0.17	1.20

322	Wearing apparel, except footwear	0.12	1.13
323	Leather products	0.30	1.43
324	Footwear, except rubber or plastic	0.50	2.01
331	Wood products, except furniture	0.49	1.95
332	Furniture, except metal	0.37	1.59
341	Paper and products	0.32	1.47
342	Printing and publishing	0.14	1.16
351	Industrial chemicals	0.21	1.27
352	Other chemicals	0.28	1.39
353	Petroleum refineries	0.59	2.47
354	Misc. petroleum and coal products	0.03	1.04
355	Rubber products	-0.07	0.94
356	Plastic products	0.09	1.10
361	Pottery, china, earthenware	0.19	1.23
362	Glass and products	0.19	1.24
369	Other non-metallic mineral products	0.37	1.60
371	Iron and steel	0.32	1.48
372	Non-ferrous metals	0.54	2.19
381	Fabricated metal products	0.38	1.61
382	Machinery, except electrical	0.49	1.96
383	Machinery, electric	0.22	1.28
384	Transport equipment	0.17	1.20
385	Professional & scientific equipment	0.13	1.14
390	Other manufactured products	0.21	1.27

Source: Calculated by the Authors based on UNIDO Industrial Statistics Database, 2002

As it is apparent from the table the values of the mark-up ratios is distributed over a wide range with minimum of 0.94 in rubber products, and a maximum of 2.47 in petroleum refineries and a mean of 1.46.

The distribution is tilted to the lower portion of the distribution. Table (17) shows some statistical analysis for the ratios of mark-up ratios pointing out that the lowest mark-up ratios have the highest frequency and which constitute around 50% of the industrial structure in Egypt.

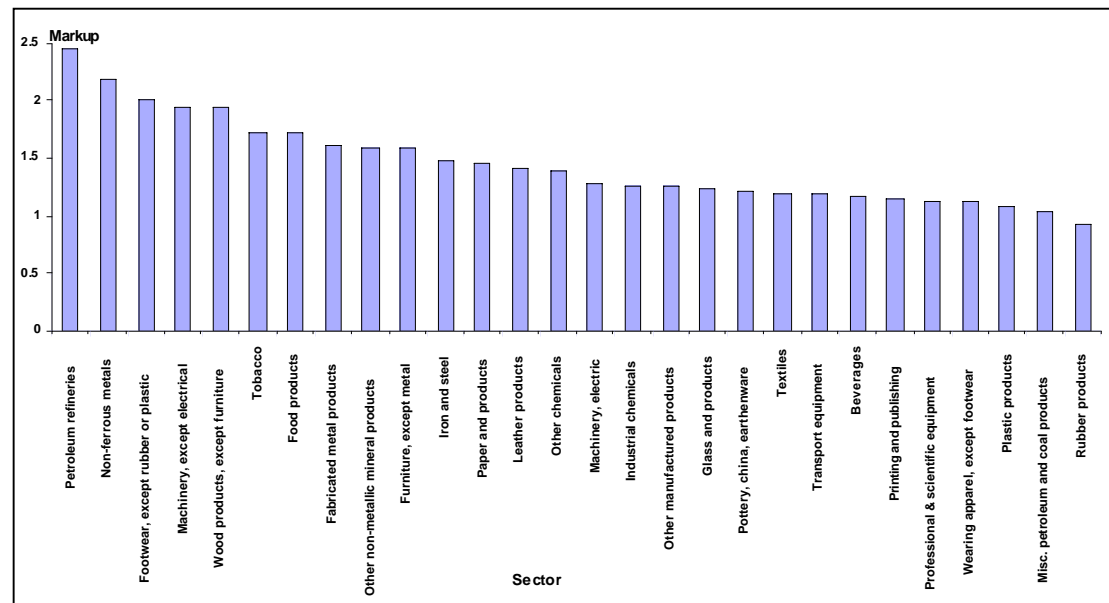
Table (17): Distribution of Mark-up Ratios

Quarter	Range	Frequency (number)	Structure (%)
First	0.94 – 1.32	14	50.0
Second	1.33 – 1.71	7	25.0
Third	1.72 – 2.09	5	17.9
Fourth	2.10 – 2.47	2	7.1
Total	0.94 – 2.47	28	100.0

Source: Calculated by the Authors based on UNIDO Industrial Statistics Database, 2002

Fig. (4) ranked the activities according to their mark-up ratios. The sectors with land resource base ranked the first. However, we cannot distinguish a pattern related to the other groups of industry.

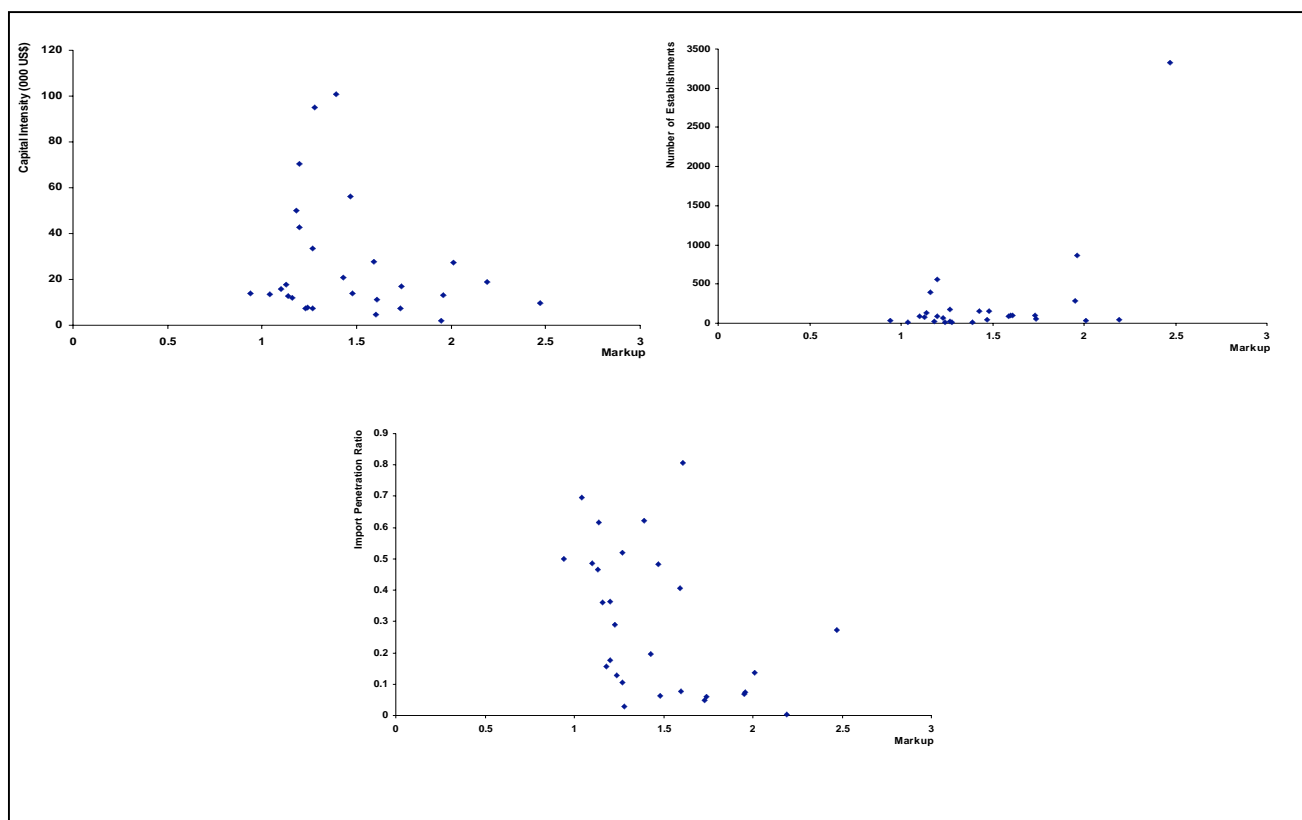
Fig. (4) Rank of Activities According to Mark-up Ratios



Source: Drawn by the Authors based on UNIDO Industrial Statistics Database, 2002

Trying to explore more about the determinants of the mark-up ratios, fig (5) plots these ratios against many variables that present some of the features of the industry that we mentioned earlier, such as import penetration, number of establishments, and capital intensity.

Fig. (5): Relationship between Mark-up Ratios and Some Variables



As it is clear from the figure, there are no clear patterns of relationships with capital intensity or the number of establishments. It would have been useful if we were able to plot the mark-up ratios with any of the ratios that describe the high degree of concentration in the industry instead of the number of establishments because the latter does not describe the concentration or the unbalanced size phenomenon of the market, but we could not produce these figures on the 3-digit classification due to unavailability of data.

However the only variable that could be linked to the mark-up ratios is the degree of satisfying the local consumption from local sources. As fig. (5) shows the higher the imports the less the mark-up ratio. This indicates that when the local market demand is satisfied mainly by local production, the mark-up ratios would be higher. Does this attribute to power of local firms to close the market for their own benefit by lobbying for administrative or any other kind of barriers? Actually we have no evidence to answer this question.

Another relevant question about the mark-up ratios is whether they highlight the high debt ratio of local firms? As it was seen from fig.(5) relatively high intensity of local production in terms of capital alone does not interpret the values and rank of mark-up ratios. However if one considers the high cost of finance in Egypt and that firms-large one- passed through a period of easing the terms of borrowing which led to high leverage ratios, we can understand the high burden of finance and the importance of considering the overhead costs (which includes mainly the cost of finance fixed assets in addition to the cost of top management and quality control, advertising, technology, and transfers systems) and to factor them into our analysis. But does this indicate that to be able to pay back for their debt, local firms have to charge their consumer high mark-up over the marginal cost of the production?

It was shown previously¹⁵ (Abdellatif 2003) that activities in Egypt maintain higher capital intensity than many other comparable countries due to many reasons; on the top ranks the rigidity of labor policy, easy terms for lending to large firms- especially in the 80s- and also the appreciation of the exchange rate. Therefore, the capital intensity generally in Egypt's industry is relatively high and leverage ratios are also high. The latter is high for just large firms. Therefore, we can not establish a link between figures of capital intensity, which are calculated on average for each activity and the mark up ratios, due to our inability to single out the characteristics of the large firms from others because data does not allow us to do that.

Previous studies showed that attributed to the large scale of operations, large firms have the opportunity to be more efficient than smaller ones¹⁶ (Abdellatif 2003, 2005). Large firms can save in the cost of procurement and managerial cost per unit of production. Also they have better marketing methods and more opportunities for sustainable sales. However, they have more financial burdens. Therefore, being more efficient in terms of operations enables them to incur less cost per unit of production than small firms. This indicates that large firms can sell cheaper than small firms if we

¹⁵ Abdellatif Lobna, *Pro Poor economic policies*, CEFRS, Feps, Cairo, 2003.

¹⁶ Ibid.

confine ourselves to marginal cost. However overhead costs are expected to be much higher in the case of large firms in contrast to small firms. That is to say each firms' size category has its own package of cost which due to data aggregates, we can not disentangle and measure their very impact on the mark up and the market behavior.

Another issue is the number of times that the unit of fixed asset turn-over during the operational year. This number is very high in some industries such as wearing apparel and steel rebars. It is lower than some engineering products. The higher this number of turn avers, the higher the gross profit and also the mark up despite the value of the mark up over the one does not represent anymore market power but the feature of shorter cycle of production of some industries. Again we can not factor the length of the production cycle into our analysis because this point was not considered before in the literature of economics of different industries that was done for Egypt.

In conclusion, studying market behavior and market power is something very new to the literature on the Egyptian industry. This current study highlighted many voids in this field. The mark-up ratios simulate the relationship between price and marginal cost average over all firm sizes for each industrial activity. Hence, they cannot explain market power in each market relative to others. However, it is a very useful devise for comparing for the same market over time.

3- *Market Power and Efficiency*

In the current section we try to explore the relationship between the mark-up ratios and efficiency. Table (18) presents total factor productivity (TFP) and technical progress. As evident from the table there is no clear pattern that can be observed where some sectors had a positive technical progress and others had negative ones. The range of technical progress started from a negative of -0.11 in tobacco and wood products, except furniture to a high 0.1 in china and pottery.

Table (18): Solow Residual (TFP) and Technical Progress (1981-1995)

Code	Definition	TFP	Technical Progress
311	Food products	0.03	-0.05
313	Beverages	0.06	0.03
314	Tobacco	0.06	-0.11
321	Textiles	0.02	0.01
322	Wearing apparel, except footwear	0.05	0.03
323	Leather products	0.00	0.00
324	Footwear, except rubber or plastic	-0.01	0.05
331	Wood products, except furniture	0.08	-0.11
332	Furniture, except metal	0.06	-0.05
341	Paper and products	0.02	-0.02
342	Printing and publishing	0.00	0.00
351	Industrial chemicals	0.04	0.02
352	Other chemicals	0.04	-0.01
353	Petroleum refineries	0.19	-0.10
354	Misc. petroleum and coal products	0.01	0.01
355	Rubber products	0.04	0.05
356	Plastic products	0.04	0.03

361	Pottery, china, earthenware	0.17	0.10
362	Glass and products	0.07	0.04
369	Other non-metallic mineral products	0.06	0.00
371	Iron and steel	0.04	-0.02
372	Non-ferrous metals	0.06	-0.09
381	Fabricated metal products	0.07	-0.02
382	Machinery, except electrical	0.07	-0.12
383	Machinery, electric	0.05	0.01
384	Transport equipment	0.01	0.00
385	Professional & scientific equipment	0.10	0.08
390	Other manufactured products	0.09	-0.02

Source: Authors' Calculations

As the table shows, if mark-up ratios are not counted for, TFP would be artificially higher. In many cases the high TFP growth turns negative after accounting for mark up. A highly significant and negative correlation was found between TFP adjusted and the mark-up ratios (-0.73), indicating that the higher the mark-up ratios the less the TFP growth. However, one cannot conclude that activities with higher mark-up ratios have less TFP growth. That is to say our calculations do not support the argument that the higher mark-up ratios imply less efficiency.

Also we could not find any significant correlation between the adjusted TFP (technical efficiency) and proxies for the characteristics of industrial activities such as capital intensity, import penetration ratio, export ratio and the number of establishments. Table (19) displays the correlation results. As it appears they all maintain negative signs.

Table (19): Correlation between adjusted TFP (Technical Progress) and Some Industrial Variables

Capital intensity	Import penetration	Export ratio	No. of establishments
-0.22	-0.28	-0.25	-0.11

Source: Authors' Calculations

Part III: The Status of Competition in the Egyptian Industry

The terms business to business and business to consumers are the large umbrella that under which falls both vertical and horizontal restraints. However, horizontal and vertical arrangements, i.e. business relations, should not be condemned without regard to their competitive nature. The term *business to business* (b2b) is usually used to refer to the vertical relations (some of them act as restraints). It refers to the agreements between firms at different level of the production or distribution chain. Vertical restraints include territorial restraints, exclusive dealing, tying arrangements, predatory pricing, and quantity forcing. Concerns regarding vertical restraints stem from the perception that anti-competitive effects might flow from restrictions imposed on firms in the down stream or the upstream value chain. On the other hand, the term *business to consumer* (b2c) refers to the horizontal relations between competitors at the same level of the value chain. Sometimes these relations comprise restraints that

the market might suffer from. A restraint is said to be of a horizontal nature if it is imposed on sales or distribution, or prices due to monopolistic behavior, unfair competition or collusion. It may lead to competition problems where it causes negative market effects with respect to prices, supply, innovation, or the variety and quality of products.

The status of market conditions in developing countries introduces a new concept relevant to competition, which we may call *consumer to business* (c2b) relation. This relation reflects the restraints that the consumers might impose on a certain industry to keep the prices of their products at certain levels (something very similar to what is known in the literature as predatory pricing). Moreover, consumers may exert pressure on producers to produce the quantity that satisfy their needs (quantity forcing). The low-income levels in developing countries accompanied by the paternal societal role of the government through its former public sector make the consumers very sensitive to any increase in prices even if it justified on industrial or market forces basis. Sometimes the prices that consumers call for do not really reflect the structure of cost which the producers are facing. In many cases, the increase in prices is due to external factors that are beyond the control of the producers themselves. These external factors include lack of finance, unavailability of foreign currency (taking into consideration the imported component), and international price increases. The producers start to face idle capacity, hence lowering the quantity provided in the domestic market and/or increasing prices. These problems used to face the public sector before but the government was able to absorb their negative effects via its social policies and channels of subsidies provided through the state budget. However, this is not the case with the private sector; where these negative impacts are partially or wholly shifted to the consumer. As a leeway, many produces in some strategic markets resort to exports to avoid the negative influence practiced by consumers, mainly through the negative impact of media on prices. This, of course, would limit supply allocated to the local market and consumers feel shortage of supply despite the existence of local capacities to produce, and start to accuse firms again of unfair competition practices or monopolistic behavior.

The present study explores the status of competition in seven leading industries; some of which constitute the traditional industries; such as textiles and ready-made garments, and beverages. Others are new ones; especially cars assembling. We divide our study into two sections. After this introduction, in section one, we explore market characteristics as related to the degree of concentration in these industries and the tools of competition. Also in the first section, we investigate the pattern of industrial relation in these industries that mostly affect competition. Also we explore patterns of government intervention in markets and their impact on competition. Section two is an impact assessment of market characteristics on competition. In addition, we discuss some of the findings and generalize them to the industry at large.

I : Status of Competition and Government Interventions:

The seven industries under study were selected because of being known as concentrated industries. Being so they serve the purpose of answering many questions related to the link between concentration, market relations and competition. Table 20 depicts the main characteristics of such industries.

Table 20: Characteristics of the Industries:

- one or two firms → extra high concentration
- 3-9 firms → very High concentration
- above 10 firms (till 20) → high concentration

Source: The authors based on the surveys

As table 20 shows the number of firms in any of the selected industries is limited and the degree of concentration is high on average. In the following, we explore some salient features of each of the seven industries with focus on classifying patterns of restraints faced by each of these industries attributed to any of the markets relations

Industry	Degree of Market Concentration	Tools of Competition	Patterns of Relations
Beverages	Very High concentration	Quality, Price, Brand names	Business to Consumer.
Textiles	Very High concentration	Price, Quality	Business to business and consumer to business
Home appliances	High concentration	Price, Quality, Brand names	Business to business and business to consumer.
Pharmaceutical	High concentration	Price, Quality	Business to business and consumer to business
Steel (rebars production)	High concentration	Price only	consumer to business
Cement	High concentration	Price only	Consumer to business.
Cars Assembling	High concentration	Price, quality, brand names	Business to business

(b2b or b2c or c2b relations).

The Beverages Industry:

Table 19: Competition Related Issues of the Seven Industries

The three main products of this industry are fresh juice, mineral water, and non-alcoholic beverages. The industry is highly concentrated in the fresh juice and non-alcoholic beverages fields with two to three firms dominating 75% of the market. Moreover, there is the milk products field where the degree of concentration is very high and higher than the case of mineral water, which is considered to be relatively the least concentrated. Quality can be regarded as the main tool of competition as well as the brand names. Accordingly, the characteristics of this industry formulated two patterns of relation, which are business to business, and business to consumer. The major vertical restraint that exist in the non-alcoholic and alcoholic beverages fields are the exclusive supply and predatory pricing of some intermediate products mainly cola. However, the vertical restraints previously mentioned were viewed by the firms to have positive effect on the industry because it guarantees stable long-term relations. Therefore, the b2b relation did not create a vertical restraint in the market. The other fields of the industry, namely juices, milk products, and mineral water do not suffer from any kind of vertical restraints. The kind of restraint that has been mentioned in this industry happens on the horizontal level where the distribution outlets play a major bottleneck and there has been several informal ways to deal with such restraints that have recently taking the shape of formal agreements (between producers and distributors) to ensure transparency and fair competition among producers.

Textiles and Ready-made Garments Industry:

The industry at large is divided into several sub sectors; each of them has its own characteristics. The industry comprises yarn, spinning and weaving, fibers, fabrics, and ready-made garments. In the current study, we focus on fabrics (dyed or printed) industry. Fabrics production is highly concentrated among few firms, 70% of them are public firms. However, many other sub-sectors in the textiles industry at large are characterized with recognized degree of competition. For example, spinning and weaving is highly concentrated. The same applies to dying and printing. The main tools of competition in fabrics are price and quality.

While cotton cultivation is shared by many growers and is not, by all means, concentrated, government intervention augments the price of cotton to weavers. Government intervenes in pricing crude cotton. It provides growers with higher prices than those that clear freely the market. The government does that in a trial to encourage growers to continue find cotton cultivation profitable. This sort of incentive is not paid directly by the government; yet, the other producers in the down stream industries that use cotton as an input are the ones that pay this subsidy bill, despite the fact that some of them are public entities- specially producers of spinning and weaving fabrics. However, none of them has a governmental nature. (See table 21 for different patterns of distorting government intervention).

Despite the absence of vertical restraints, the rest of the value chain series in the down stream industries is affected negatively as if there is collusion among growers to enforce specific price (predatory pricing).

It is interesting to note that while the ready-made garments do not seem to suffer high concentration ratios because of the existence of numerous producers, the high number of workers that are employed by this sub-sector exerts pressures on the government to protect this sub-sector through customs in the form of high tariff that constituted walls

for some periods and practiced a negative impact on imports of ready-made garment. This sort of government intervention is accompanied by almost zero tariff rates on intermediates for ready-made garments, which means that local producers enjoy an extra high effective protection. Prices of ready-made garment are augmented and profits margins are high. In this case, despite the absence of concentration, the collective action of producers (not collusion) practiced restraints on the market as if there were horizontal restraints, with the usual negative impact on consumers.

Table 21: Government Intervention in the Different Industries:

	Stage of government intervention	Type of government intervention	Impact of government intervention
Beverages	Non	Non	Non
Textiles	b2b & b2c	Cotton subsidies Prohibitive tariff on final goods (high effective rates of protection)	Negative Negative
Home appliances	Non	Non	Non
Pharmaceuticals	c2b	Setting the selling prices	Negative
Steel	b2b, C2b	Anti dumping duties Opening the market for imports of the final product	Not defined Not defined
Cement	Non	Non	Non
Cars Assembling	b2c	Tariff exemptions on inputs Prohibitive tariff on final goods	Negative

Source: The authors based on the surveys

The Cement Industry:

Although there are 12 firms in the industry, three firms account for about 70% of total production. Industry suffers from over capacity that was about to trigger price war and dominant losses to all firms. Firms resorted to the strategy of lowering prices below even costs to attain market shares or to keep them sometimes. If firms were to continue in this strategy, it would have ended that many firms had to leave the market and the degree of concentration would shift to extra high, which is not basically a better situation for the market. Firms agreed on a pricing methodology based on cost plus an agreed upon profit margin. This does not mean that prices are not any more a tool for competition or one price would prevail in the market. Actually, there are many prices, but all of them cluster around a mean. The larger the firm the lower the price it offers due to its better usage of economies of scale that characterize cement industry. This horizontal agreement, despite the fact that it saved the market from collapsing, is considered as a cartel practice. However, it has no major negative impact on the market or at least its positive impact outweighed the negative one. Also, this b2c cannot be considered as a collusive practice in the fully economic sense because it does not include assigning market shares for each producer or predatory pricing or even supply restraint.

However, this b2c practice in such a strategic industry created tension in the market. Consumers prefer the situation where producers are in a price war. It is expected that they will not anticipate or asses the final negative impact of that on markets.

Consumer dissatisfaction by horizontal agreement is reflected in the media pressure on government to intervene in the market and impose price caps. Producers find in exporting a leeway to relieve the tension on them. This situation decreases the supply available to the local market. Consequently, consumers feel that horizontal agreements among producers is not only comprise predatory prices but also supply control. The true loop is not fully felt by consumers; which is expected. Such loopholes may let the market appear as if it suffers from some anti competitive virtual situation. From the figure, we can see how pure market characteristics, that is not related directly to concentration or to b2b or/and b2c relations, may end up with c2b restraint which lead to b2c restraint. Taking net impacts, therefore, would provide wrong analysis for anti competitive behavior and would lead to wrong treatment for the situation. For example in the cement case, dealing with the situation according to the final net impact as if it is a case of collusion and refrain to supply would harm the industry and cause massive closure and shut down of firms. Government should try to educate the market in a way to improve the c2b relations.

The Steel Industry (Rebars Production):

This industry can be classified as high concentrated because there are about 20 producers in the market. However, when it comes to market shares, the industry is classified as highly concentrated because the market share of the big two of these producers is 2/3 of the whole market. Also there is a stock sharing relation between them, as one of them owns almost one-third of the other. This relation created a strategic alliance between them. They act explicitly as one company. They have one procurement plan, one production plan and one marketing plan. They share information and conduct technology upgrading together. However, they have separate financial portfolios. Such relations are not ordinary in the business environment in Egypt. Neither producers, nor consumers are accustomed to such behavior.

Literally speaking, the two companies have both vertical relation and horizontal relation. For some time these relations were not of interest to anyone. However due to the complexity of the structure of the rebars market in Egypt, these relations are now seen from both the side of producers and also consumers as anti-competitive, yet for different reasons. It is claimed that these relations create abuse of market power and restraining competition.

Only one of the two big companies producing rebars is an integrated mill (starting from the ore and comprising the whole three stages for producing rebars). The other one is a mini mill (comprises two stages and starts from the intermediate input pellet). All other producers in the market are just rollers (use the semi-finished product-billet-to produce rebars). This signifies the inconsistent structure of the market. The integrated mill normally does not supply the market with any semi-finished products (the practice as all international integrated mills do). However, because all rollers are constrained with the shortage of foreign currencies, they claim that any surplus of semi-finished product over the direct needs of operations of the integrated mill should be channeled into the market and not to the other big firm that has a strategic alliance and a stock share in this integrated mill. So despite the fact that the supply of semi finished product is available from other firms that produce this intermediate input and do not involve in producing rebars, the vertical relation through the supply of billet between the two big firms let other firms to claim the existence anti-competitive

behavior. The integration of operations in the integrated mill makes it able for her to produce this intermediate input with the lowest cost in the market. Despite that, she is not in a position to sell it directly in the market, other rollers claim that it is their right to have this intermediate product and the vertical supply relation between the two big firms present exclusive supply agreement, and hence is a vertical restraint on competition. As billet constitutes almost 70% of the cost of this industry, being basically an imported component in a financially constraint market, the b2b relation between the two big companies, though legal, is not accepted for other producers (table 22).

Moreover, the existence of one marketing plan for the two big companies creates actually a dominant position, which by itself is not acceptable to other producers or to consumers. Other producer feel that this strategic alliance may harm them and drive them out of the market any time in the case the alliance decide to under price. Also the inconsistent nature of the producers creates conflicts. For example, the dumped billet from CIC countries avail inputs for rollers cheaply and make them able to offer lower prices. They are now more competitive not because of more efficient operations but because of unfair practice in the international trade. However, for the integrated or semi integrated mill this dumped prices constitute unfair domestic competition. Lower prices of rollers are artificially low. They are able to compete and have more market share due to factors not related to productivity of better operations. The government responded to dumped billet prices by imposing anti dumping duties harms the rollers, and led them to claim that the government itself is colluding with the two big companies. From the point of view of the rollers, government intervention had a negative impact on them and did not enable them to enlarge their market share. Therefore, according to them it is an act that harmed competition in the domestic market. Recently, the government decided to abolish such antidumping duties, based on a justification of public interest preservness.

Another interesting characteristic about steel market is the fact that rebars are commodity. This means that components and cost structure is almost the same across firms. Any increase in the inputs components (internationally the price of any of the three inputs: ore, pellet, billet go together) would increase the cost of production and prices for all producers. For consumers this general increase is attributed to collusion among producers and cartel behavior, especially that the increase in input prices usually lead to both price increase of the final product and also decreases in its supply. While some other countries (Vietnam for example) responded to this international problem of increase in inputs' prices of rebars by supporting the producers through different channels especially those related to finance, in Egypt due to c2b pressures the government responded as if there was a collusion in the market and lowered tariff rates on the final product (rebars). This act in fact did not increase competition as it is expected by more opening the market for international competition. The increase of inputs prices was an international phenomenon that applied to all firms, so their competitive status did not changed after the opening. That is to say, that government intervention through tariff reduction was a political act with no impact on the status of competition in the local market.

Table 22: The Impact of the Different Patterns of Relations on the Industries:

Pattern of relation	Business to Business	Business to	Consumer to
---------------------	----------------------	-------------	-------------

Industry			consumer	Business
	Supplier to producer	Producer to distributor		
Beverages	Positive	Positive	Not applicable	Not applicable
Textiles	Negative	Negative	Not applicable	Not applicable
Home appliances	Positive	Positive	Negative	Not applicable
Pharmaceuticals	Negative	Negative	Not applicable	Negative
Steel(rebars production)	Not applicable	Not applicable	Not applicable	Negative
Cement	Not applicable	Not applicable	Positive	Negative
Cars Assembling	Positive	Positive	Not applicable	Not applicable

Source: The authors based on the surveys

The Pharmaceuticals Industry:

There is a high degree of concentration in this industry due to the multinationals high market shares. The local production is concentrated on end use products for final consumption. The industry imports nearly 90% of its raw material and intermediate inputs. In spite of this high concentration ratio, no horizontal restraints were created (b2c relation) because of the control of prices by the government.

However, the industry seems to suffer some vertical restraints (b2b relation). The multinationals are driven by the policy formulated at their headquarters where they have to buy inputs- for subsidiary components- from specific suppliers as identified by their mother firms. Other firms (domestic and joint venture) suffer as well from b2b restraints where they are asked by the government to sell according to a certain price and hence they exert pressure on their suppliers to sell them their inputs at a certain price. This affects negatively the quality of the products as cheap substitutes are replaced for expensive ones and the quality issue is kept aside.

The c2b relation gets in the equation in a certain economic context. If the prices of the inputs rise for any reason, the firms start to develop new products using a new cost formula to manipulate the government's regulations or they might stop producing certain products. In this case, consumers start to exert pressures on the firms to provide a certain quantity of the demanded products (quantity forcing) with reasonable prices (something like predatory pricing) and quality issue is forgotten.

The pharmaceutical industry is an example where the government intervention has a negative economic impact on the performance of the industry in general. Moreover, such intervention created all kinds of rent seeking behavior.

The status of competition (on horizontal level) is described to be unfair where the financial resources of multinationals allow them to reach the distributors' outlets (mainly physicians) easily and the marketing techniques they use create an unfair level playing field between their products and those produced by their public sector and joint venture competitors. Such kind of behavior initiated by government intervention and incorrect system for pharmaceutical pricing created a segmented market where one is relatively free in deciding prices and cares more about quality, whereas the other is heavily controlled by the government and quality issue is not taken in consideration.

Home Appliances Industry:

While most of the so called domestic products of this industry are assembled from parts and components that are directly imported, most of the industry does not suffer from vertical restraint. This is because that local firms import the parts but they do not produce under the brand names of international companies. They produce mainly through local brands. This fact relieved the market from vertical restraints that always appear in the markets of assembling industries. This does not negate that minor portion of the market that suffers from this restraint due to production under international brands. Being a market with small number of producers has not affected badly competition. One reason is attributed to the fact that the business is highly a family one, and has not reached a high level of maturity yet.

The home appliance industry has turned out to be an assembling industry with the wave of open door policy, which witnessed the establishment of many private firms that started their activity by assembling basically through creating local brands. However, these firms have transformed to semi producers, by time in grown up industry that was able to create a number of feeding industries domestically. There remains important parts of every product that is imported, but in general, the industry was transformed from an assembling industry to a value added industry simulating the traditional history of this industry that started by the 50's as a public activity. Despite the industry started as an assembling one, it is difficult to extend the car analysis- see below- to it, which is attributed to the small nature of the industry.

Car Assembling Industry:

There are 17 private vehicle factories located in Egypt. According to the number of factories, the industry can be classified as semi high concentrated, but when it comes to the market shares, the industry is highly concentrated due to the multinationals high market shares. The b2b relation perceived in this industry includes tying arrangements and exclusive dealing. The multinationals are driven by the policy formulated at their headquarters where they have to buy inputs- for subsidiary parts such as radios, air conditions- from specific suppliers as identified by their mother firms.

Second, agreements that restrict supply to specific markets (market segmentation), mainly the local one, constitute major horizontal restraint. They deprive local producers from competition with other producers (dealing with the same multinationals) in other foreign markets.

As viewed by car dealers these arrangements have a positive effect when their benefits are weighted against their costs. Car assembling industry enjoys very high rate of effective protection. While tariff rates on the final product is extra high, the rates on parts are lower than their nominal rates in the tariff structure, due to the existence of article (6) - a very famous article in the tariff law. According to the provision of this article, the assembler enjoys actual lowers rates of tariff on imported parts upon his usage of at least 40% local component. This provision decreased the actual rates of tariffs on imported component and attributed to the increase in the effective rates of protection on car assembled locally. This fact by itself created a distorted market that harms competition in the domestic market. This act from

government deters the upgrading of the car industry and encourages lowering the increasing of prices.

II- Main Findings:

The study of the seven selected industries shows that market concentration by itself does not lead to lack of competition. Many factors determine the impact of concentration on competition; such as the share of imported component, the relation with multinationals, the strategic nature of the products, and the degree of market maturity (which determines the potentiality of collusion). Another factor that showed that it needs to be studied carefully is the skewness of the market. In the following, we focus on those factors.

Barriers to Entry:

Barriers to entry include:

Barriers to entry related to the market: the seven industries face high barriers to entry however; the nature of these barriers differs from one industry to another according to the characteristics of the industry.

Barriers to entry related to the product: the most distinguished of these barriers is the tariff rate. Both textiles and car industries face high tariff rates on the imports of the final product.

Other barriers included the inability to enjoy fully the economies of scale, lack of know how, and government bureaucracy.

The high barriers to entry explain the high concentration ratios in the Egyptian manufacturing sector.

The Relations with Multinationals:

The main source of effect in the relation with multinationals is brand names. When brand names are decided upon by the multinationals, they are driven by the policy formulated at their headquarters where they have to buy specific inputs- for subsidiary parts from certain suppliers as identified by their mother firms. This might cause a distortion in the pricing mechanisms. In addition, multinationals in many cases restrict the domestic firms from selling abroad, an issue that negatively affects the enjoyment of economies of scale.

Skewness:

Steel and cement markets are example of concentration; but its degree is not very high. However, few firms are dominating the market. The de facto situation is that concentration is extra high because the market is skewed to two or three firms. Table (23) shows the skewness of the markets. It means that concentration is not just a matter of the number of firms existing in the market, but what counts more importantly is relevance of the shares these firms acquire which is highly important.

Government Intervention:

Another factor that deserves attention is the role of the government. Most likely government intervention targets protection for either consumers or producers. The stage and degree of intervention are diversified. In all cases, it distorts the status of competition in the market. It seems that assessing the impact of government intervention on the status of competition has not taken yet enough attention from

policy makers. It is one of the proposed tasks for the competition authority when it is established.

The striking fact about the role of the government in Egypt is that it created new patterns for pressurizing the market, which is not fully figured by literature. The inability of the government to make a successful transition to market economy, led the government to respond to consumers pressures which in many cases resulted in negative effects on competition, though it could have solved a short-term problem, whose roots were not tackled by such government intervention.

Table 23: The Skewness of the Markets:

Concentration Industry	Extra high concentration	Very High concentration	High concentration
Beverages		Not skewed	
Textiles		Not skewed	
Home appliances			Not Skewed
Pharmaceuticals			Not Skewed
Steel (producing rebars)		←	Skewed
Cement		←	Skewed
Cars			Not Skewed

Source: The authors based on the surveys

Patterns of Relations:

The impact of the three patterns of relations introduced above (b2b, b2c, c2b) differs from one industry to another according to the market conditions of each industry. These market conditions include the number and position of firms, barriers to entry, government intervention, pricing techniques, and percentage of imported inputs. For example, the producers viewed the predatory pricing and quantity forcing practiced by the supplier in the beverages industry, home appliances industry, and car industry as positive aspects because they guarantee stable long-term relations.

All these features have anticipated to the anti competitive behavior of the sectors handled. The symptoms of this behavior are clarified in table 24.

Table 24: Symptoms of Anti-Competitive Behavior

	Predatory pricing	Quantity forcing	Exclusive supply	Collusions	Barriers to entry related to	Barriers to entry related to	Government intervention
--	--------------------------	-------------------------	-------------------------	-------------------	-------------------------------------	-------------------------------------	--------------------------------

					the product	the market	n
Beverages	*↓	*↓				*	
Textiles	*↓	*			*	*	*
Home appliances			*			*	
Pharmaceuticals			*			*	*
Steel (producing rebars)	*↑	*↑				*	*
Cement	*↑	*↑		*		*	*
Cars					*	*	*

Source: The authors based on the surveys

- ↑: Business to Business
- ↓: Consumer to Business

Part IV: An Overview of the Egyptian Competition Policy and Law

In this part, we present an overview of the competition policy in Egypt and provide an analytical review of the Egyptian competition law. In doing this, we will draw on the UNCTAD's Model Law on Competition, 2003, as well as the international experience of transition economies in particular, Eastern European countries.

Competition Policy in Egypt:

With most developing countries experiencing a transitional state to market economies, the need for a competition policy is indispensable. The breaking up of state monopolies and the privatization waves require a complementary institutional infrastructure that is able to ensure a healthy competitive environment (see for example, World Bank, 2001). The diagnosis of a typical economy in transition identifies clearly the need for a competition policy. In many cases, the lack of the required competitive environment is a result of the government policies that prevent markets from being contestable (free exist and entry), impose different restrictions that preserves monopolistic situations, etc (see for example, World Bank, 2001; World Bank and OECD, 1998). But a crucial aspect of embarking on adopting a competition policy is identifying its functions and its design. Here the complexity of the issue starts to arise. In many cases, the governments of developing countries are not clear of the functions of the competition policy they are willing to adopt. In most cases, the functions are spelled out explicitly in their competition laws identifying efficiency enhancement, or public interest, and/or other objectives as the main objective. The designs of competition laws (and not competition policies) are put in line with the identified objective. But competition policy is a much wider and deeper concept than competition law. According to Khemani and Dutz (1995), "Competition policy ... is defined in the broad sense as consisting of two parts—one which is commonly referred to as antitrust or competition law and the other, which compromises micro industrial policies such as tariff and non-tariff policies, foreign direct investment, unnecessary government intervention in the market place and economic regulation designed to prevent anti competitive business practices by firms. Both parts of the policy impact on economic agents in the market place"¹⁷. The main

¹⁷ Another definition following Hoekman and Holmes, 1999: National competition *law* can be defined as the set of rules and disciplines maintained by governments relating either to agreements between firms that restrict competition or to the abuse of a dominant position (including attempts to create a dominant position through merger). Competition *policy* has a much broader domain. It comprises the set of measures and instruments used by governments that determine the "conditions of competition"

problem with developing countries is that they mix both together. The situation ends up by the failure of their competition laws to implement their objectives of competition policies.

Egypt has embarked on a comprehensive economic structural reform program since 1991. Commonly referred to as the Economic Reform and Structural Adjustment (ERSAP) program that has been implemented in collaboration with the World Bank and IMF, the reform program tackled a wide range of issues related to policy and institutional reform. The main objective of the program was to transform the economy into a market economy and cure the major imbalances that the economy faced in the 1970s and the 1980s. The reform program has been appraised by the international institutions in correcting a number of major imbalances in the Egyptian economy (IMF, 1998). However, the sustainability of reform remained skeptical. Moreover, insurance of a full competitive business friendly environment was never achieved which has been on the tope of the agenda of the new cabinet which was appointed in July 2004.

The privatization program in Egypt has suffered lately from a number of delays. Moreover, a number of the privatized companies remain “semi privatized” where the government still owns the lion’s share in their capital. The size of the state owned enterprises remain large by developing countries’ norms (World Bank, 1995). The tariff and non tariff barriers remain substantial. The inflows of FDI remain constrained by various bureaucratic and red tape measures. The labor market lacks the competitive institutional pillars that ensure full flexibility. Box 1. identifies the lack of competition in some key service sectors. The new cabinet has been trying to tackle such issues where a new ministry for investment was established, which has a main goal of accelerating the privatization process (19 firms have been privatized between July 2004 and January 2005 and more than 70 firms are prepared for privatization). The Ministry of Finance reduced the tariff rates from 14.6% weighted average to 9% weighted average and reduced the tariff bands from 23 to 6. Several measures are being undertaken to lessen the red tape measures that hinder the flow of investments, and finally there is a huge tax reform project being prepared aiming at lowering tax rates and broadening the tax base. All such efforts are likely to improve the competition policy in Egypt. Trade facilitation measures (including customs administration, port facilities, etc.) still remain as a major obstacle that needs to be addressed (see Box 1.).

Box. 1.

In Egypt the lack of competition in services that facilitate trade reduces the gains from the liberalization of merchandise trade. Only Egyptian nationals are allowed to engage

that reign on their markets. Antitrust or competition law is a component of competition policy. Other components can include actions to privatize state-owned enterprises, deregulate activities, cut firm-specific subsidy programs, and reduce the extent of policies that discriminate against foreign products or producers. Often the competition policy stance of a government may be determined in part by the international treaties it is a party to, including e.g., regional integration agreements. A key distinction between competition law and competition policy is that the latter pertains to both private and government actions, whereas antitrust rules pertain to the behavior of private entities (firms). (Hoekman and Holmes, 1999)

in the business of importing, which clearly reduces competition in distribution and competition in domestic markets. Also, the lack of competition in the provision of port services in Egypt, which are provided by public companies, has resulted in handling and storage fees 30% higher than in neighboring countries, which have broadly similar quality of services. There is also no competition in maritime shipping in Egypt which is monopolized by a state owned firm. According to a 1994 survey, the cost of shipment and handling in Egypt of a standard container was 20 to 30% higher than in the nearby countries of Jordan, Syria and Turkey (World Bank, 2001, p. 145).

Moreover, there are a number of regulatory measures that impede competition and are not tackled by competition law but rather related to trade facilitation: Examples include the technical standards which are predominantly related to food products, engineering goods, and consumer products. The majority of those national standards have no equivalence to international standards. For instance according to the latest WTO Trade Policy Review Report, there were around 1,000 standards in Egypt, of which only 25 to 30% are in conformity with international standards (WTO, 1999). Other measures include quality control measures where for example Egypt raised the number of imported products subject to quality control measures from 69 in 1992 to 182 in 1998. While such measures are necessary to ensure minimum health and safety standards, they may have been applied in a discriminatory fashion depending upon the use of the imported items (Zarrouk, 1999, p. 4). Other examples include the cumbersome administrative customs procedures where the average customs clearance transaction in Egypt requires 25-30 stages and takes from one day to several weeks (Zarrouk, 1999, p. 4).

It is clear that the government is rather pushed to enact a fully comprehensive competition policy which arises from the international institutions' pressures. The lax willingness of the government to embark on an effective trade policy (see El-Mikawy and Ghoneim, 2002) raised the question of what are the objectives behind having a protectionist trade policy and whether the government uses trade policy as a tool to redistribute income or to shield its state owned enterprises (SOEs) from foreign competition or whether other vested interests were able to convince the government of its lax trade liberalization. Even after the latest changes including the unilateral tariff reductions of 2004 the effective rate of protection that used to prevail was maintained at high levels. Hence, the incentive of the government to enact a comprehensive competition policy is absent even though, willingness to enact a competition law has been raised since 1995 where the first draft was ready and have pending for approval by the Parliament since 1997. This situation has started to change lately when the absence of competition policy and law started to affect negatively some public firms (e.g. the case of cement industry). The voices calling for an efficient enacting of a competition policy started to rise which became evident in the initiatives of the new cabinet appointed in July 2004. The cabinet undertook several measures to enhance the competition policy, including abolishment of antidumping duties, lowering tariffs, enhancing trade facilitation etc. However, the roots of anticompetitive behavior became so strong that even with such measures the anticompetitive behavior continues to prevail.

The business community in Egypt is divided into various factions with conflicting interests. They are mainly divided into industrialists and importers. While the former

would like to see some kind of special tariff protection for domestic industries, importers and agents of foreign manufactures wish to do away with all such privileges. The matter is further complicated by the fact that domestic manufacturers wish to exclude from such protection imported inputs needed for their operations— an exemption which is of course strongly opposed by domestic producers of such imports (Zaki, 1999, p. 132). The resolution of such conflicts requires collective action, which entails sacrifices on the part of certain groups and individuals. But there is no incentive for the members of the business community to change the status quo. The free rider problem inhibits the cohesion of capitalist, even when facing potential threats to their class from other social forces. (Zaki, 1999, p. 132). The greater involvement of the industrialists (versus importers) in the decision making process (37 businessmen are now members of the Parliament) shows that the government has started to take in consideration their interests. However, as identified by some observers such greater involvement of businessmen in the decision-making process has not precluded the state from acting unilaterally at its discretion, sometimes against business interest in pursuit of its own goals (Zaki, 1999, p. 136). Other commentators have argued that the lax consideration of enacting a competition law in Egypt was because of the pressure coming from the private sector which feared the enacting of such law for several reasons (Ali El Dean and Moheildean, 2001)¹⁸. In other words, the absence of effective collective action that calls for a comprehensive competition policy complemented by the lack a clear transparent framework for lawmaking in Egypt was translated in the absence of incentives on interested parties in calling for a full comprehensive effective competition policy.

Consumers in Egypt can be described to have no role in enacting competition policy. There is no law for consumer protection, consumer protection NGOs are weak and have no significant role in policy advocacy and they lack collective action initiatives.

Hence, it can be safely argued that the three main stakeholders (government, industrialists, and consumers) in enacting an efficient competition policy lack the incentives to create such a policy, which as argued above started to change lately. The role of the affected groups from the lack of competition has been strengthened lately, however they are not strong enough and myopic in believing that a competition law can cure their ills.

This leads us to the conclusion that adoption of a competition law in Egypt with such a weak policy and institutional infrastructure, absence of incentives among major stakeholders, and weak collective actions among potential gainers from the adoption of such law is likely to result in a failure of enacting the law when enacted. In addition to such specific characteristics of the Egyptian economy, we add the common features

¹⁸ According to Ali El Dean and Moheildean, 2001, p. 27: “The issuance of a competition law has been facing some resistance, this time not from the state but from the private sector, that has various concerns regarding this law, such as:

1. Fear of government intervention in a new form under the notion of protection of competition.
2. Possible abuse of the law by particular firms, that may use it, unjustifiably to charge competitors with unfair trade practices.
3. The law will cover only registered firms, leaving informal activities and smuggling intact.
4. Those that will be responsible for implementing the law may not have sufficient knowledge of the idiosyncrasies and peculiarities of particular segments of the market.
5. Just implementation of the law may be hindered by corruption and profiteering”

among developing countries which include the lack of human capacity and physical infrastructure required for a successful implementation of such law. It should be emphasized that even international institutions have backed up this argument. For example, in the World Bank Development Report 2001 it has been asserted that “In resource-constrained countries governments may benefit from focusing on removing barriers to entry and exist in markets and opening the economy to international competition before turning their attention to building competition laws and agencies” (World Bank, 2001, p. 135) or as it has been put by OECD “Competition policy instruments are blunt not refined surgical instruments and have to be handled with care. For countries without experience in this field, a rules-based approach to competition would be appropriate and there should be the fullest interplay for market forces and mobility of resources, deregulation and lowering of barriers to entry as instruments for promoting competition rather than law itself” (OECD, 1994, p. 14). The main fact that has to be emphasized is that for a competition policy to be effective there is need for than just simply enacting a competition law. There is a need for effective enforcement, a well thought out agenda in terms of the relationship between competition policy and other government policies and finally cooperation of the business community in the development of policies and institutions to implement them (See OECD, 1994). All such factors seem to be not well represented in the Egyptian economy when it comes to the issue of competition policy. The new cabinet has been trying to tackle a number of such issues, however in many cases such as lowering tariff rates and abolishment of antidumping measures did not result in positive outcomes. The main reason was that the issue of sequencing of policies enacted were left out which implied that anticompetitive actions (e.g. cartel or abuse of dominant position) were entrenched to an extent that a liberal trade policy was not able to cure it as the private sector was able to create vertical and/or horizontal restraints, or still some institutional barriers remain that impeded the establishment of a healthy competition policy.

Competition Law in Egypt:

The issue of competition is not new in the Egyptian legislation; the Criminal Law contains articles that deal with monopoly and anti-competitive behavior. For example, articles 345 and 346 are embedded in the Egyptian legislation for more than a century now. In addition, the trials to draft a separate competition law started about ten years ago, and many revisions were presented: more than 18 drafts. This reflects the difficulties and hurdles the Government of Egypt confronts when dealing with competition issues. On the one hand, there is the fear that a stringent competition provision might harmfully affect the business community and development at large. Due to the fact that most- if not all- Egyptian enterprises are still smaller than the appropriate size that enables them to withstand international competition. The government has worries of the negative prospects on investment from enforcing a competition provision without having an efficiently able administering unit (competition authority). On the other hand, the community has doubtful apprehensions and dreads about the lead of the private sector to the production process in Egypt. Consumers claim that most private practices carry monopolistic behavior and abuse of market power. Some even go to the extent of accusing the government of backing or overlooking many monopolistic practices. Therefore, when reviewing the competition law it must be kept in mind the need to set balance among all those parties, as it will clarify in many cases some ambiguities about this law. One

of them for example, is the lengthy process it is to take until the law passes from the government to the parliament.

In reviewing the law, we will first present an overview of the law, followed by an analytical review. In doing this we will focus on the capacity of the law to perform well its functions. Throughout the analysis, we provide a critical reading to answer the common major questions related to these categories of laws mainly:

- a. Does the law distinguish between horizontal and vertical agreements?
- b. Does the law treat cartel arrangements as *per se* illegal?
- c. Does the law restrict vertical agreements by firms lacking market power?
- d. Do the provisions restricting the behavior of "dominant" firms make it too easy for a firm to be labeled dominant?
- e. Does the law protect potential entrants from exclusionary behavior by incumbent firms?
- f. Is it illegal to harm or "take advantage of" a competitor?
- g. Does the law seek to control the prices charged by dominant firms?
- h. What, if any, are the requirements for the prior notification of combinations of enterprises?
- i. What are the time restrictions on agency analysis of proposals for combinations, and what are the consequences of agency inaction?
- j. What are the criteria by which proposals for combinations are judged?

I- Overview of the Egyptian Competition Law:

- Article 1: States the objective of the law: that is to assure and guarantee the freedom of conducting business for every one (whether a natural entity or a company being private or an economic authority¹⁹, etc....) as long as such activity does not harm competition.
- Article 2: Provides the underpinning definitions
- Article 3: Identifies what is meant by a market regarding the two dimensions of the physical aspect of the product and the geographic boundaries.
- Article 4: Defines what is meant by controlling the market (controlling more than 25% of the market and being able to affect prices or production without having the same power for other players in the market).
- Article 5: Extends the coverage of the law to undertakings that affect competition in Egypt, even if from non-residents.
- Articles 6 and 7: Prohibits anti-competitive agreements; both horizontal and vertical.
- Article 8: Prohibits abuses of dominant position

¹⁹ These are public companies that have special laws that allow them to run their business on economic bases. They are about 66 companies, each is almost either the sole provider or at least dominant in the service it provides. This inclusion is a positive aspect in itself specially that we if we know that the government or governmental controlled agencies and entities (including the public and public enterprise sectors constitute about 37% of GDP, which is a high percentage by the developing countries standards as well as world standards. An explicit exception was made for the governmental or governmental controlled strategic enterprises that work in the fields of water supply, electric generation, sewage, roads, natural gas, and oil and for the firms and activities regulated by a separate independent law (e.g. the telecommunication sector, and the banking sector). This is in contrast to the case mentioned in the UNCTAD model law which provided a number of exceptions that were general in their nature as State activities or local governments' activities. Such footnote is according to the explanation of the authors and did not appear in the version of the law considered.

- Article 9: Identifies that the law does not apply to governmental public utilities in all activities and private firms that undertake anti-competitive behavior but on the other hand provide public interest activities as stated by the executive decree.
- Article 10: Allows exceptions to be made by Prime Minister regarding pricing of some basic goods and services for a certain period of time after consulting the authority
- Articles 11-21: Provides procedures of work of the competition office and its structure as well as its financial and legal status.
- Articles 22-25: Provides penalties for the violation of the law as well as for employees of the authority if violated the work ethics.

II- Functions Covered by the Competition Law:

Competition laws traditionally perform two main functions: 1) the struggle against the unfair practices of competitors (or in a more generic sense: dealers in the value chain) and, 2) the elimination of the restrictions of competition; which incorporates: i) antitrust provision (prohibition of agreements restricting competition) attributed to the abuse of dominant position, ii) interlocking of undertakings.

These functions are reflected in the objectives of the law- as they appear in its title, the inaugural article, the scope of performance as codified in the provisions of the law, and the procedural protocol of applying the law.

i) Objectives:

a) Title of the Law:

The title of the Competition Law in Egypt is “Law of Protecting Competition and Preventing Anti-competitive Practices”. The law had other titles before which did not differ substantially from the aforementioned title, with the exception of one draft (No. 15) which added the phrase “Consumers’ Protection”. This is because the government believed it could encompass both aspects of competition and consumer protection²⁰ in the law. However, the idea was dropped out and the shift toward two separate laws was foreseen as the proper idea. The draft of a separate law for consumer protection is not promulgated yet. Consequently, all the provisions that were concerned with the consumer protection aspect were dropped out in the latest version of the competition law.

The title of the law is in line with the existing titles of competition and anti trust laws available around the world. What is interesting about the Egyptian title is that it couples between protecting competition and the struggle against monopoly. The majority of the laws either adopt the first half of the title, that is Safeguarding or Protection of Competition, or something alike such as the Prohibition of Unfair and Restrictive Market Practices or they adopt the second half that is Antimonopoly or

²⁰ It differs from countries to others. Some have them separately and others have them together as Australia, Hungary, Poland, and France. Or in some cases the laws are separate but their application is within the hands of the same Administering Authority.

Counteracting Monopolistic Practices. The countries that adopt a title related to Antimonopoly Law are those that stick to rules of reasons and are highly interested in attacking restricted practices. Those who apply both per se and rules of reasons with interest in both unfair and restricted practices- dub their competition act with the expression of protecting competition. In the case of Egypt, apparently, it is sufficient to follow the latter manner. However, to give popularity to the law and highlight the government's actions in preventing monopolistic practices, and to deny any claims that it supports private business practices at the concern of the populace, the Egyptian heading of the competition act stresses this point; despite being incorporated in it by definition.

b) Inaugural Article:

Worldwide, the inaugural statements of competition laws fall in one or more of three tiers pertaining to social and economic prosperity. Some laws link their work directly to the goals of development such as growth, or community welfare. Others go to a lower tier and link themselves to the objectives of economic policy; hence, their role in bolstering the goals of economic policy can be easily justified. Some of these objectives are promoting international trade, supporting economic integration, fostering market mechanisms and economic freedom, etc.... Some laws go into the third tier of targets of economic policy, which aim at promoting micro targets such as efficiency and better resource allocation.

The objective of the Egyptian law belongs to the second tier as its first article explicitly states the assurance of economic freedom. Article 1 emphasizes that the right to undertake economic activity is preserved for all as long as it does not lead to restraining, preventing, or negatively affecting the status of competition. The philosophy behind the law is to regulate market deficiencies that may typify free economies, in order to affirm the economics of a free market.

ii) Scope of Performance:

a) Prohibition of Unfair Competition:

The law contains the conventional prohibited list of practices and agreements contained in most of the competition laws in article 6. This includes: manipulation of prices, restraints on production, or sales, intentional over supply which affect prices, prevention of any person from supply, concentrated refusals to supply and/or purchase, market or consumer allocations, affecting bidding processes as collective tendering (its components are not provided in the law as identified in the footnote). However, they might be included in the executive decree²¹, and complete or partial stop of production, and/or distribution, and/or marketing without justified reasoning.

²¹ May take different forms: agreements to submit identical bids, agreements as to who shall submit the lowest bid, agreements for submission of cover bids (voluntary inflated bids), agreements not to bid against each other, agreements on common norms to calculate prices or terms of bids, agreements to squeeze out outside bidders, agreements designating bid winners in advance on a rotational basis or on a geographical or customer basis.

While, the Model Law of UNCTAD uses the word “competitors” when referring to the dealers on the list of prohibited practices; which highlights its stress on horizontal agreements, it could be understood from the provision in Egypt’s law that the list of prohibited practices incorporates both horizontal and vertical agreements. However, the law does not explicitly specify whether such types of illegal activities are confined only to horizontal or to both horizontal and vertical agreements. Countries in transition, such as Romania, Czech Republic, Slovak, and Hungary originally had almost a similar provision as that of Egypt- in their first versions of competition laws, with no clear distinction between horizontal and vertical agreements²². However, with their compliance to the EU regime of competition, they had to amend their laws in pursuant of their accession to the EU. Explicit statements for horizontal as well as vertical agreements were added. Egypt’s law does not follow the Model Law in this respect.

However, the practice in Egypt may deem it necessary to explicitly specify the coverage of the law for both horizontal and vertical agreements. Or it may be further illustrated in the executive decree; which is supposed to be released one month after the ratification of the law by the Parliament (however, it is still not released despite that more than a month elapsed since the parliament ratified the law).

The Egyptian competition law views the stopping or restraining of development of a product as illegal practices. It is uncommon for such a prohibition to appear in the section on unfair practices. It is rather a typical provision of restricted practices, as the case in the Slovak’s Act on “Protection of Economic Competition”.

Articles 9 & 10 state the conditions under which article 6 on unfair practices and agreements does not apply, which is not in line with most other similar laws as it exempts all governmental public utilities from the law, private firms upon discretionary decision of the government, and fixing of prices by the Cabinet for “basic” goods. For instance, if the accused firm leads to public benefit - it does not fall under the application of article 6. It is left to the executive decree to clarify such public benefits. The majority of laws incorporate some examples as an illustrative list to advice on this direction, but not as the case of Egypt where the law was highly agile and flexible. The competition authority may issue a general decree in some special cases, as in the Czech’s law, which is equivalent to block exemptions under the EU regime. In the case of Egypt, it is not clear in the context of the law itself how the procedure of exemption will work. Most likely, the executive decree will further elaborate on this provision.

For provisions under article 6, the law does not organize exemptions pertaining to de minimis cases. Many laws incorporate such exemptions for firms with small market shares (up to 10% in most laws of Eastern European countries)²³. Some analysts justify that in the case of developing countries, the unavailability of data at the micro level may make it impossible to apply the shares in the de minimis provision.

²² The Russian competition law does not specify explicitly horizontal and vertical agreements. Yet, its article 6.1 comprises agreements between competitors as well those between two or more deals in the chain of value of production a product.

²³ In the US the jurisprudence takes a hard line against inclusion of non competition issues as part of an antitrust analysis. In the EU, it is up to member States to decide the manner in which any de minimis rule should be applied.

b) Restrictive Practices And Abuse of Dominant Position:

Dominant position is defined as controlling 25% (down from 35% in the draft submitted by the government to the Parliament) of the relevant market. This percentage has been raised starting the draft No. 15, as it was 30% before and the lowered during discussion of the law in the Parliament to 25%. The decrease of the share is *not* consistent with the amendments of that provision which happened in the competition laws of Poland, Slovak, and the Czech Republic. These countries started with a ratio of 30% and amended it to 40%, recently. The per se rule is not complemented by any other criteria to explain dominance. As it is the case of many other countries, which complement it by a number of other criteria that assure the presence of effective dominance; such as the capacity to affect prices or to overlook competitors behavior- in other words a mixture of per se and rule of reason approaches²⁴ is adopted (e.g. Germany, Estonia), the Egyptian law adds to the 25% threshold, the ability to influence the prices or the amount of products available in the market without the competitors having the same ability.

This point constitutes a disadvantage of the law, because the absence of this treatment in some laws of transition countries diluted the issue of illegality and introduced uncertainty and ambiguity into the application of those laws. In the Egyptian case, types of practices mentioned in article 8 are clearly illegal. Therefore, the element of clarity of the law in this respect is preserved, however was diluted by adding the ability to affect prices or production without the competitors having the same ability.

Examples of illegal practices are the refusal to supply or purchase, which negatively affects prices, to be perceived as abuse of dominant position, tie –in arrangements which make the supply or purchase of a certain good dependant on the purchase or supply of another good. In this respect, the Egyptian law is in line with the UNCTAD model law of competition

The relevant market has been clearly identified from the product perspective and the geographical perspective. The identification of the product market is based on the availability of the similar product or its close substitutes from the point of view of the consumer. The executive decree, which is not published yet, that will determine which criterion (the reasonable interchangeability of use or cross elasticity) will identify the test used for identifying the relevant product market. The relevant geographic market takes in consideration the possibility of an extended market depending on the differences of competition status in each market. The law did not identify specific criteria other than the general competition status for determining the scope of the market. For example, it did not include aspects of price disadvantages arising from transportation costs, degree of inconvenience in obtaining goods and services, choices available to consumers, or the functional level at which the enterprise operate. At this stage it cannot be predicted whether such aspects will be included in the executive decree or not. However, it should be pointed out that if such specific issues are not mentioned it might give room to manipulating the definition of

²⁴ In the US, the Supreme Court limited the per se prohibition against resale price maintenance to minimum resale maintenance providing a maximum resale price maintenance to be reviewed under a rule of reason analysis because it may lead to lower prices.

the relevant geographic market. However Egypt will not be an exception as some countries do not include such aspects in their laws including Chile for example. However, by stating a 25% as a threshold for dominance, the law implicitly induces that the relevant market is within the territory of Egypt and is not extended to other markets of countries having free trade areas (FTAs) with Egypt. Countries of Eastern Europe have two ratios for dominance in their counterpart competition laws (40% for the local market and about 5% for the regional market). Apparently, this makes their laws in line with that of the EU regime of competition. The cost of transportation may oblige the local market to be the relevant one for the application of the competition law in Egypt. Yet, explicitly stating another ratio that takes into consideration the international commitments of Egypt would not only reflect a futuristic vision for the law, but would have the merit of facilitating the work of the competition office in attacking foreign undertakings that may deem detrimental for fair competition in the local market.

c) Interlocking of Undertakings:

The law does not ask enterprises that desire to own assets or ownership rights, or use rights or shares, or establish federations, or undertake mergers or acquisitions in a manner that lead to dominant position or market control are requested to notify the Competition Authority, although such provision was present in the former drafts of the law. This means that interlocking undertakings which can shape a dominant position in the relevant market, are not subject to pre-notification. Some claimers see that it would have been better if notification was automatic without identifying whether it leads to dominant position or market control. Given the absence of data, the absence of such provision avoids uncertainty which could have prevailed about legality of undertakings.

iii) Management of the Law:

a) The Competition Authority:

There is no wording that implies the independency of the Competition Authority (with the exception of its budget) in the Egyptian law, it follows the concerned Minister²⁵. Its activities include all the conventional activities of a Competition Authority ranging from receiving appeals to investigation, to database establishment, etc. It includes as well a modern or rather non-traditional role in policy advocacy and public awareness. The Board meets on a regular basis (once per month), and whenever needed. It is compromised of 15 members; the head of the Competition Authority, a deputy who must be a judge, four representatives of the concerned ministries (while they are not specified yet, it is expected that they would be the ministers of supply and domestic trade, foreign trade and industry, investment, and justice), three experts, and six representatives of the General Federation of Commercial Chambers, Federation of Egyptian Industries, Federation of Banks, the General Federation of Consumer Protection, the General Federation of Egyptian NGOs, and the General Federation of Egyptian Labor. However, two problems arise; the inclusion of a representative from

²⁵ The concerned minister is the Prime Minister in the law. The law in earlier drafts lied in the competence of both the Ministry of Supply and Domestic Trade and the Ministry of Foreign Trade and Industry.

the Federation of Banks, which is not understandable, and not identifying the concerned ministries as they should be set in the law and not the executive statutes. There is a provision that adds the possibility of inviting an expert when dealing with a special case, who is not a member of the Board, and the Board sees his presence to be important, however, his vote is not counted.

In addition to the Board, there is a full body whose members do not follow the governmental wage scale but rather have a special financial treatment. This is an important aspect to avoid corruption especially if we take in consideration the low governmental wage level prevailing in Egypt, which if applied on the workers in this body can either lead to lack of incentives to work efficiently and honestly, or open the door for corruption.

The rights and obligations of the authority's staff are explicitly defined in the law. The law controlled the staff in terms of not releasing any kind of information related to the cases handled by the authority or any other related data. Moreover, the law did not provide the authority staff with any right to incentives (e.g. additional salaries or wages) to be obtained in case of extra work or more cases identified by the authority. This is mainly to avoid any kind of corruption, while on the other hand the law emphasized that the staff will be on a different salary scheme and payroll from that of the government officials which as discussed above is considered low. In terms of rights, the law gives the authority staff access to all the firms' data and documents they need. The exact type of data and documents are expected to appear in the executive statutes. The law confirms the confidentiality of the information obtained from enterprises and emphasizes that the Authority and its staff have no right to release such information for any agency or use it for any other purpose. This is in line with the world wide practice, however, the sanctions imposed on the staff in case of releasing information is confined to fines and do not extend to imprisonment. In principle, the law does not resort to more than financial fines as penalties. International experience shows that this approach benefits the early stage of the application of the law, until the rules and regulations that it incorporates mingle with the basic fabrics of the community culture. Then the stringency of the penalty is the next step in the closest amendment.

The law gave the right to any person and the NGOs concerned with consumers' protection the right to complain to the authority about any anti-competitive behavior. The exact procedures and requirements for such complaint are expected to appear in the executive decree. The law did not give the right to the affected enterprises to appeal against its decisions. In earlier drafts, the right to appeal was allowed to be undertaken in front of the administrative court, like the case of many other countries including for example Gabon, Lithuania, Colombia, Venezuela, and Zambia. Other countries have chosen other courts as judicial courts or specialized courts. This is a pitfall in the law.

As regards to the relationship between the competition authority and the regulatory bodies in the economy, there is no unique model for such a relationship worldwide, but in many OECD and developing countries the Authority plays an active role in the functioning of the regulatory bodies. In the Egyptian law there has been no mentioning of such kind of relationships. One justification lies on the fact that all activities that have regulators are not subject to the law. However, it would have been

better to incorporate a provision that links the competition authority with other bodies such as the Supreme Council of Tariffs, Privatization Office (which was the case in earlier drafts); which is the case in many countries in transition. This would have provided the competition authority with a suitable vision about the prospects of future dominant positions.

b) Sanctions, Relief, and Actions for Damages:

Violations of the law in the Egyptian law include undertaking anti-competitive behaviors expressed above or the failure to comply with the authority's decision. The violations did not extend to failure to supply information (data and documents) required by the enterprises within a period of time or providing false or misleading information. This might negatively affect the enforcement of the law, as there is no provision to impose clear penalties to stop any data or information manipulation from the side of enterprises. Moreover, a specific provision that encourages enterprises to cooperate in data and information issues would have had the merit of support building information systems and a data bank for the competition authority, which are crucial in supporting its functions.

Sanctions in the Egyptian law are confined to fines, interim orders of activity, ceasing and permanent injunctions of products but not stopping the enterprise activity. The sanctions do not include imprisonment, divestiture, rescission, restitution to injured consumers, or permanent injunctions for activity. Although a provision in article 20 comprises the phrase "violator (to articles 6, 7, 8) would be requested to adjust its position", the statement is too loose to specifically define what is meant by that and what are those actions that deem it necessary to do that adjustment. Would division or control prices be among them?

Limiting penalties to financial fines, is not in line with the worldwide trend, which leans more towards imposing imprisonment at least to certain illegal activities to ensure the active enforcement of the law. By analogy, the same justification, for limiting penalties to fines imposed on employees of the competition authority- in case of any illegal handling with confidential information- may apply here.

However, fines are not defined, in line with the international practice, in terms of a certain percentage of the turnover (like the case of the European Union), or income (like the Ukraine). The law does not vary the fines according to the type of infringement. This might be left to be dealt with in the executive decree; however, it would have been better to identify them in the law itself. It is rather set between a minimum and a maximum that the law has identified. The power to impose the fine is vested in the hands of the concerned Minister based on the application of the Authority. The law allows the concerned minister to solve the problem without reaching the court if the violator adopts the required change in his illegal practice and pays the necessary fine. Again, this provision adds to the discretionary power of the concerned minister and attaches a large degree of vagueness to the law.

c) The Leniency System (Amnesty) and Cooperation with Other Competition Authorities:

This provision has not been mentioned in the law by any means, despite proving to be extremely efficient in breaking up cartels and collusions, or even the possibility of preventing the creation of new ones in the European Union and the United States.

Regarding the cooperation with other competition authorities, the law did not state that there will be any kind of cooperation. It would have been better if some type of cooperation (positive or negative comity) was stated in the law and its executive decree.

Part V: Main Findings and Conclusion

The present study presented an investigation on the status of competition policy in Egypt. In doing this, it tackled both the practice and the legal framework. The study was split into main four parts. Part one reviewed the literature for Egypt on competition behavior and regulations. In part two, the study portrayed the main features of Egypt's industries pertaining to competition and link that with market behavior and micro aspects of efficiency. Data available enables the numerical study of that substance through the 80s and almost the whole 90s. The study continued to explore the issue through soft data collected from interviews with leaders of some industrial activity that operate in industries with high ratios of concentration which was undertaken in Part III. Finally, the study undertook an analysis of the recently promulgated competition law in Part IV.

The literature review – in part I- on the relevant studies related to competition law and competition policy, reached the conclusion that the literature on competition law and policy in Egypt is scarce. Some studies have tackled the issue of competition policy and competition law in general whereas few studies have focused on specific sectors. Results of the studies were controversial. One of the major themes that arise from the studies reviewed is that competition law is not enough to ensure the prevalence of competitive environment in the Egyptian markets. An overall competition policy is needed and a clear commitment from the government to preserve the independence of the Competition Authority is a must for the success of the competition law.

In part II, the study explored the main features of Egypt's industry that are related to the concept of competition. Egypt's industry while has a relatively wide number of industrial activities, it is characterized with a noticeable degree of specialization in very few industries, mostly related to natural resources (mining or agriculture) or to availability of low-skilled labor.

Most of the production is produced by large firms, indicating high degree of concentration for both employment and production. While the degree of concentration shows -in many industrial sectors- some reductions, we can not depict a considerable declining trend. One can say that both specialization and concentration are well established characteristics of Egypt's industry. When investigating the relation between specialization in production and the structure of establishments, we could not find a clear relation. A sector may be characterized by a high share in production synchronized with few number of establishments. For example, food sector ranks

second in generating production and relatively few number of establishments. The first ranked sector in the structure of generating production, petroleum products, has the fifth rank in number of establishments.

The study found that the structures of the industrial markets pave the way for practicing anti-competitive behavior. The total factor productivity (TFP) has a significant negative relationship with mark-up ratios and hence changes significantly when it is adjusted (i.e. when technical progress is considered where mark-up ratios are deducted). However, this does not necessarily imply that there activities with higher TFP have lower mark-up ratios. The relationship between the adjusted total factor productivity (technical progress) and the number of establishments, import penetration and export ratios was negative and significant.

We found that because studying market behavior and market power is something very new to the literature on Egyptian industry, the current study highlighted many voids in the field that are crucial to study competition such as turn over ratios, rent seeking behavior allowed by efficiency patterns of some firms, segmentation in the market with relation to pricing methods, etc....

The mark-up ratios simulate the relation between price and marginal cost average over all firm sizes for each industrial activity. Hence, they cannot explain market power in each market relative to others. However, it is a very useful devise for comparison in the same sector across time.

Part III of the study focused on identifying three related measures of competition (business to business), (business to consumers), and (consumers to business). The study explores the status of competition in seven leading industries; some of which constitute the traditional industries; such as textiles, beverages. Others are new ones; especially cars assembling. The market characterizes, especially those related to concentration, of each industry was investigated followed by investigating the pattern of industrial relations in these industries that mostly affect competition. The degree of government's intervention and its impact on such industrial relations was also researched. Finally an impact assessment of market characteristics on competition was undertaken.

The study of the seven selected industries shows that market concentration by itself does not lead to lack of competition. Many factors determine the impact of concentration on competition; such as the share of imported component, the relation with multinationals, the strategic nature of the products, and the degree of market maturity (which determines the potentiality of collusion). Another factor that showed that it needs to be studied carefully is the skewness of the market.

The impact of the three patterns of relations introduced above (b2b, b2c, c2b) differs from one industry to another according to the market conditions of each industry. These market conditions include the number and position of firms, barriers to entry, government intervention, pricing techniques, and percentage of imported inputs. For example, the producers as positive aspects viewed the predatory pricing and quantity forcing practiced by the supplier in the beverages industry, home appliances industry, and car industry because they guarantee stable long-term relations. All these features

have anticipated to the anti competitive behavior of these sectors which included predatory pricing, quantity forcing, exclusive supply, collusions, barriers to entry related either to the market or the product ,and government intervention.

The last part of the study was devoted to analysis of the Egyptian Competition Policy and Law. In general, the study showed that there are several pillars of competition policy that have not been well tackled until very recently. Issues of high taxation, cumbersome procedures, red tape measures, high tariff rates, etc. contributed negatively to the prevailing of a healthy competition policy in Egypt.

Regarding the law, the study discussed in details its different provisions and pointed out the major loopholes associated with the law. Moreover, it has signaled the main challenges of implementing such law.

In general, the study provided a comprehensive overview of the competition status in the Egyptian economy. It dealt with the issue from different perspectives including the actual play ground of firms in the market, the institutional infrastructure embedded in the law, and the analysis of relevant data. The conclusions reached pointed out that there is a move towards anti-competitive behavior in the Egyptian economy as a result of several institutional impediments, wrong sequencing of policies adopted and inefficient government intervention. The study pointed out that time horizon of capital turnover, as revealed by interviews, plays an important role in determining markup, an issue that cannot be revealed by data. Hence, the interpretation of mark up ratios should be dealt with cautiously to ensure proper interpretation of results. The main policy implications include a better undertaking of the grass roots of the anti-competitive behavior which cannot be any more cured by the trade liberalization or simply enacting a competition law. The issue was found to be deeper. What is needed is a better data set on a more disaggregated level that allows different stakeholders to identify the anti-competitive behavior. The dataset should not be solely controlled by the private businesses or any other stakeholder to avoid asymmetric information.

In conclusion, the markets of industry in Egypt have held many features that raise questions and skeptics about the status of competition. Unfortunately, we could not present a comprehensive analysis. We had measures that gauge competitive behavior and environment, produced by hard data for the period 1981-1995, and others based on soft data for the most recent years (2000-2005).

The study highlighted that the area of competition studies still has many voids because of the newness of the topic. However, the upcoming competition authority under the newly promulgated law, would pave the way for more conducive environment for such studies. The process itself of the regular investigation on markets would release and avail more data for analytical studies.

Competition, Efficiency and Competition Policy in Tunisia



Country Report

Presented by

Riadh BEN JELILI

Université de Bretagne Sud

Department of Economics

benjr@univ-ubs.fr

Revised Version, April 18th 2005

TABLE OF CONTENTS

Executive Summary	3
TABLES AND FIGURES	12
Introduction	14
Part 1: General Considerations and Tunisian Background.....	16
I. General considerations	17
I.1. Competition, trade and emerging economies	17
I.2. What kind of competition policy for emerging and developing countries	20
II. The Tunisian Background.....	22
II.1. Global Performance	22
II.2. Manufacturing Sector General Characteristics	24
Part 2: The State of Competition in Tunisian Manufacturing Sector	29
I. Manufacturing Sector Performance and Sectoral Contribution	30
II. Trade Performance and Specialization	36
II.1. Trade performance and Import penetration	36
II.2. Specialization	43
III. Firms' Size Distribution and Market Concentration	46
III.1. Size distribution	46
III.2. Market concentration	50
IV. Markup Pricing in Tunisian Manufacturing Sector.....	54
V. Import Competition and Market Power	59
VI. Survey on Competitive Environment of Firms in the Formal Manufacturing Sector in Tunisia: Analysis of Findings	62
VI.1. Profile of Respondents.....	62
VI.2. Competitive environment: Horizontal aspects	64
VI.3. Competitive environment: Vertical restraints	68
Part 3: The State of Competition Policy in Tunisia.....	70
I. Regulation and Competition in Tunisia: Global Framework	71
II. Competition Authority in Tunisia.....	74
III. Illegal practices under Competition Law	79
III.1. Competition Policy Conceptual Framework.....	79
III.2. Summary of illegal practices under Competition Law	83
IV. Competition Policy Implementation	84
IV.1. Cases and Consultations Typology	84

IV.2. Cases of anticompetitive actions investigated under the law	88
V. The status and perspectives of cooperation with the EU in the area of competition policy.....	91
Part 4: Competition and Economic Performance. Dynamics of the Competition Process	93
I. Performance and Technical Progress in Tunisian Manufacturing Firms: Firm-level econometric analysis .	94
I.1. Methodology.....	94
I.2. Econometric evidence	97
II. Persistence of Profitability and Intensity of Competition in Tunisian Manufacturing Sectors: Firm-level econometric analysis.....	105
II.1. Methodology	105
II.2. Econometric evidence.....	108

Executive Summary

Tunisian manufacturing sector plays an important role in the Tunisian economy. It contributes significantly to the Gross Domestic Product, employment, gross fixed capital formation, merchandise exports, and the use of advanced technologies. Accordingly, it has been called upon to play a key role in the transformation and development of the Tunisian economy since the launching of market oriented reforms.

The main purpose of this report is to investigate the degree of competition, to assess the performance of the manufacturing sector and to examine the relationship between this performance, the competition environment and competition policy in Tunisia during the period 1972 to 2002.

The report has four parts. Part one presents some general considerations regarding competition, trade in emerging economies and Tunisian background. The analysis presented in Part two attempts to explain the state of competition in Tunisian manufacturing sectors. It also presents results of the Survey on Competitive Environment of Firms in the Formal Manufacturing Sector. Part three examines the state of competition policy by addressing three aspects: competition policy provisions, competition policy implementation and a normative evaluation of the existing competition policy. Part four attempts to evaluate empirically the economic performance and to examine the dynamics of the competition process in manufacturing sectors in Tunisia.

The received image of emerging markets as being basically characterised by pervasive and inefficient government controls on economic activity, lack of competition, immature and imperfect capital markets and poor corporate governance is far from being the whole picture. That is the broad message of this report on the basis of analysis and evidence from Tunisian manufacturing sector.

Indeed, despite shortcomings in corporate governance, Tunisia seems to have relatively vivacious product markets and display as much intensity of competition as that observed in advanced countries. The average Tunisian manufacturing concentration ratio (CR4) is without doubt relatively high (56.2 per cent in 2001), but the econometric investigation indicates the presence of an aggregate moderate markups in the range of 20-21 percent, more in line with micro-economic evidence suggesting low profit margins in most manufacturing industries. This result is not surprising given the high import penetration observed in mainstream

manufacturing sectors, although the econometric analysis doesn't give support to import-discipline hypothesis.

Empirical investigation of competition process dynamics in manufacturing sectors in Tunisia, using the common methodology of "*Persistency of Profitability*", for a sample subset of the 100 largest listed manufacturing corporations in terms of value added at factors costs, validates the absence of persistency in the profitability of competing firms. Those with above average profits in one period will not be expected to maintain the same level of profits in the subsequent period since they will be eroded by competitors.

The need for competition law in Tunisia was based primarily on two factors. First, the economic environment has been undergoing substantial transformation following the structural reforms initiated in 1986. Government controls on industry have been reduced, licensing and other restrictions on firms have been removed and the government has been moving out from non-essential commercial arenas. Lowering of barriers to external trade, generally, increased the scope of competition in the economy. Second, parallel to domestic reforms, the global economy has been undergoing wide ranging changes, resulting in far greater integration of markets and economies. An important element of the changing global environment was the signing of the WTO agreements. This need seems to be legitimate given the importance of respondents' percentage (82.5%) indicating the presence of entry (perceived) barriers.

One important issue that needs to be addressed concerns the presence of a sizeable informal sector. In this context, two related concerns can be made out: first of all, some see competition law as inflicting an extra unfair burden on the operators in the formal part of the economy while these operators are already competing with difficulty against the informal sector not subject to these rules. Secondly, there is a fear that competition law might be misused by the enforcers.

It might be worthwhile to research better why and how this informal sector tends to grow in the considered economy. It is quite possible that the informal sector develops not least due to the fact that there are too many restrictive regulations in the formal sector that prevent the entry of new comers. Another motive for the activity of the informal sector might be that firms with significant market power restrict their own output and impede entry to preserve their profits by means of anti-competitive practices. Consequently, there are compelling reasons for implementing a competition law and policy as a means of enlarging economic opportunities in the formal sector. It is also important to ensure that financial and capital markets, including the banking sector, operate along market principles.

Moreover, an argument can be made which puts into perspective the fear of some that competition law will add excessive or insupportable burden on firms in the formal sector that are already at a disadvantage compared to their competitors in the informal sector. It is clear that the benefits that may be expected from competition will depend to a large extent on the quality of the legal environment of business transactions.

Importance of manufacturing sectors in the economy and its evolution

1. Output in the economy as a whole has undergone a sustained expansion since 1988 growing at an average rate of 4.3 per cent per annum. In the manufacturing sector, output growth has been generally faster than average over the period 1984-2002 and hence the share of the economy's output attributable to manufacturing has improved from 15.2 per cent of total output in the period 1984-87, to nearly 18 per cent in average in 1988-2002.
2. Contribution of the manufacturing sector to overall GDP growth rate increased significantly (26.3 per cent in average) compared to a contribution of 9.1 per cent in average in 1984-1987. Private sector share in the manufacturing value added increased notably from 70.4 per cent in 1988 to 96 per cent in 2002.
3. The manufacturing sector accounts for around 15 per cent of the overall gross fixed capital formation never and the proportion of manufacturing investment undertaken by the private sector attains 86.3 per cent in average in 1996-2002. Investment rate shows a similar pattern of gradual improvement in 1988-1991 as in the overall economy (around 23 per cent in average), and a relative decline since 1992 (an average investment rate of 19.5 per cent). Since the mid 1990s the proportion of overall GDP accounted for by gross fixed capital formation never attains the average level of 27.7 per cent realized in 1984-1987.
4. The recorded level of employment in manufacturing has continuously increased, from 17.2 per cent in 1984 to 21.3 per cent in 2002. The manufacturing sector is actually the second largest employer, and the largest employer of full time workers. Since 1995, the manufacturing employment share has increased more sharply than that in total GDP, reflecting the fact that trend rate of growth in manufacturing output per worker compares not favourably with that achieved for all the economy especially at the end of the observed period. This fact seems to be correlated to the relative decline in the accumulation rate and in the share of manufacturing stock of capital.

5. The effective rate of protection (ERP) witnessed a rapid decline, during 1986-1990, by 26 points. It increased, particularly during 1990-1997. It is worth noting that this was not due to a more protectionist policy, but rather to Tunisia's adhesion to GATT in 1989, and consequently to its commitments to transform all forms of non-tariff protection into tariff equivalent.
6. In terms of value added, the food processing and textile, clothing, leather and shoes sectors predominate, accounting jointly for more than half of manufacturing value added. Clothing, leather and shoes sector makes significant contributions to manufacturing real value added growth rate, particularly during the 1990s. Moreover, this sector contributes to more than 50 per cent to manufacturing employment.
7. The manufacturing sector as a whole accounts for more than 86 per cent of goods exports in Tunisia. The importance of exporting varies across sub-sectors. At the end of the period 1984-2002, the majority of manufacturing exports were from the textiles, clothing, leather and shoes sector, which contributes to 54 per cent to manufacturing exports and exports 71 per cent of its output.

Foreign competition and its evolution

8. Net trade performance (NTP) is a useful measure in terms of summarising the key features of the trade data. NTP combines export and import flows for an industry into an index as follows: $(X - M) / (X + M)$. So, NTP will be +1 for an industry which exports but has no imports, and -1 for an importer with no exports. Between these limits the index is a convenient measure of the trade balance of each industry. A total of 26 manufacturing industries improved their net trade performance over the period and only 3 industries experienced a decline. In 2002 thirty two industries had positive trade balances, compared with 16 in 1983. The industries which have done best (NTP superior to +0,5) over the period 1983-2002 include: pasta and couscous; olive oil; canned vegetables and fruits, canned fish; wine; fertilizers; carpet; apparel; others leather and plastic products; and footwear.
9. Very high import penetration concerns mainly Mechanical, Metal, Electrical and Electronics sector, Chemical industries and Textiles, Clothing Leather and Shoes.
10. Over the period 1983-2002 Textiles, clothing leather and shoes had the highest exposure to international competition with an average index value (Export Ratio

+ (1 – Export Ratio)*Import Penetration) of 81,6 percent, followed by the Mechanical, metal, electrical and electronics sector with an index value of 74,3 percent, and the Chemical Industries with an index value of 64,7 percent.

Specialization and its evolution

11. Over the period 1972-2000, the measure of the degree of inequality in the distribution of the value added (employment) varied between 50 per cent (50 per cent) and 64 percent (62 per cent). It decreased during the 1970s, increased from 1980, and stabilized around 58 per cent in 1990s. In terms of employment distribution, the end of the period is characterized by a significant increase of the inequality (around 61 per cent).

Firm size

12. Apart from a few dozen enterprises employing more than 500 workers and belonging mostly to the public sector and the financial sector, the majority of Tunisian firms are very small private units. Out of about 87,000 formal sector firms in 1996, only 1,400 employ more than 100 workers. In the industrial sector, firms with fewer than 20 employees account for almost 60 percent of all active private companies, and companies with fewer than 250 employees account for more than 94 percent of all companies.
13. In the manufacturing sector, firms with fewer than 50 employees account for 51 percent of all active firms, and companies with fewer than 200 employees account for 89 percent of all companies. The limited size of firms is particularly pronounced in wood products and diverse Industries (where firms fewer than 50 employees account for 66 percent of all active enterprises), chemical Industries and Building Materials (65 per cent of total firms in this sector employ less than 50 employees), and food processing (64,5 per cent of total firms in this sector employ less than 50 employees). Firms in textile, clothing, leather and shoes sector are relatively larger: companies with more than 100 employees account for 40,4 percent of all companies (only 28,3 per cent for all manufacturing sectors). This sector is also characterized by a relatively weaker inequality in terms of firm size distribution and an important propensity to export.

Market concentration and Markup

14. The average Tunisian manufacturing concentration ratio (CR4) is 56.2 per cent in 2001 and 57.2 per cent in 1997. Looking at the differences in the levels, one finds great variation across industries. The most concentrated industries are other transportation equipment (CR4 of 95.4 per cent in 2001), measuring and medical instruments (92.8 per cent), metallurgy (84.8 per cent) and radio and TV and other communications equipment (80.9 per cent).
15. Econometric results reveal the presence of an aggregate plausible and moderate markup for the manufacturing sector from 1984 through 2002. The distinction between the estimation methods appears to make relatively little difference to the implied markup in Tunisian manufacturing. The aggregate markup defined over gross output is in the range of 20-21 percent and the sectoral markups are in the range of 17-36 percent: 17 per cent in Textiles, Clothing and Leather Goods sector, 17,6 per cent in Chemical and Rubber sector, 17,8 per cent in Mechanical and Electrical Goods sector, 19,3 per cent in Food Processing sector, 24,7 per cent in Woodwork, Paper and Diverse sector and 36 per cent in Construction Materials and Glass sector.
16. The magnitude of the impact of import penetration both within industries and across the manufacturing sector is very weak. Indeed, increasing within and between industry import penetration ratio from its mean value of 10 per cent will lead an estimated implied markup of 1,21 to rise to 1,216, corresponding to an increase of 0,495 per cent.

Survey on Competitive Environment

17. The Survey on Competitive Environment of Firms in the Formal Manufacturing Sector had attracted effective participation of 40 companies (on 100). This had contributed to 40% of the total response rate: 35% of the respondents were from the export-oriented industries and 65% were from the domestic-oriented industries. The export-oriented industries covered the following sub-sectors namely Canned Fish, Miscellaneous Electrical Equipment, Base Chemical Products and Textile Spinning.
18. The dominant question in this section is whether respondents perceived major entry barriers in their industry. An important percentage of the respondents (82.5%) indicated the presence of entry barriers. Respondents are also asked to identify one or more types of entry barriers. Three factors were prominent; all of them concern the limited access to essential resources: financial resources (57.6%), qualified human resources (54.6%) and technological knowledge (51.5%). Financial resources restrictions were raised particularly by respondents

belonging to Food processing (71.4%) and Miscellaneous industries (83.3%), while limited access to technological knowledge was more cited by respondents from Mechanical, Metal and Electrical (75%) and Chemical industries (80%); limited access to qualified human resources was considered as the most dominant restriction in Textiles, clothing, leather and shoes industries (60%).

19. 10.8% of respondents have a supplier in position of monopoly in his market, 37.8% indicated that they are only few suppliers in his market and 51.4% stated that numerous suppliers are present in his market. Table 21 summarizes firm's perception of different vertical restraints in his market, whether the contract is explicit or implicit and how the specific practice affects firm profit

Competition Policy

20. To back up institutional reforms and to encourage the emergence of a competitive environment, a series of global and sectoral instruments have been promulgated in Tunisia, the most significant of which is the Competition and Prices Act No. 91-64 of 29 July 1991, which has been amended by Act No. 93-83 of 26 July 1993, by Act No. 95-42 of 24 April 1995, by Act No. 99-41 of 10 May 1999 and more recently by Act No. 74-2003 of 11 November 2003. The Act, establishing the principles of competition and prices policy, is divided into several parts and chapters on the various aspects of this policy.
21. The Competition Council (*Conseil de la Concurrence*), created pursuant to Act No. 95-42 of 24 April 1995, replaced the Competition Board (*Commission de la Concurrence*). The Council is empowered to perform two functions: a decision-making function and an advisory function
22. Tunisian Competition Authority is an Independent-Administrative Authority. Its independence is ensured by articles 9 and 15 of the Competition Act.
23. When speaking of the competition policy in Tunisia, one cannot but linger a little on the role played by the Minister in charge of trade who represents a key actor in the implementation of this policy and in its conduct.
24. The number of legal cases presented to the Council during the period 1992-2002, did not exceed 48, that is an average of 4.3 case per year and of 2.5 if we do not take into account the years 1993, 1999 and 2002 where the cases brought before the Council were respectively 9, 11 and 8 cases. The Council explains the relatively modest resorting to its competences by the various parties, by the

transition of the Tunisian economy and a competition culture not deeply taken in by the operators.

25. The parties which have the most referred cases to the Council are respectively the economic enterprises which referred 39 cases to it, i.e. 81.2% of the total, and the Minister in charge of trade 5 cases, i.e. 10.4%. It should be mentioned that the years 2001 and 2002 are characterised by two cases initiated by the Council itself. Out of the 48 petitions that were presented to the Council during this period, the Council has considered that 26 among them do not fall within its scope because almost all of them correspond to what it considers as cases pertaining to unfair competition and not to anticompetitive actions and that 5 were not, in essence, admissible.
26. As to consultative activity, the opinions issued by the Council relative to draft legislation and regulatory literature and specifications accounted for more than half of all the opinions issued over the period; 8 decisions concerned the concentration and mergers case and one opinion is about exclusive agreements.

Efficiency and dynamics of the competition process

27. We estimate time varying technical efficiency across Tunisian manufacturing firms using a stochastic frontier model. The advantage of this methodology is that it considers both inefficiency and random disturbances as reasons why production is not at the technological frontier. Another advantage of stochastic frontier models is that they allow for panel data estimation so as to not only measure efficiency differences across firms but also over time. The average technical efficiency is quite high; it ranges from 0.62 to 0.96.
28. The mean technical efficiency is high for firms belonging to Food Processing and Mechanical and Electrical Goods sectors. The results reveal also a steady decline in technical efficiency since 1991, which concerns all manufacturing firms, and principally firms belonging to Textiles, Clothing and Leather Goods and Woodwork, Paper and Diverse sectors.
29. Econometric results regarding the determinants of efficiency reveal that efficiency (inefficiency) of manufacturing firms increases (decreases) with the prevalence of foreign participation. The same goes for the effect of training rate variable which is highly significant contributor to technical efficiency. Given the absence of data on employees schooling, this variable can be considered as a proxy of human capital in each firm. There is also some evidence, showing that state participation is not conducive to technical inefficiency. Furthermore, the

result shows small and medium firm size, likewise age of capital, appears to have a negative and significant influence on technical efficiency.

30. The average total factor productivity growth for the period 1985-94 has been positive and sluggish across all the industries (mean TFP rate of growth of 0.51 per cent). A comparison of TFP growth over time shows that it improved significantly in the sub-period 1990-1992, for all industries. The end of the period is marked by a decline in TFP growth rate, particularly in the industry groups like textiles, clothing and leather goods, and Woodwork, paper and diverse.
31. Competitive dynamics may be better captured by examining the persistence of corporate rates of return. If competition is intense there is unlikely to be persistency in the profitability of competing firms. Those with above average profits in one period will not be expected to maintain the same level of profits in the subsequent period since they will be eroded by competitors. With less intense competition, profitability differences between firms may be more persistent. Persistence in Tunisian manufacturing sectors is investigated here using a data set consisting of annual observations on profitability, defined as the profit rate which corresponds to the ratio of operating surplus at the current period to the aggregate capital stock at the end of the last period $t-1$ evaluated at current investment prices, for a sample subset of the 100 largest listed manufacturing corporations (in terms of value added at factors costs). The subset of 70 corporations represents those firms which have a common run of data during the period 1984-1994. The panel structure of the data set allows us to infer that profitability data is stationary.
32. Econometric result suggests a rapid speed of adjustment for excess short-run profits; nearly all of the impact of a profitability shock dissipates within 1.44 years and estimated mean value of long-run profitability is statistically close to zero. A competition-based interpretation is also compatible with the conclusions of a recent review article, Tybout (2000), on developing country manufacturing firms. He suggests that the common belief concerning the lack of competition in emerging markets and the inefficiency of their firms is not supported by evidence.

TABLES AND FIGURES

Table 1: Competition Laws in MEDA Countries	20
Table 2: Structure of manufacturing value added, 1972-2002 (per cent)	24
Table 3: VA Real Growth Rate of different groups of industries 1973-1999 (per cent)	25
Table 4: Private firm contribution to value added (per cent)	25
Table 5: Size* distribution of Tunisian Manufacturing enterprises (per cent), 2000	26
Table 6: Legal Status of Tunisian manufacturing enterprises (per cent), 2000	27
Table 7: Structure of Partnership in manufacturing sectors*, 2002	27
Table 8: Offshore and Onshore Enterprises, 1998	28
Table 1: Growth (real) and Investment Rate Trends in Tunisia (per cent), 1984-2002	31
Table 2: Manufacturing Employment and Stock of Capital Trends	32
Graph 1: Manufacturing Share in Total Employment and GDP	32
Graph 2: Labour Productivity Trends, 1990=100	33
Graph 3: Effective Rate of Protection in Tunisia	34
Table 3: Sectoral Contributions to Manufacturing, 1984-2002	35
Table 4: Sectoral Contributions to Employment, 1984-2002	35
Table 5: Sectoral Contributions to Export, 1984-2002	36
Table 6: Share of Gross Output Exported, 1984-2002	36
Table 7: Net Trade Performance of Tunisian Manufacturing, 1983-2002	36
Graph 4: NTP distribution (number of manufacturing industries), 1983-2002	37
Table 8: Net Trade Performance of Tunisian Manufacturing	38
Table 9: Import Penetration in Tunisian Manufacturing Industries	40
Table 10: Tunisian Manufacturing Sector Exposure to International Competition	42
Table 11: Gini coefficient	44
Graph 5: Gini Tunisian Manufacturing Specialization Index (Value Added)	44
Graph 6: Gini Tunisian Manufacturing Specialization Index (Employment)	45
Table 12: Size distribution of the Tunisian manufacturing firms, 2000	46
Graph 7: Gini index of Tunisian manufacturing firm size distribution, 2000	47
Table 13: Size distribution of the Tunisian manufacturing firms, 2000	48
Table 14: Share of Value Added Accounted for by the 4 and 8 Largest Companies in Tunisian Manufacturing Industries	53
Table 15: Markup estimates, Tunisian manufacturing industries, Roeger specification with common cross section coefficients	58
Table 16: Markup estimates, Tunisian manufacturing industries, Roeger specification with specific cross section coefficients	58
Table 17: Markup estimates, Tunisian manufacturing industries, Hakura specification with common cross section coefficients	61
Table 18: Effective Rate of Protection in Tunisian Manufacturing Sectors	61
Graph 8: Respondents by company size	62
Graph 9: Respondents by company legal status	63
Table 19: Respondents by size and legal status	63
Table 20: Respondents by sector and position in the value chain*	63
Graph 10: Most important mean of competition	64
Graph 11: Percentage of High specialized labor by sector	65
Graph 12: Contribution of other specialized inputs	65
Graph 13: Nature of extra services to clients	66
Graph 14: Marketing activities and communication expenses (% of turnover)	67
Graph 15: Major entry barriers in the concerned industry	67
Table 21: Respondent's perception of different vertical restraints	69
Table 1: Cases and consultations referred to competition council	85

Table 2: Distribution of cases filed according to the nature of the plaintiff	86
Table 3: Decisions issued by the Council	87
Table 4: Consultations of the competition council by nature	87
Table 5: Distribution of cases filed by economic activity	88
Table 1: Descriptive summary of the sample and variables	98
Table 2: Maximum likelihood estimates of parameters, equations (3)-(4)	100
Table 3: Elasticities and Returns to Scale by year	101
Table 4: Mean Technical Efficiency of Manufacturing Firms by Year	103
Table 5: Efficiency Change and TFP Change in Manufacturing Industries	103
Table 6: Least Squares with Group Dummy Variables and Period Effects estimates of equation (14)	104
Graph 1: Mean Corporate Profit Rate (1984-1994)	109
Table 2: Results on the estimated ADF regressions, 1985-1994	110

Introduction

Strange as it may seem, in the light of market-oriented reforms which many MENA developing countries have been implementing over the last two decades, there are not many empirical studies on the topic of competition environment in this area of the world.

There are an uncovered handful of comparative international studies for some developing countries in the region which provide data on variables such as three or four-firm concentration ratios. Even this information tends to be somewhat dated. There also exist for a few countries more detailed studies usually in the standard structure-conduct-performance (SCP) paradigm. However, to our knowledge, there is relatively limited empirical detailed evidence on manufacturing degree of competition within the area constituted by the MENA countries in general and Maghreb countries (Tunisia and Morocco) in particular.

In the absence of hard evidence, it is not surprising that there is considerable disagreement amongst economists speculating about the degree of competition in developing countries.

Laffont (1998) suggests in one hand that many developing countries exhibit segmented product markets, discretionary government regulations and considerable corruption and hence are not very competitive¹. The advocates of the structuralist theory of the Asian financial crisis of 1997–1998 believe that the crisis-affected Asian countries, including the Republic of Korea, suffered from poor competitive environments that resulted in over-investment. Michael Porter (1990), on the other hand, suggests that the Republic of Korea *Chaebol* (large conglomerates) display highly competitive behaviour, and in the areas where the Republic of Korea has been internationally successful, these companies have been subject to intense national and international competition².

This report aims at filling this gap by investigating the degree of competition in the Tunisian manufacturing sector. This sector plays an important role in the Tunisian economy. It contributes significantly to the Gross Domestic Product, employment, gross fixed capital formation, merchandise exports, and the use of advanced technologies. Accordingly, it has been called upon to play a key role in the

¹Laffont, J.-J. , 1998. "Competition, Information, and Development", Annual World Bank Conference on Development Economics, 1998, pp.237-257.

² Porter, M. 1990. *The Competitive Advantage of Nations*, London; Macmillan Press

transformation and development of the Tunisian economy since the launching of market oriented reforms.

The main purpose of this report is to assess the performance of the manufacturing sector and to examine the relationship between this performance, the competition environment and competition policy in Tunisia during the period 1972 to 2002.

The study is divided into four parts. **Part One** presents some general considerations regarding competition, trade in emerging economies and Tunisian background. The analysis presented in **Part Two** attempts to explain the state of competition in Tunisian manufacturing sectors. It also presents results of the Survey on Competitive Environment of Firms in the Formal Manufacturing Sector. **Part Three** examines the state of competition policy by addressing three aspects: competition policy provisions, competition policy implementation and a normative evaluation of the existing competition policy. **Part Four** attempts to evaluate empirically the economic performance and to examine the **dynamics** of the competition process in manufacturing sectors in Tunisia.

Part 1: General Considerations and Tunisian Background

I. General considerations

1.1. Competition, trade and emerging economies

For almost half a century, the interface between trade and competition policies has received considerable attention from policy-makers, practitioners, and academics. The point of connection between these policies is that it is widely believed that free trade among nations does not only require the removal of public barriers to trade, as quotas and custom duties but also a series of obstacles originating in private restraints, such as abuse of dominance, import cartels, and vertical restraints. Competition policy would thus be a necessary complement to trade policy.

The importance of competition policy as a tool to promote market integration has long been understood in the EC. More recently, competition rules have been inserted in a series of regional or bilateral trade agreements concluded by the EC, such as the association agreements concluded by the EC with a variety of third countries. A similar approach can also be found in agreements concluded in other parts of the world³.

The relationship between trade and competition policies is also a major issue at the WTO level. Since the beginning of the 1990s, the EC has pressed its trading partners for the adoption of a competition law framework in the context of the WTO. The recent Doha Ministerial Declaration represented another major step as it provided that negotiations over competition would take place after the first WTO Ministerial Meeting based on modalities to be decided at the time.

As part of good governance and institution building, an increasing number of developing and least developed countries have adopted competition policies at national level, as part of a coherent set of policies to create comparative advantage and internationally competitive industries⁴. For instance, 5 of the 12 Mediterranean Partners⁵ have until now adopted a competition law (see Table below) and the development of such regimes remains a controversial matter.

³ For example, the Protocol for the Defence of Competition in MERCOSUR contains an ambitious agenda whereby member countries are called to harmonize their domestic competition laws and institutions are created to prevent anti-competitive behaviours that affect trade among the member countries.

⁴ Most developing countries have, until recently, operated without a formal competition policy. Until 1990 only 16 developing countries had a formal competition policy. With encouragement and technical assistance from international financial institutions and the WTO, 50 countries have completed legislation for competition laws in the 1990s, and another 27 are in the process of doing so. It should, however, be borne in mind that it takes about 10 years for countries to acquire the necessary expertise and experience to implement such laws effectively.

⁵ The 12 Mediterranean Partners are Cyprus, Malta, Turkey, Morocco, Algeria, Tunisia, Egypt, Jordan, Israel, Lebanon, Syria, and West Bank and Gaza.

Indeed, on the one hand, many authors argue that adoption of competition law regimes will be beneficial for emerging economies:

1. First, it is argued that the existence of a competition policy was a factor contributing to economic development. Michael Porter, for example, identifies a clear connection “*between domestic rivalry and the creation and persistence of competitive advantage in an industry*” (Porter, 1990). A strong competition policy would thus be essential to the upgrading of an economy.
2. Second, it is argued that developing countries are particularly vulnerable to international cartels involving firms based in the developed world (Levenstein and Suslow, 2001)⁶. The vulnerability of such countries would be in great linked to their inability to identify and prosecute such practices effectively. It is thus claimed by some that the best way for these countries to protect themselves against such practices is to adopt effective competition law regimes and institutions (Anderson and Holmes, 2002)⁷.
3. Third, some authors argue that one of the benefits of creating effective competition law institutions in emerging economies is that such institutions could engage in competition support (Kovacic, 1997)⁸. For example, they could promote competition by making the case for removal of regulatory or other restrictions so as to allow entry in certain sectors of the economy, which have been traditionally secluded from competition.

On the other hand, arguments are sometimes raised that emerging economies do not need a competition law framework:

1. First, it is sometimes argued that free trade would be by itself sufficient to protect the competitive process. It is certainly true that opening borders contributes to discipline firms, as imported products will compete with the local products. This argument, however, does not take into account the fact that there are non-tradable products and services, the providers of which will not be disciplined by import competition.

⁶ Levenstein, Margaret and Suslow, Valerie, 2001, “Private International Cartels and Their Effect on Developing Countries,” background paper for the World Bank’s Development Report 2001, 9 January.

⁷ Anderson, Robert D. and Holmes, Peter (2002) “Competition Policy and the Future of the Multilateral Trading System,” *Journal of International Economic Law*, 5: 531.

⁸ Kovacic, William E. (1997) “Getting Started: Creating New Competition Policy Institutions in Transition Economies,” *Brooklyn Journal of International Law*, 23: 403.

2. Second, it is also sometimes argued that adoption of competition rules may be counterproductive in small economies. Application of such rules might, for instance, prevent some mergers necessary to help domestic players to gain the size necessary to be competitive on regional or international markets. However, this does not mean that no competition law should be adopted in such countries. It rather means that small economies need a competition policy that takes into account the specific market circumstances of these countries. For instance, Gal argues that “small economies need a specially tailored competition policy, because they face different welfare maximization issues than large ones” (Gal, 2001)⁹. More specifically, she claims that, given the importance of allowing producers in these countries to realize economies of scale, competition policy should exclusively focus on the promotion of economic efficiency, which should be given primacy over other goals sometimes promoted by competition regimes, such as the dispersion of economic power and the protection of small businesses.
3. Finally, some observers make the argument that competition policy would be a luxury for rich countries and that developing and transition economies have other, more pressing priorities. It is true that adoption and implementation of a competition policy might not be the most pressing reform for a country that has engaged on the path of a market economy.

⁹ Gal, Michal S. (2001) “Size Does Matter: The Effects of Market Size on Optimal Competition Policy,” *Southern California Law Review*, 74: 1437-1451.

Table 1: **Competition Laws in MEDA Countries**

COUNTRY	COMPETITION LEGISLATION	YEAR	ENFORCING BODY
ALGERIA	Competition Law	1995	Direction de la Concurrence
CYPRUS	Competition Law	1989	Ministry of Commerce and Industry
EGYPT	Draft Competition Law	-	-
ISRAEL	Trade Restrictions Law	1988	Antitrust Authority
JORDAN	Draft Competition Law	1998	-
	Law of unethical competition and commercial secrecy	2000	-
LEBANON	Draft Competition Law	-	-
LIBYA	-	-	-
MALTA	Competition Act	1994	Office for Fair Competition
MOROCCO	Competition Law	1999	Competition Council
PALESTINIAN AUTHORITY	-	-	-
SYRIA	-	-	-
TUNISIA	Competition Law	1991	Direction Générale de la Concurrence et du Commerce Intérieur
TURKEY	Competition Law	1994	Rekabet Kurumu Baskanligi (Turkish Competition Authority)

1.2. What kind of competition policy for emerging and developing countries

While there is growing consensus that competition laws and policies are necessary for sound economic development, there is still disagreement on how to achieve this objective. Key concerns which have been raised by developing countries considering adopting a competition law or strengthening competition in their economies referred to whether such a law is necessary given trade liberalisation, whether it would damage international competitiveness, and whether increased competition would raise unemployment or cause other social problems.

Several objections about competition policy objectives have been raised. In particular, concerns have been voiced about the constraining effects of competition policy on other development strategies and major debates have addressed the **potential conflict between competition policy**, on the one hand,

and **strategic trade and industrial policies**, on the other. Strategic trade policy makes a compelling argument in favour of temporary protection suggesting that development requires modern technology, which must be acquired and cultivated, and that learning by doing must occur within national borders and sheltered from import competition. Examples of successful industrial policies are found in past and recent history, particularly in East Asia. For such policies to succeed, governments must be able to identify strategically important industries and some firms that can act as national leaders once the learning-by-doing phase has been carried out under appropriate funding and protection. However, despite a number of success stories, no systematic positive relationship has been found between firm size and profit, export activity, or research and development, and an equally large number of notorious failures of industrial policy can be cited.

It is therefore not surprising that conflicting views on the relevance and the content of competition policy in developing countries still coexist.

On the basis of the modern theory of industrial organisation, as well as the history of competition policy in developed countries, Singh and Dhumale (1999)¹⁰ suggested that development-friendly competition policies need to have different objectives from those normally posited for advanced economies. Further, such policies also need to be specific to the stage of a country's economic and industrial development as well as its institutional and governance capacities. This analysis suggested the following concepts to address the developmental dimensions of competition policy:

the need to emphasise **dynamic** rather than static **efficiency** as **the main purpose of competition policy** from the perspective of economic development;

the concept of **optimal degree of competition** (as opposed to maximum or perfect competition) to promote long term growth of productivity;

the related concept of **optimal combination of competition and co-operation** to achieve fast long term economic growth;

the critical significance of maintaining the **private sector's propensity to invest at high levels** and hence the need for a steady growth of profits; the latter in turn may necessitate government co-ordination of investment decisions so as to prevent over-capacity and falling profits;

¹⁰ Singh, A. and R. Dhumale. 1999. "Competition Policy, Development and Developing Countries", T.R.A.D.E. Working Papers, November, Geneva: South Centre. (available at www.southcentre.org/publications/index.htm).

the concept of **simulated competition**, i.e., contests, for state support which can be as powerful as real market competition;

the **crucial importance of industrial policy** to achieve the structural changes required for economic development; this in turn requires **coherence between industrial and competition policies**.

II. The Tunisian Background

II.1. Global Performance

Significant structural changes in the Tunisian economy have taken place since the early 1970s. Between 1970 and 2002, the Tunisian economy grew at an average rate of 5 per cent, quite a reasonable rate by lower middle-income country and regional standards. Today, with a per capita GDP of about \$2,200, Tunisians have more than two-and-a-half times the real income their parents had 30 years ago, and all indicators of their social and economic wellbeing have improved significantly.

Agriculture's share of the GDP declined steadily from about 28 percent in 1960 to 10 percent in 2002¹¹. At the same time, the manufacturing sector expanded very rapidly, increasing its portion of the gross domestic product from less than 8 percent in 1960 to 19 percent in 2002.

Tunisia is experiencing a relatively high degree of price stability with inflation levels well below 5% since the second half of the 1990's (2.7 percent in 2002) and a sustainable overall deficit, stood at 2 percent of GDP in 2002. The Tunisian monetary policy framework has remained broadly unchanged in recent years, but a revision of the current strategy has been ongoing. Targeting growth of broad money still represents the core of the monetary policy framework.

Regarding external situation, recent developments point to a further improvement of the trade and current account balance in 2003 on the back of a strong export performance. Greater exchange rate flexibility and the appreciation of the euro have led to depreciation of the Dinar in real effective terms. This flexibility has contributed to improve Tunisia's competitiveness and to strengthen its external position despite weak demand from the EU. These combined evolutions appear to have reduced the current account deficit to 3.6 per cent of GDP and the trade deficit to 10 percent of GDP in 2002.

¹¹ However, the impact of fluctuations of agricultural production on overall GDP remains relatively important particularly during years of agricultural contractions.

In 2002, export and import transactions, together, account for about 94 per cent of the gross national product. Moreover, a high degree of diversification took place, enabling Tunisia to boost its export items from a few numbers of commodities in the early 1960s to a wide range of products in 2002. Indeed, the share of the first three commodities in the total exports of goods and services decreased significantly from 37 per cent in the early 1980s to less than 20 per cent in 2002.

Tunisia is a major exporter of consumer goods and a major importer of intermediate products which it processes into finished products for export. It is also dependent on the outside world for capital goods (27.9 percent of total imports). Although energy is of relatively minor importance in Tunisia's foreign trade (9 percent of imports and exports), the negative balance of trade in these products is highly sensitive to international price trends. The food balance is negative while imports of consumer goods are high (6.3 percent of GDP in 2001, equivalent to 10.3 percent of private consumption).

Tunisia is also the most advanced of the Euro-Med partners as far as the introduction of a free trade area with the European Union is concerned. It started dismantling tariffs in 1996, before the entry into force of the EU-Tunisia Association Agreement in 1998. Tariff dismantling has seen a speeding up of the country's integration into the European market.

The market for the product remains generally dominated by EU countries (80 per cent of the Tunisian trading in 2002), and particularly by three EU countries (France, Italy and Germany monopolize more than 60 per cent of the Tunisian trading). Consequently, Tunisia's business cycle has shown a weak link with business cycles in these EU trading partners.

In terms of regulatory framework, market forces determine most prices in the Tunisian economy, as stated in the relevant legal base (July 1991 Competition and Prices Act). According to the Ministry of Development and International Cooperation, the free interplay of supply and demand determines approximately 87% of prices at the production level and around 81% at the distribution level. Nevertheless, administrative controls remain on many consumer products in particular and account for a large percentage of the typical basket of goods. The relevant legislation in the field of anti-trust is the Competition Law of 1991 (last amended in 2003) which takes its inspiration from French law

In the area of technical regulations and standards for industrial products, the Tunisian system of standards operates on the basis of a clear conceptual

distinction between approved standards (compulsory for all) and other standards (non-compulsory). The Ministry of Industry and Energy has overall responsibility for standardisation policy and supervision. Draft standards are prepared by technical committees under the auspices of the INNORPI, the national institute for standardisation and industrial property, which is a member of the International Standardisation Organisation (ISO).

II.2. Manufacturing Sector General Characteristics

Over the past three decades, the manufacturing sector has been comparatively dynamic, growing at an average real rate of 6 per cent since 1987. In 2002, manufacturing sector employed 21.3 per cent of the entire labour force and accounted for 87 percent of total merchandise export earnings, making it the second nation's largest sector. However, this sector remains fairly small, particularly when compared to countries that have achieved fast economic growth.

The following observations can be made about general characteristics of the manufacturing sector in Tunisia:

- The structure of manufacturing output deviated from the concentration on consumer goods (food processing) to give more weight to textiles, clothing and leather goods, which belong to an export-oriented industry. Table 2 illustrates this shift.

Table 2: Structure of manufacturing value added, 1972-2002 (per cent)

	1972-1979	1980-1989	1990-1999	2000	2001	2002
Food processing	36	26	19	19	17	17
Construction materials and glass	8	12	11	9	9	9
Mechanical and electrical goods	14	15	14	14	15	15
Chemical and rubber	10	9	10	11	11	11
Textiles, clothing and leather goods	20	24	34	35	36	36
Woodwork, paper and diverse	11	12	13	13	13	13
Total	100	100	100	100	100	100

Source: Institut National de la Statistique.

Part of this shift resulted from a widespread concern in the late 1970s over limited demand in the domestic market. Also conducive circumstances in the world market at that time called for a shift in policies from producing for domestic markets to producing for export.

- The manufacturing activities that experienced the highest rates of growth (at constant prices) were those related to chemicals and rubber, construction materials and glass, woodwork, paper and diverse, and

textiles, clothing and leather goods. Table 3 illustrates this evolution.

Table 3: VA Real Growth Rate of different groups of industries 1973-1999 (per cent)

	1973-1979	1980-1989	1990-1999	2000-2002
Food processing	0.3	3.0	3.8	1.7
Construction materials and glass	16.6	9.6	3.8	5.4
Mechanical and electrical goods	9.9	8.8	4.7	8.0
Chemical and rubber	8.4	19.0	6.4	3.7
Textiles, clothing and leather goods	10.0	6.1	7.4	6.2
Woodwork, paper and diverse	12.1	8.8	6.2	5.4
Total	5.7	6.8	5.5	5.1

Source: Institut National de la Statistique.

- Table 4 shows private firm contribution to manufacturing value added. In 2002, this contribution amounted to about 96 per cent. It reached 100 per cent in textiles, almost 100 per cent in food processing and 95 percent in mechanical and electrical goods. During the period 1990-2002, the private manufacturing sector achieved high growth rate (about 13 per cent in average), mainly in construction materials and glass (about 16 percent), textiles and chemical and rubber (14 per cent).

Table 4: Private firm contribution to value added (per cent)

	1983-1989	1990-1999	2000	2001	2002
Manufacturing sector	71.7	80.4	89.1	89.5	96.0
Food processing	75.2	76.9	78.7	78.4	99.8
Construction materials and glass	42.3	54.4	85.9	86.1	85.7
Mechanical and electrical goods	67.3	80.4	96.2	94.6	94.8
Chemical and rubber	40.9	47.7	58.4	58.7	58.3
Textiles, clothing and leather goods	88.4	96.1	100	100	100
Woodwork, paper and diverse	88.2	89.1	95.6	96.0	100

Source: Institut National de la Statistique.

- Apart from a few dozen enterprises that can be considered as large (employing more than 500 workers) and belonging mostly to the public sector and the financial sector, the majority of Tunisian firms are very small private units. Out of about 87,000 formal sector firms in 1996, only 1,400 employ more than 100 workers. In the industrial sector, firms with fewer than 20 employees account for almost 60 percent of all active private companies, and companies with fewer than 250 employees account for more than 94 percent of all companies. In addition and for the same year, about 45 percent of manufacturing enterprises have a sales volume below 1/2 million Tunisian Dinar (approximately 0,4

million US\$), and 77 percent below 2 million Tunisian Dinar (approximately 1,6 US\$).

Table 5 provides evidence, taken from the directory of enterprises of the National Statistics Institute, about the prevalence of small enterprises in Tunisian manufacturing sectors in 2000. Indeed, small, medium and large firms constitute 52.5, 36.7 and 10.8 per cent, respectively, of the firms present in the directory. The size distribution varies by sector: firms in chemical and rubber, Woodwork, paper and diverse, and food processing sectors tend to be smaller; firms in the textile sectors are larger.

Table 5: **Size* distribution of Tunisian Manufacturing enterprises**
(per cent), **2000.**

	Small	Medium	Large	Total
Food processing	66.1	25.8	8.1	100
Construction materials and glass	55.1	34.8	10.1	100
Mechanical and electrical goods	63.9	26.0	10.1	100
Chemical and rubber	69.4	27.1	3.5	100
Textiles, clothing and leather goods	33.6	51.5	14.9	100
Woodwork, paper and diverse	68.4	26.3	5.3	100
Manufacturing sectors	52.5	36.7	10.8	100

*Large firms are those having more than 200 permanent workers. Small firms are those having less than 20 permanent workers. Firms that are neither larger nor small are defined as medium size.

Source: Agence de Promotion de l'Industrie (API, 2000).

The limited size of firms is due to two main factors: family ownership and the highly protectionist policies that have lasted over more than three decades. Tunisian entrepreneurs have so far been very reticent to opening ownership outside family ties. Given limited financial resources, this attitude has restricted their choice of investment to small projects. The existence of high barriers to entry of imports has made many of such projects artificially profitable.

- Between other firm characteristics, the ownership structure and the legal status may be particularly relevant to evaluate economic performances. Table 6 illustrates the legal status of Tunisian manufacturing firms.

Table 6: Legal Status of Tunisian manufacturing enterprises (per cent), 2000

	Uni- corporated	Corporation	Limited liability enterprises	Cooperative or SNC	Total
Food processing	31.4	20.8	39.8	8.1	100
Construction materials and glass	36.0	15.7	48.3	0.0	100
Mechanical and electrical goods	14.9	32.8	51.3	0.9	100
Chemical and rubber	8.2	42.4	47.1	2.4	100
Textiles, clothing and leather goods	8.1	15.4	75.5	1.0	100
Woodwork, paper and diverse	23.7	25.7	47.4	3.3	100
Manufacturing sectors	17.6	22.4	57.8	2.2	100

Source: Agence de Promotion de l'Industrie (API, 2000).

In terms of legal status, 57.8 per cent of manufacturing firms are limited liability companies (SARL in French) and 22.4 per cent are corporations (SA in French); 17.6 per cent are unincorporated, and 2.2 per cent of firms have another legal status (cooperative or SNC in French). As could be expected, large firms are more likely to have a corporation status; small firms are more likely to be unincorporated.

- According to the Tunisian Industry Promotion Agency, in 2002, the total number of enterprises with foreign participation is 1 654 (31.4 per cent of manufacturing firms having 10 or more employees), of this number more than half are totally foreign owned and 1 370 (83 per cent) are totally exporting enterprises. Table 7 describes the structure of partnership in manufacturing sectors by countries.

Table 7: Structure of Partnership in manufacturing sectors*, 2002.

Sectors \ Countries	France	Italy	Germany	Belgium	Other	Total
Food Processing	28	23	1	4	42	98
Building Materials	16	14	-	2	27	59
Mechanical, Metal	37	20	3	3	34	97
Electrical, Electronics	48	42	30	3	32	155
Chemical Industries	31	9	4	1	30	75
Textiles and Clothing	399	213	139		227	1103
Leather and Shoes	44	48	7	7	26	132
Wood Industries	12	8	1	4	7	32
Diverse Industries	42	19	12	5	23	101
Total	657	396	197	154	448	1852

**Note: An enterprise may be counted for a number of times, Source: API.*

Trade liberalization has placed additional pressures on industries pushing many manufacturing firms to open their capital to investors particularly in terms of partnership with foreign firms.

A relatively important offshore sector was created through special incentives to counter the anti-export bias of its protected domestic economy in the 1970s and 1980s (See Table 8). While this policy stimulated the country's strong export performance and facilitated Tunisia's entry into export markets, it has not given the domestic private sector the stimulus to competitiveness that normally results from external trade and competition. The main reason is that the offshore sector has developed very few linkages with the onshore economy, and takes from it virtually no tradable inputs.

Table 8: Offshore and Onshore Enterprises, 1998

Sectors \ Countries	Number of Firms		Exports/Sales Percent
	Onshore	Offshore	
Food Processing	364	62	21.1
Building Materials	278	10	12.7
Mechanical, Metal	389	43	19.7
Electrical, Electronics	102	94	57.8
Chemical Industries	305	29	39.1
Textiles and Clothing	386	1436	81
Leather and Shoes	101	131	67.4
Wood Industries	94	15	17.4
Diverse Industries	190	54	20.3
Total	2209	1874	36.5

Source: Agence de Promotion de l'Industrie

Part 2: The State of Competition in Tunisian Manufacturing Sector

I. Manufacturing Sector Performance and Sectoral Contribution

We consider here the performance of the manufacturing sector over the period from 1984 until 2002. Table 1 presents some data on trends in manufacturing GDP growth, share and investment rate over this period, along with the corresponding information for the economy as a whole.

Output in the economy as a whole has undergone a sustained expansion since 1988 growing at an average rate of 4.3 per cent per annum. In the manufacturing sector, output growth has been generally faster than average over the period 1984-2002 (5.2 per cent growth rate in average per annum in the manufacturing sector versus 3.8 per cent for the overall GDP growth rate) and hence the share of the economy's output attributable to manufacturing has improved from 15.2 per cent of total output in the period 1984-87, to nearly 18 per cent in average in 1988-2002. Over the same period:

contribution of the manufacturing sector to overall GDP growth rate increased significantly (26.3 per cent in average) compared to a contribution of 9.1 per cent in average in 1984-1987,

private sector share in the manufacturing value added increased notably from 70.4 per cent in 1988 to 96 per cent in 2002,

the manufacturing sector accounts for around 15 per cent of the overall gross fixed capital formation never and the proportion of manufacturing investment undertaken by the private sector attains 86.3 per cent in average in 1996-2002,

investment rate in the manufacturing sector shows a similar pattern of gradual improvement in 1988-1991 as in the overall economy (around 23 per cent in average), and a relative decline since 1992 (an average investment rate of 19.5 per cent). Since the mid 1990s the proportion of overall GDP accounted for by gross fixed capital formation never attains the average level of 27.7 per cent realized in 1984-1987.

Table 1: **Growth (real) and Investment Rate Trends in Tunisia (per cent), 1984-2002**

Years	Overall GDP Growth	Manufacturing GDP Growth	Manufacturing Share in GDP	Aggregate Investment rate	Manufacturing Investment rate	Private sector share Manufacturing Value added
1984-1987	2.4	4.6	15.2	27.7	31.4	72
1988	1.6	6.3	16.8	20.6	18.8	70.4
1989	3.5	6.9	17.0	22.5	23.6	68.8
1990	7.1	6.3	16.9	24.4	23.6	72.3
1991	3.9	3.9	16.9	24.0	24.5	74.1
1992	7.8	6.5	16.5	27.2	22.7	76.1
1993	2.2	4.9	17.2	28.1	21.5	77.7
1994	3.2	8.6	18.5	27.0	19.4	78.0
1995	2.4	4.4	19.0	24.2	18.1	80.6
1996	7.1	2.7	18.3	23.2	18.4	81.1
1997	5.4	7.5	18.5	24.7	18.6	84.2
1998	4.8	4.3	18.5	24.9	20.0	89.5
1999	6.1	5.6	18.1	25.4	19.6	90.4
2000	4.7	6.6	18.2	26.3	19.6	89.1
2001	4.9	6.9	18.5	26.2	19.2	89.5
2002	1.7	2.0	18.6	25.2	17.5	96.0

Source: *Institut National de la Statistique*

Over the observed period, the recorded level of employment in manufacturing has continuously increased, from 17.2 per cent in 1984 to 21.3 per cent in 2002. The manufacturing sector is actually the second largest employer, and the largest employer of full time workers.

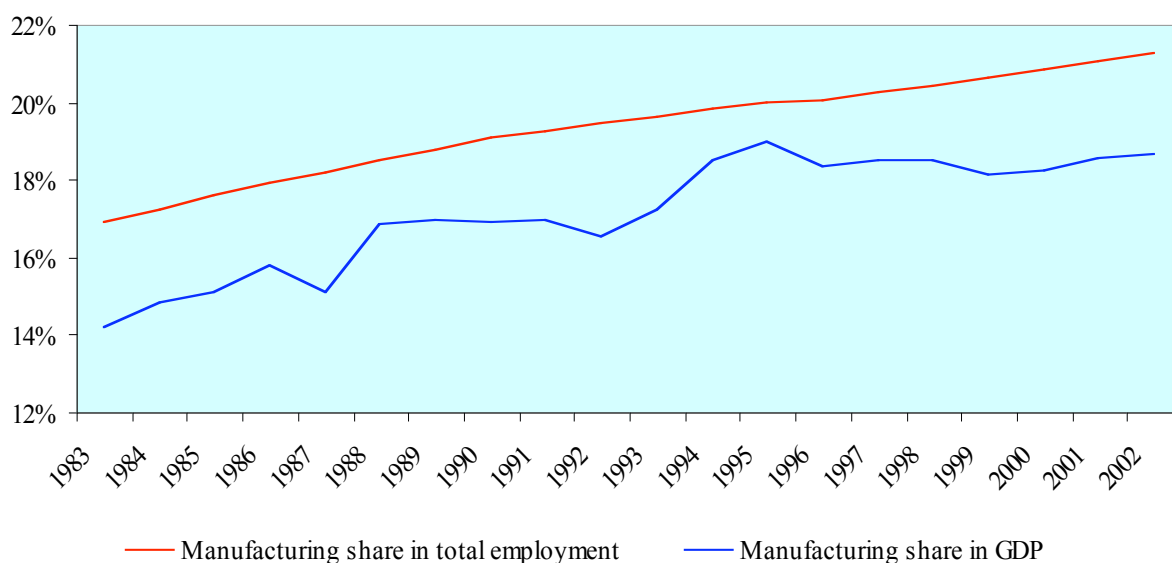
Since 1995, the manufacturing employment share has increased more sharply than that in total GDP, reflecting the fact that trend rate of growth in manufacturing output per worker compares not favourably with that achieved for all the economy especially at the end of the observed period (Graph 1 and 2). This fact seems to be correlated to the relative decline in the accumulation rate and in the share of manufacturing stock of capital.

Table 2: Manufacturing Employment and Stock of Capital Trends

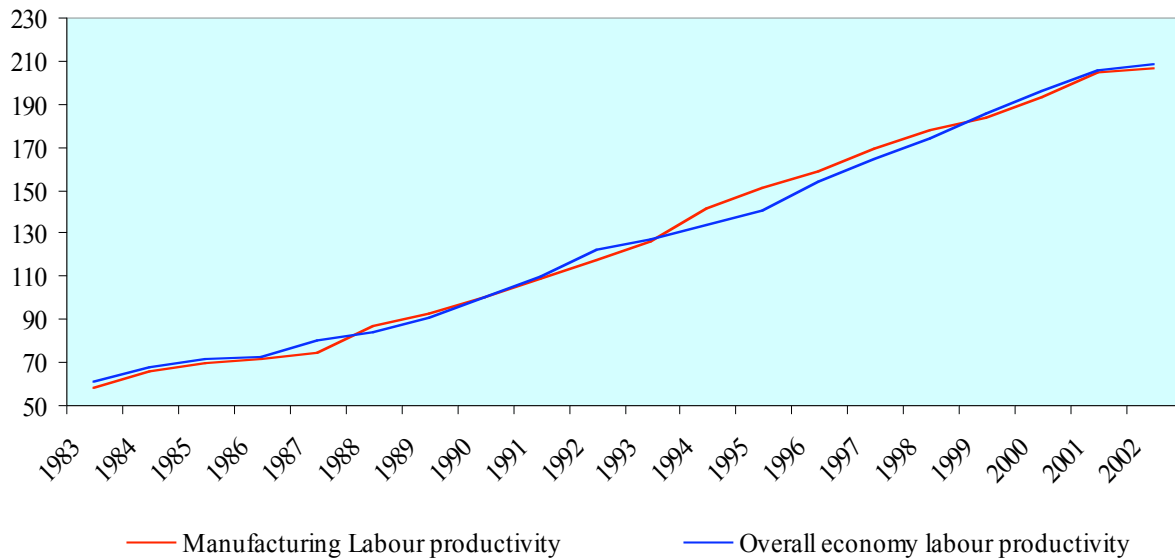
Years	Manufacturing Employment		Manufacturing Stock of Capital (volume MD)	
	Level ('000s)	Share of total	Level	Share of total
1984	311,5	17,2%	6935,8	19,4%
1988	376,5	18,5%	7531,4	18,5%
1989	390,5	18,8%	7439,2	18,2%
1990	405,5	19,1%	7453,6	18,0%
1991	416,5	19,2%	7470,5	17,6%
1992	430,5	19,4%	7521,3	17,4%
1993	445,5	19,6%	7586,8	17,0%
1994	461,5	19,8%	7617,8	16,6%
1995	477,5	20,0%	7645,7	16,1%
1996	490,5	20,1%	7651,3	15,8%
1997	506,5	20,2%	7635,2	15,4%
1998	522,5	20,4%	7638,8	15,0%
1999	540,7	20,6%	7705,8	14,6%
2000	559,1	20,8%	7791,0	14,3%
2001	579,5	21,1%	7846,3	13,9%
2002	600,3	21,3%	7946,6	13,5%

Source: Institut d'Economie Quantitative

Graph 1: Manufacturing Share in Total Employment and GDP



Graph 2: **Labour Productivity Trends, 1990=100**



The effective rate of protection (ERP) seeks to capture in a single figure support to productive factors resulting from a complex tariff structure. By including the price-distorting effects on intermediate inputs as well as on output, ERP of industry provides a measure of the net effect of border policies. It evaluates the increase in industry's value added per unit of output under protection as a percentage of the free trade value added per unit and constitutes a useful summary indicator of the manufacturing sector's exposure to international competition.

Since 1977 Tunisia has benefited from a cooperation agreement with the EU that granted Tunisian manufactured exports duty-free access to EU markets. The 1995 Association Agreement with the EU established reciprocal treatment by granting EU manufactured exports, which represent three quarters of Tunisia's imports from the EU, duty-free access to Tunisian markets after a 12-year adjustment period. The schedule for the removal of tariffs on manufactures is:

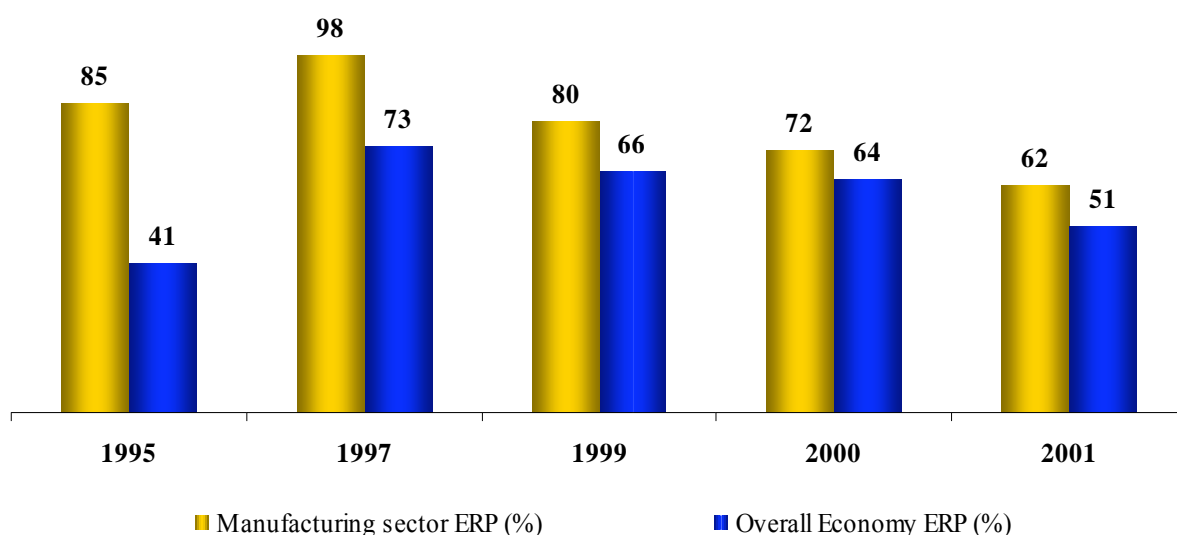
- Immediately: For primary materials and equipment not made in Tunisia, representing 12% of manufactured imports from the EU. This stage is fully implemented.
- Gradually over 5 years, one fifth per year: For finished products not made locally and certain materials, representing 28% of manufactured imports from the EU. This stage is also fully implemented.

- Over 12 years, one twelfth per year: For products produced locally that are capable of competing, representing 30% of manufactured imports from the EU. The implementation of this stage is in progress.
- Four-year delay, one eighth per year thereafter: For products made locally for which the enterprises need restructuring, representing the remaining 30% of manufactured imports from the EU. Implementation of this stage has started in 2000.

ERP witnessed a rapid decline, during 1986-1990, by 26 points. It increased, particularly during 1990-1997. It is worth noting that this was not due to a more protectionist policy, but rather to Tunisia's adhesion to GATT in 1989, and consequently to its commitments to transform all forms of non-tariff protection into tariff equivalent.

Currently in its ninth year of implementation, the agreement has resulted in a temporary but sizable increase in effective protection for most manufacturing enterprises producing for the domestic market (Graph 3), as a result of the full implementation of the first two measures above. The completion of the implementation of the third measure and, most important, the implementation of the last measure will gradually lead to a very large reduction in effective protection for enterprises producing for the domestic market, which is effectively observed since 2000.

Graph 3: Effective Rate of Protection in Tunisia



Source: Institut d'Economie Quantitative, 2003

Consider now the composition of activities making up the manufacturing sector. Table 3 presents a disaggregation of the manufacturing sector into its main activities, reporting for each the contribution to overall value added and growth rate during 1984-2002.

Table 3: Sectoral Contributions to Manufacturing, 1984-2002

	Contribution to value added			Contribution to real value added growth rate		
	1984-1989	1990-1999	2000-2002	1984-1989	1990-1999	2000-2002
Food Processing	25.0	18.9	17.5	7.0	8.0	4.8
Building Materials	12.1	10.6	9.2	12.3	8.0	12.8
Mechanical, Metal, Electrical, Electronics	14.9	13.7	14.6	13.0	12.8	23.6
Chemical Industries	9.0	10.2	10.7	24.4	12.7	9.8
Textiles, Clothing Leather and Shoes	25.7	33.7	35.4	27.2	42.7	31.7
Diverse Industries	13.2	12.9	12.6	16.1	15.9	17.3
All	100	100	100	100	100	100

It is clear that in terms of value added, the food processing and textile, clothing, leather and shoes sectors predominate, accounting jointly for more than half of manufacturing value added. Clothing, leather and shoes sector makes significant contributions to manufacturing real value added growth rate, particularly during the 1990s. Moreover, this sector contributes to more than 50 per cent to manufacturing employment (Table 4).

Table 4: Sectoral Contributions to Employment, 1984-2002

	1984-1989	1990-1999	2000-2002
Food Processing	10.1	10.2	9.9
Building Materials	5.7	6.7	7.0
Mechanical, Metal, Electrical, Electronics	9.6	11.5	13.4
Chemical Industries	4.5	4.3	4.2
Textiles, Clothing Leather and Shoes	56.0	52.2	50.2
Diverse Industries	14.2	15.2	15.4
All	100	100	100

The manufacturing sector as a whole accounts for more than 86 per cent of goods exports in Tunisia. The importance of exporting varies across sub-sectors. Table 5 reports the contribution of different sub-sectors in manufacturing to overall manufacturing exports during the period 1984-2002. At the end of the period, the majority of manufacturing exports were from the textiles, clothing, leather and shoes sector, which contributes to 54 per cent to manufacturing exports and exports 71 per cent of its output (Table 6).

Table 5: **Sectoral Contributions to Export, 1984-2002**

	1984-1989	1990-1999	2000-2002
Food Processing	11.4	9.8	6.9
Building Materials	1.9	2.2	1.6
Mechanical, Metal, Electrical, Electronics	11.9	15.4	22.3
Chemical Industries	28.1	14.7	11.7
Textiles, Clothing Leather and Shoes	41.5	52.4	54.0
Diverse Industries	5.2	5.5	3.5
All	100	100	100

Table 6: **Share of Gross Output Exported, 1984-2002**

	1984-1989	1990-1999	2000-2002
Food Processing	11,4	9,8	6,9
Building Materials	1,9	2,2	1,6
Mechanical, Metal, Electrical, Electronics	11,9	15,4	22,3
Chemical Industries	28,1	14,7	11,7
Textiles, Clothing Leather and Shoes	41,5	52,4	54,0
Diverse Industries	5,2	5,5	3,5
All	100	100	100

II. Trade Performance and Specialization

II.1. Trade performance and Import penetration

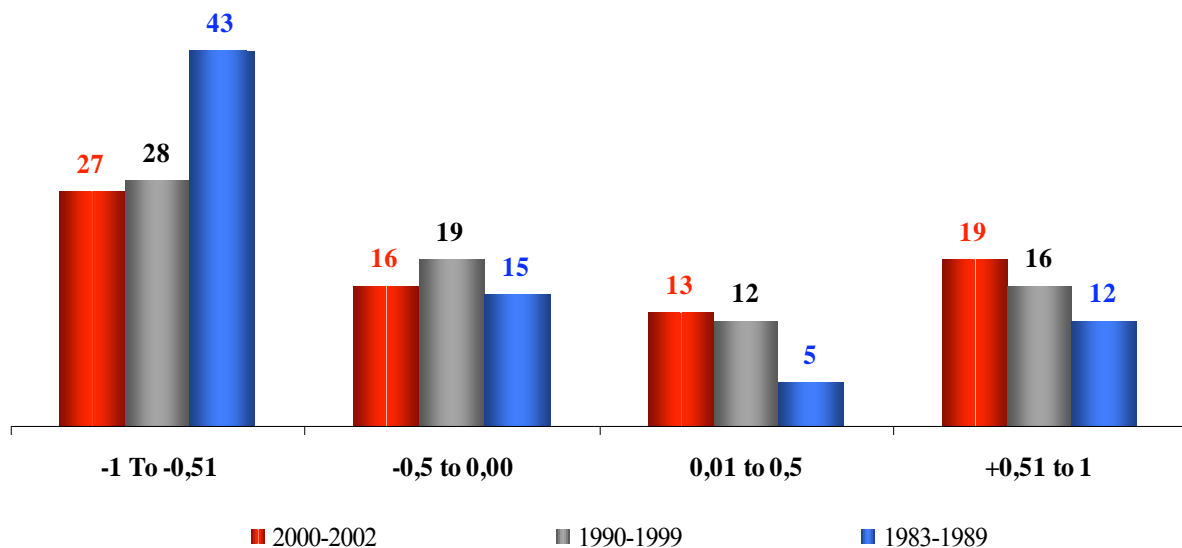
Net trade performance (NTP) is a useful measure in terms of summarising the key features of the trade data. NTP combines export and import flows for an industry into an index as follows: $(X - M) / (X + M)$. So, NTP will be +1 for an industry which exports but has no imports, and -1 for an importer with no exports. Between these limits the index is a convenient measure of the trade balance of each industry. The changes between 1983-1989 and 2000-2002 are shown in Table 7.

Table 7: **Net Trade Performance of Tunisian Manufacturing, 1983-2002**

NTP 1983-1989	NTP 2000-2002				Total
	+1 to 0,51	+0,5 to 0,01	0 to -0,5	-0,51 to -1	
+1 to 0,51	12	0	0	0	12
+0,5 to 0,01	0	4	1	0	5
0 to -0,5	4	4	5	2	15
-0,51 to -1	3	5	10	25	43
Total	19	13	16	27	75

The cells of table 7 contain the number of manufacturing industries classified in terms of their mean NTP values in 1983-1989 (rows) and 2000-2002 (columns). The main diagonal of the table shows the number of industries, 46 in all, which were in the same NTP range in 1983-1989 and 2000-2002. In this mercantilist framework, trade performance has improved over the decade. A total of 26 industries (below the diagonal) improved their net trade performance over the period and only 3 industries (above the diagonal) experienced a decline. In 2002 thirty two industries had positive trade balances, compared with 16 in 1983.

Graph 4: **NTP distribution (number of manufacturing industries), 1983-2002**



The industries which have done best (NTP superior to +0,5) over the period 1983-2002 include: pasta and cousous; olive oil; canned vegetables and fruits, canned fish; wine; fertilizers; carpet; apparel; others leather and plastic products; and footwear.

Table 8: Net Trade Performance of Tunisian Manufacturing

NAT Code	Industry	1983	1990	2002
111	Meat industries	-0,9679	-0,9738	0,8591
121	Milk industry	-0,9994	-0,9988	-0,6413
131	Grain Miling	0,2232	0,7602	-0,4638
132	Pasta and couscous	0,0769	0,5741	0,9958
133	Bread and pastries	-1,0000	0,5700	0,4589
134	Biscuits	-1,0000	0,9358	0,5626
141	Olive Oil	1,0000	1,0000	0,9725
142	Oils and fats processing	-1,0000	-0,9985	-0,5101
151	Canned vegetables and fruits	0,2004	0,6713	0,9933
152	Canned fish	0,8864	0,9695	0,9010
153	Other Conserving process	-1,0000	0,9221	-
161	Sugar industry	-0,9867	-0,9543	-0,9828
162	Chocolate and confectioners products	-0,6012	0,3858	0,1626
171	Miscellaneous food industries	-0,6987	-0,3017	-0,0901
172	Animal feed	-1,0000	-0,9884	0,2007
181	Non alcoholic beverages	-0,6090	0,5375	-0,1656
182	Wine	0,9351	0,8714	0,8463
183	Beer	0,8889	-0,1942	0,2071
184	Distilled alcoholic beverages	-0,9024	0,1076	0,2705
191	Tabacco	-0,8930	-0,0666	0,1778
211	Quarry products	-0,9853	-0,9056	-0,7291
212	Stone and marble polished	-0,9797	-0,6749	-0,2796
221	Cement and Plaster	-1,0000	0,9539	-0,0603
222	Cement based products	-1,0000	0,9791	0,5613
231	Brick industry	-0,5638	-0,5858	-0,8145
232	Tile industry	-0,4481	0,2285	0,1376
241	Glass industry	-0,9885	-0,6582	-0,6318
311	Iron and Steel	-0,9789	-0,7516	-0,8204
312	Metal and semi-products non ferrous	-0,7052	-0,6234	-0,6231
313	Foundries	-0,9916	-0,9439	-0,9841
321	Forge Products	-0,9940	-0,8609	-0,9875
322	Metallic construction and boilerworks	-0,8178	-0,7783	-0,9968
323	Metallic packaging	-0,4994	0,0454	-0,3332
324	Quincaillerie	-0,9225	-0,3281	0,9328
325	Metallic household appliances	-0,8959	-0,6569	-0,9321
331	Agricultural machinery	-0,9196	-0,9296	0,3793
332	Industrial machinery	-0,9666	-0,8668	0,9393
341	Spare parts for cars	-0,8768	-0,6120	0,2037
342	Cars and trucks	-0,9400	-0,8785	-0,9508
343	Bike and motor bike	-1,0000	-0,8808	-0,5215
351	Boats and repairing	-0,6587	0,3852	-0,9209
352	Transportation material and divers	-0,6112	-0,9047	-0,4037
361	Electrical equipment	-0,5705	0,0866	-0,0540
362	Miscellaneous Electrical Equipment	-0,4611	-0,3098	-0,1541
371	Electronic professional equipment	-0,9298	-0,7185	-0,6813
372	Electronic home appliances.	-0,7855	-0,1341	0,4650
381	Home appliances equipment	-0,9825	-0,8853	-0,5069

411	Fertilizers	0,9477	0,9859	0,9666
412	Divers fertilizers	0,7610	0,9709	0,9095
421	acide fluorhydrique,cryolithe	0,9942	0,9611	0,9969
422	Base chemical Products	-0,9473	-0,8411	-0,7471
431	Paint, ink, glue and colorants	-0,8244	-0,8006	-0,7395
432	Soap, detergents and disinfectants	-0,8644	-0,5377	-0,4300
433	Perfumes and Toiletry	-0,1352	0,0643	-0,0314
434	Miscellaneous Para-chemicals	-0,9372	-0,9339	-0,8130
441	Pharmaceutical products	-0,9471	-0,9170	-0,9091
451	Tires and Rubber products	-0,9692	-0,5143	-0,2989
511	Textile spinning	-0,9894	-0,9384	-0,7110
512	Textile weaving	-0,7754	-0,7659	-0,7909
513	Other textiles	-0,6076	-0,5590	-0,3902
521	Carpet	0,8320	0,9578	0,0428
531	Underwear	0,2335	0,3823	0,2580
541	Apparel	0,6877	0,7427	0,7505
551	Leather and skin work	-0,6501	-0,7426	0,4777
552	Other leather and plastic products	0,4921	0,5236	0,5951
553	Footwear	0,5662	0,6888	0,4777
611	Wood products	-0,8816	-0,8869	-0,7762
612	Building carpentry	0,4019	0,6886	0,8310
613	Bedding furniture	-0,9836	0,2350	0,4690
621	Paper pulp and cardboard	-0,5592	-0,7475	-0,7240
622	Packaging	-0,0131	-0,2959	0,2842
623	Paper-making	-0,3258	0,0716	0,6645
624	Printing works	-0,7830	-0,7830	-0,4274
631	Plastic products	-0,7998	-0,6473	-0,4658
641	Miscellaneous products	-0,2971	-0,2324	-0,2822

Table 9 provides a measure of competitiveness on the domestic market measured by the rate of import penetration. If Q, X and M stand, respectively, for the sectoral output, exports and imports, the domestic demand D will be equal to $D = Q - X + M$, and the rate of import penetration equals M / D . It should be emphasized that a low level of penetration does not necessarily mean that there are barriers to entry.

The table reveals a very high import penetration mainly in Mechanical, Metal, Electrical and Electronics sector, Chemical industries and Textiles, Clothing Leather and Shoes: boats and repairing (103 per cent in average over the period 1983-2002); electronic professional equipment (98 per cent); base chemical products (95 per cent); spare parts for cars (88 per cent); metal and semi-products non ferrous (86 per cent); metallic household appliances (79 per cent); pharmaceutical products (77 per cent) and underwear (71 per cent).

Table 9: Import Penetration in Tunisian Manufacturing Industries (%)

NAT Code	Industry	1983	1990	2001
111	Meat industries	5.9881	5.2618	0.0323
121	Milk industry	32.4498	21.3905	8.3191
131	Grain Miling	2.1774	0.8133	4.2388
132	Pasta and couscous	0.0197	0.1220	0.1144
133	Bread and pastries	0.0986	0.0377	0.0180
134	Biscuits	0.1530	0.1031	3.2823
141	Olive Oil	0.0000	0.0000	-2.2088
142	Oils and fats processing	54.2533	55.6402	49.5574
151	Canned vegetables and fruits	10.1309	1.7761	0.0858
152	Canned fish	5.7928	48.8105	6.7756
153	Other Conserving process	23.6518	0.4373	0.0401
161	Sugar industry	68.6073	71.3558	68.1066
162	Chocolate and confectioners products	1.5080	1.5442	5.8309
171	Miscellaneous food industries	24.8817	25.4192	26.2311
172	Animal feed	1.1893	2.3417	1.4656
181	Non alcoholic beverages	0.5534	0.2591	5.1457
182	Wine	1.3883	0.8273	0.9807
183	Beer	0.0166	0.5044	0.1804
184	Distilled alcoholic beverages	43.0934	55.9709	29.1156
191	Tabacco	4.2879	9.0558	6.7136
211	Quarry products	29.0153	32.8400	25.1811
212	Stone and marble polished	21.1764	13.7978	9.7332
221	Cement and Plaster	13.7090	0.5953	4.5682
222	Cement based products	3.3666	0.0308	0.3734
231	Brick industry	7.7381	7.3106	5.8291
232	Tile industry	31.8287	26.0830	20.4026
241	Glass industry	47.9873	45.9759	27.2131
311	Iron and Steel	52.6769	51.2008	39.8021
312	Metal and semi-products non ferrous	74.2193	87.2495	92.4813
313	Foundries	65.3813	34.3292	63.8759
321	Forge Products	12.7143	13.3520	11.7175
322	Metallic construction and boilerworks	26.1360	16.5885	8.6811
323	Metallic packaging	4.4025	1.9401	2.5681
324	Quincaillerie	64.1265	60.1656	0.0639
325	Metallic household appliances	72.6862	55.3761	70.4427
331	Agricultural machinery	101.7717	75.5278	18.9476
332	Industrial machinery	98.2186	98.6860	0.1895
341	Spare parts for cars	97.3547	91.5929	105.5700
342	Cars and trucks	66.6523	70.5165	98.0976
343	Bike and motor bike	55.4782	41.3544	29.1222
351	Boats and repairing	58.3143	338.9233	88.4055
361	Electrical equipment	55.1861	88.1280	57.9665
362	Miscellaneous Electrical Equipement	76.5017	71.6777	54.1853
371	Electronic professional equipement	98.0927	93.9140	108.0031
372	Electronic home appliances.	31.0803	29.2917	9.1210

381	Home appliances equipment	38.6854	29.1946	30.7932
411	Fertilizers	2.0589	0.4190	0.9584
412	Divers fertilizers	71.1725	8.1256	4.3344
421	acide fluorhydrique,cryolithe	-3.9634	-29.7884	-0.4775
422	Base chemical Products	95.8521	94.8386	97.2074
431	Paint, ink, glue and colorants	39.2631	36.3529	46.5754
432	Soap, detergents and disinfectants	11.9969	9.5493	21.9716
433	Perfumes and Toiletry	38.6949	25.4869	34.0924
434	Miscellaneous Para-chemicals	79.4496	69.7413	67.6187
441	Pharmaceutical products	88.0233	83.0329	63.1759
451	Tires and Rubber products	67.6128	44.5252	44.9025
511	Textile spinning	58.2768	61.2751	56.7695
512	Textile weaving	56.6276	70.7572	76.3704
513	Other textiles	60.8919	71.6056	67.5050
521	Carpet	2.7354	0.4912	0.8840
531	Underwear	57.7170	62.9345	127.1191
541	Apparel	24.0233	46.4388	55.8500
551	Leather and skin work	69.3551	62.1682	23.2969
552	Other leather and plastic products	25.0509	27.7630	32.6021
553	Footwear	8.0968	11.2353	23.2969
611	Wood products	72.9477	66.9862	60.4586
612	Building carpentry	0.1378	0.0227	0.3936
613	Bedding furniture	6.2533	1.7867	3.6554
621	Paper pulp and cardboard	61.0870	59.4204	64.1760
622	Packaging	6.8715	13.3505	16.7266
623	Paper-making	19.6729	7.3198	12.6310
624	Printing works	51.7370	36.3654	21.0562
631	Plastic products	41.2822	33.6461	41.2437
641	Miscellaneous products	49.1612	47.9740	34.4280

Table 10 gives the rate of exposure to international competition defined as:

$$\text{Export Ratio} + (1 - \text{Export Ratio}) * \text{Import Penetration}.$$

The construction of this indicator rests on the idea that the exported share of production is 100 percent exposed and that the share sold on the domestic market is exposed in the same proportion as the penetration of the market.

The table reveals over the period 1983-2002 that the sector “textiles, clothing leather and shoes” had the highest exposure to international competition with an average index value of 81,6 percent, followed by the “mechanical, metal, electrical and electronics” sector with an index value of 74,3 percent, and the “Chemical Industries” with an index value of 64,7 percent.

Table 10: Tunisian Manufacturing Sector Exposure to International Competition

NAT Code	Industry	1983	1990	2002
111	Meat industries	6,0855	5,3315	0,2019
121	Milk industry	32,4603	21,4030	10,3909
131	Grain Miling	5,4896	6,4447	7,5846
132	Pasta and couscous	0,0427	0,5708	19,4253
133	Bread and pastries	0,0986	0,1753	0,2004
134	Biscuits	0,1530	3,1190	9,0436
141	Olive Oil	72,4673	51,6568	86,3342
142	Oils and fats processing	54,2533	55,6806	77,2419
151	Canned vegetables and fruits	23,1396	10,0468	25,2364
152	Canned fish	53,3817	99,1808	56,5148
153	Other Conserving process	23,6518	10,1700	0,0000
161	Sugar industry	69,0604	72,9333	71,5611
162	Chocolate and confectioners products	1,8822	4,9091	10,7641
171	Miscellaneous food industries	29,0499	36,9483	31,7801
172	Animal feed	1,1893	2,3554	3,7718
181	Non alcoholic beverages	0,6877	1,1131	11,0670
182	Wine	30,5405	11,5602	13,3725
183	Beer	0,2983	0,8436	0,5278
184	Distilled alcoholic beverages	45,2215	82,9195	49,0344
191	Tabacco	4,5298	16,3448	13,0666
211	Quarry products	29,2297	34,4285	30,4268
212	Stone and marble polished	21,3933	16,3953	30,5496
221	Cement and Plaster	13,7090	20,7193	7,3776
222	Cement based products	3,3666	2,8591	1,9722
231	Brick industry	9,8472	9,1815	6,0882
232	Tile industry	42,1261	52,6729	38,8019
241	Glass industry	48,2630	54,0387	31,9082
311	Iron and Steel	53,2330	57,5201	36,5321
312	Metal and semi-products non ferrous	82,7870	95,0718	99,7493
313	Foundries	65,6558	35,3043	73,2800
321	Forge Products	12,7528	14,3389	10,7805
322	Metallic construction and boilerworks	28,6658	18,6071	10,8438
323	Metallic packaging	5,8502	4,0199	2,6246
324	Quincaillerie	66,5369	77,4206	3,0838
325	Metallic household appliances	76,1683	64,4980	78,0087
331	Agricultural machinery	98,7401	78,0059	43,9790
332	Industrial machinery	99,0795	99,7933	6,0652
341	Spare parts for cars	99,2256	97,6791	97,1042
342	Cars and trucks	68,5935	74,4662	97,9228
343	Bike and motor bike	55,4782	43,8639	32,5114
351	Boats and repairing	67,6322	-8,7962	82,5132
361	Electrical equipment	66,4758	98,7924	61,3165
362	Miscellaneous Electrical Equipement	89,3227	87,8627	71,9288
371	Electronic professional equipement	99,3357	98,2749	97,0139
372	Electronic home appliances.	34,6226	46,2813	19,6820

381	Home appliances equipment	39,0251	30,9269	36,1669
411	Fertilizers	45,0614	37,5323	47,3765
412	Divers fertilizers	98,4980	86,8660	38,2616
421	acide fluorhydrique,cryolithe	108,6374	112,2861	142,6513
422	Base chemical Products	97,4483	98,0037	99,0721
431	Paint, ink, glue and colorants	42,8203	40,1385	56,0089
432	Soap, detergents and disinfectants	12,8612	12,3316	36,2253
433	Perfumes and Toiletry	58,6017	46,3581	61,5196
434	Miscellaneous Para-chemicals	81,7367	71,9512	75,9771
441	Pharmaceutical products	90,0166	85,9985	62,8111
451	Tires and Rubber products	68,6365	55,8816	60,6516
511	Textile spinning	58,5861	63,1288	60,5845
512	Textile weaving	62,7754	77,8579	83,5353
513	Other textiles	71,6624	83,4281	83,8333
521	Carpet	25,5645	19,0199	4,9733
531	Underwear	86,7737	92,2780	95,2542
541	Apparel	71,9542	92,2054	94,9949
551	Leather and skin work	79,2921	69,5585	75,4021
552	Other leather and plastic products	62,1815	67,5931	82,6324
553	Footwear	30,2729	47,3824	75,4021
611	Wood products	76,8723	70,5663	62,6386
612	Building carpentry	0,4599	0,1454	2,1158
613	Bedding furniture	6,3050	4,5890	12,7071
621	Paper pulp and cardboard	73,0482	66,5071	78,2398
622	Packaging	13,1159	20,0442	27,2657
623	Paper-making	28,5694	15,0624	60,0816
624	Printing works	57,3065	40,5043	29,7236
631	Plastic products	45,5404	40,1446	54,2274
641	Miscellaneous products	66,6404	66,9545	42,0830

II.2. Specialization

The data used to evaluate specialization degree in Tunisian manufacturing sector are drawn from the UNIDO Industrial Statistics Database 2003. While the data base exists both at the 3- digit and 4-digit level of the International Standard Industrial Classification (ISIC), only the former was used, since the coverage of the latter is much more limited in term of time span.

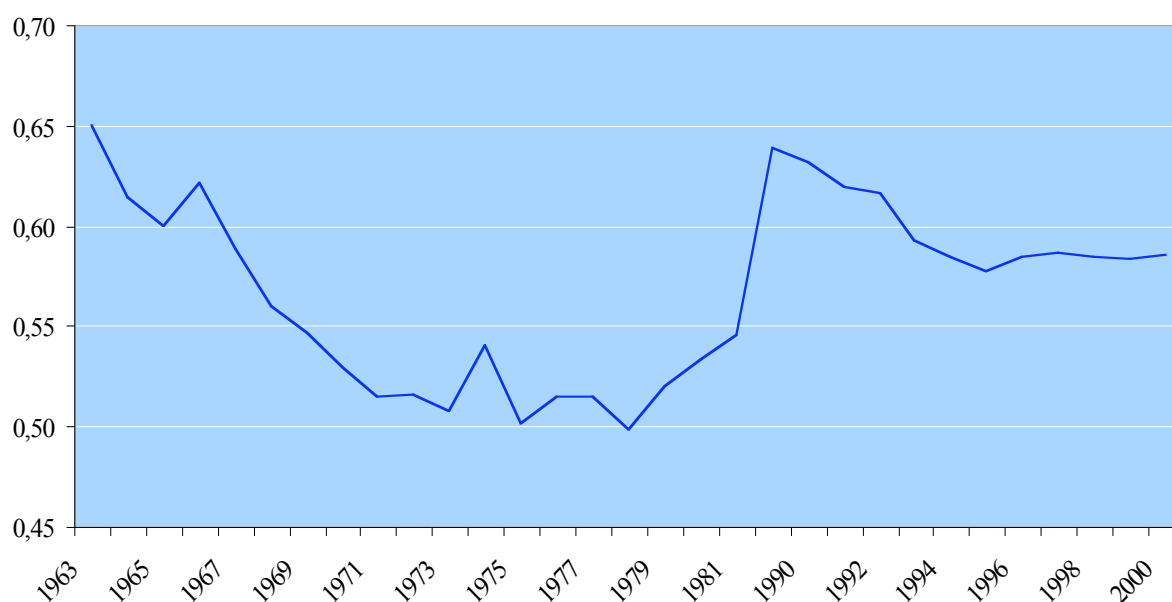
Table 11 reports Gini coefficient as a measure of the degree of inequality in the distribution of the value added and employment in Tunisian manufacturing sector. Graph 5 and 6 reveal that both measure don't exhibit the same pattern.

Table 11: Gini coefficient

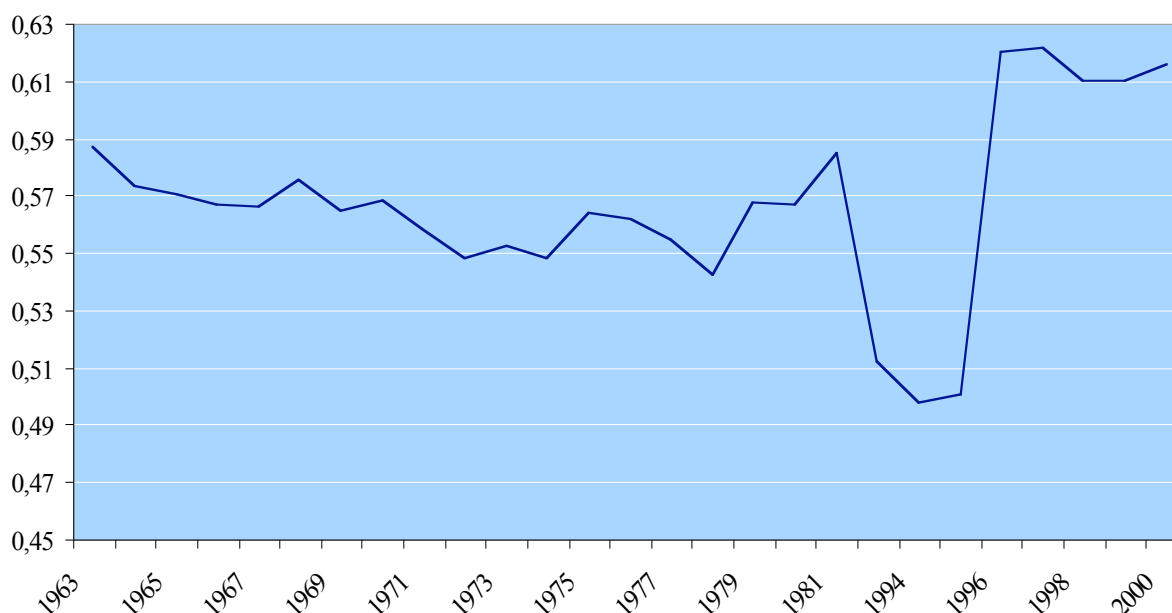
Year	Value Added	Employment
1972	0,5157	0,5478
1973	0,5071	0,5519
1974	0,5397	0,5478
1975	0,5016	0,5634
1976	0,5141	0,5615
1977	0,5146	0,5547
1978	0,4987	0,5421
1979	0,5192	0,5670
1980	0,5332	0,5667
1981	0,5455	0,5849
1989	0,6380	-
1990	0,6317	-
1991	0,6192	-
1992	0,6155	-
1993	0,5922	0,5116
1994	0,5840	0,4978
1995	0,5772	0,5007
1996	0,5840	0,6200
1997	0,5865	0,6214
1998	0,5844	0,6097
1999	0,5828	0,6097
2000	0,5849	0,6159

Source: Authors calculations from UNIDO, 2003 CD

Graph 5: Gini Tunisian Manufacturing Specialization Index (Value Added)



Graph 6: Gini Tunisian Manufacturing Specialization Index (Employment)



Over the period 1972-2000, the measure of the degree of inequality in the distribution of the value added (employment) varied between 50 per cent (50 per cent) and 64 percent (62 per cent). It decreased during the 1970s, increased from 1980, and stabilized around 58 per cent in 1990s. In terms of employment distribution, the end of the period is characterized by a significant increase of the inequality (around 61 per cent).

III. Firms' Size Distribution and Market Concentration

III.1. Size distribution

The prevalence of small plants is highlighted in Tables 12 and 13. In the manufacturing sector, firms with fewer than 50 employees account for 51 percent of all active firms, and companies with fewer than 200 employees account for 89 percent of all companies.

The limited size of firms is particularly pronounced in wood products and diverse Industries (where firms fewer than 50 employees account for 66 percent of all active enterprises), chemical Industries and Building Materials (65 per cent of total firms in this sector employ less than 50 employees), and food processing (64,5 per cent of total firms in this sector employ less than 50 employees).

Table 12: Size **distribution of the Tunisian manufacturing firms, 2000**

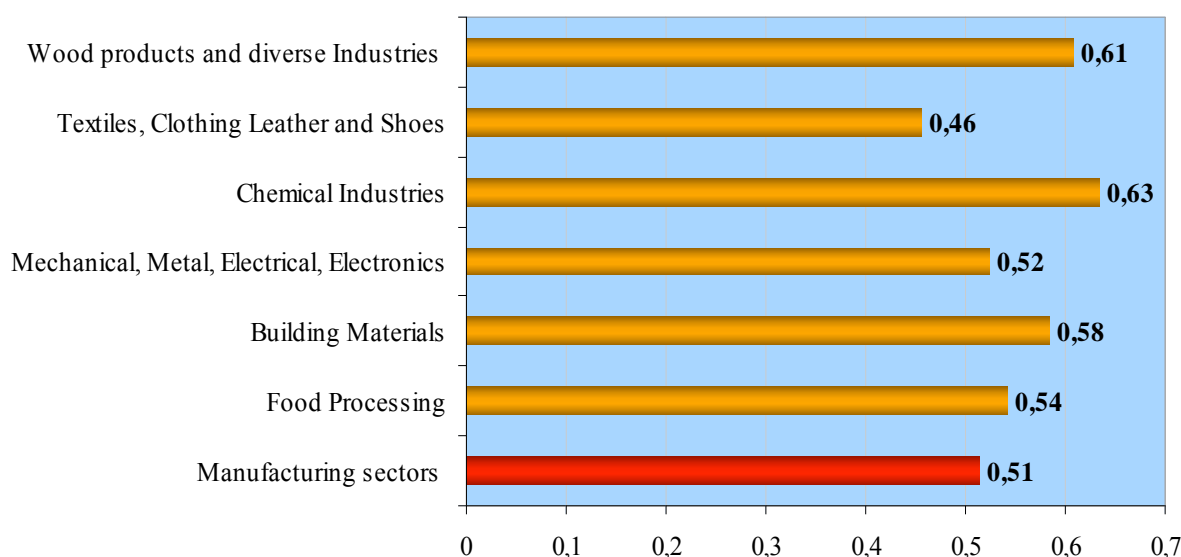
	<10	[10;50[	[50;100[	[100;200[	[200;300[	[300;400[	[400;500[	+ 500	Total
Food Processing	58	93	36	26	9	5	1	6	234
Building Materials	28	142	37	31	10	5	2	8	263
Mechanical, Metal, Electrical, Electronics	10	51	13	18	4	5	1	5	107
Chemical Industries	18	76	28	17	5	0	0	1	145
Textiles, Clothing Leather and Shoes	37	154	166	147	52	17	11	15	599
Wood products and diverse	23	90	29	19	4	2	3	1	171

Industries

Manufacturing sectors	174	606	309	258	84	34	18	36	1519
------------------------------	------------	------------	------------	------------	-----------	-----------	-----------	-----------	-------------

Firms in textile, clothing, leather and shoes sector are relatively larger: companies with more than 100 employees account for 40,4 percent of all companies (only 28,3 per cent for all manufacturing sectors). This sector is also characterized by a relatively weaker inequality in terms of firm size distribution (Graph 7) and an important propensity to export, confirming *"that exporting tends to be concentrated in the larger production units in an industry has been found for several countries ..."* (Caves 1989)¹².

Graph 7: Gini index of Tunisian manufacturing firm size distribution, 2000



¹² Caves, Richard E., 1989, "International Differences in Industrial Organization", in Richard Schmalensee and Robert Willig (Eds.), *Handbook of Industrial Organization*, Vol II. Amsterdam:North-Holland, pp. 1225-1250.

Table 13: Size distribution of the Tunisian manufacturing firms, 2000

Sector 3 digit NAT	Sector	<10	[10;50[	[50;100[	[100;200[	[200;300[	[300;400[	[400;500[	+ 500	Total
152	Canned fish	1	4	5	3	1	1			15
153	Canned vegetables and fruits		4	5	6	2	1	1		19
154	Olive oil, oils and fats processing	5	4	2	2					13
155	Milk industry	2	2	1	2		1		1	9
156	Grain Miling	1	2	2	8					13
157	Animal feed	1	12			1				14
158	Bread and pastries, sugar industry, biscuits, pasta and couscous	45	61	13	4	3	1		2	129
159	Distilled alcoholic beverages, beer and wine	3	4	7	1	2	1		1	19
160	Tabocco			1					2	3
141	Quarry products		7	2	1					10
142	Quarry products	4	6	2						12
143	Quarry products (phosphate)								1	1
145	Building Materials			1						1
261	Glass industry	1	9	4	2					16
262	Tile industry	1	1	2	1	3	1	1		10
263	Tile industry others		8	4	2	2				16
264	Brick industry	1	27	7	5	2	2		1	45
265	ciments,chaux et platre	3			2	1	1		2	9
266	ciments,chaux et platre	2	9	4	4		1			20
267	Stone and marble polished	1	17	2	2					22
271	Iron and Steel	1	1						1	3
275	Foundries	2	3	1	1				1	8
281	Metallic construction and boilerworks	1	12	2	3	1		1	1	21
285	Metal packaging	6	8	1						15

286	Metallic household appliances	1	12	1	2	1				17
287	Metallic packaging	4	22	4	6			1		37
291	Miscellaneous Electrical Equipment		5		2					7
293	Agricultural machinery	1	5		1	1				8
294	Industrial machinery		1							1
295	Industrial machinery	2	3	1						6
297	Home appliances equipment		1							1
311	Electronic professional equipment		3	1		1				5
312	Electronic professional equipment	1	8	1	2		1			13
313	Miscellaneous Electrical Equipment		1	1	4		2		1	9
314	Miscellaneous Electrical Equipment	1			2	1				4
315	Miscellaneous Electrical Equipment			2						2
316	Spare parts for cars	4	3		2	1			2	12
321	Electronic components		1	1	1		1			4
323	Electronic professional equipment		1	1				1	1	4
331	Electronic professional equipment (medical)		1	1						2
341	Cars		1						1	2
343	Cars and spare parts for cars		11	4	3					18
<hr/>										
351	Boats and repairing		3				1			4
354	Bike and motor bike	1	3		1					5
241	Fertilizers, divers fertilizers and base chemical Products	3	7	1	1	1				13
243	Colorants, peintures, encres et colles	2	6	3	2					13
244	Pharmaceutical products	1	4	1	2	1				9
245	Soap, detergents and disinfectants	8	18	6	4	1				37
246	Paint, ink, glue and colorants		8	3						11
251	Tires and Rubber products		2	2	1				1	6
252	Tires and Rubber products	4	31	12	7	2				56
171	Textile spinning	4	9	5	1					19
172	Textile spinning	4	2	7	5	2			2	40
173	Others textile spinning	2	7	6	2					17
174	Other textiles		8	3	2			1		14
175	Carpet	3	14	6	3			1		27
176	Other textiles		1							1
177	Apparel and underwear	2	6	5	5					18
181	Leather apparel, professional apparel			2	1					3
182	Leather apparel, professional apparel	11	57	18	117	43	16	8	11	371
183	Leather apparel, professional apparel		1			1				2
191	Leather and skin work		4	2						6
192	Other leather and plastic products	3	7	3	3	2				18
193	Footwear	8	2	19	8	4	1	1	2	63
201	Wood products and building carpentry		2							2
202	Wood products and building carpentry			3	1					4
203	Wood products and building carpentry	3	8	1						12
205	Wood products and building carpentry	3	1	1						5
211	Printing works, packaging	1	2	1	2				1	7

212	Printing works, packaging	2	11	5	2		1			21
221	Printing works, packaging	2	2	1	2	1		1		9
222	Printing works, packaging	6	18	7	1			1		33
223	Printing works, packaging		2							2
361	Miscellaneous products	5	38	9	11	2	1	1		67
365	Miscellaneous products	1	6	1		1				9
Total		174	606	309	258	84	34	18	36	1519

Source: Répertoire des entreprises manufacturières, INS, 2000

III.2. Market concentration

One of the earliest measures of market power is the Lerner Index (L) which is defined as:

$$L = (\text{Price} - \text{Marginal Cost}) / \text{Price}.$$

The theoretical basis for the index comes from the assumption that firms with monopoly power can charge prices above marginal cost. The index can be derived from a profit maximizing single-product monopoly model or a one-stage Cournot oligopoly model. Because of the difficulties associated with obtaining marginal cost data, the index has not been used very often to measure market power. This notwithstanding, the Lerner Index's influence in the antitrust literature remains substantial chiefly through other measures of market power that rely on it indirectly to link pricing to market concentration. Two such indices are the M-firm concentration ratio (CRM) and the Herfindahl-Hirschman Index (HHI).

The M-firm concentration ratio (CRM) is defined as the cumulative market share of the number of firms, M, with the largest market shares:

$$CRM = \sum s_i, \quad i = 1, 2, \dots, M$$

The variable s_i is the market share of the i-th firm. The most commonly used M-firm concentration ratios are the CR4 and CR8 – which measure the cumulative market shares of the four and eight largest firms in the industry, respectively.

Saving (1970)¹³ provides theoretical support for the use of the CRM as a measure of market power. In his paper, firms produce a homogeneous product and are divided into two groups – a collusive dominant group (consisting of M firms) and a price-taking fringe group. The dominant group as a whole jointly maximizes their profit given a conjectural derivative ($\lambda_{FM} = \Delta Q_F / \Delta Q_M$), which represents the fringe group's output (Q_F) response to the dominant group's output (Q_M). Saving shows that the Lerner Index (L_M) for the dominant group is related to the M-firm concentration ratio (CRM):

$$L_M = \frac{p - mc}{p} = \frac{(1 + \lambda_{FM})CRM}{\varepsilon_Q}$$

where p is price, mc is the (common) marginal cost of firms in the dominant group, and ε_Q is the absolute value of the market price elasticity of demand. Hence, the CRM is linked to market power via the dominant group's Lerner Index (LM). The excess of price over marginal cost as a proportion of price is directly proportional to the CRM.

The Herfindahl-Hirschman Index (HHI) is defined as the sum of the squared values of the n firm market shares:

$$HHI = \sum_{i=1}^n s_i^2, \quad i = 1, 2, \dots, n.$$

s_i is the market share of the i -th firm. As in the case of concentration ratio, the link between market power and the HHI is through the Lerner Index. It can be shown that the industry-average Lerner Index (L) for a homogenous product industry is given by:

$$L_M = \frac{(1 + \lambda)HHI}{\varepsilon_Q}$$

The variable λ is the conjectural derivative (assumed to be identical) for all firms in the industry, and ε_Q is the absolute value of the market price elasticity of demand. This equation reduces the variation in market shares to a single number, the average market share.

Table 14 reports the CR4 and CR8 concentration ratios for the 20 manufacturing industries in 1997, 1999 and 2001 calculated on the basis of 1800 Tunisian manufacturing firms (1590 in 1997 and 1510 in 1999) from the Enterprises

¹³ Saving, Thomas R. (1970) Concentration and the Degree of Monopoly, *International Economic Review*, **11**, 139-146.

Repertory (National Institute of Statistic) which use the same classification scheme.

The average Tunisian manufacturing concentration ratio (CR4) is 56,2 per cent in 2001 and 57,2 per cent in 1997. Looking at the differences in the levels, one finds great variation across industries. The most concentrated industries are other transportation equipment (CR4 of 95,4 per cent in 2001), measuring and medical instruments (92,8 per cent), metallurgy (84,8 per cent) and radio and TV and other communications equipment (80,9 per cent).

Table 14: Share of Value Added Accounted for by the 4 and 8 Largest Companies in Tunisian Manufacturing Industries

NAT Code	Industry	Share of value added (per cent) accounted for the					
		4 largest companies CR4		8 largest companies CR8			
		1997	1999	2001	1997	1999	2001
14	Extractive Industries	52,28	50,66	64,13	76,46	77,17	85,55
15	Food Industries	29,34	26,44	30,52	46,74	39,54	42,05
17	Textile Industries	41,23	43,37	40,56	49,09	53,63	52,42
18	Clothing and Lining Industries	9,86	11,01	12,81	16,48	16,42	18,24
19	Leather and Footwear Industries	19,88	30,54	36,01	33,93	43,49	46,47
20	Wood Products	69,06	54,86	66,34	86,59	77,38	87,27
21	Paper and Cardboard Industries	74,34	70,32	66,54	89,02	88,67	85,81
22	Printing and related support activities	61,51	67,96	70,61	79,56	85,05	83,24
24	Chemical Industries	77,50	76,88	66,73	84,47	86,27	76,70
25	Plastics material and rubber Industries	61,70	54,72	58,00	71,80	66,21	70,30
26	Mineral non metallic products	39,08	37,30	35,32	56,03	56,32	60,31
27	Metallurgy	91,62	83,75	84,84	95,73	95,60	92,87
28	Fabricated Metal Products	26,88	38,53	34,43	45,88	53,54	51,37
29	Machinery and Equipment	66,94	64,10	54,10	81,33	81,15	73,35
31	Electrical equipment	40,22	42,01	44,38	64,25	61,01	61,92
32	Radio and TV and other communications equipment	89,80	75,79	80,89	99,21	97,46	98,57
33	Measuring and medical instruments	98,92	97,55	92,81	100	100	100
34	Motor vehicle manufacturing	79,82	70,45	63,48	91,63	88,56	82,67
35	Other transportation equipment	87,93	96,45	95,40	98,26	100	100
36	Wood products and miscellaneous manufacturing	26,00	27,57	26,51	43,22	46,58	44,28

IV. Markup Pricing in Tunisian Manufacturing Sector

The main problem associated to the empirical measurement of the Lerner index and related measures arises from the fact that while prices can be measured, marginal costs are not directly observable. Therefore, indirect measures have to be developed.

Hall (1988) has suggested markup rate estimation based on a model for the Solow residual which has been extensively applied in the empirical literature¹⁴. Hall's approach has also been criticized and the results deemed somewhat dubious mostly because the estimation procedure requires use of instrumental variables which are difficult to find in the context of imperfect competition.

Roeger (1995) proposed an alternative method of computing markups founded on both the Solow residuals and the dual Solow residuals¹⁵. For a firm enjoying technical progress in the use of labor and capital, a reasonable approximation of its marginal cost (MC_{it}) can be given by the following expression:

$$MC_{it} = \frac{w_{it}\Delta L_{it} + c_{it}\Delta K_{it}}{\Delta Q_{it} - \theta_{it}Q_{it}}, \quad (1)$$

where θ_{it} corresponds to the rate of technical progress for each time period t and sector i .

Under the assumption of constant returns to scale and constant markup, equation (1) can be rephrased as follows:

$$\underbrace{\Delta q_{it} - \alpha \Delta l_{it} - (1 - \alpha) \Delta k_{it}}_{\text{Solow Residual (SR}_t\text{)}} = (\mu - 1)\alpha(\Delta l_{it} - \Delta k_{it}) + \theta_{it} \quad (2)$$

where the markup of price over marginal cost is : $\mu = P/MC$, with Δ denoting the first difference, lower case denotes the natural log transform, q , l , and k denote real value added, labour, and capital inputs, α is the labour share in value added, and $\theta \equiv \dot{A}/A$ denotes exogenous (Hicks-neutral) technological progress.

¹⁴ Hall, R., 1988. "The Relation between Price and Marginal Cost in U.S. Industry", *Journal of Political Economy* 96(5): 921-947.

¹⁵ Roeger, W., 1995, "Can Imperfect Competition explain the Difference between Primal and Dual Productivity Measures? Estimates for US Manufacturing", *Journal of Political Economy*, 103, 316-30

Under perfect competition $\mu = 1$, while imperfectly competitive markets allow $\mu > 1$.

Estimation of equation (2) faces the difficulty that the explanatory variables $(\Delta l - \Delta k)$ will themselves be correlated with the productivity shocks θ , and hence result in bias and inconsistency in the estimates of μ . One solution is to instrument, which in turn raises the requirement that the instruments are correlated with the factor inputs, but not technological change and hence the error term.

An alternative approach to avoid the endogeneity bias and instrumentation problems has been suggested by Roeger (1995). By computing the dual of the Solow residual (DSR), we can again obtain a relation of the price-based productivity measure to the mark-up:

$$DSR_{it} \equiv \alpha \Delta w_{it} + (1 - \alpha) \Delta r_{it} - \Delta p_{it} = (\mu - 1) \alpha (\Delta w_{it} - \Delta r_{it}) + \theta_{it} \quad (3)$$

with w , r denoting the natural logs of the wage rate and rental price of capital respectively. While equation (3) is subject to the same endogeneity problems, and hence instrumentation problems as equation (2), Roeger's insight was that subtraction of equation (3) from equation (2) would give us the nominal Solow residual (NSR), given by:

$$NSR_{it} \equiv \Delta(p_{it} + q_{it}) - \alpha \Delta(l_{it} + w_{it}) - (1 - \alpha) \Delta(k_{it} + r_{it}) = (\mu - 1) \alpha (\Delta(l_{it} + w_{it}) - \Delta(k_{it} + r_{it})) \quad (4)$$

in which the productivity shocks θ have cancelled out, removing the endogeneity problem, and hence the need for instrumentation.

Equation (4) is a rather tractable expression for the estimation of the markup ratio. Adding an error term, the markup can be estimated by standard OLS techniques. Alternatively, a markup coefficient could even be calculated algebraically for each year and each sector and a simple average computed over a given period:

$$\mu - 1 = \frac{\Delta(p_{it} + q_{it}) - \alpha \Delta(l_{it} + w_{it}) - (1 - \alpha) \Delta(k_{it} + r_{it})}{\alpha (\Delta(l_{it} + w_{it}) - \Delta(k_{it} + r_{it}))} \quad (5)$$

Oliveira Martins and Scarpetta (1999)¹⁶ demonstrate that where the assumption of constant returns to scale is dropped, equation (4) is actually:

$$NSR_{it} = \left(\frac{\mu}{\lambda} - 1 \right) \alpha (\Delta(l_{it} + w_{it}) - \Delta(k_{it} + r_{it})) \quad (6)$$

where $\lambda > 1$ denotes increasing returns to scale. From equation (6) it can be seen that with increasing returns to scale, the Roeger's method produces a downward

¹⁶ Oliveira Martins, J., and Scarpetta, S., 1999, "The Levels and Cyclical Behaviour of Mark-ups Across Countries and Market Structures", OECD Economics Department Working Papers No. 213.

bias in the estimation of the markup. Thus any estimate of mark-up that follows from Solow residuals should be interpreted as lowerbound values if increasing returns to scale are present.

Equation (4) can be easily extended in order to incorporate intermediate inputs and express the mark-up ratio over gross output (GO) instead of value added. This correction is important, insofar as the mark-up over value added induces a clear upward bias in the estimation (Basu and Fernald, 1995)¹⁷.

Taking into account intermediate inputs, equation (4) becomes:

$$\begin{aligned} NSRGO_{it} &\equiv \Delta(\tilde{p}_{it} + \tilde{q}_{it}) - \tilde{\alpha}\Delta(l_{it} + w_{it}) - \tilde{\beta}\Delta(m_{it} + p_{it}^m) - (1 - \tilde{\alpha} - \tilde{\beta})\Delta(k_{it} + r_{it}) \\ &= (\mu - 1)(\tilde{\alpha}\Delta(l_{it} + w_{it}) + \tilde{\beta}\Delta(m_{it} + p_{it}^m) - (\tilde{\alpha} + \tilde{\beta})\Delta(k_{it} + r_{it})) \end{aligned} \quad (7)$$

where \tilde{p} and \tilde{q} correspond to logarithms of gross output and its respective price, m and p^m to intermediate inputs and their prices, and $\tilde{\alpha}$ and $\tilde{\beta}$ to the share of labour and intermediate inputs in gross output value, respectively.

The appealing feature of Roeger's approach is that it helps to overcome some availability problems associated with price data. As equation (7) only requires nominal variables, there is no need to gather price indexes for intermediate inputs, an information that is not readily available. However, the treatment of capital costs still requires a separate computation for the growth rate of the rental price of capital, r .

Panel data set for six manufacturing sectors in Tunisian economy are employed for purposes of estimation with observations from 1984 through 2002: Food processing (FPI), Construction materials and glass (CMGI), Mechanical and electrical goods (MEGI), Chemical and rubber (CRI), Textiles, clothing and leather goods (TCLGI) and Woodwork, paper and diverse (WPDI). This provides a 19x6 panel with a total of 114 observations.

A simplified rental price of capital (r_t) inspired by the methodology of Hall and Jorgenson (1967) was defined as follows:

$$r_t = ((\tau_t - \pi_t^e) + \delta)p_t'$$

where τ is the nominal market interest rate and π^e is the expected inflation rate which is generated using the low-frequency component of the annual percentage

¹⁷ Basu, S., and Fernald, J.G., 1995, "Are Apparent Productive Spillovers a Figment of Specification Error?" *Journal of Monetary Economics*, 36, 165-88.

change in the GDP deflator using Hodrick-Prescott filter. The difference between these two terms represents the expected real cost of funds for the firm. The parameter δ corresponds to the economic rate of depreciation. It was set at 5 per cent across all sectors which is equivalent to an average service life of 20 years and p^I represents the economy-wide deflator for the gross fixed investment.

The perpetual inventory method is used to estimate gross capital stock. The method involves adding, for each type of capital asset, capital formation to an initial estimate of the capital stock and subtracting capital assets that are withdrawn. The capital stock estimates of each asset type are then summed up to obtain the economy-wide capital stock estimates. The capital stock in the starting year (1960) is approximated by an equilibrium capital output ratio (IEQ, 1985)¹⁸.

The observed labor share and intermediate inputs share in total revenue are used in the definition of the dependent and explanatory variables.

In Tables 15 and 16 the estimation results for the manufacturing sectors given by the following specification are reported:

$$NSRGO_{it} = \gamma_{0i} + \gamma_i ROEGER_{it} + \varepsilon_{it}, \quad (8)$$

for $i = \text{FPI, CMGI, MEGI, CRI, TCLGI, WPDI}$; $t = 1973, \dots, 2002$

where:

$$ROEGER_{it} = \tilde{\alpha}\Delta(l_{it} + w_{it}) + \tilde{\beta}\Delta(m_{it} + p_{it}^m) - (\tilde{\alpha} + \tilde{\beta})\Delta(k_{it} + r_{it})$$

γ_i now measures $(\mu_i - 1)$, where μ_i is the markup for the sector i . There is a number of ways that we can use information about the structure of our pooled data in estimating equation (8). We might estimate a model with selected variables that have common or different coefficients across cross-sections. Three estimations procedure will be employed: pooled least squares, weighted least squares with estimated cross-section weights and seemingly unrelated regressions (SUR).

Results indicate the presence of an aggregate plausible and moderate markup for the manufacturing sector over the sample period. The distinction between the estimation methods appears to make relatively little difference to the implied markup in Tunisian manufacturing. The aggregate markup defined over gross output is in the range of 20-21 percent (Table 15) and the sectoral markups are in the range of 17-36 percent (Table 16): according to the GLS with cross section

¹⁸ Les Cahiers de l'IEQ, 1985, « Le stock de capital sur la période 1961-1981 », n°1, pp.106-133.

weights and fixed effect estimates, 17 per cent in Textiles, Clothing and Leather Goods sector, 17,6 per cent in Chemical and Rubber sector, 17,8 per cent in Mechanical and Electrical Goods sector, 19,3 per cent in Food Processing sector, 24,7 per cent in Woodwork, Paper and Diverse sector and 36 per cent in Construction Materials and Glass sector.

Table 15: Markup estimates, Tunisian manufacturing industries, Roeger specification with common cross section coefficients

	Markup*	Std, Error**	R² /Log-Lik.
Pooled Least Squares with fixed effect*	1,211	0,015	0,6397
GLS with Cross Section Weights*	1,198	0,012	0,7161
Seemingly Unrelated Regression	1,210	0,012	313,32

** White Heteroskedasticity-Consistent Standard Errors & Covariance

* Coefficient reported concerns the estimated margin (1-Markup)

Table16: Markup estimates, Tunisian manufacturing industries, Roeger specification with specific cross section coefficients

	Markup	Std, Error**	R²/Log-Lik.
Pooled Least Squares with fixed effect *			0,694094
Food processing	1,193	0,036	
Construction materials and glass	1,360	0,040	
Mechanical and electrical goods	1,178	0,036	
Chemical and rubber	1,176	0,028	
Textiles, clothing and leather goods	1,170	0,038	
Woodwork, paper and diverse	1,247	0,043	
GLS with Cross Section Weights and fixed effect *			0,744856
Food processing	1,193	0,029	
Construction materials and glass	1,360	0,068	
Mechanical and electrical goods	1,178	0,026	
Chemical and rubber	1,176	0,029	
Textiles, clothing and leather goods	1,170	0,030	
Woodwork, paper and diverse	1,247	0,025	
Seemingly Unrelated Regression with fixed effect			325,3138
Food processing	1,195	0,027	
Construction materials and glass	1,338	0,061	
Mechanical and electrical goods	1,175	0,023	
Chemical and rubber	1,195	0,026	
Textiles, clothing and leather goods	1,154	0,026	
Woodwork, paper and diverse	1,250	0,021	

** White Heteroskedasticity-Consistent Standard Errors & Covariance

* Coefficients reported concern the estimated margin (1-Markup)

V. Import Competition and Market Power

Tariff and other restrictions clearly carry implications for the degree of international competition to which domestic industry is exposed, and hence the magnitude of the feasible markup that domestic industry can maintain. By implication, the suggestion is that trade liberalization is a means by which inefficiency in production can be remedied.

Hakura (1998) offers one means of incorporating the open economy context into the estimation of markups over marginal cost¹⁹. The starting point of analysis is the suggestion that tariff and other trade restrictions shield domestic industry from international competition. Hence reduction in trade barriers should decrease the market power of domestic producers, through increased import penetration, decreasing mark-ups of price over marginal cost. The suggestion is thus that trade liberalization will reduce the pricing power of industry.

In order to see how changes in import (or export) penetration affected the price marginal cost markup, the weighted growth rates of inputs is interacted with the import (export) penetration ratios IPR (EPR) and the relationship tested by Hakura (1998) is given by:

$$dq_{it} = \beta_{it} d\tilde{x}_{it} + \gamma (IPR_{it} - \overline{IPR_i}) \tilde{x}_{it} \quad (9)$$

$$\text{where } dq_{it} = dy_{it} + \frac{s_m}{1-s_m} dm \text{ and } d\tilde{x}_{it} = s_l dl_{it} + s_k dk_{it} + \frac{s_m}{1-s_m} dm_{it}$$

where dy denotes the log change in value added, s_j the share of factor J in value added (labor, capital and intermediate inputs) and i denotes the i 'th industry. While β provides a measure of the mark-up, γ captures the impact of deviations of import penetration from the sectoral mean value of import penetration on the mark-up. Where $\gamma < 0$, rising import penetration lowers the mark-up, where $\gamma > 0$, rising import penetration raises the mark-up.

The specification given by equation (9) is again subject to endogeneity problems, since production and input change decisions are likely to be simultaneous. Yet, it's

¹⁹ Hakura, D.S., 1998, "The Effects of European Economic Integration on the Profitability of Industry", International Monetary Fund Working Paper WP/98/85.

again possible to subject the specification of (9) to the transformations suggested by Roeger (1995).

A final extension proves necessary due to the use of panel data in the present study. Estimation of the mark-up on an industry-by-industry basis requires a control only for within-industry variation of import penetration in order to capture trade effects. In a panel data context this is not sufficient, since variation in import penetration between industries is not captured, omitting an important source of heterogeneity between industries. For this reason the following specification will be adopted to test for the impact of import penetration on the mark-up:

$$\begin{aligned} NSRGO_i = & (\mu - 1) \left(\tilde{\alpha} \Delta(l_{it} + w_{it}) + \tilde{\beta} \Delta(m_{it} + p_{it}^m) - (\tilde{\alpha} + \tilde{\beta}) \Delta(k_{it} + r_{it}) \right) \\ & + \theta_2 \left(IPR_{it} - \overline{IPR}_i \right) \left(\tilde{\alpha} \Delta(l_{it} + w_{it}) + \tilde{\beta} \Delta(m_{it} + p_{it}^m) - (\tilde{\alpha} + \tilde{\beta}) \Delta(k_{it} + r_{it}) \right) \\ & + \theta_3 \left(IPR_{it} - \overline{IPR} \right) \left(\tilde{\alpha} \Delta(l_{it} + w_{it}) + \tilde{\beta} \Delta(m_{it} + p_{it}^m) - (\tilde{\alpha} + \tilde{\beta}) \Delta(k_{it} + r_{it}) \right) \end{aligned} \quad (10)$$

where \overline{IPR}_i denotes the mean import penetration for the i 'th industry, and \overline{IPR} denotes the mean import penetration across all industries. Thus θ_2 captures the impact of within-industry variation of import penetration, and θ_3 the between-industry variation in import penetration on the markup.

A symmetrical specification to equation (10) can be provided, replacing the import penetration term with export penetration.

In Tables 17 we report the estimation results for the manufacturing sectors of the specification (10) redefined as follows:

$$\begin{aligned} NSRGO_{it} = & \theta_{0i} + \theta_{1i} ROEGER_{it} + \theta_{2i} \left(IPR_{it} - \overline{IPR}_i \right) ROEGER_{it} \\ & \theta_{3i} \left(IPR_{it} - \overline{IPR} \right) ROEGER_{it} + u_{it} \end{aligned} \quad (11)$$

The magnitude of the markup parameter is consistent with that already estimated under the preceding section with the estimate ranging from 21 to 21,6 per cent for the specification controlling for import penetration.

Crucially, we find that increased import penetration ratios across the manufacturing sector serve to decrease industry markups but increased import penetration within industries serve rather to increase industry markups, since θ_2 is significantly positive and θ_3 is significantly negative (SUR model). This result is not surprising in the Tunisian manufacturing sectors context given the significant increase of the effective rate of protection particularly during 1990s, as a result of

Tunisia's adhesion to GATT in 1989, and consequently to its commitments to transform all forms of non-tariff protection into tariff equivalent (see Table 18).

However, the magnitude of the impact of import penetration both within industries and across the manufacturing sector is very weak. Indeed, increasing within and between industry import penetration ratio from its mean value of 10 per cent will lead an estimated implied markup of 1,21 to rise to 1,216 ($1,21 + 0,091 \cdot 10\% - 0,024 \cdot 10\%$) in the SUR regression, corresponding to an increase of 0,495 per cent.

Table 17: Markup estimates, Tunisian manufacturing industries, Hakura specification with common cross section coefficients

	Markup**	θ_2	θ_3	R ² /Log-Lik.
Pooled Least Squares with fixed effect	1,216	0,089	-0,042	0,6694
<i>Std,Error*</i>	0,015	0,031	0,019	
GLS with Cross Section Weights*	1,211	0,084	-0,006	0,7683
<i>Std,Error</i>	0,012	0,017	0,012	
Seemingly Unrelated Regression	1,210	0,091	-0,026	325,17
<i>Std, Error</i>	0,012	0,012	0,009	

* White Heteroskedasticity-Consistent Standard Errors & Covariance

** Coefficients reported concern the estimated margin (1-Markup)

Table 18: Effective Rate of Protection in Tunisian Manufacturing Sectors

	1995	1997	1999	2000	2001	2002
Manufacturing sector ERP (%)	85	98	80	72	62	58
Food Processing	71	59	60	65	69	70
Building Materials	85	154	119	85	76	70
Mechanical, Metal, Electrical, Electronics	64	144	78	88	54	53
Chemical Industries	65	102	78	60	39	45
Textiles, Clothing Leather and Shoes	126	106	91	79	71	59
Diverse Industries	69	82	68	56	41	41
Overall Economy ERP (%)	41	73	66	64	51	49

Source: Institut d'Economie Quantitative

VI. Survey on Competitive Environment of Firms in the Formal Manufacturing Sector in Tunisia: Analysis of Findings

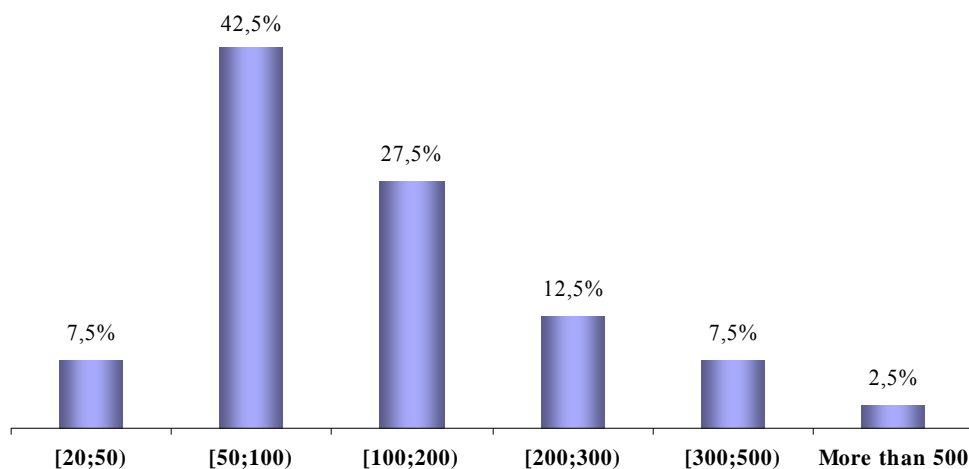
VI.1. Profile of Respondents

The Survey on Competitive Environment of Firms in the Formal Manufacturing Sector had attracted effective participation of 40 companies. This had contributed to 40% of the total response rate.

The survey findings showed that 35% of the respondents were from the export-oriented industries²⁰ and 65% were from the domestic-oriented industries. The export-oriented industries covered the following sub-sectors namely Canned Fish, Miscellaneous Electrical Equipment, Base Chemical Products and Textile Spinning.

In terms of company size, 7.5% of respondents comprised the small (less than 50 employees), 70% medium (more than 50 and less than 200 employees) and 22.5% large-sized industries (more than 200 employees). Respondents by company size are shown in Graph 8.

Graph 8: Respondents by company size

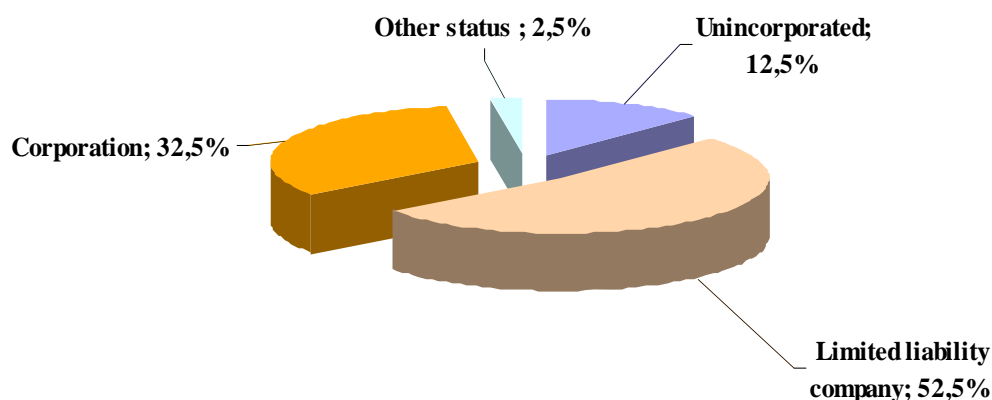


Based on the survey, 85.7% of the respondents in the export-oriented industries comprised the medium-sized industries and 14.3% was large-sized industries.

²⁰ Firms for which direct and indirect exports represent 50% or more of their turnover.

In terms of legal status, 52.5% of sample firms are limited liability companies (SARL), 32.5% are corporations (SA) and 12.5% are unincorporated. Only one firm have another legal status (cooperative or SNC).

Graph 9: Respondents by company legal status



As could be expected, large firms are more likely to have a corporation status; small and medium firms are more likely to be unincorporated.

Table 19: Respondents by size and legal status

	Unincorporated	Limited liability company	Corporation	Other status	Total
Small	0	2	1	0	3
Medium	5	16	6	1	28
Large	0	3	6	0	9
Total	5	21	13	1	40

In terms of firm position in the value chain of the industry, 86.5% of the respondents are producers of final products, 8.1% are suppliers of intermediate and final products, 2.7% are suppliers of raw materials, intermediate and final products and 2.7% are suppliers of raw materials.

Table 20: Respondents by sector and position in the value chain*

	Supplier of raw	Producer of final	Supplier of raw	Supplier of intermediate	Total
--	-----------------	-------------------	-----------------	--------------------------	-------

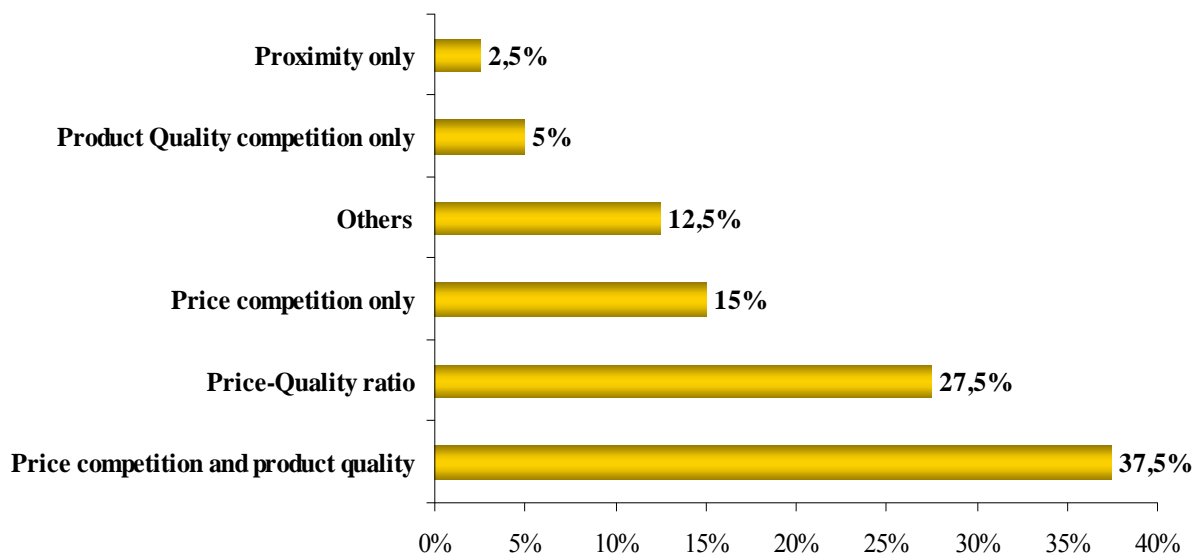
	materials	products	materials, intermediate products and final products	and final products	
Food processing	0	5	0	0	5
Building materials	0	2	0	1	3
Mechanical, Metal and Electrical industries	0	6	0	0	6
Chemical industries	1	5	0	0	6
Textiles, clothing, leather and shoes	0	9	0	1	10
Miscellaneous industries	0	5	1	1	7
Total	1	32	1	3	37

*We have 3 respondents which the position in the value chain is not indicated

VI.2. Competitive environment: Horizontal aspects

Firms are asked to identify the most important mean of competition of their major product (see Graph 10): 37.5% of firms nominated price competition and product quality as being the most important mean of competition, 27.5% nominated price-quality connection and 15% cited price competition only.

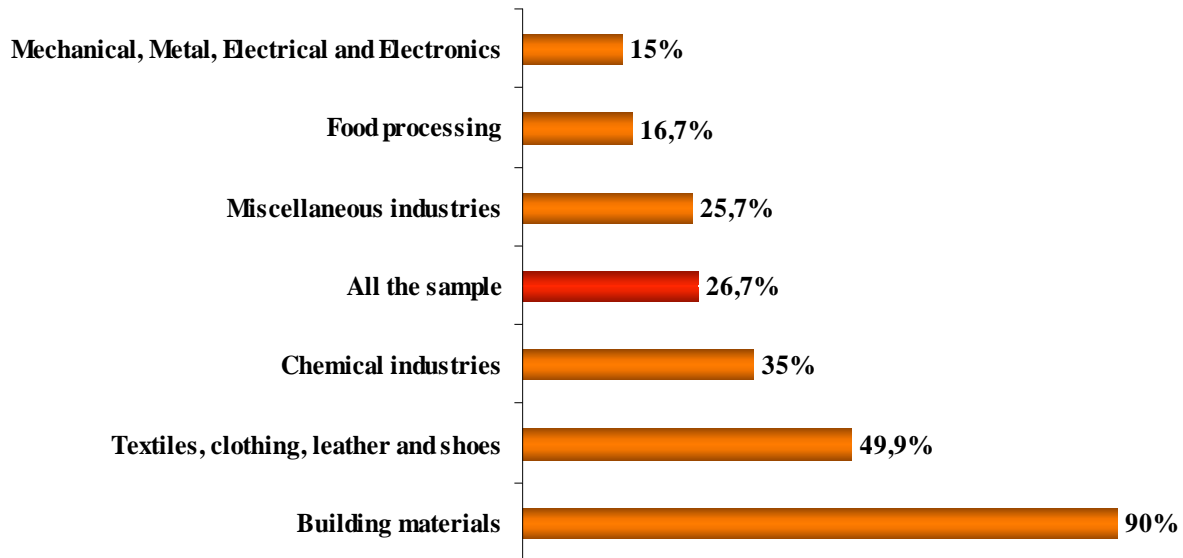
Graph 10: **Most important mean of competition**



51.3% of respondents indicated government control the price of their principal product. Asked about how did this policy effect the economic performance of their firm, 20% of them declared that this policy have a strong positive effect, 55% indicated a positive effect, 5% affirmed a negative effect and 20% stated that this policy have no effect on their performance.

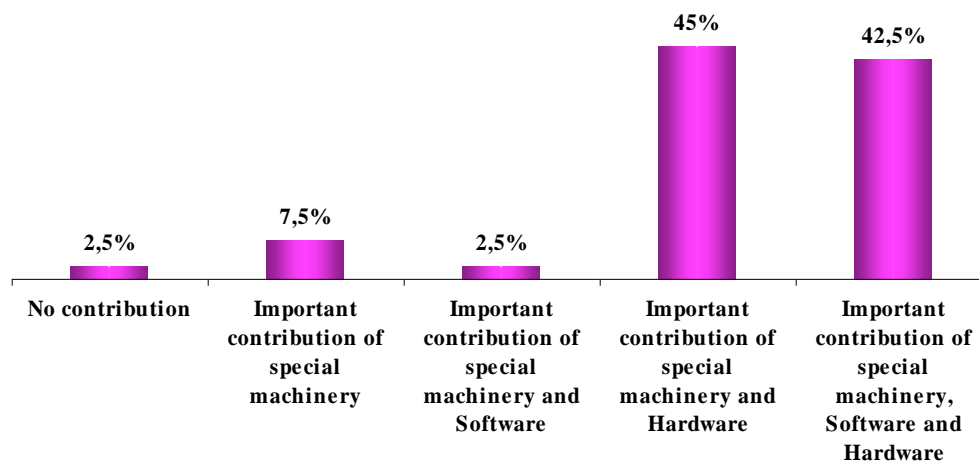
A very large proportion of the firms (94.6%) stated that their product requires a high specialized labor in a percentage varying between 10 and 90% (see Figure 4 for the sectoral high specialized labor requirement percentage). But only 37.5% of respondents declared that their product requires only high and medium specialized labor.

Graph 11: Percentage of High specialized labor by sector



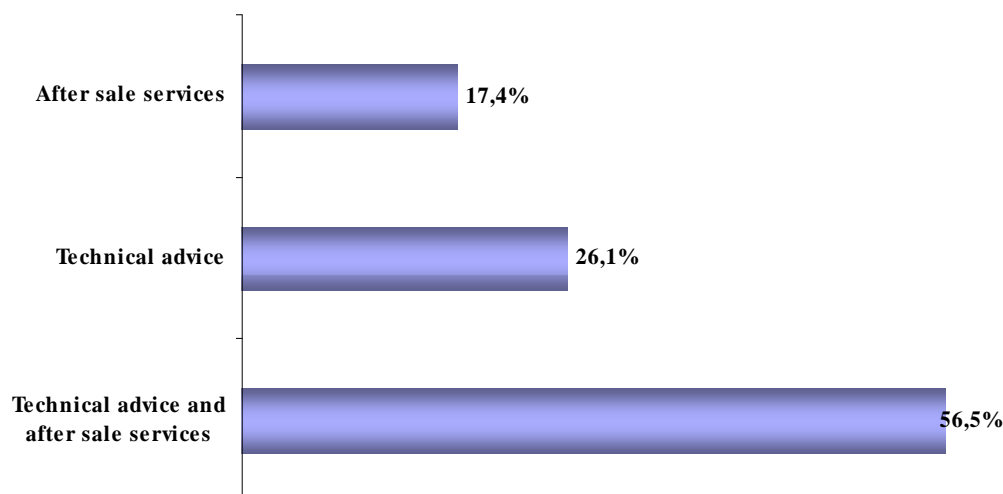
Asked about the contribution of special machinery, software and hardware for their product, 42.5% of respondents declared that contribution of both specialized inputs is important if not very important (see Graph 12)

Graph 12: Contribution of other specialized inputs



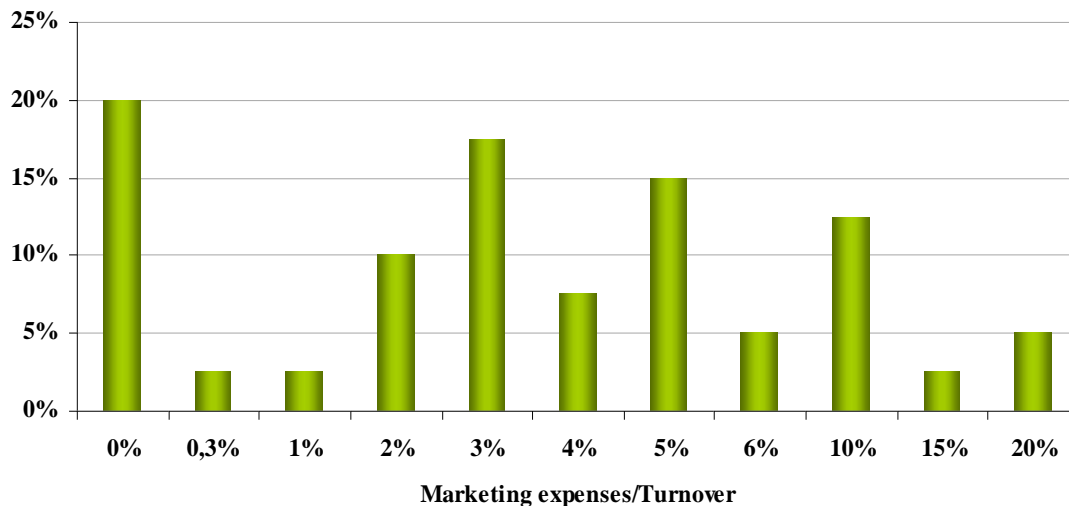
An important proportion (57.5%) of the respondents provides an extra service to clients: 56.5% of this service as technical advice and after sale services, 26.1% as technical advice only and 17.4% as after sale services only (Graph 13). All the respondents providing extra services consider such services at least important for the performance of their firm.

Graph 13: Nature of extra services to clients



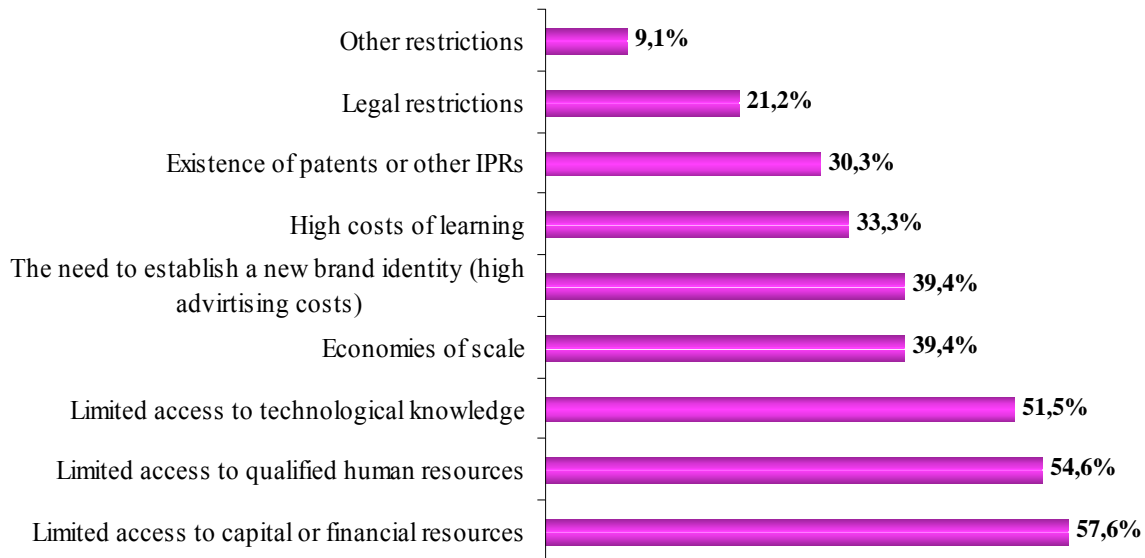
A large proportion of the firms (80%) declared a positive fraction of their turnover for marketing activities and communication (see Graph 14). The mean value of marketing activities expenses in proportion of turnover is 5.9%. Asked about the contribution of advertising, marketing and public relation to the economic performance of the firm, 87.5% of the respondents indicated at least an important contribution.

Graph 14: Marketing activities and communication expenses (% of turnover)



The dominant question in this section is whether respondents perceived major entry barriers in their industry. An important percentage of the respondents (82.5%) indicated the presence of entry barriers. Respondents are also asked to identify one or more types of entry barriers (Graph 15). Three factors were prominent; all of them concern the limited access to essential resources: financial resources (57.6%), qualified human resources (54.6%) and technological knowledge (51.5%). Financial resources restrictions were raised particularly by respondents belonging to Food processing (71.4%) and Miscellaneous industries (83.3%), while limited access to technological knowledge was more cited by respondents from Mechanical, Metal and Electrical (75%) and Chemical industries (80%); limited access to qualified human resources was considered as the most dominant restriction in Textiles, clothing, leather and shoes industries (60%).

Graph 15: Major entry barriers in the concerned industry



VI.3. Competitive environment: Vertical restraints

Manufacturers and suppliers often do not trade their goods through a simple linear pricing mechanism in which the manufacturers pay the suppliers an amount proportional to the quantity bought. Instead they use a variety of complex contracts. In the literature of industrial economics, these contracts are often referred to as vertical restraints. Examples of vertical restraints include nonlinear pricing, quantity forcing, full-line forcing, resale price maintenance, territorial restrictions, exclusive dealing, partial exclusive dealing, tie-in sales, and refusal to deal, and so on. Which set of vertical restraints will be used in practice depends on the market environment.

The third section of the questionnaire addresses the issue of vertical restraints by submitting to respondents questions regarding seven types of vertical restraints: resale price maintenance, quantity forcing, exclusive supply, exclusive dealing, tying arrangements, long term contract and franchising fee.

The results indicated that 10.8% of respondents have a supplier in position of monopoly in his market, 37.8% indicated that they are only few suppliers in his market and 51.4% stated that numerous suppliers are present in his market. Table 21 summarizes firm's perception of different vertical restraints in his market, whether the contract is explicit or implicit and how the specific practice affects firm profit.

Table 21: Respondent's perception of different vertical restraints

Vertical restraints	Frequency	Explicite in a contract	If not comply				Effect negatively firm profit
			Trial	Financial penalty	Refusal to supply	Suppression of payment facilities	
Resale price maintenance	32,5%	87,5%	0%	30,8%	69,2%	30,8%	50%
Do not sell above a certain price	0%	-	-	-	-	-	-
Do not sell below a certain price	5,0%	-	-	-	-	-	-
Sell at a certain fixed price	27,5%	-	-	-	-	-	-
Quantity forcing	36,1%	84,6%	7,7%	30,8%	53,8%	46,2%	12,5%
Exclusive supply	27,8%	90%	10%	30%	60%	80%	12,5%
Exclusive dealing	34,3%	100%	0%	16,7%	66,7%	58,3%	33,3%
Tying arrangements	36,1%	76,9%	7,7%	15,4%	61,5%	92,3%	23,1%
Long term contract	38,9%	100%	14,3%	28,6%	57,1%	92,9%	33,3%
Mean length (years)	4,62	-	-	-	-	-	-
Median lenght (years)	3,5	-	-	-	-	-	-
Franchising fee	30,6%	90,9%	9,1%	18,2%	45,5%	90,9%	9,1%

Part 3: The State of Competition Policy in Tunisia

I. Regulation and Competition in Tunisia: Global Framework

For over fifteen years now, Tunisia has set itself as an objective to draw up a development strategy aimed at securing, in its economic dimension, the improvement of individual as well as collective well-being.

It is in this respect and on the basis of a dynamic analysis of the observed and expected evolutions of the national as well as international environment, that it has adopted a strategy articulated, basically, around two choices.

The first one is the choice of transition towards a market economy following a progressive approach and well-balanced pace having made it possible to liberalize almost the whole market of goods and services, and, to a great extent, the labour market and to move forward in a relatively significant way in the liberalization of the financial market.

Of course, resorting to such an approach combining determination with respect to the economy reform and gradualism is accounted for, among other things, by the fact that it enabled:

- ✓ At the microeconomic level, to improve the adaptation capacity of the private sector which had to develop in a new context, and to change its vision, the logic of its behaviour and the foundations of its decision criteria,
- ✓ At the socio- economic level, to restrain and keep under control the social cost of the adjustment and the restructuring which the economy and the enterprise had to undergo representing a vector of greater socio-political stability allowing, in its turn, a better responsiveness of the private sector.

The second choice on which this strategy is based is that of the openness onto and the ever growing integration into the world economy and the vigorousness of a certain number of regional cooperation processes.

This double choice based on the development of private initiative, whether local or foreign, within a framework of openness and partnership implies undoubtedly all the importance granted by the elaborated strategy to a better knowledge of how the private sector, the business people and their expectations are perceived.

It is within this framework that comes the implementation, in a first sequence of the economy reform, of a coherent and multidimensional program having made it possible to impact all aspects including mainly the legislative and regulatory framework, the domestic and foreign trade, prices and investment, direct and

indirect investment, education and vocational training, infrastructure, the banking and financial system, the current convertibility of the Dinar and the administration.

The objective of this first sequence which extended from 1987 to 1995 was to lay down the market mechanisms after decades of economy planning and administration, to prepare the economy to the establishment of an evolving process of integration into the world economy and to liberate the energies and initiatives within the framework of a new balance of roles between the private and public sectors.

On the basis of the steps covered in terms of restructuring and reform of the enterprise and the economy, Tunisia decided to go forward in the integration of its economy into the world economy coupled with membership to the WTO and the signing of a partnership agreement with the EU, which Tunisia was, needless to say, the first country on the southern shore to sign with such an important economic space.

A second sequence of reforms was undertaken aimed at globally upgrading the economy and enabling the Tunisian enterprises to reach, in a more competitive context, a parity of performance both on the domestic and external markets.

The use of overall upgrading as a matrix to conduct the reform dynamic made it possible to:

- ✓ stress that the competitiveness of the enterprise depends also on that of its environment and to perceive it and assess it in terms of the respective roles of the private and public sectors at the level of the actions and reforms to undertake, and
- ✓ focus on the fact that the competitiveness requirements are not only texts or policies to implement but also mainly behaviours and attitudes which were required to adjust, not to say, change.

Concerning the components of the overall upgrading, it is worth reminding that concerning the environment and in relation to competitiveness, the undertaken actions covered:

- The adaptation of the legal framework through the setting up of a regulatory framework aimed at establishing clear and transparent game rules enhancing the confidence of the local and foreign operators and protecting them as much as possible from any form of anticompetitive practice or unfair competition,
- The development of human resources which has to meet two objectives: On the one hand, to provide, mainly through the vocational training apparatus, the needed skills for the enterprise in order to step up its flexibility and

capacity of coping with the evolution of demand, technologies and of markets, and on the other hand, to make it easier to integrate the biggest number of people in the economic sphere and the labour market by enhancing their capacity and their know-how.

- The development of infrastructure so as to improve the profitability of private investment, to facilitate and reduce the costs of marketing of goods and services and to further attract foreign direct investments.
- The stability of the macroeconomic framework to provide an adequate setting for the expectations and decisions of local and foreign private investors, and the access of the economy to the international financial market at reasonable conditions in order to finance the development effort and several fields related to the improvement of the competitiveness of the enterprise environment,
- The modernization of the banking and financial sector through the development, among other things, of the capacity to assess the project or the promoter-related risk and to make of the promoter a full actor in the restructuring dynamic of the enterprise and its quest for a better competitive positioning on the different markets,
- The upgrading of the administration and the reconsideration of its role so as to reduce the transaction costs and facilitate the transition of the economy and its restructuring.

In parallel with these actions, a national upgrading program (PNM) was initiated. It includes actions directly targeting enterprises and enabling to encourage them, on the basis of a diagnosis and through granting them bonuses and privileges, to undertake the required actions, in terms of material and immaterial investment, for the improvement of their competitive positioning on the various markets.

It is within the framework of this overall dynamic, that Tunisia gave particular attention to whatever is related to the competition policy whose scope, foundations and mechanisms had been defined by Law No. 91-64 dated 29 July 1991 relative to competition and prices and which was amended four times to give rise finally to the Law No. 20003-74 dated 11 November 2003.

It is worth reminding that this law stipulates in its general provisions in the first article that it aims at:

- ✓ defining the procedures governing the free price setting,
- ✓ setting up the rules providing for free competition, enacting to this effect the commitments to be borne by the producers, traders, service providers and other intermediaries, having to prevent any anticompetitive actions, ensuring

price transparency and eradicating restrictive practices and unlawful price rises, and

- ✓ enabling the monitoring of concentration and mergers

II. Competition Authority in Tunisia

As mentioned above, to back up institutional reforms and to encourage the emergence of a competitive environment, a series of global and sectoral instruments have been promulgated in Tunisia, the most significant of which is the Competition and Prices Act No. 91-64 of 29 July 1991, which has been amended by Act No. 93-83 of 26 July 1993, by Act No. 95-42 of 24 April 1995, by Act No. 99-41 of 10 May 1999 and more recently by Act No. 74-2003 of 11 November 2003. The Act, establishing the principles of competition and prices policy, is divided into several parts and chapters on the various aspects of this policy.

The Competition Council (*Conseil de la Concurrence*), created pursuant to Act No. 95-42 of 24 April 1995, replaced the Competition Board (*Commission de la Concurrence*). The Council is empowered to perform two functions: a decision-making function and an advisory function.

The Council is empowered to perform two functions:

- ***a decision-making function***: The Council is required to take cognizance in an adjudicatory capacity of applications pertaining to the anti-competitive practices stipulated in article 5. In this capacity it can impose financial penalties, order the closure of the firms, or grant injunctions ordering traders to cease the offending practices, and
- ***an advisory function***: The Council may be requested by the Ministry of Trade to give an opinion on draft laws and regulations and on competition-related issues, as well as on planned concentrations.

Tunisian Competition Authority is an Independent-Administrative Authority. Its independence is ensured by articles 9 and 15 of the Competition Act.

To ensure the Council's autonomy, the legislators conferred on it a privileged status that makes it more of a jurisdictional authority than an administrative one. This aim is reflected in two features: Membership of the Council, half of which consists of judges; the referral of cases by a range of bodies, namely, the Ministry of Trade, firms, professional bodies, trade unions, registered consumer organizations and chambers of agriculture, commerce and industry.

The monitoring and observance of the provisions of the Competition and Prices Act are matters for both the administration and the judiciary. There are at least three bodies that may intervene under a procedure laid down in the Act. These are the DGCRC (Direction Générale de la Concurrence et de la Recherche Economique, Ministry of Trade) and the regional offices of the Ministry of Trade, the Competition Council, and the ordinary law courts

The role and powers of each authority are clearly defined by the Act:

- **Price-control officials, police officers of the criminal investigation service and local authority officials** are authorized to enforce the Act. To this end, they have quite wide-ranging powers to carry out investigations and inquiries into all the subjects and practices (prices, competition) dealt with in the Act. However, only price-control inspectors are authorized to prepare cases for trial and to report offences relating to anti-competitive practices (article 5);
- **The Competition Council:** the Council has the task of ruling on the anti-competitive practices specified in article 5, that is, agreements and abuses of dominant positions, which are referred to it by applicants, including the Ministry of Trade, firms, organizations and professional bodies. In addition to its decision-making and advisory functions, the Board is empowered to order inquiries and investigations, which are carried out under the authority of the chairperson by “rapporteurs” appointed for this purpose;
- **The Ordinary law courts:** with the exception of the anti-competitive practices that fall within the jurisdiction of the Competition Council, all offences under the Competition and Prices Act are assigned to the jurisdiction of the ordinary law courts. In addition, these courts are authorized to nullify any agreements prohibited under article 5. They are also competent to rule on redress for damage suffered as a result of the anti-competitive offences specified in article 5 in cases on which the Council has already passed judgement. Similarly, the Council may transmit to the public prosecutor any cases in which individuals have participated by indirect means in violations of the prohibitions in article 5.

The President, vice-presidents, magistrates and others members of the Council are proposed by the Minister of Trade and appointed by decree by the President of the Republic

Competition Board has 13 members, including the President and two Vice-Presidents.

Backgrounds of members of Competition Board are as follows:

Judiciary (magistrate): 7 members including the President and 2 vice-Presidents

Public administration and business professions: 6 members

In the same vein, it is worth mentioning that the Law in Articles 12 (New), 13 (new) and 13A, makes for the appointment at the Council of respectively:

- ✓ A permanent secretary in charge mainly of the registration of petitions, of bookkeeping and filing, of drawing-up minutes of hearings and of deliberations and decisions of the Council and of any other mission entrusted to him/her by the Council's president.
- ✓ A general "*rapporteur*" and of recorders appointed by ordinance. The general "*rapporteur*" is responsible for coordination, follow-up, monitoring and supervision of the recorders' work.

The recorder's mission consists in initiating the investigation of petitions which are entrusted to him by the President of the Council. In this respect, he checks the documents of the case and can require from the corporate and natural persons, under the seal of the President of the Council, all the additional elements necessary for the investigations.

He can also, in compliance with the regulations and after permission from the Council's president, make all on the spot enquiries, ask to be handed any document he deems necessary for the investigation of the case or still initiate under the seal of the president, all enquiries or appraisals which will be carried out by the agents in charge of the economic and technical control.

The President can also appoint contractual recorders chosen for their experience and competence in the areas of competition and consumption.

- ✓ Of a government commissioner representing the Minister in charge of trade having as a mission to defend the general interest in issues related to anticompetitive actions mentioned in Article 5 of the Law and to present the administration's comments to the Council.

When speaking of the competition policy in Tunisia, one cannot but linger a little on the role played by the Minister in charge of trade who represents a key actor in the implementation of this policy and in its conduct. Among other things, the minister has as prerogatives to:

- ✓ Authorize concentration and mergers operations which can give rise to a dominant position (Article 7 new) and to concession and commercial

representation contracts (Article 5 new) and the agreements securing technological and economic progress,

- ✓ Bring before the Council petitions on his own initiative or upon request from the government (Article 11 new),
- ✓ Take precautionary transition measures against excessive price increases justified by crises or calamities (Article 4) or measures having to ensure or reinstate the conditions for adequate competition (Article 7A),
- ✓ Apply decisions taken by the Council (Article 35 new).

The General Competition and Economic Research Department was also assigned by the Decree n° 2966 of December 20, 2001 an important role in the implementation of the competition policy, mainly through fulfilling the following missions:

- ✓ The enforcement of laws and measures relative to competition and prices and to the contribution to the spread of competition culture
- ✓ The monitoring of concentration operations and the gathering of indicators in relation with the anticompetitive actions,
- ✓ The drawing up of petitions having to be filed before the Competition Council.

It is worth mentioning that this department can be entrusted by the Council's president to carry out queries or investigations regarding the cases referred to the Council (Article 11 New).

Appointments of the members of competition authority are:

- The President: last for 5 years renewable one time if he is not a magistrate.
- 2 vice-Presidents: last for 5 years renewable one time.
- 4 magistrates: last for 5 years renewable one time.
- 4 advisers: last for 4 years non renewable.
- 2 advisers: last for 6 years non renewable.

The budget for the competition authority is assigned as part the budget of a Ministry of Trade.

It is worth mentioning that this department can be entrusted by the Council's president to carry out queries or investigations regarding the cases referred to the Council (Article 11 New).

At this level of our developments, it is worth pointing out the interest shown by Tunisia to the ongoing adaptation of the competition policy to go hand in hand with the economy reform and restructuring process aimed at ensuring its liberalization

and its integration as provided for, among others, by Tunisia's commitments within the framework of its partnership agreement with the European Union and its membership in WTO.

This adaptation, also obtained by the successive amendments of the regulatory framework, is mainly visible through the broadening, in 1995, of the scope of the law on competition in its Article 5 (new) to include the issues of concentration and mergers, not provided for in its July 1991 initial version, as well as the strengthening of the expertise and the human resources put at the disposal of the Council to bestow on it the required efficiency through equipping it, for instance, with a general rapporteur, with the possibility of resorting to contractual recorders and with a government commissioner that did not exist in the initial version of this law.

As far as the referral of the cases to the Council is concerned, Article 11 of the Law stipulates that petitions are brought before the Competition Council by the Minister in charge of commerce, the enterprises, the professional organizations, trade unions, organizations or legally incorporated associations of consumers, or by the chambers of agriculture or commerce and industry, even if, as we are going to see later, in practice, it is the Minister in charge of trade who has mainly been the party to refer the most cases to the Council. In this respect, it should be mentioned that these amendments have now led to the fact that the Council can also automatically take proceedings in a case, in the event of a withdrawal of the petition by the concerned parties should the investigations carried out in a case it has had to examine show anticompetitive actions on a market directly related to that of the one subject of the petition.

Given that the law provides for the need to prescribe the actions related to the anticompetitive practices which are more than 3 years old, the Council, once the case is referred to it, will, as stipulated by Article 19 (new) of the Law, be faced with 2 courses of action:

- ✓ The first being the one where it considers that the facts put forward are outside its jurisdictions, as was the case with some of the petitions it has had to deal with or that they are not backed by evidence, in which case it will declare the petition non- admissible.
- ✓ The second case corresponds to that where it rules that the case is admissible in essence. Decisions rendered will then necessarily include :
 - The recognition of the reprehensible feature or not of the practices submitted to its investigation,

- The condemnation, if need be, of the authors of such actions to those sanctions mentioned in Article 34 of the current Law.

It should also be pointed out that by virtue of Article 20 (new) of this Law, the Competition Council is also entitled, if need be, to address injunctions to the operators concerned by the anticompetitive actions so as to put an end to these practices within a given deadline or also to impose on them particular conditions in the conduct of their business.

It can order the temporary closure of an establishment or of the guilty establishments for a period not exceeding 3 months knowing that their reopening can occur only after they have put an end to the actions for which they had been condemned. It can also, if it deems it necessary, hand over the case to the prosecutor in order for a lawsuit to be initiated.

In the event of an excessive exploitation of a dominant position ensuing from a case of concentration and mergers of enterprises, the Competition Council can suggest to the Minister in charge of trade to call upon, should the occasion arise, jointly with the Minister responsible for the concerned sector, through a counsel's decision, the enterprise or the enterprises at fault to modify, complete or terminate any agreement and any act by virtue of which the concentration and mergers giving rise to the violation was made notwithstanding the carrying out of the procedures mentioned in Articles 7 (new) and 8 (new).

III. Illegal practices under Competition Law

III.1. Competition Policy Conceptual Framework

In this part of the study devoted to the presentation of the different components of the competition policy in Tunisia, it will be worthwhile, beyond the institutional dimension, to re-examine certain important conceptual substructures of this policy on which the 2002 report of the Competition Council sheds good light.

In this respect, the Council considers, for example, an economic enterprise to be any physical person or corporate person taking up an economic activity and having commercial, financial, economic management autonomy.

As a result, it considers that the subsidiaries of the enterprises not showing such autonomy cannot be answerable to this law on competition.

It is also worth observing that by virtue of the Law but also and mainly through the Council's activity, the different decisions made by it and the various opinions it issued, being situated at the heart of the competition policy, this institution distinguishes between the anticompetitive actions and the unfair competition ones.

This distinction was corroborated by the Council's decision of 25 December 2002 relative to Case n° 9/93 which stipulates that « the unfair competition cases whose consequences are confined to one or a few enterprises without these cases affecting the market mechanisms and its normal functioning are answerable to before the common law courts ».

Hence, through this decision the Council confirms that what it considers as unfair competition is outside its jurisdictions and those of the competition law but falls within the powers of Article 92 of the obligations and Contracts Code.

Similarly and regarding agreements, forbidden by Article 5, whether these are vertical or horizontal, explicit or implicit, if they affect the good functioning of the market, the Council considers that the small enterprises do not fall within the powers of the competition Law, confirming it in the Decision 2135 of 19 December 2002 but that they can be sued for unfair competition issues.

It is also worth pointing out that the Council, as stipulated by Article 6 of the Law, does not consider to be anticompetitive any agreements or actions whose authors can prove that they have as an impact technical or economic progress and that they provide the users with an equitable share of the resulting profit. These actions are, however, subject to the permission of the Minister in Charge of trade after advice from the Council.

It is within this framework that comes the Council's opinion n°2267 of 12 December 2002 relative to the agreements between the insurance companies on the exchange of the Risk analysis data and information which the Council did not consider as anticompetitive actions despite their impact on price fixing. The same is said for the agreements concerning the collective coverage against the major risks.

As to the concentration and mergers operations having to meet simultaneously two conditions, namely that the entity to which they give rise should secure 30% of the market share and that it should have a turnover equal or higher than 3 million Dinars, these are subjected to an authorization from the Minister in charge of trade for which he seeks the Council's opinion.

The Council explains, in its 2002 report, that the fact of keeping both conditions makes it possible to take into account the liberalization of the markets and the potential of the enterprises operating on the Tunisian territory to withstand foreign competition as its opinion n°2266 dated September 24, 2002 appears to show.

In this respect, it should be pointed out that the Council suggests in this Report to change the Council's advisory opinion into a binding one because of the importance of the decision of the Minister in charge on the functioning of the market and the compliance with the competition rules. The Council justifies such a

proposal by the fact, among other things, that this decision must be based on an economic study which the Council actually proposes to conduct.

With regard to the situations of excessive exploitation of a dominant position on the market, it is to be pointed out that the Council has considered in its decision n°2135 of December 19, 2002 that a dominant position does not constitute in itself an impairment to the competition except if it leads to the elimination of competitors or to the hindrance of the normal functioning of the competition rules.

It has also considered that an economic enterprise is in a dominant position if this position bestows on it an economic power enabling it to handle and manage its clients according to its sole will.

This implies, in this case, that it finds itself in a position where, away from any market pressure, it can impose its conditions, control the market mechanisms and influence, in a fundamental manner, the situation of the operators on this market likely to result from its market share, its technological, commercial and financial capacities or from its geographical localisation.

As to the situations of excessive exploitation of a position of economic dependence, the Council in its appraisals considers that such practice concerns the case where an enterprise does not happen to have a dominant position but has a position which enables it to influence the market situation as a client mainly of the big retailers which have become capable of imposing their conditions on the producers and industrialists.

As to the exclusive concession and commercial representation agreements, Tunisia has chosen to subject them to the authorization of the Minister in charge of commerce. This is, as shown by the Competition Council's 2002 Report, unlike many other countries such as France, for instance, which considers them to be valid as long as the choice of the distributors is justified by the nature of the product or the capacity to provide well determined services.

Whatever the case may be and as shown by the 2002 report of the Council of Competition, two major principles have underlined the drawing up and mainly the implementation of the competition policy as well as its adaptation:

➤ ***Gradualism:***

The implementation of the competition policy in Tunisia was carried out, like all other reforms introduced in all the other areas, in a gradual way to ensure its efficiency and its consistency with the other components of the development strategy.

This progressivism translates the conviction in which the Council itself believes and which we find throughout its reports that competition is not seen as an end in

itself but as one of the levers of, even of the requirements of the liberalization of the economy, of its integration in the world economy and of making more dynamic the private sector whose responsiveness improvement has become one of the key conditions for the success of the adopted strategy.

This vision is very tangible in the approach which the Council has of its role and its contribution both of which are underlined in its 2001 Report, a report which was meant to be an evaluation of the first decade of its activity. Thus it is underlined that this role cannot be thoroughly understood unless we take into consideration that this Council was born in an environment which was fast shifting after many years of planned economy and protection having shaped the attitudes and behaviours of the various operators and thereby the functioning of the market.

It is within this perspective that we should see the four amendments introduced on this law so as to take into consideration the evolution and the inadequacies noticed whether in the scope or the means and procedures of the Council's intervention. All this should make it possible to improve the efficiency of its interventions and that of the framework of the competition policy itself.

➤ ***Flexibility:***

It is, to a great extent, in correlation with the approach based on progressiveness as far as the elaboration and the implementation of the competition policy is concerned.

Indeed, the Competition Council considers that this flexibility is justified by the need to take into consideration the higher interests of the country without, however, this flexibility leading to any kind of leniency in applying the competition rules. This can be achieved through providing for some exceptions subjected to the appraisal of the Minister in charge of trade and the Competition Council and relative to vital products of health, environment and culture and to the economic and technological progress.

This flexibility also reflects the determination to take into consideration in the elaboration of the competition policy, its implementation and its adaptation, the steps covered in the restructuring of the economy and the will to take into account the particularities of the country through refusing that the framework of competition be brought down to a standard framework that is imported and transplanted to a reality it is not ready for.

In its last two reports, the Competition Council has come up with several proposals aimed at making its role more dynamic and at improving the competition framework. These proposals can be summed up as follows:

- ✓ Enriching the procedure so as to provide the different parties more possibility for defence by introducing the possibility to appeal because right now there is only the possibility to lodge an appeal with the cassation court,
- ✓ Conferring to the Council the possibility to resort to an emergency procedure to take preventive measures putting an end to anticompetitive actions, something it is able to do now,
- ✓ Spreading even further the culture of competition and sensitising more the concerned parties as to its merits,
- ✓ Examining the possibility of further strengthening the administrative and financial autonomy of the Council to consolidate its perception among operators as an independent body, particularly that the Ministry of trade is often involved in the cases submitted to it,
- ✓ Reinforcing the means at its disposal with skills and qualifications through recruitment of specialists in the legal and economic fields related to competition and through the in-service training of the resource people already operating in its services,
- ✓ Developing its database through the provision of more data and studies.

III.2. Summary of illegal practices under Competition Law

Article 5 of the law prohibits:

all concerted actions and explicit or implicit agreements aiming at restricting competition, particularly when they restrict price determination by market forces, market access by other firms, restrict or control production, markets, investments or technical progress, share markets or sources of supplies;

the abuse of dominant position on the local market or on an important share thereof: Actions of abuse concern refusal to sell, tied sales, resale price maintenance, discrimination among customers or discontinuation of commercial relations for no valid reason or because the partner refuses to yield to unjustified commercial conditions;

the abuse of a dependent situation in which a supplier or a customer is held, with no choice left for an alternative outlet for his products or source of supply for his purchases.

Two amendments of the 1991 Act were introduced to deal explicitly with exclusive arrangements: the explicit prohibition of all exclusive agreements of concessions and commercial representation, enacted in 1995, and the relative easing of this

prohibition by granting the minister in charge of trade the power to authorize such agreements on an exceptional basis, enacted in 1999. The latter amendment does not however spell out the conditions that need to be met in order to benefit from such exceptions.

The prohibition of exclusive agreements in the Tunisian legislation contrasts with the French or the EU legislation where a rule-of-reason is applied and where the competition authority weighs the likely anticompetitive against the pro-competitive effects of the intended contract.

The Tunisian law does not consider as anticompetitive behavior concerted actions or the abuse of a dominant position that generates technological or economic progress and where a fair share of this progress benefits to consumers. Authors of such practices need to provide evidence for the likelihood of such effects. These practices, which have to be submitted to the approval of the minister of trade who issues his decision after seeking the competition council's opinion, may be exempted from prosecution even if they eliminate competition from a substantial portion of the market.

Merger control was introduced only through the 1995 amendment. Mergers fall under the heading of concentration, defined as any action that transfers the property of a firm allowing another firm or group of firms to exert an important influence on other firms. Any concentration action resulting in a dominant market position has to be submitted to the minister's approval. Two conditions are involved, a joint market share of the parties involved exceeding 30 percent (issue of market definition), and total sales have to exceed a certain amount set by decree, currently standing at 3 MD.

It is important to notice that the minister of trade has no legal obligation to seek the opinion of the competition council on merger cases. Indeed, consultations of the latter are only optional.

IV. Competition Policy Implementation

IV.1. Cases and Consultations Typology

It is necessary to clarify that implementing competition law is the major activity of the competition authority. It is designed to ensure that businesses do not enter into agreements that prevent or distort competition, do not abuse their market power and do not engage in anticompetitive mergers. Competition law is directed at the autonomous behavior of businesses, not at behavior sanctioned by law. In fact a

competition law by itself does not impede the adoption of anti-competitive legislation.

As a consequence, a key activity that competition authorities perform is to advocate competition, to seek, in other words, to influence competition policy. The focus of this enquiry is to identify the ingredients for acquiring a reputation as an independent enforcer of competition law and as a credible advocate for competition policy.

It should be first pointed out that the Council, since its creation, has always had two missions, namely a legal one and an advisory one to which we can also add an activity which, without however being part of its official missions, is likely to become more and more important in terms of impact on the competition policy, namely its activity of investigation and guidance.

As previously indicated, within the framework of its two missions, the Council can be resorted to by the Minister in charge of Commerce, by the economic enterprises, by the professional organizations or trade unions, the incorporated organisations or groupings of consumers or by the chambers of agriculture or those of commerce and industry.

Table 1: Cases and consultations referred to competition council

Years	1992	1993	1994	1995		1996	1997	1998	1999	2000	2001	2002	TOTAL
				JUIN	JUIL								
Cases	1	9	4	3	1	2	1	1	11	4	3	8	48
Consultation requests			1	2		6	3	17	10		11	12	62

Source: Based on the Tunisian competition council's report, various issues

The number of legal cases presented to the Council during the period 1992-2002, as shown by Table 1, did not exceed 48, that is an average of 4.3 case per year and of 2.5 if we do not take into account the years 1993, 1999 and 2002 where the cases brought before the Council were respectively 9, 11 and 8 cases.

The Council explains, in its 2001 Report related to the evaluation of the first decade of its activity, the relatively modest resorting to its competences by the various parties, by the transition of the Tunisian economy and a competition culture not deeply taken in by the operators.

With respect to the opinions, their number was, over the same period, 62, that is an average of almost 5.6, higher to that recorded at the level of petitions, thus implying that the Council was resorted to more for its advisory mission than for its legal-related one.

As to the proceedings placed with the Council, it is to be said that the parties which have the most referred cases to the Council are respectively the economic enterprises which referred 39 cases to it, i.e. 81.2% of the total, and the Minister in charge of trade 5 cases, i.e. 10.4%. It should be mentioned that the years 2001 and 2002 are characterised by two cases initiated by the Council itself.

Table 2: Distribution of cases filed according to the nature of the plaintiff

Years	1992	1993	1994	1995		1996	1997	1998	1999	2000	2001	2002	TOTAL
				JUIN	JUIL								
Government (Minister of Trade)			1			1		1	2				5
Firms	1	9	2	3	1	1	1		9	3	2	7	39
Business associations or trade unions			1							1			2
Consumer protection associations													0
Farm, Industrial or commercial chambers													0
Initiation by the council											1	1	2
TOTAL	1	9	4	3	1	2	1	1	11	4	3	8	48

Source: Based on the Tunisian competition council's report, various issues

It is also important to observe that out of the 48 petitions that were presented to the Council during this period, the Council has considered that 26 among them do not fall within its scope because almost all of them correspond to what it considers as cases pertaining to unfair competition and not to anticompetitive actions and that 5 were not, in essence, admissible.

Table 3: **Decisions issued by the Council**

ANNEES	1992	1993	1994	1995		1996	1997	1998	1999	2000	2001	2002	TOTAL
				JUIN	JUIL								
Decisions			4	1			8	5	7	6	4	8	43
Withdrawal of the suit							2	1		1		1	5
Falling outside the Council's jurisdiction			4				5	4	3	4	2	4	26
No ground to continue the procedures							1		1		1	2	5
Cases sanctioned for guilt				1					3	1	1	1	7

Source: Based on the Tunisian competition council's report, various issues

As to consultative activity, the opinions issued by the Council relative to draft legislation and regulatory literature and specifications accounted for more than half of all the opinions issued over the period; 8 decisions concerned the concentration and mergers case and one opinion is about exclusive agreements.

Table 4: **Consultations of the competition council by nature**

Years	1992	1993	1994	1995		1996	1997	1998	1999	2000	2001	2002	TOTAL
				JUIN	JUIL								
Mergers								2	3	1	1	1	8
Exclusive and selective contracts										1			1
Draft legislation							2	6	4	3	3	6	24
Cahiers de Charge									6	2	4	2	14
Other issues							4	4	3	1	4	3	19
TOTAL							6	12	16	8	12	12	66

Source: Based on the Tunisian competition council's report, various issues

Table 5: **Distribution of cases filed by economic activity**

ANNEES	1992	1993	1994	1995		1996	1997	1998	1999	2000	2001	2002	TOTAL
				JUIN	JUIL								
Agro-Food Industry	1	1	1	1		1			2		2		9
Energy		1											1
Mechanical and Electrical Industry		2	2	2						2		1	9
Chemicals		1				1							2
Textiles, Apparel and Leather		1		1									2
Services		3	1				1	1	5	1	1	3	16
Handicrafts									2			2	4
Others manufacturing industry									1	1			2
Distribution									1			2	3
TOTAL	1	9	4	4	0	2	1	1	11	4	3	8	48

Source: Based on the Tunisian competition council's report, various issues

IV.2. Cases of anticompetitive actions investigated under the law

Finally, at this stage of our analysis, we need to present some cases to illustrate in practice the application of the regulations in force by the Competition Council and the type of motives it used to justify the decisions it made and consultative activities it undertook.

As far as decisions are concerned, among the cases which can be mentioned, there is that of the North Mechanical Industries enterprise "Imen" which filed a complaint against the enterprise "Electrode" accusing it of charging low prices, which thus made any competition difficult, and asking the Council to consider this situation as one of abuse of dominant position.

The investigations conducted by the Council have led it to notice that, unlike what the plaintiff claimed, the level of prices charged by "Electrode" was due to an effort

to keep costs under control and that these prices were far from being lower than the cost prices but, on the other hand, were close to the export prices and the international reference prices.

On this basis, the Council stated in its decision n°2 of April 8, 1999 that the provisions of Article 5 of the competition law were not applicable to this case and that the complaint was considered non admissible in substance.

Another example of a case falling under this category was that filed by « Le Comptoir de tissage de sac » (a jute bag manufacturer). This company lodged a complaint against the Cereals Marketing Board for failure to purchase from it while it is in a situation of economic dependency towards this Board.

The Council, in its decision n°3 of March 15, 2001, while admitting the existence of an economic dependency situation, considered that this petition was non admissible since the plaintiff participated in tenders made by the Board and was not selected because of its high prices.

As to cases of withdrawal of suits, that of the «National Federation of Tomato producers» should be mentioned because it has largely contributed to move forwards the regulation then in force.

The complaint in itself was lodged by this Federation against agri-business manufacturers for collusion on fixing the purchase price of fresh tomato with the approval of their union chamber which had itself announced this price. The decision of the Council n°1 of May 7, 1998 was merely to take notice of this and drop the case.

This case made it possible, however, to show one of the inadequacies of the law prevailing at that time, namely the impossibility for the Council, once the petition is withdrawn by the plaintiff, to carry on and extend its investigations on the anticompetitive actions at the level of an activity branch. The 1999 amendment remedied to this by empowering the Council to pursue on its own initiative such investigations whenever it deems it necessary.

As far as withdrawal of suits falling outside the Council's jurisdiction is concerned, one of the cases falling under this category, is the one relative to the complaint filed by « la Société Nationale de l'Emballage Moderne » (The National Company of Modern packaging) against « la société Belvédère de l'emballage » (The Belvedere Packaging Company), the former accusing the latter of enticing essential elements of its labour force away so as to harm and affect its activity.

The Council Considered, in its decision N° 5 of December 2000, that it is a case which involves only the relationship between two enterprises without affecting the

good functioning of the packaging market and that, as a result, it does not fall within the scope of an anticompetitive action and within the jurisdiction of the Council.

As a case admissible in substance, mention should be made of that filed by the Steel company “Hédidane” against “SOFOMECA” for lowering its prices down to a level making it impossible for the former to market its product.

The proceedings of the Council have shown that indeed SOFOMECA was charging prices not reflecting at all its costs which did not include any margin. This led, for example, to the total exclusion of « Hédidane » from the market of steel balls and, among other things, to SOFOMECA finding itself in a monopolistic situation on this market.

Hence, the Council considered, in its decision n°1 of November 6, 2002, that this petition was admissible and that the different elements of the case made it possible to state that SOFOMECA resorted to anticompetitive actions as per the provisions of Article 5 of the competition law.

As to the consultative activities, and more precisely in the area of concentration, the Council approved of the finalisation of many operations over the last few years after having examined their cases and where the key question it systematically asked itself was to determine what their impact on the functioning of the market relative to their sector was.

Within this framework, and because it considered that they did not affect competition, the Board authorized, for instance, the operations:

- ✓ Of merger between the ‘Tunisian firm of explosives’ and the firm ‘Nitrogil’, considering, in its decision n°1 of May 7, 1998, this merger as an internal restructuring operation between a parent company and its subsidiary,
- ✓ Of a merger between ‘Promogaz’ and the firm ‘Butagaz’ provided that the latter takes in charge the replacement of the Gas cylinders held by the former’s clients or refund the deposit in the event of the restitution of such cylinders (decision n°11 of December 10, 1998),
- ✓ Of the takeover of the firm F3T by the PAF firm, in the iron ore sector, arguing basically, in its decision n°2 of 1999, that this operation enabled them to improve their competitiveness without, however, harming competition in this sector,

On the other hand, the Council issued a unfavourable opinion as regards several of these cases arguing the same concern, i.e. their impact in terms of competition. It is worth mentioning here the merger case between the firm ‘Esso Standard’ and the Firm ‘Mobil Tunisie’. The Council justified its decision by the fact that this merger

was going to generate an economically dominant position affecting competition in the oil sector without yet being a source of economic or technological progress.

V. The status and perspectives of cooperation with the EU in the area of competition policy

The Association Agreement signed between the EU and Tunisia is essentially a Free Trade Agreement but contains also provisions on standards and norms, payments and capital movements, rights of establishment and services, competition, economic cooperation including technical assistance, in addition to political dialogue and cooperation in social and cultural matters. With respect to competition, the Association Agreement states that any provisions inconsistent with the rules of Articles 85, 86 and 92 of the Treaty establishing the European Community are incompatible with the proper functioning of the Agreement. It adds that the Association Council will adopt, within five years of the entry into force of the Agreement, the necessary rules for compliance with the competition provisions of the Treaty of Rome.

Tunisia has been among the first Euro-med southern partners to enact a competition law. The existing law is by and large consistent with EU competition legislation, with the exception of state aids which is a very complex issue, both for the EU and for Tunisia. The successive amendments of the Tunisian law have tended to reduce gaps with EU legislation.

Under the framework of the Association Agreement, the EU can assist to enhance the efficiency of the council's work. The following areas of technical assistance are worth considering:

- Internship for the training of the council's staff: investigations of cases, collection of relevant information, the conduct of on site collection of information, methodologies used in conducting a rule of reason approach with respect to vertical agreements, etc.
- Internship for students specialized in competition law.
- Assistance with databases: how to optimize the use of limited resources in order to collect the most relevant information on market structure and conduct? What sort of general information and literature should be sought and collected in preparation for the empowerment of the council with self-initiation?

- Assistance with programs to install a competition culture, particularly to enable firms to understand what is relevant for competition policy. How to adapt the spread of competition culture in an environment where small and medium enterprises make up the bulk of the economy?
- Cooperation agreements and positive comity.
- Harmonization of laws.
- Exchange of ideas on multilateral negotiations on competition policy.

**Part 4: Competition and Economic
Performance. Dynamics of the Competition
Process**

I. Performance and Technical Progress in Tunisian Manufacturing Firms: Firm-level econometric analysis

In this section, a panel of 265 firms in manufacturing industry, drawn from the Annual Firm Survey, with detailed information on output and input factors and firm ownership is used to estimate a translog stochastic production function for the period 1984-94. By adopting the time-varying inefficiency model developed by Battese and Coelli (1995)²¹, we seek to analyse technical (in)efficiency and to identify its determinants for each of the six manufacturing sectors, to examine industry-level total factor productivity performance, and to investigate the relationship between technical efficiency change and competition environment.

I.1. Methodology

Traditionally, the analysis of firm performance has been done using conventional financial ratios such as the return on equity, return on assets, expense to premium ratios, etc. With the rapid evolution of frontier efficiency methodologies, the conventional methods are rapidly becoming obsolete. Frontier methodologies measure firm performance relative to “best practice” frontiers consisting of other firms in the industry. Such measures dominate traditional techniques in terms of developing meaningful and reliable measures of firm performance.

Assuming that the relationship between inputs (X_{it}) and outputs (Q_{it}) can be approximated by a production function that is known to the firm i for the year t , then the firm-specific production frontier corresponding to the best practice function is defined as follows:

$$Q_{it}^F = F(X_{it}, t), \quad (1)$$

where Q_{it}^F is the potential output level on the frontier at time t for firm i , given the technology $F(\cdot)$, assumed to be continuous, strictly increasing and quasi-concave, and X_{it} is a k order vector of inputs.

²¹ Battese, G. and Coelli, T. (1995). “A Model for Technical Inefficiency Effects in a Stochastic Frontier Production Function and Panel Data”, *Empirical Economics*, Vol. 20, 325-332.

A stochastic element can be introduced in the production function. Then, any observed output Q_{it} using for inputs X_{it} can be expressed as,

$$Q_{it} = F(X_{it}, t) \exp\{v_{it} - u_{it}\} \quad (2)$$

where $(v_{it} - u_{it})$ is composed error term combining a symmetric component v_{it} capturing random variation across firm and random shocks that are external to its control, and output-based technical inefficiency or efficiency error u_{it} accounting for production loss due to unit-specific technical inefficiency. u_{it} is always greater than or equal to zero and assumed to be and independent of the random error, v_{it} , which is assumed to have the usual properties ($\sim \text{iid } N(0, \sigma_v^2)$).

For the empirical analysis purpose, a parametric approach is adopted by considering the time-varying stochastic production frontier in translog form as:

$$\begin{aligned} \ln Q_{it} = & \alpha_0 + \alpha_L \ln L_{it} + \alpha_K \ln K_{it} + \frac{1}{2} \beta_{LL} (\ln L_{it})^2 + \frac{1}{2} \beta_{KK} (\ln K_{it})^2 + \beta_{LK} (\ln L_{it}) (\ln K_{it}) \\ & + \beta_{tL} (\ln L_{it}) + \beta_{tK} (\ln K_{it}) + \alpha_t t + \frac{1}{2} \beta_{tt} t^2 + (v_{it} - u_{it}) \end{aligned} \quad (3)$$

where Q_{it} corresponds to the value-added.

The distribution of technical inefficiency effects is taken to be the non-negative truncation of the normal distribution $N(m_{it}, \sigma_u^2)$, where:

$$m_{it} = Z_{it} \delta, \quad (4)$$

δ is a $1 \times p$ vector of parameters to be estimated, and Z_{it} a $p \times 1$ vector of variables which may influence the efficiency of a firm i .

Given the estimates of parameters in equation (3) and (4), the technical efficiency level of firm i at time t is then defined as the ratio of its means, given its realized firm effect, to the corresponding mean potential output,

$$TE_{it} = \frac{E(Q_{it}/u_{it}, L_{it}, K_{it})}{E(Q_{it}^F/L_{it}, K_{it})} = \exp\{-u_{it}\}, \quad (5)$$

The rate of technical progress TP_{it} is defined by:

$$TP_{it} = \frac{\partial \ln F(L_{it}, K_{it}, t)}{\partial t} = \alpha_t + \beta_{tL} + \beta_{tK} \quad (6)$$

If technical change is non-neutral then TP_{it} may vary for different input vectors. Hence, following Coelli, Rao & Battese (1998)²², the geometric mean between adjacent periods as a proxy is used:

$$TP_{it} = \sqrt{\left(1 + \frac{\partial \ln F(L_{it}, K_{it}, t)}{\partial t}\right) \left(1 + \frac{\partial \ln F(L_{it}, K_{it}, t+1)}{\partial (t+1)}\right)} - 1 \quad (7)$$

Taking logs of equation (2) and totally differentiating it:

$$\begin{aligned} \dot{Q}_{it} &= \frac{d \ln F(L_{it}, K_{it}, t)}{dt} - \frac{du_{it}}{dt} + \frac{dv_{it}}{dt} \\ &= \frac{\partial \ln F(L_{it}, K_{it}, t)}{\partial t} + \sum_{J=K,L} \frac{\partial \ln F(L_{it}, K_{it}, t)}{\partial J_{it}} \frac{dJ_{it}}{dt} - \frac{du_{it}}{dt} \\ &= TP_{it} + \sum_{J=K,L} e_{it}^J \frac{dJ_{it}}{dt} - \frac{du_{it}}{dt} \end{aligned} \quad (8)$$

The second term on the right-hand side of (8) measures the input growth weighted by output elasticities e_{it}^J with respect to input J.

The conventional conceptualization of total factor productivity growth ($T\dot{F}P$) can be defined as output growth unexplained by inputs, i.e.:

$$T\dot{F}P \equiv \dot{Q}_{it} - \sum_{J=K,L} e_{it}^J \frac{dJ_{it}}{dt} \quad (9)$$

In equation (9), the output elasticities with respect to input J is supposed to be equal to input share in the total production cost under the assumption of perfect competition.

From equations (8) and (9), TFP growth consists of two components: technical progress, which corresponds to innovation and shifts in the frontier technology, and technical efficiency change or catching-up effect:

$$T\dot{F}P = TP_{it} - \frac{du_{it}}{dt} \quad (10)$$

The technical efficiency change (ΔTE_{it}) denotes movement toward or away from the frontier; it corresponds to the derivative of the negative of the inefficiency measure with respect to time.

²² Coelli, T.J., Prasada Rao, D.S., and Battese, G.E. (1998), An Introduction to Efficiency and Productivity Analysis, Kluwer Academic Publishers, Boston, 271 pp.

The decomposition of TFP growth is useful in distinguishing innovation or adoption of new technology by best practice firms from the diffusion of technology. Coexistence of a high rate of TP and a low rate of change in technical efficiency may reflect the failures in achieving technological mastery or diffusion (Kalirajan, Obwona & Zhao, 1996)²³.

With the translog, the elasticities of output with respect to labour and capital, respectively, can be estimated at each time period and at the mean inputs values across the sample (or sectoral sub-sample), (\tilde{L}, \tilde{K}) , as:

$$e_t^L = \alpha_L + \beta_{LL} \text{Ln} \tilde{L}_t + \beta_{LK} \text{Ln} \tilde{K}_t + \beta_{Lt} t \quad (11)$$

and,

$$e_t^K = \alpha_K + \beta_{KK} \text{Ln} \tilde{K}_t + \beta_{KL} \text{Ln} \tilde{L}_t + \beta_{Kt} t \quad (12)$$

So, one can compute returns to scale as $e_t = e_t^L + e_t^K$. An $e_t < 1$, $= 1$, and > 1 indicates decreasing, constant, and increasing returns to scale, respectively.

Taking into account the possibility of increasing or decreasing returns to scale, TFP growth is then the sum of the following three terms:

$$\dot{TFP} = \underbrace{\frac{TP_{it}}{TP_{it}}}_{\text{Technological Progress Affect}} + \underbrace{\frac{\Delta TE_{it}}{TE_{it}}}_{\text{Catching-up Effect}} + \underbrace{(e_t - 1) \left[\frac{e_t^K}{e_t} \frac{\Delta K_{it}}{K_{it}} + \frac{e_t^L}{e_t} \frac{\Delta L_{it}}{L_{it}} \right]}_{\text{Returns to Scale Effect}} \quad (13)$$

Increasing K and L by x per cent will increase output by more than x per cent if there is increasing returns to scale, and by less than x per cent if decreasing returns to scale are present. If there are constant returns to scale, then input changes do not affect changes in total factor productivity, and equation (10) is valid.

1.2. Econometric evidence

The econometric analysis is applied on a balanced panel of 265 manufacturing firms for which observations exist for all the years because the reliability of the measure of technical efficiency depends crucially upon the length of the time dimension of the panel. Firms are observed for a period of 11 years, from 1984 to 1994. Hence, a total of 2915 observations for 265 firms are used in the analysis.

²³ Kalirajan, K. P., Obwona, M. B. & Zhao, S. (1996) "A Decomposition of Total Factor productivity Growth: the Case of Chinese Agricultural Growth Before and After Reforms", American Journal of Agricultural Economics 78, p331-338.

The firms have been selected from the national annual survey report on firms carried out by the Tunisian National Statistic Institute, and data used concerning capital stock, age of capital, and investment, are taken from the Tunisian Quantitative Economics Institute.

The variables used in the analysis comprise value added, capital stock evaluated at historical values and calculated through perpetual inventory method, total labour used by type of qualification, age of capital, investment, short-term and long-term debts, exports, time invariant characteristics such as activity, whether or not the firm is an exporting. Data were deflated using the appropriate price index, thereby expressing all data in terms of values for 1990 (the base year of prices index). Table 1 provides a descriptive summary of the sample and variables in the data set.

Table 1: Descriptive summary of the sample and variables

	Industry	Code	Number of firms	Mean Ln(L)	Mean Ln(K)	Mean Foreign partici- pation %	Mean Private local partici- pation %	Mean State partici- pation %
Food processing (FPI)	Milk industry	121	3	2,329	7,057	38	34	18
	Grain Miling	131	3	1,951	6,770	0	100	0
	Pasta and couscous	132	4	1,716	6,510	0	100	0
	Bread and pastries	133	8	1,176	5,143	0	100	0
	Biscuits	134	1	1,491	5,912	0	100	0
	Canned vegetables and fruits	151	4	1,391	6,404	0	100	0
	Canned fish	152	1	1,270	5,598	0	100	0
	Sugar industry	161	3	2,361	7,464	22	42	36
	Miscellaneous food industries	171	6	1,511	5,939	12	74	6
	Animal feed	172	2	1,423	5,954	0	100	0
	Non alcoholic beverages	181	5	1,994	6,645	46	52	3
	Wine	182	1	1,711	6,291	0	100	0
Construction materials and glass (CMGI)	Quarry products	211	2	1,968	6,514	50	50	0
	Stone and marble polished	212	7	1,341	5,480	0	100	0
	Cement and Plaster	221	1	2,959	8,211	0	1	99
	Cement based products	222	8	1,731	6,101	0	100	0
	Brick industry	231	6	2,141	6,628	8	86	4
	Tile industry	232	3	2,128	6,450	10	46	45
	Glass industry	241	4	1,887	6,352	0	100	0

Mechanical and electrical goods (MEGI)	Iron and Steel	311	1	2,186	7,170	0	100	0
	Metal and semi-products non ferrous	312	1	2,092	6,668	72	28	0
	Foundries	313	1	2,795	7,490	37	0	9
	Forge Products	321	4	1,488	5,747	0	100	0
	Metallic construction and boilerworks	322	9	1,964	6,170	0	88	0
	Quincaillerie	324	5	1,804	6,267	0	100	0
	Metallic household appliances	325	3	1,468	5,672	0	67	0
	Agricultural machinery	331	1	1,242	5,091	0	100	0
	Industrial machinery	332	3	1,442	5,569	0	100	0
	Spare parts for cars	341	1	1,774	6,291	0	100	0
	Boats and repairing	351	1	2,982	6,823	1	1	98
	Electrical equipment	361	4	1,949	6,317	0	96	0
	Miscellaneous Electrical Equipment	362	3	1,812	5,708	0	100	0
	Electronic professional equipment	371	3	1,910	6,061	33	67	0
Chemical and rubber (CRI)	Fertilizers	411	2	2,179	7,045	47	10	40
	Base chemical Products	422	2	1,656	6,334	0	79	0
	Paint, ink, glue and colorants	431	7	1,561	5,770	0	96	0
	Soap, detergents and disinfectants	432	9	1,805	6,324	0	100	0
	Perfumes and Toiletry	433	7	1,259	5,113	0	100	0
	Miscellaneous Para-chemicals	434	1	1,715	6,255	0	100	0
	Tires and Rubber products	451	2	1,835	6,363	0	100	0
Textiles, clothing and leather goods (TCLGI)	Textile spinning	511	5	1,509	5,977	0	100	0
	Textile weaving	512	23	1,784	6,202	1	96	1
	Other textiles	513	4	1,855	6,208	0	99	0
	Carpet	521	1	1,314	5,250	0	100	0
	Underwear	531	7	1,733	5,834	0	90	0
	Apparel	541	31	1,919	5,634	0	63	0
	Leather and skin work	551	2	1,582	5,967	0	100	0
	Other leather and plastic products	552	3	1,468	5,266	33	67	0
	Footwear	553	6	1,666	5,864	0	67	0
Woodwork, paper and diverse (WPDI)	Wood products	611	2	1,752	5,966	18	78	5
	Building carpentry	612	1	1,468	5,426	0	100	0
	Bedding furniture	613	7	1,958	6,002	18	75	0
	Paper pulp and cardboard	621	2	2,464	7,409	0	50	50
	Packaging	622	2	1,854	6,083	0	96	0
	Paper-making	623	2	1,844	6,330	0	100	0
	Printing works	624	8	1,691	6,048	4	75	21
	Plastic products	631	13	1,496	6,117	0	100	0
	Miscellaneous products	641	4	1,749	5,679	0	50	0

The parameters of the translog stochastic frontier model, defined by equations (3) and (4), are simultaneously estimated by the maximum likelihood method using the computer program, FRONTIER Version 4.1, designed by Coelli (1996). The

program provides maximum-likelihood estimates of the parameters and predicts technical efficiencies. It uses the following parameterization:

$$\sigma^2 = \sigma_v^2 + \sigma_u^2, \text{ and } \gamma = \sigma_u^2 / (\sigma_v^2 + \sigma_u^2),$$

Given the specifications of translog frontier with inefficiency effects expressed as an explicit function of firm-specific variables, and a random error, and given the results of statistical tests on the estimated parameters, the preferred frontier models are chosen and the estimates of their parameters are presented in Table 2.

Table 2: Maximum likelihood estimates of parameters, equations (3)-(4)

Variable	Parameter	Coefficient	Stand. Error	T-ratio
<i>Constant</i>	α_0	4.415	0.233	18.967*
<i>Log(L)</i>	α_L	2.089	0.113	18.530*
<i>Log(K)</i>	α_K	-0.727	0.097	-7.476*
<i>Log(L)²</i>	β_{LL}	0.099	0.028	3.530*
<i>Log(K)²</i>	β_{KK}	0.135	0.011	12.063*
<i>Log(L)*Log(K)</i>	β_{LK}	-0.293	0.029	-10.030*
<i>time</i>	α_t	-0.070	0.015	-4.621*
<i>Time²</i>	β_{tt}	0.005	0.001	4.561*
<i>Inefficiency determinants</i>				
<i>Constant</i>	δ_0	0.358	0.046	7.860*
<i>Dummy FPI</i>	δ_1	-0.107	0.016	-6.570*
<i>Dummy CMGI</i>	δ_2	0.115	0.017	6.744*
<i>Dummy MEGI</i>	δ_3	-0.100	0.015	-6.509*
<i>Dummy CRI</i>	δ_4	-0.013	0.016	-0.782
<i>Dummy TCLGI</i>	δ_5	0.021	0.014	1.521
<i>Rate of skilled workers</i>	δ_6	-0.455	0.038	-12.089*
<i>Dummy FOREIGN</i>	δ_7	-0.097	0.021	-4.524*
<i>Age of capital AGEK</i>	δ_8	0.013	0.002	6.214*
<i>Dummy Firm size<100 employees</i>	δ_9	0.033	0.013	2.455*
<i>Dummy State participation > 25%</i>	δ_{10}	-0.085	0.029	-2.939*
<i>Dummy 1985</i>	δ_{11}	-0.088	0.022	-3.998*
<i>Dummy 1986</i>	δ_{12}	-0.177	0.028	-6.217*
<i>Dummy 1987</i>	δ_{13}	-0.212	0.034	-6.321*
<i>Dummy 1988</i>	δ_{14}	-0.241	0.038	-6.329*
<i>Dummy 1989</i>	δ_{15}	-0.273	0.041	-6.729*

<i>Dummy 1990</i>	δ_{16}	-0.305	0.043	-7.078*
<i>Dummy 1991</i>	δ_{17}	-0.319	0.043	-7.506*
<i>Dummy 1992</i>	δ_{18}	-0.313	0.041	-7.726*
<i>Dummy 1993</i>	δ_{19}	-0.270	0.036	-7.548*
<i>Dummy 1994</i>	δ_{20}	-0.216	0.034	-6.318*
<i>sigma-squared gamma</i>	σ^2	0.038	0.001	35.138*
	γ	0.062	0.015	4.185*
<i>Log-likelihood</i>		653.629		

Elasticities of mean output with respect to two input variables, labour and capital stock, are estimated at the mean values of the variables involved, by using equations (11) and (12). It should be noted that labour effort is a flow input variable while capital is a stock input variable, which excludes the possibility of direct comparison. Returns to scale range from 1,017 to 1,075, detailed information on returns to scale is presented in Table 3. It shows that the sum of inputs elasticities is always close to unity and the hypothesis of constant returns to scale is accepted in all years, and for all sectors²⁴. Thus, over the full period, it seems unlikely that firm size is a major cause of inefficiency in manufacturing.

Table 3: Elasticities and Returns to Scale by year

	1984	1990	1994	1984-1994
<i>Elasticities with respect to Labour</i>				
Food processing	0.566	0.583	0.583	0.576
Construction materials and glass	0.574	0.583	0.576	0.575
Mechanical and electrical goods	0.657	0.646	0.642	0.648
Chemical and rubber	0.635	0.618	0.610	0.620
Textiles, clothing and leather goods	0.722	0.718	0.726	0.716
Woodwork, paper and diverse	0.669	0.659	0.636	0.655

²⁴ In general, use of individual firm data, instead of the mean values, doesn't yield different results. The firm level returns to scale distribution by year is reported in the following table:

Returns to scale distribution (Frequency in %)											
	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Less than 0,96	5.3	5.3	5.3	5.3	6.0	6.4	6.8	6.8	6.0	6.0	5.7
from 0,96 to 1,08	52.8	51.3	52.8	52.5	52.8	52.5	53.6	54.0	52.8	54.3	54.3
from 1,08 to 1,2	41.1	42.6	40.8	41.5	40.4	40.4	39.2	38.9	40.4	38.9	39.2
more than 1,2	0.8	0.8	1.1	0.8	0.8	0.8	0.4	0.4	0.8	0.8	0.8

So, more than 90 % of firms have an estimated returns to scale between 0,96 and 1,2. Given this distribution, it might well be the case that a test for constant returns is accepted.

Elasticities with respect to Capital

Food processing	0.496	0.471	0.469	0.480
Construction materials and glass	0.444	0.434	0.452	0.445
Mechanical and electrical goods	0.382	0.388	0.397	0.389
Chemical and rubber	0.423	0.435	0.446	0.437
Textiles, clothing and leather goods	0.352	0.352	0.343	0.356
Woodwork, paper and diverse	0.385	0.389	0.408	0.395

Returns to scale

Food processing	1.062	1.054	1.052	1.056
Construction materials and glass	1.018	1.017	1.028	1.020
Mechanical and electrical goods	1.038	1.034	1.039	1.036
Chemical and rubber	1.058	1.054	1.057	1.057
Textiles, clothing and leather goods	1.073	1.070	1.069	1.072
Woodwork, paper and diverse	1.054	1.048	1.043	1.049

The elasticity of output with respect to labour is higher for the Textile, Clothing and Leather Goods firms than the other sectors. It ranges from 0.702 to 0.726, which reflects the high labour-use in this sector.

Econometric results regarding the determinants of efficiency reveal that efficiency (inefficiency) of manufacturing firms increases (decreases) with the prevalence of foreign participation (the sign of coefficient of inefficiency effect of FOREIGN is negative and significant at 5 per cent level). The same goes for the effect of training rate variable (TRAIN) which is highly significant contributor to technical efficiency. Given the absence of data on employees schooling, this variable can be considered as a proxy of human capital in each firm. There is also some evidence, showing that state participation (STATE) is not conducive to technical inefficiency. Furthermore, the result shows small and medium firm size (SMSIZE), likewise age of capital (AGEK), appears to have a negative and significant influence on technical efficiency.

The average technical efficiency, calculated by using equation (5), ranges from 0,62 to 0,96. The average efficiency score improved at first, recovered to a peak level in 1991, and fell in the last three years. The detailed information on mean technical efficiency is presented in Table 4.

The decomposition of total factor productivity change into technical efficiency change and technical change, by using equation (10), gives the possibility to understand whether the industries have improved their productivity levels simply through a more efficient use of existing technology or through technical progress. Growth in efficiency change can also be considered as an indicator of industry's performance in adapting the technology. The mean changes in efficiency and TFP of manufacturing industries are presented in Table 5.

The results reveal a steady decline in technical efficiency since 1991, which concerns all manufacturing firms, and principally firms belonging to Textiles, Clothing and Leather Goods and Woodwork, Paper and Diverse sectors. The average total factor productivity growth for the period 1985-94 has been positive and sluggish across all the industries (mean TFP rate of growth of 0.51 per cent). A comparison of TFP growth over time shows that it improved significantly in the sub-period 1990-1992, for all industries. The end of the period is marked by a decline in TFP growth rate, particularly in the industry groups like textiles, clothing and leather goods, and Woodwork, paper and diverse.

Table 4: Mean Technical Efficiency of Manufacturing Firms by Year

	Mean Technical Efficiency	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Food Processing	0.90	0.77	0.83	0.89	0.90	0.92	0.93	0.95	0.96	0.96	0.94	0.89
Construction												
Materials and Glass	0.76	0.62	0.68	0.73	0.75	0.77	0.80	0.82	0.83	0.82	0.79	0.77
Mechanical and Electrical Goods	0.91	0.76	0.83	0.89	0.91	0.93	0.94	0.96	0.96	0.96	0.94	0.92
Chemical and Rubber	0.86	0.68	0.75	0.83	0.86	0.88	0.90	0.93	0.94	0.93	0.91	0.87
Textiles, Clothing and Leather Goods	0.81	0.65	0.71	0.77	0.79	0.82	0.85	0.88	0.89	0.88	0.85	0.80
Woodwork, Paper and Diverse	0.85	0.69	0.76	0.82	0.85	0.87	0.89	0.91	0.92	0.92	0.89	0.84
Total												
Manufacturing Sector	0.84	0.69	0.75	0.81	0.84	0.86	0.88	0.90	0.91	0.90	0.88	0.84

Table 5: Efficiency Change and TFP Change in Manufacturing Industries

	1985	1989	1991	1993	1994	1985-94
Efficiency Change						
Food processing	0.056	0.017	0.009	-0.020	-0.042	0.012
Construction materials and glass	0.055	0.030	0.011	-0.033	-0.022	0.015
Mechanical and electrical goods	0.076	0.013	0.000	-0.018	-0.025	0.016
Chemical and rubber	0.065	0.021	0.011	-0.023	-0.042	0.018
Textiles, clothing and leather goods	0.056	0.026	0.009	-0.028	-0.049	0.015
Woodwork, paper and diverse	0.066	0.026	0.007	-0.031	-0.048	0.015
TFP Change						
Food processing	0.001	0.002	0.014	0.005	-0.007	0.002
Construction materials and glass	0.000	0.015	0.016	-0.008	0.013	0.005
Mechanical and electrical goods	0.021	-0.002	0.005	0.007	0.010	0.006
Chemical and rubber	0.009	0.006	0.016	0.001	-0.007	0.008
Textiles, clothing and leather goods	0.001	0.011	0.014	-0.003	-0.014	0.005
Woodwork, paper and diverse	0.011	0.011	0.012	-0.006	-0.013	0.005

At a second stage, a statistical analysis is performed to identify the determinants of technical efficiency change of the Tunisian manufacturing sector with a focus on the impact associated to investment rate and openness. For this purpose, an equation examining the impact of openness (OPENNESS) and investment effort (INVRATE) on technical efficiency change is specified as follows:

$$\Delta TE_{it} = \gamma_0 + \gamma_1 INVRATE_{it} + \gamma_2 (INVRATE_{it})^2 + \gamma_3 OPENNESS_{it} + \gamma_4 (OPENNESS_{it})^2 + \gamma_5 (INVRATE_{it})(OPENNESS_{it}) + \gamma_6 SIZE_{it} + \alpha_i + \beta_t + \varepsilon_{it} \quad (14)$$

where SIZE is the firm size which refer to the number of full-time employees in the firm i at period t and ε_{it} a classical disturbance term.

Equation (14) allows for non-linearity in investment and openness impact on technical efficiency change. It includes firm-specific fixed-effect α_i , to capture time-invariant influences on a firm's mean level of technical efficiency change over the sample period. To capture economy-wide influences on technical efficiency change that are common to all manufacturing firms in any given year, a set of year time dummies is also included. In this specification, the variable SIZE is defined as a dummy variable equal to 1 if the number of full-time employees in the firm is less than 100 (to characterize small and medium firm in the sample), and 0 otherwise. The variable OPENNESS regards import penetration rate evaluated at a 3-digit level SIC sector-based data.

Fixed-effects OLS estimator is used to obtain estimates of the parameters in equation (14), the results of which are presented in Table 6.

Table 6: **LS with Group Dummy Variables and Period Effects estimates of (14)**

Variable	Parameter	Coefficient	Standard-error*	T-ratio	Mean of X
<i>Constant</i>	γ_0	0,016	0,003	5,334	
<i>INVRATE</i>	γ_1	0,007	0,002	4,415	0,347
<i>INVRATE²</i>	γ_2	-0,001	0,000	-3,874	0,5478
<i>OPENNESS</i>	γ_3	0,011	0,004	2,841	0,5499
<i>OPENNESS²</i>	γ_4	-0,001	0,000	-2,303	1,444
<i>INVRATE*OPENNESS</i>	γ_5	0,002	0,001	1,564	0,1813
<i>Small and Medium Firm Size Dummy</i>	γ_6	-0,011	0,003	-3,360	0,6917
Mean of dependent variable				0,01524	
Standard Deviation				0,0393	
Observations				2650	
Adjusted R-squared				0,60559	

*Heteroskedasticity-robust standard errors are reported.

The results highlight firstly, the existence of a positive and highly significant association between investment effort of firm and efficiency change. Evaluated at the mean values, the elasticity of efficiency change to investment rate is estimated at 0,174. This suggests that modernity of machinery and installations, caused by investment effort, plays an important role in the growth of the firm efficiency. That is, more investment effort gives the firm some competitive advantage.

Secondly, a negative correlation is obtained between the dummy indicating small and medium size firm (SIZE) and the efficiency change. This result indicates that large firms are in better position to improve their efficiency than small and medium firms. This may be the result of large firms having better access to credit than small firms to finance the implementation of new technology or because new technologies (computers) are more profitable when implemented on a larger scale.

Thirdly, there is a positive relationship between the degree of openness of the considered industry and efficiency change. The signs of the openness variable and of its square indicate (as for INVRATE variable) that efficiency increase with openness, reach a maximum, and then declines. Evaluated at the mean values, the elasticity of efficiency change to openness is estimated at 0,39 which is very significant. Therefore, the firms that operate in sectors with higher degree of openness, i.e. in more competitive sectors, have most incentive to improve its efficiency.

II. Persistence of Profitability and Intensity of Competition in Tunisian Manufacturing Sectors: Firm-level econometric analysis

The purpose of this section is to examine empirically the **dynamics** of the competition process in manufacturing sectors in Tunisia using the common methodology of "*Persistency of Profitability*" (PP) studies in industrial organization.

II.1. Methodology

Static measures of concentration inadequately reflect competition intensity since, despite high industry concentration ratios, competition between oligopolistic firms may be intense over market share, design, sales, etc. Such competitive dynamics may be better captured by examining the persistence of corporate rates of return. If competition is intense there is unlikely to be persistency in the profitability of

competing firms. Those with above average profits in one period will not be expected to maintain the same level of profits in the subsequent period since they will be eroded by competitors. With less intense competition, profitability differences between firms may be more persistent.

This essentially Schumpeterian perspective on the competition process has been adopted in PP studies, which are typically based on estimation of the following first-order auto-regressive equation for corporate profitability.

$$P_{it} = \alpha_i + \lambda_i P_{it-1} + u_{it} \quad (1)$$

where P_{it} is the profitability of firm (sector) i in time t , α_i and λ_i are the parameters to be estimated, and u is the usual error term. The coefficient λ_i is interpreted as the speed of adjustment of excess profits to the norm and, if $\lambda_i \in]-1; 1[$, the equilibrium or long-run profitability level of firm i is given by:

$$P_i^{LR} = \frac{\alpha_i}{1 - \lambda_i} \quad (2)$$

Equation (1) has the virtue of not requiring any unobservable variables to map competitive dynamics. *However, as noted by Glen, Lee and Singh (2001), henceforth GLS, the equation does not differentiate between different sources of persistency, specifically those arising from persistent monopoly power or those due to continuous good management and hence persistent efficiency. Entry and exit forces which erode excess profits apply to both sources of such profits.*

Following GLS and to control for business cycles and other macroeconomic shocks, the regression analysis is conducted in terms of the variable $Y_{it} = P_{it} - \bar{P}_t$, where \bar{P}_t is the average of the P_{it} across firms. Y_{it} thus represents the deviation of the profitability of representative firm in sector i at time t from the average profitability of all other firms in the country sample at that time. Given the relatively short time dimension of the data, the analysis is based on second-order autoregressive models of the form:

$$Y_{it} = \alpha_i + \lambda_{1i} Y_{it-1} + \lambda_{2i} Y_{it-2} + \varepsilon_{it} \quad (3)$$

The presence of a unit root, which indicates that shocks to profitability persist indefinitely, implies that (3) can be written in first difference form. Im, Pesaran and Shin (1997), hereafter IPS, have provided a relatively powerful test of the unit root hypothesis in situations where the data under investigation also have a cross-sectional dimension. The ‘standardised t-bar test’ proposed by IPS exploits the

panel structure of the data and is based on the average value of the Augmented Dickey-Fuller statistic calculated for each of the individual firm's or sector's data, adfi ; i.e. the average value of the t-statistic on the coefficient β_i in the rewritten version of (3) given by the Dickey-Fuller regression:

$$\Delta Y_{it} = \alpha_i + \beta_i Y_{it-1} + \gamma_i \Delta Y_{it-1} + \varepsilon_{it} \quad (4)$$

where $\beta_i = -(1 - \lambda_{1i} - \lambda_{2i})$ and $\gamma_i = -\lambda_{2i}$. To take into account the short time series available while recognising the requirement that the ε_{it} do not display serial correlation, two sets of tests of the unit root hypothesis were therefore conducted; in the first (unrestricted) set, ΔY_{it-1} is included in all regressions while, in the second (parsimonious) set, the test is conducted on the basis of regressions chosen through a specification search in which the Schwarz-Bayesian Criterion is calculated to decide whether or not to exclude the lagged ΔY_{it-1} term. In both cases the appropriate standardised t-bar statistic is calculated and compared to the relevant critical values.

As mentioned above, panel unit root tests developed by IPS are used to explore the panel time series properties of the variables. This test addresses the low power of the conventional unit root tests by exploiting the cross-sectional and time series information. We briefly outline the methodology used by IPS for testing unit roots before presenting the results.

IPS (2003) suggest a panel unit root test in the context of a heterogeneous panel. This basically applies the ADF test to individual series thus allowing each series to have its own short-run dynamics and the overall t-test statistic is based on the arithmetic mean of all individual countries' ADF statistic. Suppose a series (such as GDP, rate of return or price) can be represented by the ADF (suppose without trend):

$$\Delta Y_{it} = \alpha_i + \beta_i Y_{it-1} + \sum_{j=1}^{p_i} \gamma_{i,j} \Delta Y_{it-j} + \varepsilon_{it} \quad (5)$$

The IPS tests, which are based on N individual regressions, allow both the trend and the serial correlation coefficient to vary across the units under the alternative, in addition to the mean and variance. It also allows for the heterogeneity in the value β_i under the alternative hypothesis.

IPS test for the null hypothesis that β_i is null for all observations i versus an alternative that some of the β_i s are less than zero. They propose tests based on the

average over the individual units of a Lagrange-multiplier test of the hypothesis that $\beta_i = 0$ as well as tests based on the average of the augmented Dickey-Fuller statistics, which they find to have somewhat better finite sample properties than the L-M test.

IPS average ADF test can be implemented following the steps described below:

1. Given the specification (5), with or without time trend, standard panel unit root test based on the augmented ADF statistics for each firm, sector or country i is conducted. $t_i(N, T)$ is the cross sectionally augmented Dickey-Fuller (CADF) statistic for the i th cross section unit given by the t-ratio of the coefficient of Y_{it-1} in the CADF regression.
2. The t_{bar} statistic is then formed as a simple average of the individual $t_i(N, T)$ statistic:

$$t_{bar} = \frac{1}{N} \sum_{i=1}^N t_i(N, T; p_i),$$

where p_i is the lag order in the ADF regression (5).

3. Finally, a standardised t-bar statistic for unit root test is evaluated as:

$$Z_{t_{bar}} = \frac{\sqrt{N}(t_{bar} - E(\eta))}{\sqrt{Var(\eta)}},$$

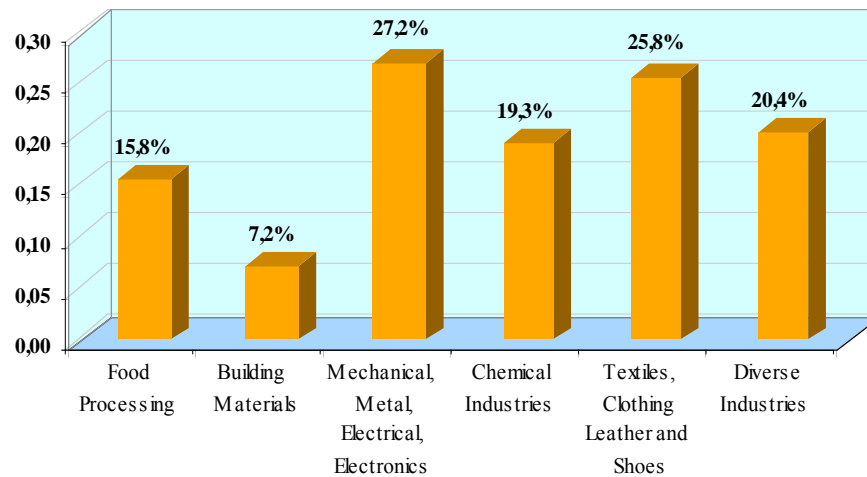
$E(\eta)$ and $V(\eta)$ are obtained from the results of Monte Carlo simulation carried out by IPS and are available from their table (2); they have tabulated them for various time periods and lags. When the ADF has different augmentation lags p_i the two terms $E(\eta)$ and $V(\eta)$ in the equation above are replaced by corresponding group averages of the tabulated values of $E(\eta, p_i)$ and $V(\eta, p_i)$ respectively.

II.2. Econometric evidence

Persistence in Tunisian manufacturing sectors is investigated here using a data set consisting of annual observations (1984-1994) on profitability, defined as the profit rate which corresponds to the ratio of operating surplus at the current period to the aggregate capital stock at the end of the last period $t-1$ evaluated at current investment prices, for a sample subset of the 100 largest listed manufacturing

corporations (in terms of value added at factors costs). The subset of 70 corporations represents those firms which have a common run of data during the period 1984-1994 (11 observations)²⁵; firms with broken runs of data are excluded on the grounds that time series methods are inapplicable with such short time series. Graph 1 provides the means of corporate profitability for each sector.

Graph 1: **Mean Corporate Profit Rate (1984-1994)**



Given the limited number of temporal observations, a parsimonious specification of (4) where ΔY_{it-1} is dropped and a time trend is included in all regressions is kept to test for the presence of unit roots.

Table 2 summarises the relevant results obtained by estimating equation (4) across all firms following the specification search described above. The most important results are:

1. While the regression model (4) is very simple, the fit of the regression is reasonable in most cases, with the average adjusted R^2 of 0.337. The great majority of individual regressions have an adjusted R^2 in excess of 0.2.
2. The results of the unit root tests suggest that this hypothesis is rejected. Indeed, the standardised $t_{bar}(Z_{t_{bar}})$, evaluated from the critical values $E(\eta) = -2.166$ and $V(\eta) = 1.132$ for $T = 10$, is sufficiently weak (-2.9323) compared to the critical value at 5 per cent level obtained by interpolation

²⁵ The subset of 70 corporations is constituted by 14 firms from Food Processing sectors, 8 firms from Building Materials sectors, 13 firms from Mechanical, Metal, Electrical and Electronics sectors, 6 from Chemical Industries, 15 from Textiles, Clothing Leather and Shoes sectors and 14 firms from Diverse Industries.

between the relevant values for small samples provided in IPS (-2.388). The panel structure of the data set allows us to infer that profitability data is stationary.

3. The mean value of λ in Table 2 is relatively small (0.308), and the estimated standard error suggest it is precisely estimated (0.004). This result suggests a rapid speed of adjustment for excess short-run profits; nearly all of the impact of a profitability shock dissipates within 1.44 years.
4. Most importantly, our results are in line with those reported in GLS (2001) concerning firms in emerging markets, and more precisely with GLS central result: “...there is less persistence in developing than in advanced economies.”
5. Estimated mean value of long-run profitability is statistically close to zero (mean value of -0,002 with relatively important estimated standard errors).

A competition-based interpretation is also compatible with the conclusions of a recent review article, Tybout (2000)²⁶, on developing country manufacturing firms. He suggests that the common belief concerning the lack of competition in emerging markets and the inefficiency of their firms is not supported by evidence. He concludes:

“Indeed, although the issue remains open, the existing empirical literature does not support the notion that LDC manufacturers are relatively stagnant and inefficient. Turnover rates in plants and jobs are at least as high as those found in the OECD, and the amount of cross-plant dispersion in measured productivity rates is not generally greater. Also, although small-scale production is relatively common in LDCs, there do not appear to be major gains from better exploitation of scale economies.” (p. 38).

Table 2: Results on the estimated ADF regressions, 1985-1994

Firm N°	α	λ	ADFi	Adjust. R ²
Mean	-0,002	0,308	-2,539	0,337
St error	0,396	1,139	1,884	0,213

²⁶ Tybout, J.R., 2000. Manufacturing firms in developing countries: how well do they do, and why? Journal of Economic Literature XXXVIII (March), 11–44.

Competition, Efficiency and Competition Policy in Morocco

By
Lahcen Achy
(INSEA, Rabat)
and
Khalid Sekkat
(DULBEA, University of Brussels)

(Revised : May 2005)

1. Introduction

The importance of competition and competition policy in a developing country like Morocco can be motivated in different respects. In relation to growth and development, the issue can be analyzed on the light of the controversy about the role of industrial policy. Some economists argue in favor of the creation (and the protection) of domestic champions while others recommend promoting domestic competition to force firms to rationalize and innovate in order to survive. However, strong empirical evidence (Porter, 1990) supports the association between a vigorous rivalry and the creation and persistence of competitive advantage in an industry (See Rey, 1998 for a deep analysis in this respect). A well functioning of the domestic market through an effective competition prepares and enables domestic firms to successfully compete on international markets. The experience of many centralized economies highlights the importance of competition as a tool, although not the only one, for developing strong and efficient market economies conducive to growth and employment. Recent development in Morocco's external environment also advocates for the importance of competition and competition policy issues. They concern both the negotiations agenda related to the multilateral trading system and the country's relationship with its traditional main partner i.e. the European Union (EU).

The present paper examines the state of competition and efficiency in the Moroccan manufacturing sector as well as on the legislation aimed at fostering competition. Specifically it seeks to

- Assess the degree of competition
- Assess the degree of efficiency
- Examine the relation between efficiency and competition conditions.
- Present competition law provisions
- Present the mechanisms of enforcement of competition law.

We adopt the traditional distinction of firms' strategies according to the horizontal and vertical dimensions. The analysis of the horizontal dimension is based on concentration and mark-up indicators. To examine the vertical dimension, we interview producers and dealers using the questionnaire in the appendix.¹ To study efficiency we compute distribution of firm size and productivity. A systematic comparison of the findings in the different dimensions is conducted in order to highlight the interaction among various indicators.² The paper also

¹ Interviews were conducted for selected sectors and in the most important cities of the country.

² For instance, whether the profile of mark-ups correlates with industrial concentration?

provides a critical analysis of the existing competition law as well as of the mechanisms for its implementation and enforcement. The rules and their actual implementation and enforcement are examined in relation to the findings on the degree of competition, the degree of efficiency and their interactions.

The rest of the paper is organized as follows. The next section provides an overview of the literature dealing with similar issues for Morocco. Section 3 presents a general picture of the manufacturing sector and highlight some of Moroccan specificity in terms of differences in data, methodology, institutional framework and so forth. Sub-section 4.1 focuses on the degree of competition while Sub-section 4.2 deals with efficiency. Section 5 focuses on competition and vertical restraints in selected sectors. The relationship between competition and efficiency is examined in Section 6. Section 7 presents the Competition Policy framework in Morocco including competition policy provisions and competition policy implementation and enforcement. Section 8 concludes by discussing the strengths and weaknesses of the competition, efficiency and the existing competition policy framework and drawing policy recommendations.

2. Relation to the literature

Since early 80s, Moroccan authorities have decided to switch from a model of a relatively centrally planned economy with a large public sector to free trade and market-oriented policies. Price liberalization policy has been one of the main components of the Structural Adjustment program. Starting from 1983, most prices of goods and services were freed in order to promote competition and allow market mechanisms to have a greater role in allocating and pricing factors, goods and services. Empirical work on competition issues in Morocco has been very limited. To our knowledge, only four studies have been devoted to these issues.

Hajji et al (1992) assesses the impact of price liberalization on competition dynamics. In other words, the objective of the study was to provide an answer to the following question: to what extent price liberalization generated the expected theoretical effects in terms of competition and efficiency. The study was based on both *on-the shelf analysis* and *ground-surveys*. Around 50 firms and organizations were interviewed.

The authors first focused on the 209 goods used in consumer price index (CPI), and the 231 ones used in wholesale price (WPI). Using output data³, they classified these goods into four market structures (monopoly, non-concentrated oligopoly, competition, and concentrated oligopoly)⁴ and examined the behavior of their prices over the period 1982-1989. The results of this classification are presented in Table 2.1.

Table 2.1: Number and weights of products in CPI and WPI according their market structure

	CPI number	Weight	WPI number	Weight
Monopoly	10	6,2	5	7,7
Non-concentrated oligopoly	12	5,4	28	8,1
Competition	184	86	189	79,2
Concentrated oligopoly	3	2,5	9	3,0
Total	209	100	231	100

No significant correlation has been found between market structure and time behavior of prices⁵. Data on concentration have been provided by the Directorate of Statistics and computed as the share of the five largest firms in each sub-sector in 1986 (according to the Moroccan classification of manufacturing industries). Time behavior of prices was computed as average price growth between 1982 and 1989 for the same sub-sectors. The authors noticed that in 7 sub-sectors out of the 18 sub-sectors for which concentration index was computed, the share of the five biggest firms exceeds 50 percent.

The authors also conducted the analysis at the sector level. They computed the two classical concentration indices (CC4) (the share of the four largest firms) and HHI (Herfindhal-Hirshman Index) at the sectoral level. Ten out of the twelve sectors covered by the study belong to the manufacturing sector. These sectors were concerned by price liberalization policy undertaken in the early eighties. Two service activities were added (hotels and cinemas). To assure a certain degree of comparability of the results, the same methodology was applied in the twelve cases. These indices are presented in Table 2.2.

³ This typology does not account for imports in defining market structures.

⁴ Concentrated oligopoly is a market where the two biggest firms have more than three quarters of the market share. This was the case of Metallic packaging, Tire manufacturing, Iron and steel and paper Products. Non-concentrated oligopoly is defined as a market with a few firms but none of them has a dominant position.

Table 2.2: Concentration Indices in the Manufacturing Sector in 1986

	CC4	HHI
Agro-food industries	76,4	52,9
Textile and leather industries	66,6	13,3
Plastic and rubber industries	92,3	61,5
Mechanic, metallurgic, and electric industries	97,2	75,0
Other industries	82,3	47,1

The authors noticed that over the same period of time both prices and imports were liberalized, which makes it difficult to disentangle the specific effect of price liberalization, on the market structure. Anecdotal evidence suggests that tariff dismantling had stronger effect than domestic price liberalization policy. However, no formal discussion of the issue was provided by the authors.

Belghazi (1997) examined market structure and competition environment as well as profitability differentiation and productive performance. Regarding market structure, the author focused on the impact of the coexistence of formal and informal activities in the manufacturing sector on the state of competition. A special emphasis was put on textile and garment sector. Three factors seem to explain informal sector competition capacity:

- Informal sector relies on family labor, generally unremunerated, to compensate for its lower labor productivity
- Informal sector use very low quantity of capital and hence save in the cost of capital in comparison with formal sector
- Informal sector does not pay, or pay only partially, taxes and hence may propose lower prices

The HHI had also been computed on at the 4-digit level. Depending on the value of HHI, four market structures were considered (competition, concentrated market, oligopoly, and monopoly).

⁵ It has to be noticed, that the absence of correlation has not been formally tested by the authors but inferred graphically. Secondly, the authors indicated that the desegregation may not be appropriate to reach any firm conclusion.

Table 2.3: Number and share of activities by market structure (1991)

Market structure	Value of HHI	Number of activities	Share of activities	Share of firms	Share of workers	Share of turnover
Competition	Less than 0.15	59	26,3	77,3	71,9	48,6
Concentrated	From 0.17 to 0.43	73	32,6	20,5	22,3	33,8
Oligopoly	From 0.43 to 0.90	68	30,4	2,0	4,2	12,5
Monopoly	More than 0.9	24	10,7	0,2	1,7	5,2
Total		224	100	100	100	100

Firms operating in oligopoly and monopoly represented in 1991 less than 2,2 percent of total manufacturing firms, 5,9 percent of the labor force and 17,7 percent of total manufacturing turnover. The authors noticed that the concentration degree in the manufacturing sector decreased from 1986 and 1991. They conclude that oligopolistic and monopolistic sectors have only a limited economic importance and their potential impact tend to be softened by openness to foreign imports.

Turning to profitability and performance, it appears that the share of firms declaring losses represented 35 percent in terms of the number of firms and 19 percent in terms of total manufacturing sales in 1991, which indicates that size matters in explaining the observed profitability of firms.

Table 2.4: Profitability of manufacturing firms in 1991 on the basis of price to average cost ratio

Price-cost ratio	Average	Standard deviation	Weight measured by the number of firms	Weight measured by the share of sales
Smaller than 1	0,9265	0,4591	35,0	19
Greater than 1	1,0752	0,0945	65,0	81
Total	1,0475	0,2285	100	100

Table 2.5: Mark-up by market structure

Market structure	Average	Standard deviation	Share of sales
Competition	0,0219	0,1373	48,6
Concentrated	0,0570	0,1018	33,8
Oligopoly	0,0267	0,1046	12,5
Monopoly	0,0584	0,0556	5,2
Total	0,0367	0,1198	100

The authors conclude that margin dispersion tends to be higher in competitive type of markets and weaker in monopolistic markets. They also argue that market concentration does not represent a key factor in explaining margin level and dispersion. Following them, the explanation (not tested) is to be found in the level of protection of imports. Firms in concentrated type of markets succeed in negotiating a better protection compared to other market structures.

Haddad et al. (1996) investigated the impact of the dismantling of quantitative restrictions, reduction of tariffs, and simplification of administrative procedures, on Morocco's industrial performance. The study used data from annual surveys from 1984 to 1989 of all firms with more than ten employees or sales revenue of more than DH100, 000 (Morocco's currency is the dirham).

The results showed that concentration rates in manufacturing were relatively high. In six sectors, half of sectoral sales were accounted for by four or fewer firms. Concentration has a strong positive effect on profit margins while import penetration is negatively correlated with the margins. However, the results for import penetration are not robust to the inclusion of other control variables. Therefore, there seems to be only weak support for the import-discipline hypothesis.

Turning to productivity, it was found that measured growth in factor productivity is affected by changes in capacity utilization and scale. In contrast, concentration and import penetration have no significant impact. There is thus no evidence that greater competition from imports enhances productivity, at least as captured by the import penetration proxy. Finally, while a

positive correlation is found between productivity growth and growth of exports, further tests suggest that it is more likely that exports were driving higher productivity growth than the reverse.

Using the same database, Haddad (1993) also found a positive relation between productivity and exports at the firm level. Productivity levels are measured relative to the most efficient firm in each industry. The results showed that firms closest to the maximum level of efficiency tend to have a high share of exports and that high import penetration rates reduce (at a decreasing rate) the gap between the firm's productivity index and the efficiency frontier.

3. Overview of the manufacturing sector

3.1 Data issues.

This section presents various indicators of the manufactured sector in Morocco for 1980, 1992 and 2001. These include the shares sub-sectors in total manufacturing value-added, employment and exports as well as import penetration and export performance by sub-sectors. Finally the specialization of the economy is computed. The choice of the three years is the following: 1980 corresponds to the pre-trade-liberalization period, 1992 to the accelerated trade-liberalization period and 2001 is the last available year.⁶ This allows highlighting the impact of such reforms on the manufacturing sector. The data for value added and employment are drawn from the UNIDO database and complemented (for the period 1997-2001) from national source using the correspondence table in Appendix 1. The foreign trade data are from the CHELEM database. The correspondence between the UNIDO and CHELEM classification is provided in Appendix 2. We use the three digits split of UNIDO which comprises 28 sectors. However, for compatibility between the two databases we had to pool sector (ISIC 323) leather products with (ISIC 324) footwear, except rubber or plastic and sector (ISIC 351) industrial chemicals with (ISIC 352) other chemicals. For the same reason we drop (ISIC 353) petroleum refineries and (ISIC 354) misc. petroleum and coal products. We end up with 24 sectors.

3.2. Results.

Table 3.1 presents the shares of sub-sectors in total manufacturing employment, value added and exports. Irrespective of the indicators under consideration, wearing apparel (except footwear) and food products emerge as very important sub-sectors in 2001. Together they represent more than 50% of the total manufacturing employment and exports and around 27% of its value added. Food products stand as the most important sub-sector in term of value added and the second most important in term of employment and exports. Wearing apparel

⁶ In addition there are less missing observations for 1992 than for 1990.

(except footwear) is the most important in term of employment and exports. The chemical sub-sector is the next most important sector and represents 6% of the manufacturing sector total employment (fourth rank), 14% of its value added and exports (second and third rank respectively). Except in term of employment (8% and third rank), the importance of textile is low. The shares of the remaining sub-sectors are in general very low (below 2%) irrespective of the indicator.⁷

The importance of sub-sectors has evolved markedly since the launching of trade liberalization. Wearing apparel (except footwear) recorded a spectacular increase of its shares in term of all indicators during the 1980s. During the 1990s the increase was important in term of value added and employment. During 1980s, the shares in employment and value added of food products increased while it decreased in export. During the 1990s the shares remained unchanged or decreased. On average over the 1980s and the 1990s, the shares of chemicals and textiles recorded a sensitive decrease. The evolution of two sub-sectors is worth noting. These are electrical machinery and professional and scientific equipment. Although their shares in employment and value added exhibit no particular pattern, the one in exports shows a spectacular increase: from 0.47% in 1980 to 8.13% in 2001 electrical machinery and from 1.21% to 5.83% for professional and scientific equipment. This finding is in accordance with the one by Fontagné and Périody (1996) who found an increasing specialization of Morocco and Tunisia in electrical goods. Achy and Sekkat (2003) has also found that these sub- sectors are highly sensitive to profit incentive. Their exports supply increase highly following an exchange rate depreciation suggesting their ability to effectively compete on international market.⁸

⁷ We disregard the share of Tobacco because of its very specific status. There is only firm in the sector and it is state owned.

⁸ Over the 1980s Morocco has also implemented a reform of foreign exchange market which induced depreciation of the real exchange rate.

Table 3.1: Manufacturing sub-sectors shares in employment, value added and exports

Indicator	Employment			Value added			Exports		
Sector	Year			Year			Year		
	1980	1992	2001	1980	1992	2001	1980	1992	2001
Foods products	8.95	19.45	18.27	9.45	15.96	16.08	30.57	18.56	17.14
Beverages	2.57	1.88	1.17	4.49	5.78	6.94	1.88	0.59	0.27
Tobacco	1.57	1.05	0.53	2.76	13.28	12.87	0.04	0.01	0.00
Textiles	23.86	16.73	8.06	14.71	9.49	5.10	13.18	4.08	2.10
Wearing apparel. Except footwear	10.55	21.27	34.60	2.36	7.16	11.66	13.43	39.71	40.47
Leather products including Footwear	4.71	3.87	3.62	2.81	1.67	1.45	4.87	4.35	4.10
Wood and wood products. Except furniture	2.21	1.81	1.94	2.22	1.67	1.14	1.87	0.45	0.72
Furniture. Except metal	1.93	0.56	0.83	1.41	0.20	0.37	0.20	0.11	0.32
Paper and paper products	2.46	1.76	1.63	4.64	2.11	2.74	2.93	1.32	0.71
Printing and publishing	2.20	1.38	1.69	1.91	1.18	1.37	0.05	0.11	0.05
Chemicals	7.95	5.96	6.29	16.35	14.18	13.97	17.63	18.69	14.50
Rubber products	1.48	0.59	0.23	2.47	1.35	0.37	0.07	0.25	0.32
Plastic products	1.96	1.96	2.51	1.47	1.42	2.10	0.07	0.21	0.36
Pottery. China. Earthenware	0.45	0.98	1.10	0.44	0.91	1.06	0.14	0.27	0.24
Glass products	0.56	0.43	0.38	0.73	0.38	0.48	0.02	0.04	0.08
Other non-metallic mineral products	7.72	7.15	5.34	11.25	7.74	8.18	0.17	0.03	0.22
Iron and Steel	0.37	0.23	0.38	0.53	1.49	1.64	0.02	0.33	0.30
Non-ferrous metals	0.49	0.17	0.58	0.60	0.24	0.48	5.52	1.24	1.19
Fabricated metal products	7.83	5.78	4.56	8.04	5.38	3.51	0.50	0.59	0.76
Machinery. Except electrical	2.28	1.75	0.98	2.15	1.66	0.81	0.30	0.71	0.96
Electrical machinery	3.98	2.33	4.42	4.47	2.92	4.15	0.47	3.80	8.13
Transport equipment	3.63	2.55	1.60	4.52	3.52	3.80	4.25	1.89	0.89
Professional and scientific equipment	0.12	0.20	0.49	0.09	0.19	0.39	1.21	2.40	5.83
Other manufactured products	0.19	0.16	0.38	0.13	0.12	0.41	0.59	0.25	0.34

Source: Authors calculations from UNIDO

So far we identified various changes in sub-sectors shares. Although it is not possible to infer, at this stage, their impact on specialization of the manufacturing sector in Morocco these changes may affect such a specialization. To formally examine how specialization in the manufacturing sectors has changed, table 3.2 presents GINI index for the three indicators and the three years as before.

Table 3.2: GINI index of specialization in the manufacturing sector

Indicator	Employment	Value Added	Exports
Year			
1980	0,55	0,53	0,74
1992	0,64	0,57	0,79
2001	0,67	0,59	0,78

Source: Authors calculations from UNIDO

The values of the GINI index are different between indicators and this is a common finding in the literature because indicators measure different aspects of the economic activity (see Amiti, 1999 and Midelfart et al., 2004). As a matter of comparison the GINI indices reported by Amiti (1999) for the least developed European countries are 0.44 in 1990 (with both employment and production data) for Greece and 0.39 and 0.44 (with production and employment data respectively) for Portugal. This suggests that Morocco is much more specialized than these countries. Although, using a different methodology, Achy and Sekkat (2003) also showed that the Moroccan is by far less diversified than the Turkish. In term of evolution the three indicators point in the same direction. During the first stage of liberalization, the GINI index increased markedly suggesting that the Moroccan manufacturing sector became more specialized. During the second stage, the GINI index remained almost unchanged especially compared to its evolution during the 1980s. The relationship between trade liberalization and industrial specialization is documented both at the theoretical and the empirical level although there is no consensus about the direction of the change.

The theoretical literature holds two opposing views on the impact of trade liberalization on industrial specialization. The first is associated with Krugman and the new economic geography approach. Krugman (1993) asserted that the removal of barriers to trade would allow firms to reallocate their activities and, due to economies of scale and a reduction in transport costs, lead to an increased in specialization. The second view was expressed by Frankel and Rose (1998), who argued that trade liberalization on the contrary strengthen intra-industry trade linkages between participating countries and make their economic structures more similar. Amiti (1999) constructed GINI coefficients of specialization using production and employment data of 10 European. The results showed an increase in specialization in all the EU countries between 1980 and 1990 which corresponds to further trade liberalization due to the implementation of the Single Market Program. Midelfart et al., 2004 used production and export data for the period 1970-1997 and found that since the early 1980s production specialization has increased gradually in the EU.

Given the difference in factor endowment between Morocco and its main trading partner (i.e. Europe) it is unlikely, however, that intra-industry trade constitutes an important component of total trade. The prediction by Frankel and Rose (1998) should not hold for Morocco while Krugman's analysis seems reasonable. It follows, therefore, that the increase in specialization following trade liberalization in Morocco fits with expectation.

Whether such increase in specialization is good or bad for the country is still an open question. As far as manufacturing sector is concerned, specialization can induce gains in term of internal and external scale economies. However, specialization makes a country dependent on a limited number of good and makes it vulnerable to a specific industry shock. While the literature has identified the high specialization of LDCs on primary commodities (energy, mining or agriculture) as a major problem (see Makdissi et al, 2000 and Sachs and Warner, 1995), the results in tables 3.1 and 3.2 raise further concern about the Moroccan situation. Even when concentrating on manufactures, the results show that the country becomes more specialized in wearing apparel (except footwear) and the share of food products is still sizeable. The later might be highly influenced by the restrictions of the Common Agricultural Policy of the EU (Morocco's main trading partner). The former should shortly face a fierce competition from lower-wage and higher-productivity countries such as China and India (See Dasgupta and Iqbal, 2002). This is particularly true with the phasing out of MFA in January 2005.

The above analysis points to a link between the trade liberalization which was implemented by Morocco since the 1980s and specialization. To further highlight this aspect, table 3.3 presents the status of the sub-sectors with respect to foreign competition. It looks both at competition on the domestic market (import penetration) and export performance on external markets (share of exports in total output). From both points of view the figures for wearing apparel (except footwear) and professional and scientific equipment are surprising at first sight. This is may be due to the importance of some sorts of outsourcing which is not accounted for in computing these indicators. While this implies a high openness of the sub-sectors it does not necessarily reflect the status of competition from imports or in export markets. We will disregard the two sectors when analyzing import penetration and export performance. Moreover, similar problem being potentially present for the other sectors, the analysis will be cautious.

A first interesting result concerns the figures for the important sub-sectors identified above i.e. food product and chemicals. In 2001 both show import penetration ratios among the lowest in the table. The result for food products may be due to a high protection of these sub-sectors. Such a statement is not contradicted when looking at the export ratio. While it is relatively high (in comparison to the other sub-sectors) for chemical and it is very low for food products. Heuristically, our intuition is that if this sub-sector had low import penetration ratio because of its competitiveness, it should have also shown high very export ratio. The latter does not hold and one can suspect that the main reason is the high protection of the sub-

sector. In contrast, electrical machinery has both a very high import penetration and export ratios. This sub-sector was noticed earlier as a potentially very competitive one. This is not contradicted by the figure in table 3.3. Over the 20 years period, food products became less opened and exports lesser than before, chemicals in contrast became more opened and exporting more and electrical machinery is markedly more opened and exporting significantly more. This confirms its status of a potentially promising sub-sector.

Table 3.3: Import penetration and export performance of the manufacturing sub-sectors

Indicator	Import penetration			Share of exported output		
Sector	Year			Year		
	1980	1992	2001	1980	1992	2001
Foods products	32.23	10.90	14.06	30.00	22.23	26.09
Beverages	1.97	4.43	5.53	7.00	5.85	4.24
Tobacco	5.72	8.73	1.19	0.12	0.07	0.04
Textiles	19.84	44.75	68.14	15.68	12.58	16.66
Wearing apparel. Except footwear	-80.33	-16.41	-44.99	111.50	195.89	183.43
Leather products including Footwear	9.91	58.54	168.88	30.27	73.78	125.98
Wood and wood products. Except furniture	9.09	10.14	11.39	14.13	8.31	17.39
Furniture. Except metal	11.26	26.06	64.43	2.48	8.29	44.53
Paper and paper products	23.76	26.70	23.63	11.14	12.42	8.20
Printing and publishing	30.15	25.07	22.35	0.58	2.76	1.60
Chemicals	30.70	25.17	43.48	16.52	30.59	48.59
Rubber products	20.24	27.47	61.53	0.60	10.35	37.94
Plastic products	45.63	47.56	50.63	0.61	3.82	6.50
Pottery. China. Earthenware	44.01	30.26	24.41	6.68	10.82	10.14
Glass products	30.02	43.21	51.77	0.60	3.61	10.92
Other non-metallic mineral products	1.23	3.90	1.59	0.30	0.16	1.68
Iron and Steel	88.47	63.09	54.03	0.75	6.40	6.02
Non-ferrous metals	197.84	76.02	42.50	187.32	64.16	31.93
Fabricated metal products	26.78	23.95	38.14	1.15	2.92	9.22
Machinery. Except electrical	77.33	86.93	94.44	1.99	16.37	50.02
Electrical machinery	34.03	45.94	94.81	1.97	34.82	93.06
Transport equipment	56.59	55.85	66.24	14.75	12.16	14.16
Professional and scientific equipment	103.64	121.18	215.49	283.28	389.07	822.63
Other manufactured products	102.60	96.61	70.07	112.96	77.95	28.56

Source: Authors calculations from UNIDO

4. The state of competition and efficiency

4.1. Data issues.

The analysis of the status of competition in each sub-sector uses two indicators: concentration ratio and mark-up. Concentration ratio is computed using firm level data. The database is drawn from the yearly survey conducted by the Ministry of Trade and Industry. This survey covers all manufacturing firms with at least 10 employees or with an annual turnover that exceeds 100 000 DH. It collects firm level data on a set of variables such as turnover, output, value added, exports, investment, gross labor cost, and the number of permanent and temporary employees. The firms are grouped by sub-sector according to the table in Appendix 1. We obtained the data for 1990 and 2000. They cover around 5000 and 7000 firms respectively and include all manufacturing sub-sectors. We computed concentration ratios for both dates.

Mark-ups are estimated using UNIDO data over the period 1985-2001 (see the methodology report. For some years UNIDO pools some sectors. This is the case for:

- Beverages with tobacco
- Leather products with footwear (except rubber or plastic)
- Wood and wood products (except furniture) with Furniture (except metal)
- Paper and paper products with printing and publishing
- Industrial chemicals with other chemicals
- Rubber products with plastic products
- Pottery, china, earthenware with glass products and other non-metallic mineral products
- Iron and steel and non-ferrous metals

Hence we adopt a similar pooling for the whole period and for the same reason as in section 3 we drop petroleum refineries and miscellaneous petroleum and coal products. We end up with 18 sub-sectors instead of 28. To allow comparison with concentration ratios, we follow similar approach with firm level data.

Mark-up estimation needs capital stock, investment deflator, real interest rate, capital depreciation rate, shares of factors in output, the nominal wages bill and nominal output. Nominal wages bill and nominal output are directly drawn for the UNIDO. Real interest rate and investment deflator are directly drawn from the World Development Indicators (WDI) published by the World Bank. As a rate of capital depreciation, we follow the literature in trying various values between 0.05 and 0.1. The results are not very sensitive to change in

these values and report only those for 0.07. The computation of the other variables calls for more elaboration.

To construct series of capital stock, we rely of the perpetual inventory method (see the methodology report and Ben Jellili, 2003) which use investment series, the rate of depreciation of capital stock and the initial capital stock. The later can be neglected if investment series are available for enough years backward. This not the case here: investment series are available only since 1985. Moreover, no data of initial stock are available at the sub-sectors level we are using here. Here to approximate capital stock in 1985 by sub-sector, we proceed as follows. We split the 1985 capital stock computed for the whole Moroccan economy by Nehru and Dhareshwar (1994) according to the share of each sub-sectors investment (UNIDO) in total investment (WDI). As a matter of check we compared the obtained share of total manufacturing capital stock in total capital stock to the one of value added. The obtained capital stock of the manufacturing capital stock represents 16% of the whole economy capital stock while its share in GDP is 13%. The manufacturing sector being more capital intensive, our approximation seems reasonable.

To get shares of factors in output, a typical framework adopts a constant return to scale Cobb-Douglas production function and shows that the parameter of the function is equal to the shares of the remuneration of factors in aggregate output. The early literature drew on the national accounts of some industrial countries and set the parameter to a value of one-third. The parameter, and hence technology, is assumed to be the same across units (sectors or countries), which is questionable. An alternative solution is to use the Input-Output table to approximate the shares. There are however two problems: the Input-Output table is not available for all countries and when so it refers to a given year. As mark-up estimation will be conducted over 17 years period, we use another approach which keeps coherence between mark-up and factor shares estimation. This is based on Senhadji (2000) which used the traditional constant return to scale Cobb-Douglas production function in per capita form. It regresses value added per worker on capital per worker (both in log). It can be shown that the estimated slope is an estimate of the capital share. Using Senhadji (2000)'s approach we estimate capital shares on a pooled sample over years and sub-sectors. We allowed the slopes to differ across sub-sectors and corrected for heteroskedasticity. Employment and nominal value added series come directly from UNIDO. To get real value added we use production price index (the ratio of nominal to real production, both from UNIDO). The results are reported in Appendix 3. The weighted average capital share for the manufacturing sector is

0.30 which is comparable to the one obtained by Senhadji (2000) for the whole economy (0.36). The share of labor is (1-capital share).

To estimate mark-up, Roeger (1995) recommends using output rather than value added. Otherwise, the estimates will be biased upward. Since both variables are available we use output and approximate the share of materials as the average over the whole period of the differences between output and value added.⁹

4.2. Competition

Table 4.1 presents concentration and mark-up estimates by sub-sectors as well as the manufacturing sector weighted average. Appendix 5 compares our results with those by Haddad et al. (1996). The latter computed the C4 and mark-up for various Moroccan manufacturing sectors in 1987. While their concentration index is computed in a similar way to ours, the calculation of mark-up is too simplistic (i.e. a ratio of the difference between values added and labor cost to the value of production). Hence, the results for concentration are similar but those for mark-up are completely different. Our concentration ratio was on average 35.50% in 1990 and has slightly increased to stand at 37.59% in 2000. The average mark-up is equal to 105.92. Standard deviations indicate that there are important differences across sub-sectors in particular for concentration.

Professional and scientific equipment appears as the highly and most concentrated sub-sectors in 2000 with an index above 76%. In contrast food products, Textiles and Wearing apparel. (except footwear) are the least concentrated sectors with an index below 20%. The concentration index for the other sub-sectors ranges from 22% to 57%. In this category chemicals and electrical machinery are among the most concentrated (57% and 46% respectively). Davis and Lyons (1996) computed concentration index for the EU using, like us, the C4 index and a sector classification comparable to ours. With the usual caveats, comparison of our concentration index in table 4 with theirs suggests that concentration in the Moroccan manufacturing sector is, in general, high. In the EU the average concentration in the food, beverage and tobacco sub-sectors is 28% (in 1993) while it is 36% in Morocco. It is 34% in the EU for the electrical machinery and 46% in Morocco. For chemicals the index is 52% in the EU and 57% in Morocco. Concentration indices are not too different between the EU and Morocco for wearing apparel. For the remaining sub-sectors concentration is in

general higher. However, in comparison to results reported for Tunisia by Ben Jellili (2001) concentration in Morocco is much lower. For instance, the C4 for the food sector is 88% in Tunisia. The one for electrical machinery is 85% and for chemicals it is 86%. The difference between these findings and ours may be due to the sector classification.

Mumcu and Zenginobuz (2001) present the concentration index C4 for Turkey in 1998. They use the UNIDO classification and the definition of number of their sub-sectors corresponds exactly to ours. Appendix 4 compares their concentration indices to ours for the sub-sectors with the same definition. The results are very instructive. The concentration index is always higher in Morocco and the differences are in general sizable. In particular concentration index is 10 points higher in Morocco for Foods products, 15 points higher for electrical machinery and almost 20 points higher for Professional and scientific equipment. The difference is less pronounced for Wearing apparel (except footwear). To sum-up the high concentration of the manufacturing sub-sectors seems to be confirmed.

Over the 1990, there have been substantial changes in concentration. The most notables concern Professional and scientific equipment with a decrease of 15 percentage points. Machinery, electric and foods products also show a decrease of around 3 percentage points each. The most notable increase concerns Pottery, China, Earthenware (11 percentage point) followed by chemicals and Beverages and tobacco (6 points each).

On average mark-up in the manufactured sector is of medium size 105.92 but there are important differences across sub-sectors. The highest mark-up is found for other manufactured products sub-sector (114.24). Eight sub-sectors have mark-ups higher than the average. Among them, Wearing apparel (except footwear) and electrical machinery are the closest to the average with a mark-up of around 108 each. Foods products, Professional and scientific equipment and Chemicals exhibit significantly higher mark-up than the average of around 111 each. Our estimated mark-ups are lower than those reported by Ben Jellili (2001) for Tunisia. He reported a markup of 117 for food products wearing apparel and electrical machinery while our estimates are around 110. The most notable difference concerns chemicals: in Tunisia, mark-up is 139 while it is 110 in Morocco. Here again, the differences may be due to the sector classification.

⁹ Because of the lack of theoretical foundations (theory is generally developed in term of value added) we prefer not to use the same approach to the one of capital share.

Table 4.1: Indicators of the degree of competition by sub-sectors

Indicator Sector	Concentration			Markup
	1990	2000	Change	
Foods products	23.83	20.29	-3.54	111.57
Beverages and tobacco	49.22	55.3	6.09	100.00
Textiles	16.03	13.26	-2.77	104.45
Wearing apparel, except footwear	10.09	10.21	0.12	108.89
Leather products including Footwear	24.95	23.43	-1.52	100.00
Wood and wood products and furniture	36.67	39.46	2.79	103.67
Paper and Publishing	42.29	40.24	-2.05	100.00
Chemicals	50.35	56.74	6.39	110.72
Rubber and Plastic products	42.74	32.68	-10.06	100.00
Pottery, China, Earthenware ETC	28.78	40.37	11.58	100.00
Iron and Steel and other metals	96.49	55.74	-40.75	111.18
Fabricated metal products	18.9	22.08	3.18	102.93
Machinery, except electrical	36.49	38.63	2.14	109.88
Machinery, electric	49.42	45.73	-3.69	108.51
Transport equipment	48.73	53	4.26	110.90
Professional and scientific equipment	91.24	75.68	-15.57	111.36
Other manufactured products	55.25	55.79	0.54	114.24
Average*	35.50	37.59	1.43	105.92
Standard deviation*	16.65	17.76	7.95	4.97

Source: Authors calculations

* Weighted using shares in value added

4.3. Efficiency

Tables 4.2 and 4.3 display firm size distribution by sub-sectors for 1990 and 2000. In 2000 firms occupying at most 10 workers represent more than a quarter of total firms in each sub-sectors but wearing apparel and beverage. In the food products sub-sector more than 50% of firms occupy at most 10 workers. Once firms occupying at most 50 workers are considered, the proportion is around 2/3 except, again, for wearing apparel and beverage. In fact the latter seems to have a balanced distribution of firm's size while for the former a majority of firms are either in the class 11-50 (around 27%) or in the class 101-200 (around 20%). Large firms (more than 201 workers) represent non-negligible shares in chemicals and electrical machinery (10% and 14% respectively) and important shares in wearing apparel and beverage (22% and 25% respectively). Over the 1990s, the general tendency was an increase of the share of firms occupying at most 10 workers. Except for chemicals, this share has increased for all sub-sectors. The most notable increases concern Professional and scientific equipment

(34 percentage points) and electrical machinery (16 points). The increases for food products and wearing apparel were modest (2 and 0.3 points respectively). For chemicals, the increases concern the class 11-50 (around 6 points) or in the class 101-200 (around 3 points). The shares of large firms (more than 201 workers) have decreased for all sub-sectors except electrical machinery (+4) and wearing apparel (+8 points).

To offer a synthetic view of the distribution of firm size by sub-sectors, table 4.4 provides GINI indices. In 2000, the wearing apparel and beverage sub-sectors appear, unsurprisingly, as having the least unequal distribution of firm size. The other sub-sectors have much more unequal distribution of firm size: the GINI coefficients range from 35 to 64. In this category inequality is higher for Professional and scientific equipment and food products (a GINI coefficient around 59) than for chemicals and electrical machinery (a GINI coefficient around 35). In term of evolution, there is an increased inequality of firm size distribution except for chemicals and wearing apparel.

Table 4.2: Firm's size distribution by sub-sectors in 1990.

Sector	Class	Number of employees						Total
		1-10	11-50	51-100	101-200	201-500	>500	
Foods products		51.87	28.98	7.34	4.84	4.84	2.13	100.00
Beverages and Tobacco		9.68	22.58	16.13	16.13	25.81	9.68	100.00
Tobacco								
Textiles		16.53	44.54	17.08	10.66	7.51	3.69	100.00
Wearing apparel, except footwear		11.68	39.19	16.24	18.93	11.14	2.82	100.00
Leather products including Footwear		38.27	39.35	10.83	5.05	5.42	1.08	100.00
Wood and wood products and furniture		42.80	38.27	7.41	7.00	2.06	2.47	100.00
Paper and Publishing		43.16	41.05	8.16	4.47	2.11	1.05	100.00
Chemicals		37.55	32.91	9.70	8.86	7.17	3.80	100.00
Rubber and Plastic products		19.80	60.40	12.87	2.48	3.47	0.99	100.00
Pottery, China, Earthenware ETC		19.88	46.69	17.77	7.23	4.52	3.92	100.00
Iron and Steel and other metals		17.65	41.18	23.53	5.88	5.88	5.88	100.00
Fabricated metal products		28.13	44.27	16.67	6.51	3.13	1.30	100.00
Machinery, except electrical		36.84	47.37	10.53	3.38	1.88	0.00	100.00
Machinery, electric		14.77	47.65	20.81	6.71	8.05	2.01	100.00
Transport equipment		23.23	37.37	12.12	15.15	7.07	5.05	100.00
Professional and scientific equipment		12.50	75.00	12.50	0.00	0.00	0.00	100.00
Other manufactured products		41.67	41.67	8.33	8.33	0.00	0.00	100.00

Source: Authors calculations using data provided by the Direction de la Statistique.

Table 4.3: Firm's size distribution by sub-sectors in 2000.

Sector	Class	Number of employees						Total
		1-10	11-50	51-100	101-200	201-500	>500	
Foods products		53.92	32.69	6.33	3.20	2.35	1.51	100.00
Beverages and Tobacco		12.50	31.25	18.75	12.50	15.63	9.38	100.00
Tobacco								
Textiles		25.81	40.42	16.07	10.06	6.01	1.62	100.00
Wearing apparel, except footwear		11.98	27.86	17.08	20.61	17.83	4.64	100.00
Leather products including Footwear		39.43	35.65	9.78	10.73	3.79	0.63	100.00
Wood and wood products and furniture		61.15	29.14	3.97	3.97	1.32	0.44	100.00
Paper and Publishing		50.69	38.70	5.30	2.75	2.16	0.39	100.00
Chemicals		28.80	38.74	9.95	12.04	6.81	3.66	100.00
Rubber and Plastic products		33.92	47.90	10.14	3.50	3.85	0.70	100.00
Pottery, China, Earthenware ETC		36.31	42.27	11.92	5.59	1.86	2.05	100.00
Iron and Steel and other metals		31.40	41.86	13.95	8.14	1.16	3.49	100.00
Fabricated metal products		50.33	37.25	6.01	4.54	1.07	0.80	100.00
Machinery, except electrical		46.41	37.91	7.19	6.54	1.96	0.00	100.00
Machinery, electric		31.51	33.56	15.07	6.16	5.48	8.22	100.00
Transport equipment		38.40	34.40	8.80	10.40	5.60	2.40	100.00
Professional and scientific equipment		46.43	42.86	3.57	7.14	0.00	0.00	100.00
Other manufactured products		46.77	38.71	12.90	1.61	0.00	0.00	100.00

Source: Authors calculations using data provided by the Direction de la Statistique

Table 4.4: GINI coefficients of firm's size distribution by sub-sector

Sector	GINI 1990	GINI 2000	Evolution
Foods products	53.94	59.37	5.43
Beverages and Tobacco	0.00	11.46	11.46
Tobacco			0.00
Textiles	30.28	38.37	8.08
Wearing apparel, except footwear	20.96	10.54	-10.42
Leather products including Footwear	48.92	48.11	-0.81
Wood and wood products and furniture	51.78	64.50	12.71
Paper and Publishing	55.18	60.61	5.43
Chemicals	41.14	36.56	-4.58
Rubber and Plastic products	45.87	50.82	4.94
Pottery, China, Earthenware ETC	36.14	49.81	13.67
Iron and Steel and other metals	30.39	44.57	14.18
Fabricated metal products	44.62	59.61	14.99
Machinery, except electrical	54.64	56.75	2.12
Machinery, electric	32.77	34.93	2.16
Transport equipment	29.80	44.13	14.34
Professional and scientific equipment	50.00	59.52	9.52
Other manufactured products	55.56	60.22	4.66
Average*	32.95	37.08	5.48
Standard deviation*	18.63	19.41	7.89

Source: Authors calculations using data provided by the Direction de la Statistique

* Weighted using shares in value added

Table 4.5 displays the estimated Total Factor Productivity (TFP) by sub-sectors. There is no important difference between the adjusted and the unadjusted TFP except for three sub-sectors (Iron and Steel and other metals, Professional and scientific equipment and other manufactured products). In any case, however, there is a change of pattern (from + to -) or important change in level of TFP. The results show that the average increase of productivity in the manufacturing sector over the 1990s was low: 0.85. This estimates fit with the finding by Sekkat (2004) that the average increase of productivity in the whole economy over the 1990s was very low (-0.6) and lower than in Egypt (2.33) or Tunisia (+0.6). Knowing that the Moroccan economy as whole was highly affected by drought during this period and that agriculture represents a high share of GDP (17%), our finding for the manufactured sector seems reasonable. As suggested by the standard deviation, there are important differences across sub-sectors, however. Abstracting from the Iron and Steel and other metals sub-sectors which is not important in Morocco, the most important decrease of productivity concerns Professional and scientific equipment (-4.85). Although less pronounced, the decreased affecting food product (-2.45), electrical machinery (-1.37) and wearing apparel (-1.25) are worrying given the importance of these sub-sectors. Chemicals show almost no change in productivity while other manufactured products recorded the highest increase (7.11).

Table 4.5: Total Factor Productivity (TFP) by sub-sector.

Sector	TFP	Adjusted TFP
Foods products	-2.60	-2.45
Beverages and Tobacco	4.42	4.42
Tobacco		0.00
Textiles	2.01	2.11
Wearing apparel, except footwear	-1.58	-1.25
Leather products including Footwear	2.16	2.16
Wood and wood products and furniture	-2.57	-2.97
Paper and Publishing	2.48	2.48
Chemicals	0.69	0.60
Rubber and Plastic products	-1.12	-1.12
Pottery, China, Earthenware ETC	5.00	5.00
Iron and Steel and other metals	-13.16	-17.80
Fabricated metal products	-0.19	-0.23
Machinery, except electrical	1.07	0.86
Machinery, electric	-1.07	-1.37
Transport equipment	3.18	3.72
Professional and scientific equipment	-2.78	-4.85
Other manufactured products	5.83	7.11
Average*	0.90	0.85
Standard deviation*	3.37	3.78

Note: TFP stands for Total Factor Productivity computed as a Solow's residual

Adjusted TFP is TFP adjusted using the estimated Markup.

*Weighted using shares in value added

5. Competition and vertical restraints in selected sub-sectors

Measurement indicators used generally to assess the state of competition are not completely appropriate and need some refinement. First, there is the relevant degree *aggregation*. Firms of the same industry or those belonging the same "*3-digit code of ISIC*" produce, very often, different products. These products are not always substitutes or interchangeable. For instance, "*food industry*" includes among other activities, transformation of cereals, sugar, milk, and oil. Each of these activities has its own specific profile in terms of concentration, competition, and distribution channels. This example can be extended to many other industries such as "*construction materials*", "*chemicals*" or "*textiles*". Therefore, concentration indices computed at more disaggregated level, tend be more relevant and informative.

Second, the multiplicity of products within the same firm poses also another problem. This is particularly the case when these products are classified in different industries. Practically, a *multi-product firm* is classified in the industry in which it generates most of its turnover. Data

collected by the annual manufacturing survey do not provide any information on turnover composition. In this case, it is difficult and risky to conclude that an industry with very few firms is a very concentrated industry. It is possible that a large number of firms operate in a given industry, but at the same time a substantial share of their turnover is earned in another industries.

In order to overcome these difficulties, a survey on competition patterns in a selected sample of manufacturing industries appeared to be crucial. This survey allows directly interviewing professionals on their perception of horizontal and vertical restraints to competition in their respective markets. The combination of *concentration indices* computed on the basis of the annual survey and *qualitative data* collected from the "*competition survey*" improves our understanding and assessment of competition issues in the manufacturing sector in Morocco.

This section is based on an "on the ground survey" carried out in July and September 2004. More than 100 firms located mainly in Casablanca, Rabat and Agadir have been interviewed on competition and related issues. The complete questionnaire used for the survey is presented in the methodology report. The manufacturing industries covered by the survey are steel industry, cement industry, ceramic industry, automobile industry, pharmaceutical industry, milk industry and finally soft drinks industry. These industries have been selected on the basis of two criteria: their economic importance, and their high level of concentration using usual concentration indices.

5.1. Results by sub-sector

5.1.1. Steel industry

The steel industry is one of the components of the metallurgic sub-sector according to the Moroccan classification of economic activities. The metallurgic sub-sector is made of around 90 firms with a total turnover of roughly 6 billion DH. It provides jobs for some 4700 people among which 320 are females. This sub-sector offers also some 400 seasonal jobs. The value added rate in metallurgic firms is on average estimated to 20 percent. Most of the metallurgic sub-sector output is sold on the domestic market (85 percent). However, around two thirds of inputs used in production process are imported. Steel in various forms is used in building and construction, roads, and bridges. It is also used in other manufacturing industries such as transportation engines, equipment and machinery.

The steel industry in Morocco is dominated by SONASID located in the city of Nador in the oriental region. The market share of this firm alone exceeds 60 percent. SONASID is controlled by ONA, which is the first private holding in Morocco. (SONASID, a state-owned company, has been one of the building blocks of the industrialization policy in Morocco). Some other 20 medium-sized firms with a turnover ranging from 10 to 100 million DH also operate in the steel industry. Most of them have a limited liability status, or in some cases belong to individual entrepreneurs. These units take the form of mini-mills that produce finished steel articles such as bars, plates and other structural shapes.

In addition to producers, many "importers-distributors" contribute to the supply process of the steel market in Morocco. The "*Comptoir Métallurgique du Maroc*" (CMM) is one of the main suppliers. Its headquarters are located in Casablanca but has a distribution Network spread over the large cities such as Agadir, Marrakech, Kénitra, Tanger, Fès, Meknès, and Oujda. The CMM is a corporate company created in 1913. Other specialized distributors contribute in supplying the steel market particularly at the regional level. Some examples are: LONGOMETAL (corporate company created in 1949, it originally belongs to the public holding *National Investment Company* (SNI). ASMETAL

Interviews conducted with producers as well as distributors during the survey reveal that the steel industry is gradually open to the international competition. Import penetration is very high for inputs and high for finished and semi-finished products. To face high competitive pressure exerted by large local producers, it seems that some former producers become importers and / or distributors. It has to be noticed that trade policies of import-substitution ensured for a long time that steel firms were not facing foreign competition. Steel imports have only been liberalized since 1990, and since then all quantitative controls were removed.

**Table 5.1: Example of products and actors on the steel market in Morocco
(Producers and distributors)**

Product	Producer	Distributor
Steel bars and sections	MAROMETAL, MAGHREB TUBE, POLACIERS, TUBE ET PROFIL, INDUSTUBE, MAGHREB TUBES	ARMETAL, ASMETAL, GROMETAL, LONGOMETAL, CMM, MAROC FER
Iron and steel, drawn, compressed and turned, tube rounds and squares	POLACIERS	ARMETAL, ASMETAL, SOFAFER
Concrete steel, high adhesion notching	SONASID, SOMATREF, SOMETAL	ASMETAL, CMM, LONGOMETAL
Smooth concrete steel	MAROMETAL, SOMATREF, SONASID	ASMETAL, MAROC FER
Special and hard steel wire	POLACIERS, SOMATREF	ARMETAL, ASMETAL
Machine wire	SONASID	ARMETAL, ASMETAL
Steel sheets, pre-lacquered and galvanized	MAGHREB TUBES	ARMETAL, ASMETAL, LONGOMETAL, SOFAFER
Steel strips	MAGHREB TUBES, POLACIERS, SOMATREF, TUBE & PROFIL, INDUSTUBE	ARMETAL, ASMETAL

Source: Ministry of Trade and Industry Database "Who produces, what?" ("Qui produit quoi") and KOMPASS Maroc 2000.

Table 5.2 indicates that average tariff (MFN) applied to chapter 72 of the customs' classification system (HS: Harmonized System) is 20,1 percent with a standard deviation of 7,8 percent. The nominal tariff ranges from 2,5 to 50 but most frequent tariff is 17,5 percent in 2003. This tariff applies to more than 84 percent of lines. For chapter 73 (steel products), the average MFN tariff is 38,5 percent with a standard deviation of 15 percent.

Table 5.2: Tariffs (Most Favored Nation) by Chapter of HS, 2002

Code HS	Number of lines	Description	Average tariff	Range	Standard deviation
72	614	Iron and steel	20,1	2,5 – 50	7,8
73	425	Manufactured iron and steel	38,5	2,5 – 50	15,0

Source: Authors' computation using data provided by the Moroccan Customs' Administration.

Some importers mentioned *predatory prices* from large local producers. It seems that *abnormally low prices* offered by local producers tend to coincide with periods of large imports.

Most of medium sized producers and distributors operate exclusively at the regional or even at local level. Competition, as perceived by actors is sufficiently high and intensive, and clients well informed that it is practically impossible to sustain a unilateral increase in prices without substantial losses in terms of sales (meaning that direct price elasticity of the demand is extremely). As far as concrete steel is concerned, there seems to be a trend of small and medium firms to equalize their prices with those of their relevant competitors.

Some of the interviewed firms expressed the need to *use marketing and communication techniques*, to promote further their relationships with professionals in the construction sector. However, so far very limited resources have been directly allocated to boost sales using modern commercial tools. Very often small and medium enterprises producing or distributing steel products attract their clients by providing trade credits. Large enterprises in the steel industry require cash payment from their clients.

Interviews reveal that several steel industry products can only be profitably produced on a large-scale basis, and hence require sizeable investments. For these products, the extent of *barriers to entry* limits the extent of competition in the market, and tends to hurt the final consumers. However, the dismantling of trade barriers under the Free trade agreement with the European Union, and further with other countries such as Egypt and Turkey are expected to induce more competition on the domestic market.

5.1.2. Cement industry

Cement industry belongs to the chemical and para-chemical sector. Cement is classified among manufacturing of mineral non-metallic products along with other construction materials such as concrete, ceramic, plaster, lime, tiles, and earth bricks. The output of these activities, which amounts to 13,5 billion DH, is largely oriented to the domestic market. The share of sales exported does not exceed 3 percent. Cement is the most important building material both in terms of turnover with 6,5 billion DH, and investment 550 million DH. However, cement industry is a highly capital intensive industry, and hence offers relatively less job opportunities. Out of 26 000 jobs in the manufacturing of mineral non-metallic products, only 3000 are in the cement industry. Foreign ownership is largely present in the cement industry in Morocco with substantial participation of some worldwide multinational companies.

Domestic output of cement in Morocco is generated by four large companies: *Lafarge Ciments*, *Ciments du Maroc*, *Holcim*, and *Asment Témara*. "Lafarge Ciments" is the largest

firm on the cement market. Around 68 percent of its capital is held by "Lafarge Maroc", which is itself controlled by ONA (the largest financial holding in Morocco) and "Lafarge France". "Lafarge Ciments" is endowed with a production capacity of 4,2 million tons per year. This total capacity is shared among four production locations: Casablanca with 2,2 million tons par year, Meknès with one million tons, and Tangier and Tétouan with 500 000 tons per year each. The market share of "Lafarge Ciments" computed on the basis of total sales is estimated to 41 percent.

The second major player on the cement market is "Ciments du Maroc". This company is controlled by the Italian group "Italcementi", which holds 54 percent of its capital. Ciments du Maroc is endowed with a production capacity of 3,2 million tons per year, shared among three production locations: Marrakech with 1,3 million of tons per year, Agadir with 1,1 million tons par year, and Safi with 800 000 tons per year. The market share of "Ciments du Maroc" is estimated to 28 percent of the total market in Morocco.

The third cement company in terms of its market share is Holcim. A share of 51 percent of capital belongs to the Swiss group of the same denomination (Holcim). This company has a production capacity of 2,2 million tons shared between two production locations: Oujda with 1,7 million tons, and Fès with 500 000 tons. The market share of Holcim is estimated to 22%. Finally, "Asment Témara", located around Rabat, is ranked in the fourth position in term of its importance of the domestic cement market. Its market share is estimated to 9 percent. Its unique production unit, located in Témara, is endowed with a production capacity of 860 000 tons. The Portuguese group "Cimprom" owns 55 percent of the capital of Asment Témara.

Compared to the steel market, presented earlier, the cement industry tends to be less open to international trade flows. Import penetration in the cement industry is around 1,5 percent, while its export orientation ratio stands at less than 2 percent. Import penetration has even declined over the nineties following the domestic cement industry restructuring process. Before restructuring process, roughly one third of local demand was met through imports. The low level of penetration of imports in the cement market can be to a large extent explained by the high tariff rates that continue to apply to foreign cement. Tariffs (Most favored nation) applied by the end of 2002, were 32,5 percent for cement, and 26 percent for Clinker. However, these tariffs are expected to decrease under the gradual liberalization process of the Moroccan foreign trade. A reduction of 10 percent per year of the current tariff is scheduled from 2003 to 2012 under the free trade agreement with the European Union. The reduction is even higher under the free trade area with Egypt and Turkey. Total dismantling of tariffs is scheduled with Egypt by the end of 2004 for "Grey cement".

Geographical distribution of production units combined with the high level of transportation cost seem to restrain choices made by distributors and consumers to the closest suppliers. This is further strengthened by prices that are not much different from one supplier to the other. Some interviewees think even that producers "agree" on prices in order to share geographically the cement market. Others consider that prices are extremely high with respect to the real production costs. It is difficult, unless detailed analysis of the cost of producing cement is undertaken, to give credit to these opinions. However, from a theoretical point of view, one cannot ignore that it is very tempting for producers in the current state of the market to collude. The local market is highly protected from import penetration, highly concentrated, the product is homogenous, and its substitutability by other product is extremely low, in addition transaction costs related to collusion are substantially low. As a result, the price of cement in Morocco is relatively high with 760 DH (production level) or the equivalent of \$ 80 per ton compared to around \$ 40 per ton for Egyptian or Turkish cement.

Professional association of cement producers (APC) considers that their higher prices are the consequence of the cost of energy in Morocco. Some "estimates" reveal that between 50 and 66 percent of the final price of one ton of cement is made by energy. However, Moroccan producers don't seem to be worried by potential competition of foreign producers following the expected dismantling of tariffs. Most of them are even extending their production capacities.

Regarding vertical restraints, interviews did not mention the presence of "retail price maintenance" as such, however distributors tend to receive lists of recommended prices. Those recommended prices tend even to be strictly respected by distributors either wholesalers or retailers. Quantity forcing restraints are less frequent on the cement market. Distributors are not restrained to exclusive dealing although geographical location of production units leads often distributors to opt for unique supply source. However, interviews show that some distributors tend to diversify their sources of supply. Finally, restraints such as tying arrangements and long-term supply contracts have not been found in the cement industry in Morocco.

Generally, interviewees in the cement industry tend to be aware of the adoption of competition law, however their knowledge of its content and its provisions are still lacking.

5.1.3. Ceramic industry

Ceramic industry is one of the sub-sectors of "*construction materials*" according to the Moroccan classification of economic activities. The total turnover of the ceramic industry amounts to 1,9 billion DH, and provides jobs for around 6000 workers of which 1400 are females. Roughly, 88 percent of the output of ceramic industry is sold on the local market. Exports are estimated to 235 million DH. These are mainly ceramic bathroom appliances. *Ceramic tile manufacturing* is the main activity in ceramic industry in Morocco. This activity generates 1,3 billion DH and absorbs 4500 employees, which is the equivalent of 68 percent and 75 percent of turnover and employment of the whole ceramic industry respectively. The rest of the industry analysis focuses on this activity.

The supply side of the *Ceramic tile manufacturing* is made of some 20 firms. However, it is characterized by a high level of concentration (see Table 5.3). The four largest firms generate 71 percent of the market turnover, 68 percent output, and used 56 percent of employment. In most cases, ceramic products are distributed through wholesalers and retailers of other building materials such cement, bricks and plaster. However, some "specialized shops" of ceramic products emerged in recent years, particularly in large cities.

Table 5.3: The largest firms in the ceramic industry

	Market share	Creation year	Number of workers
UNION CERAME	31,3	1987	650
FACEMAG	14,7	1977	800
CERAME AFRIQUE INDUSTRIES	13,6	1978	477
GROS CERAME	11,8	1989	650
GROCER	10,3	1992	400
COCEMA	8,9	1966	620
CERAMICA OUADRASS	6,2	1993	319

Source: Ministry of Trade and Industry Database "Who produces, what?" ("Qui produit quoi") and KOMPASS Maroc 2000.

In addition to domestic competition from other materials, ceramic industry is increasingly facing foreign competition as well. Three countries are particularly threatening the local industry: China, Turkey and Spain. According to interviewed professionals but also consumers, ceramic products imported are of higher quality and lower prices compared to those produced locally. Prices are freely determined by market forces. Abolition of "reference prices" used till 2002, and the dismantling of tariffs under the association agreement with

Europe have conducted to a significant decline of local market prices. Thus, margins of local ceramic manufacturers are squeezing. Imports have doubled since 2001 from 5,5 million square meters to 11 million square meters. The current level of imports represents the equivalent of one third of domestic production capacity estimated to roughly 30 million square meters per year.

Local manufacturers explain their lack of competitiveness by the cost of energy which tends to be more expensive in Morocco compared to its competitors. It is estimated that the cost of energy accounts for more than one third of total cost. Another factor, often mentioned by local manufacturers, is the under-reporting of real prices of imports. This practice would be used to pay customs tariffs than what should be paid effectively and hence compete "illegally" with local production.

Firms in the local industry allocate very few resources to marketing and communication activities. They tend to develop close relationship with their clients through trade credits and discounts. There is also an effort made by manufacturers to develop new designs to match various consumers' tastes. Ceramic manufacturers can also offer client-tailored products. In that case, prices are much more expensive.

Regarding vertical relationships between producers and distributors, interviewees did not mention any specific type of restrictions, either on prices or on quantities.

5.1.4. Automobile industry

There are some 80 firms operating in the automobile industry in Morocco. Their total turnover is estimated at 6,8 billion DH and provide employment for more than 6200 workers among which 770 are females. Automobile industry is largely domestic market oriented, its exportation ratio does not exceed 7,2 percent, which generates the equivalent of 500 million DH in terms of export earnings. Imports of cars for personal use are estimated to 2,1 billion DH. These imports originate mainly from France with 800 million DH, Germany with 375 million DH, Japan 280 million DH, and Spain 275 million DH.

In the early 90s, local automobile industry has severely declined due to competition from imports of second hand cars. Roughly 100 000 units per year were sold through the second hand markets for cars. This market benefited largely from low customs tariffs applied at that time. However, in order to boost the local automobile industry, the Moroccan government launched a call for tender for a domestically manufactured car. The Italian car manufacturer

FIAT was selected to supply an economic car by in which the local industry is integrated. Customs tariffs on second hand cars have been increased to protect the local industry.

The automobile industry is made of three activities that complement each other. The first activity is "construction and assembling of vehicles" with 83 percent of the automobile industry turnover, and 48 percent of its employment. This activity is highly concentrated with 10 large operating firms. Among them, the four largest are SOPRIAM, SOMACA, AUTO HALL and BERLIET MAROC. Their turnover counts for 65 percent of the market. The second activity is "*manufacturing of cars equipment*". This activity generates 620 million DH of turnover. It is largely export oriented with more than 55 percent of its sales made on foreign markets. This activity provides jobs for roughly 2000 workers. Some 30 firms supply the car equipment market. The largest firms are: SODEX, NRF MAROC, SIPROF, IRIZAR MAGHREB and SMES. The third activity is "*trucks manufacturing and coach-building*". Its turnover amounts to 420 million DH, and its employment to 1100 job opportunity. This activity is largely domestic market oriented. Although, more than 30 firms operate in "trucks manufacturing and coach-building", two firms (CIM) and Bennes Marrel Maroc clearly dominate with a market share of roughly 66 percent. According to professionals' estimates, more than 80 percent of inputs used in the automobile industry are imported. The industry turnover originates for 50 percent from individual cars, and 16 percent from sales of mechanic equipment for cars.

Table 5.4: Main characteristics of the leading firms in the automobile industry in Morocco

	Market share	Creation year	Number of workers	Share of foreign capital	Share of state capital
SOPRIAM	23,2	1980	218	8,97	0,00
SOMACA	16,5	1962	776	40,0	38,0
AUTO HALL	14,3	1974	554	0,00	0,00
BERLIET MAROC	11,0	1958	200	36,5	0,00
DAF DIM	10,9	1990	201	0,00	0,00
RENAU MAROC	9,5	1975	235	80,0	0,00
SEFAMAR	7,7	1991	215	0,00	0,00
SAIDA STAR-AUTO	4,8	1956	400	0,00	0,00

Source: Authors' computation from annual manufacturing survey data (2002).

Despite the thinness of Moroccan market, only 35000 new personal cars are sold each year, supply is extremely diversified. A potential client may choose among more than 30 brands and 350 different versions. The market is very much fragmented. This view has been

confirmed by professionals interviewed. The margin on a car does not exceed 12 percent due to intensive competition including among different distributors of the same brand. In addition to price quality ratio, another key variable often mentioned is "confidence or familiarity" with a particular brand. Some brands are viewed as more reliable than others. In some cases, this appreciation remains subjective and not based on any hard evidence.

Usually, consumers have a preference for CBU vehicles over CKD vehicles. The number of cars manufactured domestically is not large enough to allow for economies of scale. In addition, the assembling activity does not represent the main component in driving price competitiveness of a vehicle. Assembling represents between 10 and 12 percent of the total cost of a vehicle according to interviews. Furthermore, due to geographical proximity from Europe (France being the main supplier on the Moroccan market), the cost of importing CBU cars does not represent a substantial fraction of the total cost. Therefore, CKD and CBU are competing on the local market.

Local car manufacturers as well as importers rely on a very selective distribution Network to reach their potential clients in different regions in Morocco. Distributors are independent but have to comply with a number of commercial and financial conditions to be granted the "*quality of distributor*". Distributors are submitted to zoning constraints whereby each distributor is not allowed to operate beyond a limited geographical zone. This is an implicit arrangement between the supplier and its distributor. Any distributor is expected to strictly comply with it, otherwise he might be accused of unfair competition. The distributor is also expected to reach a certain target in terms of his turnover. Any distributor who fails repeatedly to hit the target may be penalized through different means such suspension of trade credits, or suspension of discounts. At the extreme case, the penalty may be the withdrawal of the distributor card and the ending of the contract.

Most of interviewed units are aware of the existence of a competition law, but there is substantial ignorance when it comes to its content and its implications.

5.1.5. Pharmaceutical industry

Pharmaceutical industry, which is one of the chemical industries, is made of three activities. The first, and the most important, is the manufacturing of pharmaceutical products for human use. The second is the manufacturing of basic pharmaceutical products. The third is the manufacturing of products of veterinary use. There are some 30 firms operating in the pharmaceutical industry with a total turnover of 5,3 billion DH, which is the equivalent of 18 percent of chemical industry turnover. Pharmaceutical industry offers roughly 5000 job

opportunities. Its output is primarily oriented to the domestic market. The ratio of exports to output does not exceed 4 percent. The most promising markets for Moroccan exports are the Maghreb region (Algeria, Libya, Tunisia and Mauritania), and to a lesser extent France and Senegal.

Pharmaceutical industry is, however, heavily dependent on imports for its inputs. Around 90 percent of primary and intermediate item used in pharmaceutical industry production process originate from abroad. Pharmaceutical industry in Morocco developed in the mid sixties as a component of import substitution strategy that took place at that time. Any imports of products that could be manufactured locally were prohibited. The local production, which did cover no more than 15 percent of domestic consumption in 1965, covered 62 percent of the needs in 1979 and 80 percent currently. Pharmaceutical industry, such other industries, is progressively facing foreign competition pressures. In addition, pharmaceutical industry is facing the challenge of implementing TRIPS agreement which will be taking place in 2005.

The activity of manufacturing pharmaceutical product for human use dominates the pharmaceutical industry. Some 22 firms operate in this activity with a total turnover of 4 billion DH, 80 percent of the industry exports and 75 percent of its employment. The output of manufacturing basic pharmaceutical industry products is estimated to 1,65 billion DH and provides jobs for around 950 workers. This activity represents a very strategic area in the pharmaceutical industry but it requires large investments in terms of capital, and research and development (R&D). These investments are generally beyond Morocco's capacity

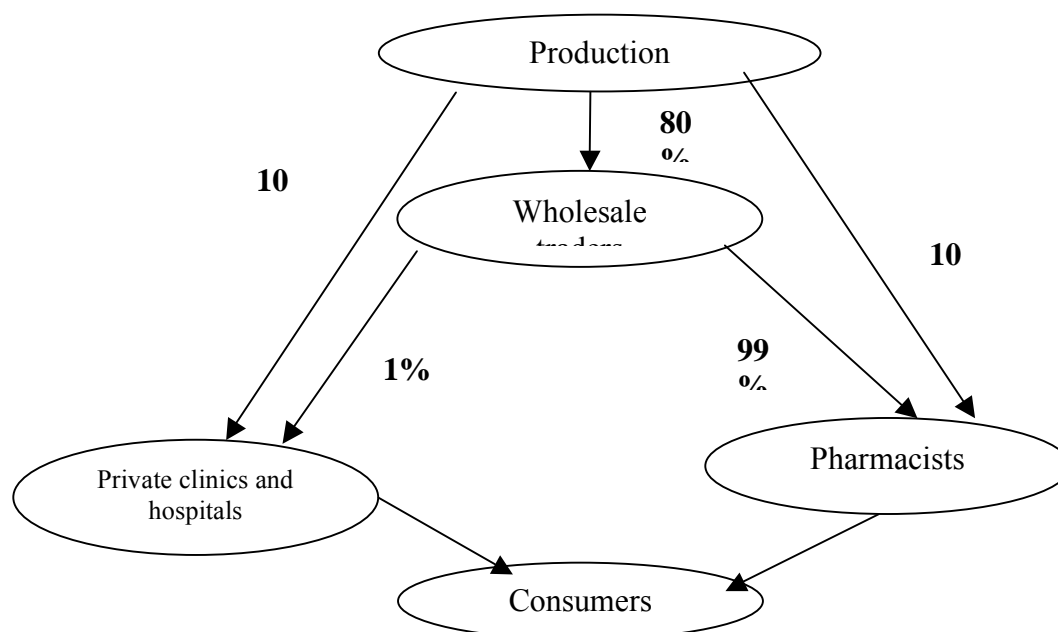
Table 5.5: Main characteristics of pharmaceutical companies in Morocco

	Market share	Creation year	Share of foreign capital	Number of workers	Share of exports
LABO MAPHAR	20,6	1950	66,3	454	14,4
COOPER MAROC	18,4	1965	17,2	540	17,9
LAPROPHAN	12,6	1964	21,7	608	4,3
SOTHEMA	7,7	1977	0,0	358	0,0
PRODUITS ROCHE	6,0	1975	99,7	268	0,0
RHONE POULENC	5,5	1964	67,0	120	0,0
ROBER					
LABO PFIZER	5,1	1963	11,9	165	18,4
PROMOPHARM	5,0	1947	10,3	172	37,3

Source: Authors' computation from annual manufacturing survey data (2002).

Pharmaceutical industry in Morocco is characterized by a strong presence of foreign capital. The largest pharmaceutical laboratories are generally connected with international pharmaceutical groups such as MAPHAR, LAPROHAN, ROCHE, RHONE POULENC ROBER. Due to regulatory constraints, domestic market is, however, less concentrated compared with international pharmaceutical industry market. Some interviews indicated that regulatory constraints that limit foreign ownership in the pharmaceutical industry restraint the attractiveness of this industry for international investors. These restrictions are expected to be amended.

Figure 5.1:
Distribution channels of medicines in Morocco



Distribution Network of pharmaceutical products is made of 40 wholesalers, and approximately 6000 pharmacists. The official margin is 10 percent for wholesalers, and 30 percent for pharmacists. The most dominant channel of distribution is through direct supply from laboratories to pharmacists and then to consumers. Other channels of distribution exist, as shown in the figure, but these are less important. Distributors (pharmacies) are not allowed to promote their products while producers can do that only with professionals. The market for medicines is also characterized by a high degree of asymmetric information between suppliers and consumers. This asymmetry leads to the emergence of a certain number of practices. Poverty and under-coverage of medical insurance pushes a large part of households to rely directly on pharmacists' advice without any medical consultation. Products subscribed tend sometimes to be biased toward commercial considerations.

Pharmaceutical industry operates in a strictly regulated environment that covers producers, importers, and distributors. This industry is technically controlled by the ministry of public health. The ministry of trade and industry is in charge of issues related to imports of inputs, and entry authorizations. A specificity of pharmaceutical industry is that prices of medicines are not free but fixed by the government authorities. Due to purchasing power of most

Moroccan household and the low coverage of medical insurance (less than 20 percent of total population), the price of medicines appear to be high.

Representatives of pharmaceutical laboratories keep their pressure on pharmacies, but also on prescribers in general. Those who subscribe their products are granted different favors and advantages (payment of trips to attend conferences, offers of books, coverage of training expenses...). Interviews have shown that those laboratories that cannot offer the same advantages for their "subscribers" are penalized. Tying arrangement is another type of vertical restraints that has been mentioned during interviews. In particular, where there is a short supply in a given product any demand for that product should be combined with other products less demanded to be satisfied.

Regarding competition law, most of those who were interviewed ignore the existence of such a law. Those who are aware of its existence have limited knowledge on its content and its implication on their business.

5.1.6. Milk industry

Milk industry is one the food industries. It is made of two activities according to the Moroccan classification. The first is "milk treatment" and the second is "dairy products manufacturing". Most firms operate in both industries simultaneously. Milk industry turnover is the equivalent of 13 percent of the total turnover of the food industry and 14 percent of its employment. However, milk industry is very much domestic market oriented, and its exports represent the equivalent of 5 percent of food industries exports. While "milk treatment" activity is quasi-exclusively local market oriented, "dairy products manufacturing" exports some 8 percent its production. Around forty firms operate in the milk industry in Morocco. It generates a total turnover of 6,5 billion DH per year. Milk treatment activity accounts for 40 percent compared to 60 percent for dairy products manufacturing. Milk industry offers 8600 job opportunities, among which 2600 are for females. The regulatory framework has been updated following the liberalization process of milk industry. A particular interest has been devoted to organizing distribution of milk, and limiting the extent of the informal sector (direct sale of milk without any control).

Milk industry in Morocco is dominated by "*Centrale Laitière*" (CL), which is under the control of ONA, the largest financial holding in Morocco. The market of CL is estimated to 60 percent on the basis turnover data provided by the Ministry of Trade and Industry. The French group Danone owns 29 percent of CL's capital. CL employs around 3000 persons, 1050 among them are females. Other firms operating on the milk market are much smaller,

and they generally supply their products mainly at the regional level. Some examples are: BONLAIT located in Marrakech, COLAINORD located in Tétouan, COLAIMO in Oujda, EXTRALAIT in Kénitra, SUPERLAIT in Fès or HALIB SOUSS located in Agadir.

In the area of dairy products, CL is mainly in competition with SIALIM, NESTLÉ Maroc and COPAG. SIALIM is controlled by the French company "*Fromageries Bel*", which owns 70 percent of its capital. It provides 650 jobs and generates a turnover of 850 million DH of which one third is earned on foreign markets. NESTLÉ Maroc is controlled by the Swiss group NESTLÉ. Its turnover amounts to 800 million DH of which 12 percent from exports. It has to be noticed, however, that NESTLÉ activity is not limited to milk industry and operate in other food industries. COPAG stands progressively as the toughest competitor to CL in particular in UHT milk and Yogurt products. . COPAG was created in 1987 and located in Taroudant in Souss region. It provides employment for 2000 workers. It has the legal status of "cooperative" formed by 166 members of which 60 are small cooperatives. Over the last years, COPAG has been very dynamic and innovative on the milk industry market. Compared o other producers of the same size, the turnover of COPAG recorded an impressive annual growth rate of 25 percent over the last three years.

Milk industry relies progressively on highly qualified workers for technical development of new products, creation of new concepts, marketing and packaging. Competing firms are allocating substantial budgets for promoting and advertising their products. These investments make entry to the milk industry increasingly difficult. Some small and medium cooperatives that operated on local and regional markets disappeared. Those that are still alive are losing grounds under competitive pressures of large industrialized units. The latter have very strong distribution Network and a large diversified offer of products.

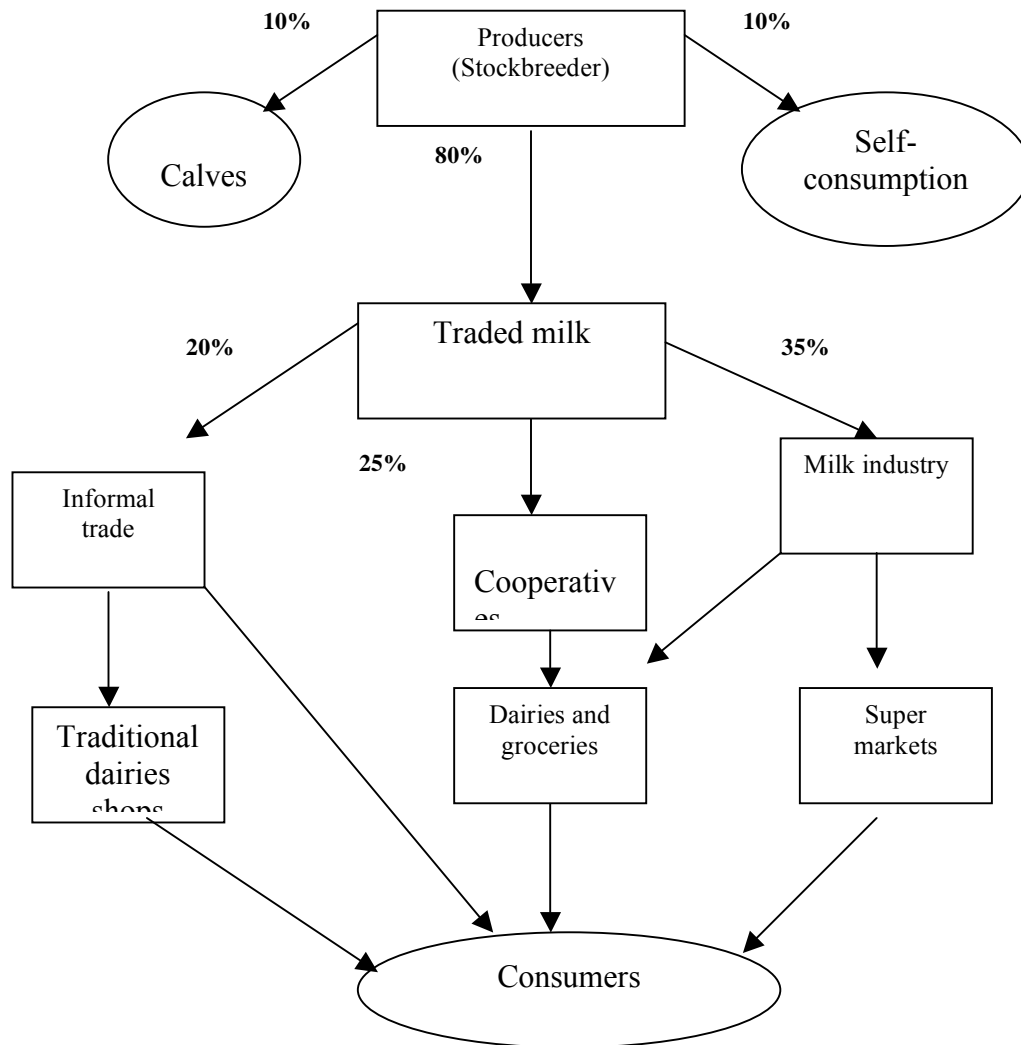
Different distribution channels continue to exist in Morocco. The *traditional channel* through which milk collected is directly sold on the market without any control or treatment. Around 20 to 25 percent of milk is channeled to consumers through the traditional channel. The cooperative channel, which is relatively more organized. Stockbreeders collect, treat and distribute their milk. Cooperatives are generally endowed with a control system of milk validated by veterinary inspection, and their products tend to conform to the prevailing norms. However, due to competition of industrialized firms and volatility of supply, cooperatives seem to be struggling to survive. They tend to loose their members, who directly supply their milk to industrial units through the *modern channel*. In the modern channel, industrial firms operating in the milk industry control the process of production of milk and can impose their

conditions on small stockbreeders. Interviews indicate that small producers are suffering from their lack of any bargaining power in "negotiating" with industrialized firms.

Regarding postproduction stage, some vertical restraints that existed in the past such as tying arrangements (joint offer of milk and yogurt) and quantity forcing (imposed quota by each distributor) tend to be less frequent. There is however a trend towards aligning prices for comparable basic products, and to diversify as much as possible other more elaborated products. This last trend makes price comparison more difficult, and leads to competition on quality and attributes of products.

Most of interviewed distributors and cooperatives are not aware of the existence of the competition law. However, some cooperatives have already suffered from anti-competitive practices. They have reacted by complaining to the ministry of interior, which was the main department in charge of price control in pre-liberalization era.

Figure 5.2: Milk distribution channels in Morocco¹⁰



¹⁰ This figure have been constructed on the basis of data provided by the article «Organisation de la filière laitière au Maroc», published in *Options Méditerranéennes*, série B, n° 32, 2001.

5.1.7. Soft drinks industry

Soft drink industry is a component of beverage industry, which is classified among food industries. Beverage industry is constituted of alcoholic drink activity, production of wine, production of beer, production of mineral water, and finally production of soft drinks. Beverage industry is made of 30 firms with a total turnover of 5,2 billion DH, and total employment of roughly 3900 workers, of which 700 are females. The beverage industry contributes by 9,6 percent to the food industry output, and by 6 percent to its employment. However, beverage industry is very dynamic in terms of investment over the last years. In 2002, beverage industry investment represented 22 percent of total investment in food industry.

Soft drinks industry is highly concentrated. It is to a large extent controlled by "*Société Brasserie du Maroc*" (SBM). This company has ownership in "Brasseries du Nord Marocain" (BRANOMA), in "Société Brasseries de Tanger" (SBT), and in SOTHERMA that collects and produces mineral water (Sidi Hrazem). The SBS provides employment for 2400 persons. Its production units are located in Marrakech and Salé. SBS represents almost all imported soft drinks brands on the Moroccan market. Also Coca-Cola enjoyed a large market power since Pepsi-Cola left the market in 1996. Coca-Cola Export Corporation (CCEC), which is controlled by the American company, is very well established in Morocco. It has a strong distribution network that covers the whole Moroccan market through different bottling units located in Casablanca, Fès, Marrakech, Tangier, and Agadir. In addition to Coca-Cola, CCEC distributes other soft drinks such as Fanta and Sprite. Recently (2003), Pepsi-Cola returned to the Moroccan market through its partnership with the Moroccan conglomerate "Holmarcom", which controls the mineral water company "OULMES". Other developments registered on the beverage market are the partnership between the Belgian conglomerate Castel, and SBM and the emergence of new brands of soft drinks "competing" with Coca-Cola, such as Mecca Cola. However, market shares of these new brands remain extremely low.

For soft drink industry the brand name is very determinant in consumers' choice. Firms in this industry allow substantial budget for promotion campaigns and advertisements. These investments in communication constitute real entry obstacles for any potential firm on the market. It is extremely costly to build a brand name and challenge the already well-established brands. Retailer prices are often recommended by large distributors, in some cases these prices are even indicated on the package. Quantity forcing practice is not explicit but those who buy large quantities receive generally discounts and promotional gifts.

5.2. Comparative analysis across sub-sectors

5.2.1. Assessment of the state of competition

A summary of competition' assessment is depicted in Table 5.6. Cement industry appears as the most concentrated industry. The number of local producers in this industry is limited, its import penetration is very low, its output is homogenous, and its degree of substitutability with other industries' output is extremely low. Steel and milk industries are also highly concentrated. However, import penetration for the first is not as low as for the cement industry, and there is a high product-diversification for the second. These findings mitigate the extent of concentration in these industries in comparison with cement industry. Ceramic industry is moderately concentrated with a medium level of import penetration and a relatively high diversification of output. Pharmaceutical industry, for regulatory reasons, is characterized by a moderate level of concentration. It is also an industry open to both imports of inputs and final products. Finally, automobile industry is characterized by a low level of concentration. Its market is open to foreign competition, and very diversified.

Table 5.6:
Assessment of the state of competition in selected manufacturing industries in Morocco

	STL. I.	CMT. I	CRM. I.	ATM. I.	PHM. I.	MLK. I.	SDR. I.
Concentration level of domestic production ¹¹	High	High	High	Medium	Medium	High	High
Import penetration of final products ¹²	Low	Low	Medium	High	Medium	Low	Low
Reliance on imported inputs ¹³	High	Low	Low	High	High	Low	High
Export propensity ¹⁴	Low	Low	Low	Low	Medium	Low	Low
Diversification of industry products ¹⁵	Medium	Low	Medium	High	High	High	Medium
Availability of substitution	Low	Low	Medium	Medium	Low	Low	Medium

Note: Table constructed by the authors on the basis of competition survey data, and manufacturing survey data carried out yearly by the Ministry of trade and industry.

STL.I. : Steel industry, CMT. I.: Cement industry, CRM. I.: Ceramic industry, ATM. I.: Automobile industry, PHM: Pharmaceutical industry, MLK. I. : Milk industry, SDR.I.: Soft drinks industry.

5.2.2. Horizontal restraints to competition

The patterns and tools of competition take different forms in the seven industries considered in this section. Competition is mainly based on prices and geographical proximity for cement and steel products. These are concentrated industries, and for which transportation costs represent a substantial component. Geographical proximity from clients offers a net comparative advantage both for producers and distributors. These two industries are also characterized by the relatively low role attributed to marketing and to high entry barriers. Entry in these industries requires substantial amounts of investment with a long payback period. Conversely, in the ceramic industry, output is more diversified and competition takes place on both prices and quality. Competitors supply the whole market and don't limit themselves to their own regions. In automobile industry, more open on imports, the role of economies of scale is less critical. Competition takes place on prices and the "brand name".

¹¹ Local output concentration is considered as high if the market share of four largest firms exceeds 75 percent, medium if the market share exceeds 50 percent but less than 75 percent.

¹² Import penetration of final products is considered as high if accounts for more than 50 percent of domestic demand. Import penetration is low if it accounts for less than 10 percent of local demand.

¹³ Similar definition is used for reliance on imports for inputs.

¹⁴ Export propensity is low exportation ratio is less than 10 percent, and high if it exceeds 50 percent.

¹⁵ The degree of diversification is appreciated through the number of products supplied by firms belonging to the same industry. It is low if the number of different products does not exceed two, and high when it exceeds five.

The latter depends on consumption habits, availability of equipments, and potential value on the second hand market. Regarding milk industry, the role of marketing and distribution are extremely important. Product quality, as perceived by consumers is also very crucial. Within this environment, economies of scale and the cost of the "brand name" creation act as barriers to entry. The same findings apply also to soft drinks industry.

Table 5.7:
Horizontal restraints to competition
Area of competition, Marketing role and Nature of entry barriers

	Main competition variable	Government intervention on prices	Marketing role	Entry barriers
STL. I.	Price, Proximity	No	Low	Economies of scales
CMT. I.	Price, Proximity	No	Low	Economies of scales
CRM. I.	Quality, Price	No	Low	Economies of scales
ATM. I.	Nom de la Brand, Price	No	High	Technological knowledge, cost of brand creation
PHM. I.	Price, Proximity	Yes	Low	Intellectual property rights, Technological knowledge, legal restrictions
MLK. I.	Quality, Price	No	High	Economies of scales, cost of brand creation
SDR. I.	Quality, Price	No	High	Economies of scales, cost of brand creation

Note: Table constructed by the authors on the basis of competition survey data, and manufacturing survey data carried out yearly by the Ministry of trade and industry.

STL.I. : Steel industry, CMT. I.: Cement industry, CRM. I.: Ceramic industry, ATM. I.: Automobile industry, PHM: Pharmaceutical industry, MLK. I. : Milk industry, SDR.I.: Soft drinks industry.

Pharmaceutical industry is a special case. Consumers don't choose products but they rely on their prescribers. In addition, prices are fixed by the governmental authority in charge of the industry. Competition at the level of distribution takes place on the basis of proximity and prices. The capacity to deliver ordered products in a very short time makes competition more relevant at the regional level (between wholesalers) rather than at the national level. Entry in the pharmaceutical industry is constrained through a multiplicity of barriers such as technological know-how, intellectual property rights and other legal constraints.

5.2.3. Nature and occurrence of vertical restraints

Vertical restraints are "agreements" between suppliers and dealers which may in some cases restrain competition. The most commonly used restraints are: retail price maintenance, exclusive dealing, territorial exclusivity, quantity forcing and tying arrangements. The survey on competition environment in the manufacturing industries in Morocco revealed the existence of several restraints with various occurrences from one industry to the other.

Except for ceramic industry, interviews indicate that *retail price maintenance* tends to prevail although under a light form of "*recommended price*". Restraints on quantity are also prevailing in the automobile industry. Quantity forcing tends to be imposed by producers or importers on their distributors. These restraints exist but they are less frequent in steel, cement, pharmaceutical and milk industries. They are generally indirect through discounts and trade credits, conditional on quantities or on exclusive dealing.

Some distributors, in order to benefit from conditional advantages, rely on one supplier in order to reach the required threshold. In some cases, distributors are only supplied if they have an "*account*" before producers. Conditions to open this account tend to be restrictive. Small and medium distributors found generally themselves excluded from direct dealing with producers. Large distributors at regional level are granted dominant position with respect to retailers and consumers.

Tying arrangements' restraints seem to be absent in cement and automobile industry. Conversely, this practice has been mentioned, although rarely, in steel, milk, pharmaceutical, and soft drink industries.

Finally, except in automobile industry in which distributors are linked to their suppliers through long-term arrangements, none of the other industries has mentioned this restraint.

Table 5.8:
Frequency of vertical restraints (B to B)

	Retail price maintenance	Quantity forcing	Exclusive dealing	Tying arrangements	Long term supply contracts
STL. I.	Recommended price	Less frequent	Discount on volumes	Less frequent	No
CMT. I.	Recommended price	Less frequent	Discount on volumes	No	No
CRM. I.	None	None	No	No	No
ATM. I.	Recommended price	Frequent	By contract	No	Yes
PHM. I.	Not applicable	Less frequent	No	Less frequent	No
MLK. I.	Recommended price	Less frequent	No	Less frequent	No
SDR. I.	Recommended price	Less frequent	No	Less frequent	No

Note: Table constructed by the authors on the basis of competition survey data.

STL.I. : Steel industry, CMT. I.: Cement industry, CRM. I.: Ceramic industry, ATM. I.: Automobile industry, PHM: Pharmaceutical industry, MLK. I. : Milk industry, SDR.I.: Soft drinks industry.

The survey revealed that non-respect of vertical restraints leads sometimes to "sanctions", but most often to suspension of certain benefits. Detailed results are presented in Table 5.9. In the automobile industry, non-respect of vertical restraints may lead at the extreme case to the withdrawal of the "*distributor card*". Suspension of trade credits, and discounts are the most prevailing forms of penalties. The relatively high degree of competition in pharmaceutical and ceramic industries makes it difficult for suppliers to apply any sanctions against their distributors.

Table 5.9:
Nature and frequency of sanctions generally applied

	Financial sanction	Refusal to supply	Trade credits suspension	Suspension of discounts
STL. I.	No	Less frequent	Non applicable	Frequent
CMT. I.	No	Less frequent	Non applicable	Frequent
CRM. I.	No	No	Less frequent	Less frequent
ATM. I.	No	Frequent	Frequent	Not applicable
PHM. I.	No	No	Less frequent	Less frequent
MLK. I.	No	No	Not applicable	Less frequent
SDR. I.	No	No	Not applicable	Less frequent

Note: Table constructed by the authors on the basis of competition survey data.

STL.I. : Steel industry, CMT. I.: Cement industry, CRM. I.: Ceramic industry, ATM. I.: Automobile industry, PHM: Pharmaceutical industry, MLK. I. : Milk industry, SDR.I.: Soft drinks industry.

6. The relationship between competition and efficiency

Fostering competition is not an objective in itself. Competition is important because the lack of it may induce costs in terms of economic efficiency and welfare. In market economies, most decisions are left to private economic actors (see Newman (2002) and Graham and Richardson (1997)). Market forces are allowed to play their role and the price mechanism is largely relied upon to bring about an efficient allocation of resources. However, private actors may collude to put aside competition. In these cases, welfare may be lower than with free competition. To prevent such outcomes, public authorities must intervene by means of competition laws and policy.

The purpose in this section is to examine whether the degree of competition affects economic efficiency of the Moroccan manufacturing sector. To this end, table 6.1 presents correlation coefficients between TFP on one hand and GINI coefficients, concentration indices and mark-ups on the other. While TFP and markup estimates are “average” over the 1990s, GINI and concentration concerns two specific years i.e. 1990 and 2000. Therefore, average of the two years is used to compute correlation. Moreover, correlation can only be computed using the 17 available sub-sectors. The low size of the sample makes the results very sensitive to outliers. Hence, correlation coefficients are computed using the full sample (17 sub-sectors) and also using samples which exclude the other manufactured products and Iron and Steel and other metals sub-sectors. These are the two outliers in the sample with the former showing the highest increase of TFP (7.11) and the latter showing the highest decrease (-17.8).

Correlation coefficients over all sub-sectors suggest no relationship between TFP and firm size distribution and a potential negative link between TFP and concentration and mark-up. The coefficient is however not high. When only the other manufactured products sub-sector is excluded, no relationship between TFP and firm size distribution emerge while the correlation coefficient with concentration or mark-up increased markedly. It reaches 50%. When only the Iron and Steel and other metals is excluded no links seem to exist between TFP and any of the three indicators. Excluding both sub-sectors results in high and negative correlation between TFP on one hand and GINI and mark-up on the other hand. The coefficient with of the latter is however much higher than the one with the former. On the basis of the results in table 8, one can exclude the existence of a negative relationship between productive efficiency (i.e. TFP) and market power (i.e. mark-up). Although less robust than the latter, a relationship between TFP and firm size distribution is also possible. Knowing that inequality of firm size

distribution is mainly reflected in the predominance of small firms (see discussion in Section 4), the result with GINI, if confirmed, suggests a loss of efficiency due to small size of firms. Tybout (2000) draws on various researches examining competition and efficiency in developing countries to examine whether producers enjoy monopoly power in product markets and whether small firms and market power induce loss of efficiency. The analysis neither supports the existence of higher market power in LDCs than in developed countries nor does it support the existence of efficiency loss due to small firms and market power. Our results for Morocco contrast, however, with these conclusions.¹⁶

Table 6.1: Correlation of the adjusted TFP with other indicators.

Indicators	GINI	C4	Mark-up
Sample			
All sub-sectors	-0.03	-0.38	-0.28
All sub-sectors except other manufactured products	-0.13	-0.48	-0.48
All sub-sectors Iron and Steel and other metals	-0.20	-0.02	-0.15
All sub-sectors except other manufactured products and Iron and Steel and other metals	-0.39	-0.17	-0.48

Source: Authors calculations from UNIDO

Due to the small sample, the results in table 6.1 should clearly be taken with caution. To shed further light on the issue, we conduct an econometric investigation using firm level data. The objective is to examine whether efficiency is negatively related to market power. Due to data availability it is not possible to compute TFP at firm level. We therefore use labor productivity (output per worker) as a proxy for efficiency. To control for sectors' specificity, we use Panel Data methodology and consider sectors' fixed and random effects. We use the 2000 firm level data base and focus on those sectors for which we have an exact correspondence between the definitions used in the firm level data base and the one used to compute mark-up. This implies that the sectors which were pooled for the study of mark-up were disregarded (see Section 4, data issues). We end up with a sample of 4262 firms. As explanatory variables, we use firm's age, its size, its legal status and mark-up. These are among the common explanatory variables used in the literature.

¹⁶ Tybout (2000) does not conclude, however, that these are not an issue: "it would be foolish to conclude that market power is a non issue in developing countries" (p27). Existing research still covers a limited (and may be unrepresentative) set of countries and is unlikely to detect isolated pockets of non-competitive behavior.

Firm age is expected to affect productivity because of continuity and experience (see Geroski, 1988). Firm legal status may affect its productivity because of its impact on type of management, access to credit and uncertainty. For example, Leech and Leahy (1991) find that better ownership control improves firm performance. Hubbard (1998) documents that information problems in financial markets ensure a link from firm characteristics to investment decisions. One implication of these findings is that capital costs will differ by the characteristics if these affect access to capital. There are various explanations to why firm size may affect labor productivity (see Oi and Idson, 1999 for a survey). One possibility is that large firms use more skilled labor than small ones and this explains the higher labor productivity. Another potential explanation relates to technology. If large and small firms operate with distinct technologies, this may explain why we observe substantial differences in capital intensity over the size range (see Little, Mazumdar and Page, 1987). Finally, there is empirical evidence that increased product market competition is associated with higher firm productivity or higher productivity growth (e.g. Nickell et al., 1997). In this section, our main interest is in the latter issue.

Our dependent variable is intended to capture productive efficiency. However, empirical studies often cannot separately identify the impact of competition on allocative, productive and dynamic efficiency. For instance competition by affecting process and product innovation (dynamic efficiency) can indirectly affect productivity (productive efficiency). Moreover, recent research (e.g. Aghion et al, 2002 and Griffith, 2001), has suggested that the relationship may be non-linear. Increased competition is beneficial to productivity up to a certain level and then become detrimental. In our context this implies that increase in mark-up should first have a negative impact and then the impact become positive. For our purpose, the issue is to examine whether the actual state of competition in Moroccan is beneficial or detrimental to productivity. To this end we follow the literature in using mark-up in level and the squared mark-up as explanatory variables. The estimated coefficients are, then, used with the observed levels of mark-up and squared mark-up to see whether the ultimate impact is positive or negative.

Table 6.2: Regression results. Dependent variable: log of output per worker.

Specifications	Specification 1		Specification 2		Specification 3		Specification 4	
Variable	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Constant	2.07	6.10	3.95	26.37	3.14	4.18	3.74	5.10
Age	0.09	5.29	0.05	3.14	0.03	2.05	0.03	2.04
Mark-up	0.04	7.35	-0.60	-16.88	-0.02	-0.47	-0.33	-3.82
Mark-up ²	-	-	0.05	17.99	-	-	0.02	3.84
Capital #	0.25	22.96	0.25	24.57	0.24	24.31	0.24	24.36
Legal status								
Dummy2	0.24	0.42	-0.11	-0.28	-0.17	-0.23	-0.18	-0.24
Dummy3	0.76	2.00	0.32	1.85	0.15	0.22	0.15	0.21
Dummy4	0.55	1.63	0.32	3.39	0.05	0.08	0.05	0.08
Dummy5	0.57	1.72	0.52	5.57	0.38	0.55	0.38	0.56
Dummy6	0.51	1.53	0.47	5.19	0.31	0.45	0.31	0.45
Dummy7	0.67	1.82	0.37	2.15	0.09	0.13	0.09	0.13
Dummy8	0.49	1.40	0.35	2.59	0.17	0.24	0.17	0.24
Adjusted R ²	0.19		0.28		0.32		0.32	
Random effects test					CHISQ (2) = 0.18		CHISQ (2) = 0.32	

Note: Except for dummies, all explanatory variables are in log.

Due to data limitation capital stock is proxied by the “accounting capital”

Table 6.2 presents estimation results using the OLS method on the pooled sample (Specifications 1 and 2) and the Panel data random effect method (Specifications 3 and 4).¹⁷ The Hausman test rejecting the existence of random effects, we will focus on the results of the OLS. Although still low, the quality of the fit increases markedly when the squared mark-up is introduced in the regression. All control variables have the expected sign and are significant. The level of mark-up has a negative and significant coefficient while the squared mark-up has a positive and significant coefficient. This is in accordance with the non-linear effect of competition on productivity.

A rough assessment of the impact of the actual degree of competition on productivity is presented in Table 6.3. For all sectors, the impact is negative. The highest negative impacts concern Wearing apparel, Machinery and Electrical. Wearing apparel and Electrical are sectors in which Morocco is (or is becoming) specialized. Another of specialization is food which also exhibits an important loss (although less) in productivity due to the lack of competition.

¹⁷ Note that the results of the Panel data fixed effect method (Presented in Appendix 6) are disregarded because of the co-linearity between mark-up and fixed effects.

Table 6.3: Estimated decrease (%) in output per worker due to imperfect competition.

SECTOR	Decrease
Foods products	-1.22
Textiles	-1.06
Wearing apparel, except footwear	-1.36
Fabricated metal products	-0.79
Machinery, except electrical	-1.33
Machinery, electric	-1.36
Transport equipment	-1.27
Professional and scientific equipment	-1.24
Other manufactured products	-0.85

7. Competition Policy Assessment

This section first presents and analyzes the Moroccan competition law provisions and, then, examines the current state of competition policy implementation. To this end, two sources of data have been exploited. One concerns the existing data and literature on competition issues in Morocco while the other is based interviews with civil servants and experts involved directly or indirectly in the process of designing, implementing, or advocating competition provisions.

7.1. Competition law provisions

The Moroccan competition law title is "*Law on freedom of prices and Competition*"¹⁸. The Moroccan law is largely inspired by the French law on competition. Competition law (*Law n° 6-99 on freedom of prices and competition*) appeared officially in June 05, 2000, published in the official Bulletin n° 4810 (July, 6, 2000) and entered officially into force in July 06, 2001 one year after its official publication as it is stated in its last article 103.

In addition to the law, implementation decrees (28 articles) have been adopted in September 17, 2001 and published in October 10, 2001 in the official bulletin n° 4940. Finally, the legal framework on competition has been completed by the publication of "one article decree" nominating competition council members (official bulletin n° 4970) on January 17, 2001.

7.1.1 Brief overview on the law making process

Before the Structural Adjustment Program (SAP), prices of most goods and services were administratively set. The *department of Prices* was in charge of controlling that prevalent prices on markets don't depart from "*administrative prices*" as decided by civil servants in their offices. However, since the early 80s, Moroccan authorities have switched gradually towards a more market-oriented economy. Price liberalization policy has been one of its main components. Accordingly, a large number of prices were freed in order to promote competition and allow market mechanisms to have a greater role in allocating and pricing factors, goods and services.

¹⁸ Three other alternatives are generally used: "**Control of Restrictive Business Practices**" (RBPs law) for example in UK, Switzerland, India, Hungary, Finland and Colombia. "**Antimonopoly Law**" such as in Chile, Japan and Poland. "Competition Act" in most other countries.

The idea of drafting a law on competition started in 1989 through Morocco's cooperation with France. But it took some time for policy makers "to be convinced" that market liberalization was not inconsistent with market regulation and control of anti-competitive practices. The first draft benefited from the presence of a French expert in competition issues. The draft draws to a large extent on the French law¹⁹. The drafting stage was delayed by the conflict of competence that emerged between the "department of general affairs" and the "department of trade". Each of these departments considers it is its own prerogative to deal with competition issues.

In 1995, a first public conference was organized by the "*Ministry of economic incentive*"²⁰, and an initial draft was sent to the "general secretariat of the government" (SGG²¹) in 1996. This department examines the conformity of the draft with the constitution (constitutionality requirement) and with the overall existing laws and regulations (consistency requirement). The text lasted almost three years before its presentation to the "*Government Council*"²², and then to the "*Council of Ministers*"²³ chaired by the King. The delay is explained by the order of priority of competition law compared to other legal frameworks in the government's agenda, and to various disagreements over the role of the competition board. According to our interviews, this entity was endowed with much more prerogatives, independence and authority in the original draft. On the other hand, the project adopted introduced "penal sanctions", which was not the case in the initial draft.

This review reveals the conflicting views on the necessity of a competition law in Morocco, and the extent of power that should be granted to the competition board. Under the pressure of some international institutions, and in compliance with the FTA with European Union, Morocco passed finally a half-hearted competition law.

7.1.2. Objectives of the law

The purpose drafting a Moroccan competition law is to:

- ✓ Define the legal provisions governing *freedom of prices* and organize *free competition*

¹⁹ More precisely on the French ordinance of December 1986.

²⁰ Our translation of "Ministère de l'Incitation Economique".

²¹ SGG: Secrétariat Général du Gouvernement

²² The government Council (Le Conseil du Gouvernement) chaired by the Prime Minister has only a preparation role.

²³ Le Conseil des Ministres

- ✓ Define the rules protecting competition in order to *stimulate economic efficiency* and improve *consumers' welfare*.
- ✓ Ensure *transparency and loyalty* of commercial relationships.

The lawmaker in Morocco insisted on freedom of prices and free competition as its first objective. The principle of free price setting does not rule out the authorities' right to intervene and set prices in some specific circumstances. Article 2 states that prices of goods and services are freely determined by market forces, with some exceptions explicitly provided in articles 3,4,5 and 83. Under these exceptions (lack of competition because of monopoly or under-supply or as the result of legal and regulatory provisions) prices may be set by administrative authorities²⁴ after consultations with the Competition council. Temporary measures can also be taken to prevent sudden price surges or declines due to exceptional circumstances (public catastrophe, abnormal market situation) after consultations with the Competition council. These temporary measures should not exceed six months renewable once.

The second objective of the Moroccan competition law is to stimulate economic efficiency, and improve consumers' welfare. Hence, free competition is not an end in itself. The third objective underlined by competition law is transparency and loyalty of commercial relationships. Some competition laws adopted in other countries highlight other objectives such as *stimulate innovation*, *limit the impact of restrictive business practices on trade and development*, ensure that Small and Medium Enterprises have an equitable opportunity to participate in the economy.

7.1.3. Scope of application

The first article defines the *scope of the competition law*. The scope as stated in the Moroccan competition law is very large. It covers all *natural persons* or *corporations* whether *their headquarters are established or not in Morocco*, provided that their *operations* or *behaviors* have an effect on competition in the Moroccan market or in a substantial part of it. The law covers *all activities* of production, distribution and services. The law applies also to *public entities*, which engage in *commercial activities* as economic agents, *but does not apply to the sovereign acts* of the state itself. The law applies finally to *export agreements* to the extent their implementation has an incidence on domestic market competition.

²⁴

7.1.4 An overview of the Moroccan competition law

The Moroccan competition law is made up of nine tiles and 103 articles.

Table 7.1: Architecture and content of the Moroccan competition law

N°	Title	Articles	Number of articles
1	Scope of the law	Article 1	1
2	On the freedom of prices	Articles 2,3, 4 & 5	4
3	Anticompetitive practices	Articles 6,7,8 and 9	4
4	Economic concentration projects	Articles 10,11, 12 & 13	4
5	On Competition Board	Articles from 14 to 46	33
	Three chapters		
	o Chapter 1: <i>Functions of the Board</i> ,		
	o Chapter 2: <i>Composition of the Board</i>		
	o Chapter 3: <i>Investigation procedures of the Board</i>		
6	Restrictive competition practices	Article from 47 to 55	9
	Three chapters		
	o Chapter 1: <i>Consumer protection and information</i>		
	o Chapter 2: <i>Transparency of commercial relationships</i>		
	o Chapter 3: <i>Storage for speculative purposes</i>		
7	Specific rules for products and services for which prices are regulated	Articles from 56 to 60	5
8	Investigations and penalties	Article from 61 to 82	22
	Two chapters		
	o Chapter 1: <i>On investigations</i>		
	o Chapter 2: <i>On penal sanctions</i>		
9	Transitory and Miscellaneous provisions	From article 83 to 103	21
	Two chapters		
	o Chapter 1: <i>Transitory provisions</i>		
	o Chapter 2: <i>Miscellaneous provisions</i>		
Total			103

7.1.5 Competition law content analysis

Competition law is tightly grounded in its economic and legal environment. It defines provisions that govern freedom of prices and rules to protect competition. It determines broadly the rules by focusing on forbidden (anti-competitive practices), controlled, or regulated practices (operations of economic concentration). The competition law adopts the rule of reason approach by providing substantial margin of maneuver, and discretion to the administrative authority in charge of competition. This approach may complicate the process of implementation in an environment characterized by lack of both transparency, and expertise.

Table 7.1. presents more comprehensively the chapters that compose the competition law in Morocco. This sub-section focuses on some specific provisions.

❖ **Anticompetitive practices:**

Concerted practices that restrict competition: The **article 6** of the Moroccan competition law states that any concerted arrangements, agreements, collusive behaviors or coalitions explicit or implicit, in *whatever form* and for *whatever reason* are prohibited when their *object* or they *can have as effect* to *prevent, restrict or distort* competition in any given market.

The competition law lists explicitly some practices as examples but *without intending to provide an exhaustive list of prohibited practices*. These are: practices that limit access to market or limit free competition, put obstacles to the free-market prices by artificially favoring their increase or decrease, limit or control production, demand, investment or technical progress, segmentation of markets or sources of purchase.

Abuse of dominant position: Any abuse, by one or more enterprises, of a dominant position on the domestic market or on in a substantial part of it is prohibited. Various acts and behaviors are qualified as abusive such as: Refusal to supply, discriminatory selling terms, tying arrangements, ending business relationship with a partner for the motive of not complying with unjustified and abusive commercial terms, imposing directly or indirectly minimal prices at which goods and services have to be sold (resale price maintenance RPM). Abuse may also take the form of selling to consumers at below costs in order to prevent entry of a competitor or one of its products (**Article 7**).

Establishing whether the practices or behavior of an enterprise involve or not an *abuse of a dominant position* will require a case-by-case analysis (rule of reason approach). A dominant position in itself is not anti-competitive as such.

❖ **Exemptions**

The provisions embodied in articles 6 and 7 are not applicable when anti-competitive practices are the result of implementing legal or regulatory provisions, or in case their authors can justify that their effect on economic progress are sufficiently high to compensate for restrictions on competition, and that they allow consumers to get a fair share of profit, without eliminating competition in a substantial part of the market²⁵.

Some type of agreements when their purpose is to improve SMEs management, or marketing by farmers of their products, can be recognized as entering in scope of exemption by the administration authority in charge of competition upon consultation of the Competition Council. This means that even when some practices fall within the scope of articles 6 and 7, the possibility exists of their authorization. The exemption is granted if such practices produce a “*net public benefit*” and the burden of proof falls on firms. The text does not specify whether the exemption should be temporary (then for how much time?), or permanent.

❖ **Operations of economic concentrations**

Any concentration project or any concentration that *may harm competition*, either by creating or strengthening a dominant position needs to be notified to the Prime Minister (PM) (article 12). The notified project, which may include also incorporate some commitments, is examined by the PM within two months. But the PM *may* ask for advice from the Competition Council (CC). In this case the decision should be given within six months.

These provisions apply only when firms that take part in the concentration project, or those firms related to them accounted during the last year before the concentration project for more than *40 percent* of sales, purchases, or other economic aggregates in a national market of goods and services of the same nature or of substitutes, or in a substantial part of the market.

²⁵ This is another area in which the rule of reason approach is adopted.

7.1.6. The competent authority

The prime minister (PM) through the "*Department of General Affairs*"²⁶ is the administrative authority in charge of competition policy implementation. This department relies in various cases on consultations with other entities such as the "competition council", the "Inter-ministerial commission on prices"²⁷, and the "Ministry in charge of the sector under investigation". These entities have a consultative role. But the competition law does not require in all cases to consult all these entities. In some cases, consultations are cumulative, in others one or two entities can be sufficient. In all cases, competition law stipulates that only consultation is required by the administrative authority to validate its decisions. The PM or the department of General Affairs are not expected to respect the outcome of consultation.

Therefore, the **competition council (CC)** according to article 14, is a *consultative entity* established to provide its opinion, advice and recommendations²⁸. The CC is consulted by permanent parliamentary commissions for law proposals on competition, by the government on any competition-related issue, by regional and local councils, chambers of commerce, agriculture and fishing chambers, trade and labor unions, and consumers' associations on any question of principle related to competition. The CC can also be consulted by jurisdictions in dealing with anti-competitive practices defined in articles 6 and 7.

Article 16 states CC consultation is compulsory for the government in a number of cases in *preparing, amending or reviewing legislation on restrictive business practices*. Article 17 shortly states that the CC undertake its duties defined in the present law in the areas of concentration, and anti-competitive practices, as well as in the domain of prices.

It can be noticed that in all these articles, the CC acts as a consultative body *but never on its own initiative*. The competition council as stated in the articles 14 to 17 *has no power* to order enterprise to supply information. The CC does not take any decision. No explicit mandate is given to the CC in studying and analyzing markets, prices, and business operations and providing information to the public. The CC has also no power in issuing implementing regulations to assist it in carrying out its tasks.

Composition of the CC: The competition council is composed by the Chairman and (12) members among which: Six members are officers from the public administration; three members are selected for their knowledge in law, economics, competition or consumption; and three members are appointed for

²⁶ Currently delegated Ministry for General Affairs.

²⁷ La commission interministérielle des prix.

²⁸ Note that the trend in most of the competition authorities created in recent past is to award them as much administrative independence as possible in order to prevent any interference with political influence.

their current or previous experience in production, distribution or services²⁹. The Chairman of the CC is appointed by the Prime Minister. The rest of members are nominated for five years by decree. Their mandate is renewable once.

The "inter-ministerial commission on prices" is also a consultative body. This entity does not appear in the competition law itself, but in its implementation decrees. This commission is chaired by the Prime Minister, or the Minister of General affairs or one of its representatives. It is formed by members from the following departments: Interior, Finance, Agriculture, Industry and Trade, Employment, Planning, Handicraft, and representatives of the sector under investigation for a competition related issue.

7.1.7 The trial procedure and sanctions

The trial procedure can be initiated either by *public authorities*, on the basis of *victims' complains*, or through " *associations of consumers*" that can act on behalf of victims. However, only those associations recognized as "*associations of public interest*" are entitled to initiate the trial procedure. In any case, it is up to the attorney to appreciate the opportunity to open or not a formal investigation.

The Moroccan competition law makes a distinction between three categories of sanctions: "civil sanctions", "administrative sanctions" and "penal sanctions". Sanctions include fines (vested both in the administrative authority and judicial authority)

Civil sanctions

Civil sanctions involve reestablishment of "previous situation" with or without restitution to injured consumers. These sanctions imply that all agreements or contracts that led to irregular competition are null and void.

Administrative sanctions

The administrative authority of competition is empowered by the law to levy fines on natural persons or legal entities for infringement of competition rules. Administrative sanctions apply only to restrictive competition practices stated in chapter VI. The law allows any enterprise or individual to appeal to the appropriate judicial authority against the decision of the administrative authority. The amount of the administrative ranges between one and twenty times the weekly average turnover. However, it cannot exceed 100 000 DH. The fine may be

²⁹ In some countries the legislation states that the persons appointed should not have interests which would conflict with the functions to be performed. In Germany, members must not be owners, chairmen or members of the board of management of the supervisory board of any enterprise, cartel, trade industry association, or professional association.

augmented by an amount of money computed on the basis of the gap between the "applied price" and the "price that should prevail".

Penal sanctions

Penal sanctions in the competition law involve both financial penalties and imprisonment. Article 67 states that any concerted practices that restrict competition (article 6), or abuse of dominant position (article 7) are punished by imprisonment of two (2) months to one (1) year and a fine of 10 000 to 500 000 DH or one of these two sanctions. Imprisonment may reach five (5) years and the fine 1 000 000 DH for speculative practices on basic products that affect the free determination of prices.

Enterprises charged with anti-competitive practices are subject to fines amounting from 2 and 5 percent of the turnover generated in Morocco during the previous financial year. If the infringement is committed by a natural person, he or she is imposed a fine ranging from 200 000 and 2 000 000 Moroccan dirhams. In addition to fines imposed by the competition authority, competition law allows those who suffered from the actions of violators to seek compensation in civil courts.

7.2. Competition policy in practice

The competition law appeared in official bulletin in July 2000, and was expected to enter into force in July 2001. However, so far there has been no effective implementation of the law's provisions. Interviews with the staff in charge of competition confirm this finding. It seems that the department of general affairs has received a number of complaints³⁰ related to anti-competitive practices, but no concrete actions have already been taken.

The president of the competition council, who is a *retired* former Minister, has been nominated. The rest of members of have also been nominated, but they lack human and financial resources to ensure their consultative mission. Over the last three years, they have met two or three times. The building expected to host the competition council is still under construction.

Different articles in the Moroccan newspapers revealed the existence of various cases of potential abuse of dominant position, suspected anti-competitive practices, or economic concentration that deserve to be investigated.

The absence of enforcement of competition law in Morocco reveals to a large extent the low degree of commitment towards an effective liberalization of the economy, and undermines the

credibility of market reforms. Other examples may be provided in areas such as fiscal policy, and labor regulations. In all these three cases, the legal and regulatory frameworks exist, but they are only weakly enforced. The question on why these institutions are so weak is extremely relevant. Is it just a matter of capacity and financial means that can be resolved by technical and financial assistance? Or Is it deeper than that revealing the existence of actors that participate in weakening the enforcement process, and that might use it as a rewarding or a disciplining device?.

8. Conclusion

Twenty years after the starting of a comprehensive program of economic reforms in Morocco, this paper seeks to assess the state of competition and efficiency in manufacturing sector as well as the legislation aimed at fostering competition. The study combines quantitative analysis and a qualitative survey-based set of information. Previous studies were based on data up to (at most) 1991 i.e. less than 10 years after the starting of the reform process in Morocco. This might be not enough for some structural effects to emerge. The present study benefits from additional information over 10 years that might be helpful in identifying such changes.

Previous empirical evidence finds high concentration rates in the Moroccan manufacturing sector. Such concentration allows producers to get high profit margins while imports do not seem to reduce the margins. Moreover, concentration and import penetration do not induce any improvement in productivity. Finally, while a positive correlation is found between productivity growth and growth of exports, further tests suggest that it is more likely that exports were driving higher productivity growth than the reverse.

Our preliminary analysis identified wearing apparel and food products as very important sectors in Morocco. The chemical sector is the next most important sector while the importance of textile is low. Since the launching of trade liberalization, wearing apparel recorded a spectacular increase of its importance, food products shares remained unchanged while the ones of chemicals and textiles recorded a sensitive decrease. Electrical machinery and professional and scientific equipment show a spectacular increase of their shares in exports although their shares in employment and value added exhibit no particular pattern. As compared to other emerging countries, Morocco appears as more specialized. In term of evolution, GINI index suggest that Moroccan manufacturing sector became more specialized.

³⁰ These complaints are made secret, we could not have any indications on them.

Examining the status of sectors with respect to foreign competition, food product and chemicals have the lowest import penetration ratios. The result for food products may be due to high protection. The export ratio is relatively high for chemical and is very low for food products. Electrical machinery has both a very high import penetration and export ratios. Over the 20 years period, food products became less opened and exports lesser than before, chemicals became more opened and exporting more and electrical machinery is markedly more opened and exporting significantly more. This confirms its status of a potentially promising sector. Note that for wearing apparel and professional and scientific equipment the data does not allow assessing properly import penetration and export orientation. It seems, however, that these sectors are highly involved in international outsourcing which may be interpreted as an indicator of competitive pressure.

With respect to domestic competition, professional and scientific equipment appears as the most concentrated sector while food products, textiles and wearing apparel are the least concentrated sectors. Chemicals and electrical machinery are highly concentrated. In comparison to other emerging countries, concentration is higher in Morocco and the differences are in general sizable. This is especially true for foods products, electrical machinery and professional and scientific equipment. Over the period, concentration in professional and scientific equipment decreased markedly. Electrical machinery and food products show only a modest decrease of concentration while chemicals exhibit an increase. Looking at mark-ups, wearing apparel and electrical machinery are the closest to the manufacturing average while food products, professional and scientific equipment and chemicals exhibit significantly higher mark-up than the average.

In the food products sector the majority of firms are of small size (i.e. less than 11 workers). In the wearing apparel a majority of firms are of medium (11 to 50 workers) or large size (101 to 200 workers). Large firms (more than 201 workers) represent non-negligible shares in chemicals and electrical machinery (10% and 14% respectively). Over the period, the general tendency was an increase of the share of small size firms. The shares of large firms have decreased for all sub-sectors except electrical machinery and wearing apparel.

In terms of Total Factor Productivity (TFP), the most important decrease of productivity concerns professional and scientific equipment. An important decrease is also found for food product, electrical machinery and wearing apparel. This is worrying given the importance of these sub-sectors. Chemicals show almost no change in productivity.

Econometric investigation suggests the existence of a negative relationship between productive efficiency and market power. The highest negative impacts concern wearing apparel, electrical machinery. These are sectors in which Morocco is (or is becoming) specialized. Another sector of specialization is food products which also exhibits an important loss (although less) in productivity due to the lack of competition.

In order to deepen the analysis of competition pattern in Morocco, a survey was conducted in a selected sample of manufacturing industries appeared to be crucial. It covers both horizontal and vertical restraints to competition. The manufacturing industries covered by the survey are steel industry, cement industry, ceramic industry, automobile industry, pharmaceutical industry, milk industry and soft drinks industry.

Regarding horizontal aspects of competition, prices and geographical proximity are the most important for cement and steel products which are also characterized by the relatively low role attributed to marketing and by high entry barriers. In the ceramic industry, competition takes place on both prices and quality and producers supply the whole market and don't limit themselves to their own regions. In automobile industry takes place on prices and the "brand name" (influenced by consumption habits, availability of equipments, and potential value on the second hand market). Regarding milk industry, product quality, marketing and distribution are extremely important. Economies of scale and the cost of the "brand name" creation act as barriers to entry. The same findings apply also to soft drinks industry. In the pharmaceutical industry, prices are fixed by the government and competition is more relevant at the regional level (between wholesalers) rather than at the national level. Entry in the pharmaceutical industry is constrained by technological know-how, intellectual property rights and other legal constraints.

Turning to the vertical restraints to competition, *retail price maintenance* tends to prevail in all industries, although under a light form of "*recommended price*", except for the ceramic industry. Restraints on quantity are prevailing in the automobile industry but less frequent in steel, cement, pharmaceutical and milk industries. They are generally indirect through discounts and trade credits, conditional on quantities or on exclusive dealing. Tying arrangements' restraints seem to be very rare or absent in all industries. Finally, except in automobile industry in which distributors are linked to their suppliers through long-term arrangements, none of the other industries has mentioned this restraint.

The non-respect of vertical restraints leads sometimes to "sanctions", but most often to suspension of certain benefits. It may lead at the extreme case to the withdrawal of the "*distributor card*". Suspension of trade credits, and discounts are the most prevailing forms of

penalties. The relatively high degree of competition in pharmaceutical and ceramic industries makes it difficult for suppliers to apply any sanctions against their distributors.

Summing up our findings, the manufactured sector in Morocco is very, and increasingly, specialized. Over the whole period, the same three sectors (food products, wearing apparel and chemicals) dominate manufacturing while two others (electrical machinery and professional and scientific equipment) are emerging. In the five sectors, productivity is decreasing markedly (except for chemicals), small and medium size firms represent a majority (except for wearing apparel which shows a balanced distribution of firm size) and mark-ups are relatively high. There seems, therefore, to be a clear competition issue in the Moroccan manufacturing sector. The issue is the most worrying as the lack of competitive pressure is found to be associated with low efficiency and concerns sectors that represent the largest shares in term of employment.

Based on the computed concentration trade indices, the lack of competitive pressure seems to be much more related foreign than to domestic competition. The concentration index is, in general, low to medium in the least efficient-high power sectors. Imports penetration and/or export orientations are, in contrast, lower these sectors. The most notable example is the food sector with a sensitive decrease in productivity (-2.45%), a mark-up above average (111), and imports penetration and export orientation ratios by far below manufacturing average (respectively 14% and 26%). The findings suggest, therefore, that to tackle the competition and efficiency problems in the Moroccan manufacturing sector further openness to foreign competition is needed. This does not mean, however, that fostering domestic competition is not important.

The quantitative analysis does not allow identifying business practices that deter competition. The field survey conducted across seven sub-sectors shows that geographical proximity, marketing, technological know-how and distribution networks limit the extent of domestic competition. In particular distribution activities are governed by a set of restraints (on resale prices, quantities) and mechanisms to enforce such them (sanctions or suspension of certain benefits). These are fields where domestic competition policy has a crucial role to play.

The Moroccan competition law appeared in official bulletin in July 2000, and was expected to enter into force in July 2001. It defines provisions that govern freedom of prices and rules to protect competition. It broadly determines forbidden, controlled, or regulated practices and adopts the rule of reason approach. However, so far there has been no effective implementation of the law's provisions. The department in charge the law has received a number of complaints related to anti-competitive practices, but no concrete actions have

already been taken. Following observers, the absence of enforcement of competition law in Morocco reveals to a large extent the low degree of commitment towards an effective liberalization of the economy, and undermines the credibility of market reforms

References

Achy, L. and M. Cherkaoui (2004), "Political Economy of Making Market-Enhancing Laws In Morocco".

Achy, L. and Kh. Sekkat (2003), "The European Single Currency and MENA's Exports to Europe", *Review of Development Economics*, pp. 563–582.

Aghion, P., H. Bloom, R. Blundell, R. Griffith and P. Howitt (2002) "Competition and Innovation: An inverted U relationship", NBER Working Paper 9269

Amiti, M. (1999): "Specialization patterns in Europe", *Weltwirtschaftliches Archiv*, vol. 135, 1-21.

Belghazi, S. (1997), "Industrial competition and competitiveness in Morocco"

Ben Jelili, R. (2001), « Markup Pricing in Tunisian Manufacturing Industries » paper presented at the ERF's Eighth Annual Conference, Cairo, Egypt, January 2002.

Dasgupta, D. and F. Iqbal (2003, forthcoming), "Trade, Investment Climate and Jobs in the Middle East and North Africa Region, Some Emerging Issues", *Work in Progress*, Washington D.C.: World Bank

Davies, S. and B. Lyons (1996), *Industrial Organization in the European Union*, Oxford University Press, Oxford.

Dessus, S., J. Devlin and R. Safadi (2001) (eds.), "Towards Arab and Euro-Med Regional Integration", Paris and Cairo: OECD and ERF.

Fontagné, L. and N. Péridy (1996), "Le renouveau de l'insertion des pays du Maghreb dans les échanges internationaux", *Annales Marocaines d'Economie*; pp. 87-116.

Frankel, J.A. and A. K. Rose (1998), "The Endogeneity of the Optimum Currency Area Criteria", *The Economic Journal*, December, pp. 1009-1026

Graham, E. and J.D. Richardson, (1997), "Global Competition Policies", Washington D.C.: Institute for International Economics.

Griffith, R (2001) "Product market competition, efficiency and agency costs: an empirical analysis", IFS Working Paper W01/12.

Haddad, M., J. de Melo and B. Horton (1996), "Morocco, 1984-89: Trade Liberalization, Exports and Industrial Performance" in Roberts, M. and J. Tybout (eds.), *Industrial Evolution in Developing Countries: Micro Patterns of Turnover, Productivity and Market Structure*. New York: Oxford University Press.

Hajji, N., L. Jaidi and M. Zouaoui (1992), "Price and Competition in Morocco: Twelve sectoral studies", Ministry of Economic Affairs and Privatization

Hoekman, B. and H. Kheir El Din (2000) (eds.), "Trade policy Developments in the Middle East and North Africa", Washington D.C. and Cairo: World Bank and ERF.

Hoekman, B. and J. Zarrouk (2000) (eds.), *Catching Up with the Competition: "Trade Opportunities and Challenges for Arab Countries"*, Michigan: Michigan University Press.

Hubbard, G.R. (1998), "Capital-market imperfections and investment", *Journal of Economic Literature*, March, pp.193-238.

Krugman, P.R. (1993), "Lessons of Massachusetts for EMU", in F. Torres and F. Giavazzi (eds.), *Adjustment and growth in the European Monetary Union*, Cambridge University Press: Cambridge.

Leech, D. and J. Leahy (1991), "Ownership Structure, Control Type Classifications, and the Performance of Large British Companies", *Economic Journal*, 101(6), 1418-37

Little, I., D. Mazumdar and J. M. Page Jr. (1987), *Small manufacturing enterprises: A comparative analysis of Indian and other economies*, Oxford University Press, Washington.

Makdissi S., Z. Fattah and I. Limam (2000), "Determinants of Growth in The MENA Countries", Global Research Project (GRP) paper.

Mumcu, A. and Ü. Zenginobuz, *Competition Policy in Turkey*, paper presented at the ERF's Eighth Annual Conference, Cairo, Egypt, January 2002.

Nehru V. and Dhareshwar A. (1994), "New Estimates of Total Factor Productivity Growth for Developing and Industrial Countries," Policy Research Working Paper # 1313, the World Bank.

Neumann M. (2002), *Competition Policy: History, Theory and Practice*, Forthcoming, Edward Elgar.

Nickell, S., Nicolitsas, D. and Dryden, N. (1997), "What makes firms perform well?", *European Economic Review*, vol. 41.

Oi W. Y. and T. L. Idson, (1999) "Firm size and wages", Chapter 33 *Handbook of Labor Economics*, Volume 3, edited by O. Ashenfelter and D. Card, North-Holland.

Omran, M. (2002), "The Performance of State-Owned Enterprises and Newly Privatized Firms: Empirical Evidence from Egypt" paper presented to the ERF Ninth Annual Conference, American University in Sharja, the United Arab Emirates, 26-28th October 2002

Porter, M. (1990), *The Competitive Advantage of Nations*, New York: The Free Press.

Rey P. (1998), "Competition Policy and Economic Development", *Development Themes of the 21st Century*, G. Kochendörfer-Lucius and N. Pleskovic eds., Villa Borsig Workshop Series, 92-103, 1998.

Roberts, M. and J. Tybout, eds. (1996), *Industrial Evolution in Developing Countries: Micro Patterns of Turnover, Productivity and Market Structure*. New York: Oxford University Press.

Roeger, W. (1995), "Can Imperfect Competition explains the Difference between Primal and Dual Productivity Measures? Estimates for US manufacturing", *Journal of Political Economy*, Vol. 103, No. 2, pp. 316-330.

Sachs, J. and A. Warner (1995), "Economic reform and the process of global integration", *Brookings Papers on Economic Activity* 1, 1-117.

Sekkat, Kh. (1992), "Les Relations Verticales Inter-Entreprises: Objectifs et Instruments", Editions de l'Université de Bruxelles, Collection Gestion.

Sekkat Kh. (2004), "The Sources of Growth in Morocco: An Empirical Analysis in a Regional Perspective", *Review of Middle East Economics and Finance*, pp. 1-18.

Senhadji A. (2000), "Sources of Economic Growth: An Extensive Growth Accounting Exercise," *IMF Staff Papers*, pp. 129-157.

Tybout, J. (1992), "Linking Trade and Productivity: New Research Directions." *World Bank Economic Review*, 6, pp. 198-211.

Tybout, J. (2000) "Manufacturing firms in developing countries: How well do they do and why?", *Journal of Economic Literature*, March

Appendix 1:

Correspondence Table: ISIC/ Moroccan Classification

Code ISIC	Content	Code NMAE	Content
311	Foods products	15 – (159)	Industries alimentaires (sauf industries des boissons)
313	Beverages	159	Industries des boissons
314	Tobacco	16	Industrie du Tabac
321	Textiles	17	Industrie textile
322	Wearing apparel, except footwear	18	Industrie de l'habillement et des fourrures
323	Leather products	19- (193)	Industrie du cuir (sauf chaussures)
324	Footwear, except rubber or plastic	193	Chaussures en cuir
331	Wood and wood products, except furniture	20	Travail du bois et fabrication d'articles en bois
332	Furniture, except metal	361	Fabrication de meubles
341	Paper and paper products	21	Industrie du papier et du carton
342	Printing and publishing	22	Edition, imprimerie, reproduction
351	Industrial chemicals	24- (246)	Industrie chimique (sauf fabrication d'autres produits chimiques)
352	Other chemicals	246	Fabrication d'autres produits chimiques
355	Rubber products	251	Industrie du caoutchouc
356	Plastic products	252	Transformation des matières plastiques
361	Pottery, China, Earthenware	262+263+264	Fabrication de produits céramiques, de carreaux en céramiques, de tuile et briques en terre cuite
362	Glass products	261	Fabrication de verre et d'articles en verre
369	Other non-metallic mineral products	265+266+267+268	Fabrication de ciment, chaux et plâtre/ Ouvrages en béton ou en plâtre/ Travail de la pierre/ Fabrication de produits minéraux divers
371	Iron and Steel	27- (274)	Métallurgie (sauf métaux non ferreux)
372	Non-ferrous metals	274	Production de métaux non- ferreux
381	Fabricated metal products	28	Travail des métaux
382	Machinery, except electrical	29	Fabrication de machines et équipements
383	Machinery, electric	30+31+32	Machines et appareil électrique, matériel informatique, équipement de radio, télévision & communication
384	Transport equipment	34+35	Industrie automobile / Fabrication d'autres matériels de transport
385	Professional and scientific equipment	33	Fabrication d'instruments médicaux, de précision d'optique et d'horlogerie
390	Other manufactured products	36 – (361)	Autres industries manufacturières

NMAE: nomenclature marocaine des activités économiques.

Appendix 2:
Correspondence Table: ISIC/ CHELEM

CHELAM	ISIC
KA, KB, KC, KD, KE, KF, KG	311
KH	313
KI	314
DA, DD	321
DB, DC	322
DE	323+324
EA	331
EB	332
EC	341
ED	342
GA, GB, GC, GD, GE, GF, GG	351+352
GI	355
GH	356
BB	361
BC	362
BA	369
CA, CB	371
CC	372
FA, FB	381
FC, FD, FE, FF, FG, FH, FO	382
FL, FM, FN	383
FS, FT, FU, FV, FW	384
FI, FJ, FK, FP, FQ, FR	385
EE	390

Appendix 3:
Estimated Capital Shares by sub-sectors

Sector	Capital share
Foods products	0.27
Beverages and Tobacco	0.40
Textiles	0.22
Wearing apparel, except footwear	0.21
Leather products including Footwear	0.22
Wood and wood products and furniture	0.25
Paper and Publishing	0.27
Chemicals	0.33
Rubber and Plastic products	0.25
Pottery, China, Earthenware ETC	0.26
Iron and Steel and other metals	0.40
Fabricated metal products	0.26
Machinery, except electrical	0.26
Machinery, electric	0.30
Transport equipment	0.33
Professional and scientific equipment	0.24
Other manufactured products	0.29
Average*	0.30
Standard deviation*	0.02

*Weighted using shares in value added

Appendix 4:
Concentration in Morocco and Turkey

YEAR	Morocco C4 2000	Turkey C4 1998*	Difference
Foods products	20.29	9.77	10.52
Beverages and Tobacco	55.3	38.6	16.7
Tobacco	100	58.9	41.1
Textiles	13.26	4.7	8.56
Wearing apparel, except footwear	10.21	6.5	3.71
Fabricated metal products	22.08	11.5	10.58
Machinery, except electrical	38.63	34.3	4.33
Machinery, electric	45.73	30.2	15.53
Transport equipment	53	37.3	15.7
Professional and scientific equipment	75.68	55.7	19.98
Other manufactured products	55.79	24	31.79

Mumcu and Zenginobuz (2001)

Appendix 5:

Concentration and mark-up

Sector	Concentration			Mark up	
	1987 (Haddad et al. 1996)	1990 (Authors' calculations)	2000 (Authors' calculations)	(Haddad et al. 1996)	(Authors' calculations)
Foods products	26	23.83	20.29	80	111.57
Beverages and tobacco	72	49.22	55.3	12	100.00
Textiles	16	16.03	13.26	59	104.45
Wearing apparel, except footwear	18	10.09	10.21	11	108.89
Leather products including Footwear	23	24.95	23.43	10	100.00
Wood and wood products and furniture	38	36.67	39.46	20	103.67
Paper and Publishing	47	42.29	40.24	69	100.00
Chemicals	52	50.35	56.74	64	110.72
Rubber and Plastic products	45	42.74	32.68	23	100.00
Pottery, China, Earthenware ETC	-	28.78	40.37	-	100.00
Iron and Steel and other metals	81	96.49	55.74	4	111.18
Fabricated metal products	25	18.9	22.08	49	102.93
Machinery, except electrical	-	36.49	38.63	-	109.88
Machinery, electric	-	49.42	45.73	-	108.51
Transport equipment	60	48.73	53	15	110.90
Professional and scientific equipment	-	91.24	75.68	-	111.36
Other manufactured products	-	55.25	55.79	-	114.24

Appendix 6:
Regression results with fixed effects.
Dependent variable: log of output per worker.

Specifications	Specification 1		Specification 2	
Variable	Coefficient	t-statistic	Coefficient	t-statistic
Constant	-	-	-	-
Age	0.03	1.93	0.03	1.92
Mark-up	0.00	0.00	0.00	0.00
Mark-up ²	-	-	0.00	0.00
Capital	0.24	23.70	0.24	23.70
Legal Status				
Dummy2	-0.18	-0.46	-0.18	-0.46
Dummy3	0.14	0.85	0.14	0.85
Dummy4	0.05	0.94	0.05	0.94
Dummy5	0.37	7.57	0.37	7.57
Dummy6	0.30	7.18	0.30	7.18
Dummy7	0.08	0.55	0.08	0.54
Dummy8	0.17	1.53	0.16	1.53
Adjusted R ²	0.33		0.33	
Fixed effects test	F (9,4242) = 92.80		F (9,4241) = 34.61	

Appendix 7: Competition survey in the Manufacturing sector

Distribution of interviewed firms by industry

	Location			
	Rabat region	Casablanca	Other cities	Total
Automobile industry	07	03	01	11
Beverage industry	04	04	01	09
Cement industry	08	07	00	14
Ceramic industry	05	05	04	14
Milk industry	04	05	05	14
Pharmaceutical industry	05	12	02	20
Steel industry	03	10	02	15
Other industries	07	00	04	11
Total	43	46	19	108

Experts Interviews

Department	Location
Ministry of Industry delegation	Casablanca
Ministry of Industry delegation	Agadir
Chamber of Commerce and industry	Rabat
Chamber of Commerce and industry	Casablanca
Chamber of Commerce and industry	Agadir
Chemical and para-chemical industries	Ministry of Industry, Rabat
Food industry division	Ministry of Industry, Rabat
Veterinary and agronomy Institute	Rabat

Competition, Competition Policy and Economic Efficiency in the MENA Region

Jordan's Country Report

By

Ibrahim Saif & Nesreen Barakat

Final Report

June, 2005

Table of Contents

Executive Summary.....	2
Literature Overview.....	6
Specific Remarks.....	7
Introduction.....	8
Overview of the Jordanian Economy.....	9
Overview of the Manufacturing Sector in Jordan.....	11
The State of Competition in Jordan.....	14
Productivity Analysis.....	23
Vertical Aspects of Competition: Questionnaire Analysis and Results.....	33
The State of Competition Policy in Jordan.....	39
Conclusion.....	47
Bilbiograph.....	48

List of tables and Figures

	<i>Page</i>
<i>Table (1) Structure of Manufacturing Sector</i>	11
<i>Table(2) Average Employment and Value Added in the Manufacturing Sector</i>	12
<i>Table(3) Average Employment and Value Added for Different Concentration Categories (1994-2001)</i>	16
<i>Table(4) Average Import Penetration (1994-2001)</i>	20
<i>Table(5) Value Added Per Worker at Constant Prices (1980-2001)</i>	25
<i>Table(6) Parameters Estimates of the Production Function (1981-2001)</i>	26
<i>Table(7) Estimated Solow Residual</i>	27
<i>Table(8) Estimated Mark-Up Ratio</i>	29
<i>Table(9) Estimated Technical Efficiency for Selected Sector</i>	31
<i>Table(10) Survey Results: Vertical Aspects of Competition</i>	36
<i>Table(11) Survey Results: Share of Raw Materials</i>	38

List of Figures:

	<i>Page</i>
<i>Figure (1) Value Added and Gross Output 1994-01</i>	12
<i>Figure (2) Manufacturing Sector Cost Structure</i>	15
<i>Figure (3) Development of Manufacturing Sector Concentration during 1994-2001</i>	17
<i>Figure (4) Firm's Size Distribution percentage Trend Line 1994-2001</i>	18
<i>Figure (5) Firm's Size Distribution</i>	18
<i>Figure (6) Import Penetration for the Manufacturing Sector</i>	22
<i>Figure (7) Hirschman Concentration Index</i>	23
<i>Figure (8) Intra Industry Index</i>	29

Annexes

Annex 1: Technical Efficiency (at) and Solow Residual (sr).....	47
Annex II: Correlation Analysis (1980-2002).....	52

Executive Summary

By early 'nineties, only 15 countries had adopted competition laws. By the end of the decade approximately 90 had done so and many of the original 15 had taken steps to strengthen their competition laws and institutions. Moreover, the member states of the WTO commenced negotiations that will probably lead to the development of a treaty to govern competition in international markets.

The objective of this study is to assess the state of competition in Jordan. It analyses the status of competition in the manufacturing sector and addresses the Jordanian competition policy, legislation and enforcement compared to other selected MENA countries that has enacted competition laws such as Morocco, Tunisia and Egypt.

To assess competition in the Jordanian manufacturing sector, the study overviews the manufacturing sector in terms of its major industries, firm's size distribution, market structure, employment, value added and cost structure.

The contribution of the manufacturing sector to GDP was 15% in 2004. The sector is dominated by the consumer and intermediate goods. Capital goods contribution in the value added is limited. However, consumer goods constituted 45.3% of the value added on average while intermediate goods constituted 41.7%. Growth of these industries is driven mainly by growth in domestic demand more than growth in external markets.

The Jordanian manufacturing sector is dominated by enterprises employing less than 5 employees. Structure of firm's size has not altered fundamentally over the last few years. Share of small firms group increased from 71.7% in 1994 to 84% in 2001, due to the easy entry to the market and low cost to start-up such businesses. The medium scale group share seems to be declining with its share dropped from a level of 25.5% in 1994 to only 12% in 2002. The large firms' number has proportionally declined over the same period. Apparently, growth in terms of the number of small firms outpaced that for the other groups.

The largest employment contributor in the manufacturing sector is food industries followed by the textile. They generate nearly 8% and 10% of the value added respectively. Textile industry generates about 10% of the total employment when added to the wearing apparel sector, while it generates nearly 4.5% of the manufacturing sector value added.

This analysis mirrors the labor intensive nature of these industries. The same applies to the fixture and furniture sector which generates 7.3% of the employment in the manufacturing sector and contributes only 2% in the value added. On the other hand there are industries that generate high value added such as tobacco and petroleum refinery. However, their contribution to the employment in the sector is limited.

When computing cost structure of manufacturing sector in Jordan, it indicates that intermediate inputs and/or raw materials in particular are the most important element. However, most of the raw materials are imported which means that the sector is highly sensitive to changes in import tariffs on raw materials.

Also, to portray an accurate picture for the state of competition in the manufacturing sector in Jordan, the study estimated the degree of specialization in the economy using Gini Coefficient for both the value added and employment.

Results for the year 2001 showed clearly that Jordanian manufacturing sector is characterized with high equality among sector where minimal specialization occurs.

The Gini coefficient for value added pertaining the overall sector is 0.2%, while the Gini coefficient for employment was 0.052. These results indicate that the wealth creation in the Jordanian manufacturing sector is not related to a specific sector. All sub sectors contribute almost equally to either value added or employment.

Moreover, the study calculated the concentration and market penetration to assess the degree and effectiveness of competition in the manufacturing sector. It analyzed also competition and market performance using productivity and technical efficiency.

The findings of the study indicate clearly that the Jordanian manufacturing sector is highly concentrated. The largest three firms in the different sub-sectors tend to hold a market share of more than an average of 77% during 1994 to 2001. Ten out of the twenty eight sub-sectors of which the data is available, the largest three firms hold a share of more than 90%. While only five sub-sectors have concentration ratio less than 40%. The only sector that maintains a concentration ratio of 100% is the petroleum refineries sub-sector due to the franchise power granted to the only petroleum refinery in Jordan.

Industries with high concentration (80 and higher) generate about 54 percent of the value added and employ 34 percent of the labor force. The second group with concentration between 40 and 79 generates 25 percent of the value added and employ 29 percent of the labor force. These are industries that are more labor intensive than the first group. The least concentrated group is industries with concentration below 40 percent generate 10.5 of the value added and employs 27 percent of the sector's labor force. This group is apparently a labor intensive and it is dominated by small firms.

Overall, the concentration index over the period 1994-2001, declined marginally although there are a growing number of firms in few sectors. It seems that new entrants are operating and competing at a lower scale and they are unable to join the largest three companies in the various sectors.

Considering import penetration, the study indicates that markets may be highly contestable even if domestic activities are highly concentrated. This mainly happens when they are sufficiently open to competition from foreign goods and services. The Jordanian manufacturing sector didn't witness significant changes in the value of import penetration during the period 1990 to 2001. The highest ratio that was witnessed during that period was 53.6% in year 1990, while the lowest ratio was 45.3% in the year 1999. However, the year 2001 witnessed an increase over its level during 1999 to reach 51.8%.

Import penetration decreased slightly from 53.6% in 1994, to nearly 51% in 2001. Variations in import penetration were modest over time. Standard deviation in import penetration for the whole sector was 2% during the period 1994 to 2001. These results, in many cases, reflect developments in trade policies and manufacturing sector in Jordan. The relatively high import penetration suggests that intra-industry is high and that many manufacturers were exposed to competition from abroad. Price differences between imported items and domestically produced goods exist as a result of tariff and non-tariff barriers and transportation costs.

As far as the productivity is concerned, findings of the study revealed that, on average the estimated productivity over the decade of eighties were negative. This trend was reversed during the decade of the nineties. These results were valid for all the sectors under investigation, except for that of the textile sector.

However, the behavior of the estimated productivity is not consistent overtime or a cross sectors. Performance seems to be sector specific. The results did not distinguish any of the sectors over time, that has a clear performance trend, most if not all sectors went through a high and low times. This pattern makes it difficult to draw conclusion regarding the relationship between market structure variables, the state of competition in the country and the overall performance.

To illustrate the competition status, the following correlations were computed: Concentration with Technical Efficiency; Export Orientation with Technical Efficiency; and Import Penetration with Productivity.

For most of the studied sectors, the spearman correlation coefficient between concentration index and technical efficiency was significant and negative. This means that less competition is associated with low productivity. This also indicates from a policy making point of view, that concentration has not led to the exploitation of the economies of scale. It was rather misused and has negative implications on productivity. This also suggests that, we need to compare the performance of the large and small firms, since productivity gain could be generated at the second level in terms of size in few sectors.

Meanwhile export expansion, measured as the share of export to gross output, was found to be insignificantly correlated with the growth of the (SR) or (TFP). Exports grew at a rapid rate. The estimated coefficient was insignificant although, it holds the expected positive sign in few cases. This weak correlation between export and (SR) or technical efficiency is normal since Jordanian exporters perceived the export markets as an expansion of the domestic market.

Moreover, exports were, in many cases, the result of bilateral government arrangements and were directed to few markets only. Weak correlation could be explained in terms of the high concentration of exports in few markets, whereby export oriented industries became very vulnerable to the swings in the regional markets, without succeeding in penetrating new markets to compensate the lost markets.

In the meantime, Import Penetration (IMP) was negatively correlated with the estimated (SR) or with the level of concentration. This indicator was also insignificant in determining the level of the (SR).

The study explains that the behavior of the coefficient varies between sectors without clear pattern. The level of aggregation utilized in this analysis might hide some details which might reveal the true relationship between the market structure variables. One of the reasons behind this unexpected relationship between openness and the (SR) growth may be attributed to some measurement errors that could arise from the definition of the openness as adopted here. The measure does not differentiate between imported raw materials and the final goods. This may overstate the level of manufactured imports relative to the gross output and could lead to wrong conclusions in a country characterized by its high dependency on imports.

The study examined, as well, the subsistence and effect of vertical aspects of competition in the Jordanian economy including vertical restraints and market entry barriers. Around 50 companies were interviewed from eight selected industries: Textiles and Clothing, Beverage, Paper and Paper products, Electrical Machinery, Pharmaceuticals, Cars, Paintings and chemicals, Vegetable Oil and Plastic.

Findings suggest that the Jordanian market does not suffer badly from unfair competitive practices due to vertical restraints. Except in few cases, it was noticed that, rarely the supplier and distributor are engaged in any price related or non-price related agreement that impose a vertical restrain. Nonetheless, the importance of getting the market players aware of their right to fight against such measures should be an important government endeavor. However, the majority of the interviewed companies agreed that limited access to funds is the major entry barrier. It was also clear from the survey that the Jordanian industrialists are not aware of the competition Law and its contents.

The Jordanian Competition Law was enforced in year 2002 under the temporarily law (49) after two previous attempts failed to issuing an anti-trust and competition law in 1996 and 1998. This Law is now replaced with a permanent law No. (33) for year 2004 which is endorsed by the parliament and ratified by the HM the King. The Law takes into consideration Jordan's international commitments and tackles the existing Jordanian relevant laws.

A Competition Directorate was established in year 2003 to implement the Law. The Directorate is not independent as it is within the Ministry of Industry and Trade and reports to the Minister. A National Competition Committee was formed by end 2003 with a very limited role mainly on overseeing the strategy and giving directions for the Directorate.

So far there have been several cases that were investigated under the current law. It is fair to believe that few Jordanian markets are suffering from collusive behavior and abuse of dominant positions, particularly in view of the high degree of concentration observed in many sectors. This record shows that developing a competition tradition and culture is a slow process and that the enactment of a competition law is only a starting point in that process.

Literature Overview

Most of the previous empirical work concerning the manufacturing sector, focused their analysis on estimating productivity growth over time by estimating Solow Residual (SR) *inter-alia* (Bani Hani 1989, Khateeb 1996) by adopting various methodologies for this purpose. This type of studies measured productivity at both aggregate level and disaggregate (firm) level. At the aggregate level they estimated productivity growth overtime and illustrated their cyclical changes. Studies at the firm level used limited sources and they did not place emphasis on particular sectors. They tend to pool data at the firm level and were more concerned about the consistency of the theoretical framework and the empirical findings.

Other studies focused on policy analysis of the process of industrialization, *inter-alia* (Zaghlool, I. and M. Hazaima: 1999, or Homs: 2002). Very few studies have focused on the market structure and how this structure influence performance. Earlier investigation was conducted within the context of import-substitution policies and dealt with the current policies without critical assessment of their outcome on the performance. This was the case for a period of time as a result of inadequate data that matches exports and imports with output.

The overall conclusion emerged out of these studies was that productivity growth was negative or at best low. Recommendations were focused on policy changes in order to alter the market structure. However, previous work stop short of investigating the market structure and to draw more specific policies based on some factual findings.

Nevertheless, few studies established a link between market power, measured by concentration index (labor or value added), foreign trade variables and competition and competitiveness. For example, Nasr (1984), investigated the level of concentration in the manufacturing sector in Jordan for one year. However no attempt was made to link market performance with the state of competition in the manufacturing sector.

Muhtaseb (1995) has covered certain important aspects of the trade paradigm and focused on import penetration; Al-Hajji et al. (1997a, 1997b) have described qualitatively the competitiveness of the manufacturing sector, using primary survey data. More recently, MMIS, a local management Consulting Firm, has conducted a study on “Investment Strategy for the Manufacturing Sector” (2001) utilizing various competitiveness techniques, such as the ranking of manufacturing industries, based on selected performance criteria, cost structure analysis and cluster analysis at the manufacturing sector level.

Quite recently, the Competitiveness Unit at the Ministry of Planning published the “Jordan Competitiveness Book” which contains a series of studies¹ concerning market structure at sub-sectoral and micro level. These studies covered multitudes of sectors focused on specific products and investigate their linkages with other sectors. Those studies followed the cluster approach, based on M.E. Porter diamond methodology, they covered wide spectrum of sectors including services and manufacturing. These studies did not investigate the overall picture of the concerned sectors in terms of their market dynamics.

¹ *Jordan Competitiveness Book: Confronting the Competitiveness Challenge*, 2003, Ministry of Planning. Amman-Jordan.

Hence, this study fills an important gap in the existing literature where it is going to link domestic market conditions with foreign trade variables within the context of the new legal competition framework which has been introduced recently.

Specific Remarks

Variables such as concentration, import penetration, and firm size were not available in the UNDO data set. In addition, data covering the period 1980-2002 were not available concerning all variables. The data to cover the entire period under investigation needed to be extrapolated. Whenever this done, it was mentioned.

Since, capital stock and capital cost are going to be used as independent variables in the estimations; it was found that, utilizing the DOS data set will be more convenient and consistent. The methodology utilized in estimating the capital stock, is consistent with what is suggested by the report's methodology. The capital stock was first estimated utilizing the perpetual inventory method by using the year 1994 as the base year for estimating the initial capital. In the next step, the capital cost was estimated following the steps suggested by the study methodology with slight changes from the original equation. The actual level of inflation was used, instead of the expected level of inflation, since the actual estimates of the inflation are available.

In addition we utilized different methodology in deflating the capital stock. Details of this methodology will be provided later.²

Concentration was estimated for the largest three companies in terms of the value added. The number of employees was difficult to gather over the period under investigation.

The DOS have changed the methodology in gathering data and in classifying certain activities since 1996. This has resulted in few changes in the number of companies over time. The changes in methodology explain why the number of firms or employees may decline without any solid justification. Surely, it does not reflect exit and entry movements from the industrial market rather it reflects the changes in the adopted methodology.

Furthermore, in order to estimate efficiency, we utilized the UNIDO data set. However, in order to obtain the fixed price series we adopted different deflators which we believe are more precise.

² We have utilized the perpetual inventory method to estimate the current series of the capital stock by using the year 1994 as the base year to estimate the initial capital. In the second step we breakdown capital stock into machinery and equipment and construction. For each part of the capital stock we utilized the relevant price deflator. This is slightly different from the original proposed methodology.

Introduction

The current state of globalization as well as the intensification of mergers, especially cross-border mergers; trade liberalization which has resulted in significant reductions of tariff barriers and has shifted some of the attention among WTO members from tariff reductions to other impediments to market access, all leads to business anticompetitive practices which considered as serious restraints.

This caricature represents fairly accurately where the renewed interest in competition policy and competition law comes from. It has ensured that, whereas at the beginning of the 'nineties, about 15 countries had adopted competition laws, by the end of the decade approximately 90 had done so and many of the original 15 had taken steps to strengthen their competition laws and institutions. In addition, the member states of the WTO commenced negotiations that will probably lead to the development of a treaty to govern competition in international markets.

Jordan, however, has not been out of this liberalization trend, even though the pace of the reform has been slower than some of the emerging countries. The private sector's share in production and investment is rising, due mainly to the deregulation of many activities that had been previously reserved for the public sector. Price regulation has also been lifted on the bulk of goods and services in Jordan and there is an increasing reliance on markets in their determination. These major shifts in the control of production and prices from the public sector to private firms have drawn attention to the importance of establishing a competition system serving the objectives of efficiency and fairness.

It is generally recognized that competition policy should not be construed in the narrow sense of anti-trust law, but in the larger sense of all policies preventing barriers to entry and fostering market contestability. Trade liberalization is considered as a major component of these policies, particularly in countries with small markets captured, under protection, by a small number of firms. Such is the case of almost all MENA economies where the number of firms tends to be very small in the industrial sector and in services. Under such domestic market structures import liberalization would exert enough pressure on domestic firms to ensure that markets are functioning competitively, regardless of the enactment of a competition law.

Due to the significant importance of trade liberalization to discourage anticompetitive practices, it is not sufficient. The practice in many developed and developing countries alike, is to enforce other regulatory measures that may underpin fair competitive practices and restrict imports: standards and norms, sanitary and phyto-sanitary control and, more seriously, anti-dumping. Restrictive measures other than tariffs are as prevalent, if not more, in most developing countries, including Jordan.

Furthermore, practices by exporting firms may still impair competition in importing countries, even if there are no government restrictions. In the absence of domestic competition law, these firms may enter into exclusive or selective arrangements and impose the prohibition of parallel imports on their branded products.

The objective of this study is to assess the state of competition legislation and enforcement in Jordan. It first analyzes the state of competition in the Jordanian economy addressing the manufacturing sector in specific. Then it analyzes competition legislation and enforcement in the country. The analysis will be compiled

in a report including other MENA countries that has enacted competition laws for comparison purposes.

Overview of the Jordanian Economy

Macroeconomic Policies

After the crisis of 1989, the first priority of macroeconomic policies in Jordan was to restore stability and confidence in the Jordanian economy. The difficulties of macroeconomic management had been exacerbated by the collapse of the third largest bank in August 1989 and a doubling of the external debt burden, which amounted to about twice the level of GDP in 1990. In addition, the negative repercussions of the Gulf war and the return of Jordanian workers expelled from Kuwait in 1991-92 required the Jordanian authorities to adapt their policies to a changing environment.

Jordanian efforts introduced within the framework of two IMF stand-by arrangements in 1989 and 1992. As a result, the Jordanian Dinar stabilized against the U.S. dollar and the SDR in 1992. The Central Bank of Jordan (CBJ) kept monetary expansion broadly in line with macroeconomic developments, thus holding a tight control on excess liquidity. Initially, monetary policy was enforced through direct controls and high reserve requirements. Over time, however, the CBJ shifted to indirect controls of monetary policy, notably with the introduction of CBJ certificates of deposit in 1993, a gradual reduction of reserve requirements, and the liberalization of current and capital account transactions.

Trade Liberalization

Trade liberalization has been the thrust of the adjustment efforts. During successive rounds of liberalization, quantitative barriers to imports and tariffs were eliminated or reduced on a multilateral or regional basis, opening Jordan to world markets. Simultaneously, the Jordanian government pursued a strategy of obtaining preferential market access for Jordanian exports through bilateral trade initiatives.

The comparison with the import-substitution policies of the past is revealing. Until the late 1980s, Jordan had a high and complex tariff structure, with a maximum tariff rate of 318% and an average weighted tariff rate of 19%. Widespread exemptions implied that 51% of all imports were exempted from import duty. In addition, about 40% of imports were subject to quantitative restrictions. The tariff structure was also characterized by a high degree of variation.

Currently, Jordan has a simple import tariff structure, with an average weighted import tariff rate of 13%, a maximum rate of 30%, and a standard deviation of 15.7%. Non-tariff barriers are limited to the exclusive trading rights for petroleum products, due to expire in 2008. Exemptions have also been reduced significantly with a small portion of imports now exempted from import duties.

More importantly, Jordan acceded to the WTO in 2000 with a commitment to gradually reduce tariff and non-tariff barriers over the next eight years. In particular, the maximum tariff rate will be reduced to 20% by 2010 under the WTO agreements.

Multilateral liberalization has been complemented with a series of bilateral trade agreements aimed at increasing market access for Jordanian exports. Beyond the special access granted to the Qualified Industrial Zones (QIZs) in 1996, Jordan ratified a Free Trade Agreement with the United States in 2001 and an Association

Agreement with the European Union (EU) in 2002. Jordan is also a member of the Arab Free Trade Agreement since 1998 and has signed bilateral free trade agreements with most countries of the MENA region and some European countries that are not yet members of the EU. In addition, the government launched in 2001 an ambitious project, the Aqaba Special Economic Zone, aimed at providing free-trade zone status and a streamlined administration with significant tax and infrastructure incentives.

Deregulation of Commodity Prices

Another policy challenge faced the Jordanian authorities in the early 1990s, was the extensive regulation of domestic commodity prices. These regulated prices included most food staples (wheat, barley, sugar, rice, milk, meat, etc.) and domestic petroleum product prices, accounting for an estimated 34% of the average consumption basket.

The food subsidies were established in 1989-90 with the intent of protecting the poor following the exchange rate crisis, but resulted in distortions of relative prices and a generalized subsidy system that benefited the rich more than the poor. The impact on the budget was also substantial, with the overall cost of food subsidies amounting to over 3% of GDP in 1990. The prices of petroleum products had been regulated even before the crisis, reflecting subsidized crude oil received from neighboring Arab countries. The subsidies on petroleum products covered all industrial and commercial uses.

The main goal of government policy was to move away from general subsidies in favor of direct transfers to the poor. This involved a gradual increase in commodity prices that was politically very difficult to introduce. Most explicit food subsidies were gradually reduced and eliminated in 1999. In addition, the market for two food staples (chaff and barley) was liberalized in 2002, leaving only a small subsidy on wheat. For petroleum product prices, the authorities adopted a policy of gradual price increases to bring prices in line with international market prices over the long run. The IMF estimated that only 10-15% of the average consumption basket is estimated to be still regulated.

It should be mentioned that the drive to adopt the competition law, was very much motivated by these policy changes described above, especially after 1996 when the Ministry of supply was canceled.

Overview of the Manufacturing Sector in Jordan

The manufacturing sector in Jordan is dominated by the consumer goods and intermediate goods. Capital goods contribution in the value added is limited. As the table below shows consumer goods constitutes 45.3% of the value added on average, and intermediate goods constitutes 41.7% on average. It is quite clearly that growth of these industries was driven by growth in domestic demand more than growth in external markets.

Table (1): Structure of the Manufacturing Sector³

	Average Period (1) (1994-1997) JD000	Period (1) %	Average Period (2) (1998-2001) JD000	Period (1) %
Consumer Goods	320,672	45.6%	412,882	45.1%
Intermediate Goods	290,118	41.3%	384,575	42.0%
Capital Goods	92,081	13.1%	118,482	12.9%
Total	702,871	100%	915,939	100%

Source: industrial census, several issues, DOS (Jordan)

In terms of employment, food industries are the largest contributor in the manufacturing sector by nearly employing 15% on average of the total employment in the sector over the last decade, while it generates nearly 8% of the value added. The second largest industry in terms of employment is the textile industry. It generates about 10% of the total employment when added to the wearing apparel sector, while it generates nearly 4.5% of the manufacturing sector value added. However, this analysis mirrors the labor intensive nature of these industries. The same applies to the fixture and furniture sector which generates 7.3% of the employment in the manufacturing sector and contributes only 2% in the value added.

On the other hand there are industries that generate high value added such as tobacco and petroleum refinery. However, their contribution to the employment in the sector is limited as shown below in table (2).

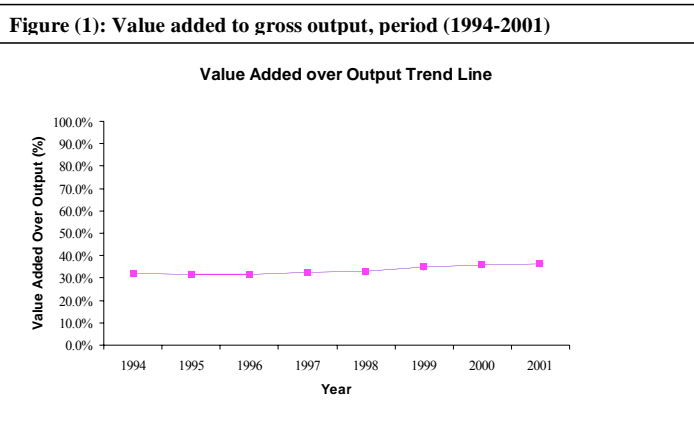
³ Consumer goods include: food products, beverages, tobacco, textiles, leather products, footwear, wood and furniture, paper products, printing and publishing. Intermediate goods include: chemicals, petroleum, rubber and rubber products, plastic products, non metallic products. Capital goods include: metallic products, non-electrical products, electrical products, transport equipment.

Table (2): Average Employment and Value added of the Manufacturing Sector for the Period (1994-2001)

ISIC2	Sector	Average Value Added (1994-2001)		Average Employment (1994-2001)	
		Value (JD 000)	%	Number	%
290	Other Mining	188,198	17.3%	8,422	6.9%
311	Food manufacturing	81,439	7.5%	18,141	14.7%
313	Beverage industries	46,020	4.2%	2,604	2.1%
314	Tobacco manufactures	107,421	9.8%	1,115	0.9%
321	Manufacture of textiles	20,659	1.9%	3,440	2.8%
322	Manufacture of wearing apparel, except footwear	27,177	2.4%	10,043	8.0%
323	Manufacture of leather and products of leather, leather substitutes and fur, except footwear and wearing apparel	0		476	0.4%
324	Manufacture of footwear, except vulcanized or molded rubber or plastic footwear	5,856	0.5%	1,705	1.4%
331	Manufacture of wood and wood and cork products, except furniture	6,391	0.6%	3,073	2.5%
332	Manufacture of furniture and fixtures, except primarily of metal	22,792	2.1%	9,123	7.4%
341	Manufacture of paper and paper products	23,315	2.1%	3,161	2.6%
342	Printing, publishing and allied industries	25,707	2.3%	1,274	1.0%
351	Manufacture of industrial chemicals	59,913	5.4%	6,596	5.4%
352	Manufacture of other chemical products	80,446	7.2%	6,999	5.7%
353	Petroleum refineries	54,073	4.9%	2,236	1.8%
355	Manufacture of rubber products	1,133	0.1%	213	0.2%
356	Manufacture of plastic products not elsewhere classified	24,751	2.3%	4,194	3.4%
362	Manufacture of glass and glass products	1,127	0.1%	285	0.2%
369	Manufacture of other non-metallic mineral products	115,903	10.7%	13,419	10.9%
371	Iron and steel basic industries	26,432	2.4%	1,361	1.1%
372	Non-ferrous metal basic industries	7,543	0.7%	851	0.7%
381	Manufacture of fabricated metal products, except machinery and equipment	32,557	3.0%	10,882	8.9%
382	Manufacture of machinery except electrical	6,235	0.6%	970	0.8%
383	Manufacture of electrical machinery apparatus, appliances and supplies	24,857	2.3%	3,335	2.7%
384	Manufacture of transport equipment	7,657	0.7%	1,031	0.8%
385	Manufacture of professional and scientific, and measuring and controlling equipment not elsewhere classified, and of photographic and optical goods	2,047	0.2%	624	0.5%
390	Other Manufacturing Industries	3,399	0.3%	1,715	1.4%
410	Electricity, Gas and Steam	93,328	8.5%	5,908	4.8%

Source: Department of Statistics

The percentage of the value added to gross output, which could be utilized as a proxy to productivity shows a stable trend since the early nineties. This percentage reached for the whole sector an average of (33.4%) over the period 1994-2001.



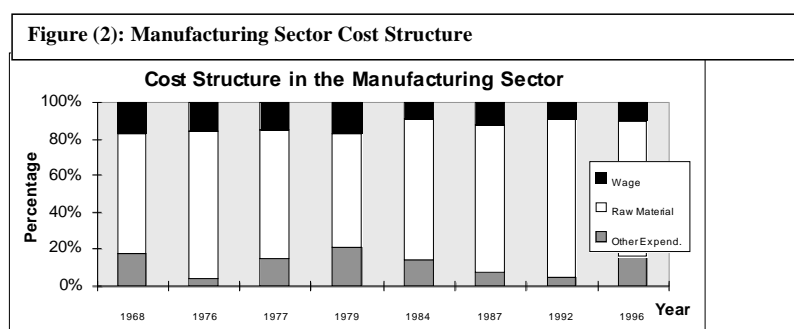
Source: Department of Statistics

The highest ratio was achieved in the printing publishing and furniture and allied sector due to the service nature of the industry which generally generates high value added. The second highest value added in the sector was achieved in the tobacco industry; however, this is not an indicator of productivity but represents the taxes and the regulated nature of this particular sector. Away from these two sectors this indicator goes below 50% for almost all the sectors in the manufacturing industry, while the average reaches 33%. Sectors above the average of 33% include:

- Other mining sector (57.8%)
- Beverage industries (49.7%)
- Manufacture of textiles (37.7%)
- Manufacture of wearing apparel except footwear (51.8%)
- Manufacture of footwear (36%)
- Manufacture of furniture and fixtures, except primarily of metal (38.1%)
- Manufacture of rubber products (42%)
- Manufacture of glass and glass products (35.4%)
- Manufacture of other nonmetallic mineral products (47.8%)
- Manufacture of fabricated metal products, except machinery and equipment (34.2%)
- Manufacture of machinery except electrical (33.9%)
- Manufacture of professional and scientific and measuring and controlling equipment (38.9%)
- Other manufacturing industries (33.6%)
- Electricity, gas and steam (44.3%)

Nevertheless, our investigation will establish the link between the degree of competition and productivity in later sections. The relatively low percentage of the value added to gross output, point to the high proportion of intermediate demand (cost structure) used in the manufacturing sector in Jordan.

A decomposition of the cost structure shows that, raw materials are the most important element in the cost structure over a fairly long period. This fact has not changed over time as can be seen from figure (2) below.



Source: estimated from DOS statistical bulletins.

The cost structure indicates that, intermediate inputs and/or raw materials in particular by and large are the most important element. Given the fact that most of the raw materials are imported, means that the sector is highly sensitive to changes in import tariffs on raw materials.

Performance in the manufacturing sector and its structure was greatly influenced by the manufacturing policies that were adopted over time. Protection and weak

competition arguably are the most important factors in this regard. In the following section we will focus on the state of competition and the most important factors affecting market structure and hence performance in the manufacturing sector.

The State of Competition in Jordan

Anticompetitive behavior depends largely on both the degree of concentration and openness or market penetration. If there are a small number of firms that hold a very large share of a market, then it would be easier for them to agree on collusive actions to fix prices, rig bids or share the market. However, if imports represent a relatively large share of domestic demand and are allowed to respond freely to domestic restrictive actions, then imports will play more or less the same dissuasive role against anticompetitive practices that a large number of domestic competitors would have played. Thus, both high market concentration and low import penetration are significant indicators of potential impairment of the competition process.

In Jordan, and for the purpose of our study to portray an accurate picture for the state of competition in the manufacturing sector, the degree of specialization in the economy was calculated to pin point if the Jordanian economy is specialized around a certain sector or activity. The Gini Coefficient for both the value added and employment of the manufacturing sector in Jordan were computed utilizing the equations given in the project methodology.

Given the nature of the Gini Coefficient as a measure of the degree of inequality in the distribution of the two elements, value added and employment, an analysis of this indicator for the Jordanian manufacturing sector was conducted. The results for the year 2001 show clearly that Jordanian manufacturing sector is characterized with high equality where minimal specialization occurs. These results indicate that the wealth creation in the Jordanian manufacturing sector is not related to a specific sector. All sub sectors contribute almost equally to either value added or employment. The Gini coefficient for value added pertaining the overall sector is 0.2%, while the Gini coefficient for employment was 0.052. These results indicate higher equality when considering employment, while the sector witnesses less equality when considering value added and wealth creation.

Market concentration has been challenged on the ground that what matters from the competition standpoint is not the number of firms per se, but whether there are barriers to entry to a market that would make the incumbents' situation and power incontestable by potential entrants. However, it is still an important indicator of market power that competition authorities throughout the world use in their surveillance of the competition process.

The results given in table (3) below, show the degree of concentration across Jordanian industries averaged for the period 1994 till 2001. Concentration is measured by the shares of the three largest firms in value added for the industry during that period.

The table indicates clearly that the Jordanian manufacturing sector is highly concentrated. The largest three firms in the different sub-sectors tend to hold a market share of more than an average of 77% during 1994 to 2001. Ten out of the twenty eight sub-sectors of which the data is available, the largest three firms hold a share of more than 90%. While only five sub-sectors have concentration ratio less than 40%. The only sector that maintains a concentration ratio of 100% is the petroleum

refineries sub-sector due to the franchise power granted to the only petroleum refinery in Jordan. The only sector with no concentration data available is the manufacture of other non-metallic mineral products. The five sub-sectors that exhibited the least concentration in their market during the period 1994-2001, are:

- Manufacture of furniture and fixtures, except primarily of metal (16.4%)
- Manufacture of plastic products not elsewhere classified (19.3%)
- Manufacture of wearing apparel (27.1%)
- Manufacture of wood and wood and cork products, except furniture (28%)
- Manufacture of fabricated metal products (29.6%)

However, taking 2001 year in specific, the figures also indicate that most of the Jordanian industries are highly concentrated. This is due to the limited size of the domestic market as well as to the legacy of investment licensing which was enforced until the late eighties. The largest three firms in 16 out of the 28 sectors generate more than 70% of the total value added generated in the sector. The most concentrated industries are petroleum refineries and manufacture of rubber products. The share of the largest three firms in total value-added for those two sectors stands at about 100%. Tobacco manufactures, 99.9%, and the manufacture of electrical machinery, apparatus, appliances and supplies, 97.5%. The least concentrated sectors are:

- Manufacture of plastic products not elsewhere classified (16.9%),
- Manufacture of furniture and fixtures except primarily of metal (20%), and
- Manufacture of wearing apparel except footwear at 38.8%, which are, interestingly, the most export-oriented industry in Jordan.

Manufacturing of wearing apparel except footwear is not highly concentrated; however, there is a growing trend in the concentration ratio in this sector. The ratio increased from a level of 19% in 1994 to a level 38% in 2001. While other sectors showed a marked increase in their concentration index such the manufacture of machinery except electrical and the manufacture of fabricated metal products except machinery and equipment. Some of the sectors that witnessed a decline in their concentration ratio are iron and steel basic industries, manufacture of professional and scientific equipment, manufacture of transport equipment, and the electricity, gas and steam sub-sector. Changes in the concentration ratio are subject to market conditions and the overall growth not sector's specific. These changes are related to how markets react and how private-public respond to policy changes.

However, the average values of the period 1994-2001 indicate clearly that the industries with high concentration values are the sectors that contribute more to the manufacturing sector's value added and employment. However, the industries with concentration ratio greater than 90%, contributed by 53.8% to the manufacturing sector value added. While its contribution to the employment reached an average of 34.5% during the period 1994-2001.

Finally, it is worth noting that there is no reason to believe that, the concentration ratio at a more disaggregate level differs significantly from the level of analysis that is conducted.

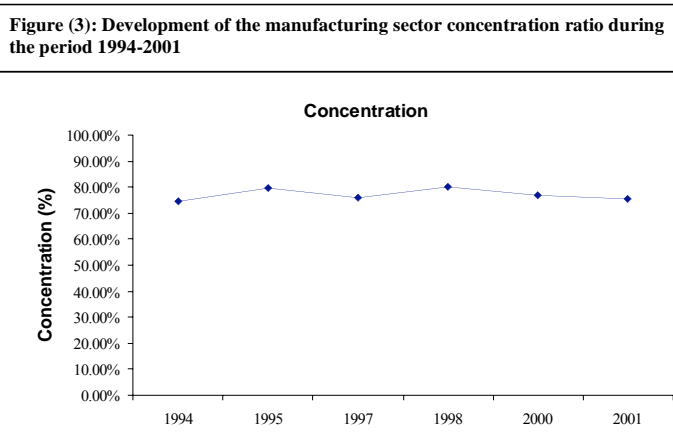
Table (3): Average Employment and Value added for different concentration ratio categories, for the Period (1994-2001)

Indicator	Sectors	Average Value Added Share	Average Employment Share	Average Concentration Ratio
Sectors with concentration more than 80 percent	Other mining	17.2%	6.9%	95.4%
	Beverage industries	4.2%	1.9%	92.3%
	Tobacco manufactures	9.8%	0.8%	94.9%
	Manufacture of leather and products of leather		0.3%	92.7%
	Petroleum refineries	4.9%	1.6%	100%
	Manufacture of industrial chemicals	5.5%	4.8%	90.0%
	Non ferrous metal basic industries	0.7%	0.6%	95%
	Manufacture of electrical machinery, apparatus and supplies	2.3%	2.4%	97.5%
	Manufacture of transport equipment	0.7%	0.8%	93.9%
	Electricity, gas and steam	8.5%	14.4%	98.7%
	Sub-Total	53.8%	34.5%	
40-79 percentage	Food manufacturing	7.4%	13.2%	48.9%
	Manufacture of textiles	1.9%	2.5%	77.7%
	Manufacture of footwear	0.5%	1.2%	58.8%
	Manufacture of paper and paper products	2.1%	2.3%	72.3%
	Printing, publishing and allied industries	2.3%	0.9%	66.9%
	Manufacture of other chemical products	7.3%	5.1%	62.2%
	Manufacture of rubber products	0.1%	0.2%	79.9%
	Manufacture of glass and glass products	0.1%	0.2%	64.8%
	Manufacture of pottery, china, and earthen ware			79.0%
	Iron and steel basic industries	2.4%	1.0%	75.4%
	Manufacture of machinery, except electrical	0.6%	0.7%	66.4%
	Manufacture of professional and scientific and measuring and controlling equipment	0.2%	0.5%	69.4%
	Other manufacturing industries	0.3%	1.3%	65.2%
	Sub-Total	25.2%	29.1%	
Firms below 40 percentage	Manufacture of wood, and wood and cork products, except furniture	0.6%	2.2%	28%
	Manufacture of wearing apparel	2.5%	7.3%	27.1%
	Manufacture of plastic products not elsewhere classified	2.3%	3.1%	19.3%
	Manufacture of fabricated metal products	3.0%	7.9%	29.6%
	Manufacture of furniture and fixtures, except primarily of metal	2.1%	6.7%	16.4%
	Sub-Total	10.5%	27.2%	
Others	Manufacture of other non metallic mineral products	10.6%	9.8%	
	Total Industry	100%	100%	77.1%

Source: Estimated from the Department of Statistics Industrial Surveys.

It can be seen from the table above that industries with high concentration (80 and higher) generates about 54 percent of the value added and employ 34 percent of the labor force. The second group with concentration between 40 and 79 generates 25 percent of the value added and employ 29 percent of the labor force. These are industries that are more labor intensive than the first group. The least concentrated group that is industries with concentration below 40 percent generate 10.5 of the value added and employ 27 percent of the sector's labor force. This group is apparently a labor intensive and it is dominated by small firms.

Overall the concentration index over the period 1994-2001, declined marginally as can be observed from figure (3) below. It is worth mentioning that, although there is a growing number of firms in few sectors, it seems that new entrants are operating and competing at a lower scale and they are unable to join the largest three companies in the various sectors.



Source: generated from the Department of Statistics industrial surveys.

In fact, the findings concerning concentration ratio are very much proportional to the distribution of firm size among the sectors. The least concentrated sectors are the sectors that are dominated by small and medium scale enterprises SMEs such as the manufacture of wearing apparel, manufacture of wood and wood and cork products except furniture, manufacture of furniture and fixtures except primarily of metal. Wherein, companies employing 1-4 employees represent 83.5%, 93%, and 87.1% of the overall companies working in these industries respectively. On the other hand the highest concentrated are those sectors with high percentage of large companies such as, petroleum refineries, electricity, gas and steam, and the tobacco manufacturers.

By large, the Jordanian manufacturing sector is dominated by enterprises employing less than 5 employees. This category contributed to about 82.6% of the total enterprises operating in this sector in the year 2000. The companies employing 5-19 employees contributed to just over 14% of the value added. The remaining 3.4% represented companies that employ 20 or more employees. The sectors that mostly employ less than 5 employees which most of them show low concentration are:

- Manufacture of furniture and fixtures, except that of base metal (ISIC2 332)
- Manufacture of wood and wood and cork products, except furniture (ISIC2 331)
- Manufacture of fabricated metal products, except machinery and equipment (ISIC2 381)
- Manufacture of leather and products of leather, leather substitutes and fur, except footwear and wearing apparel (ISIC2 323)
- Manufacture of wearing apparel, except footwear (ISIC2 322)

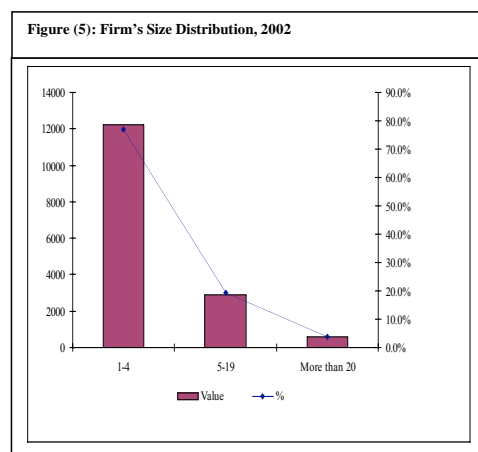
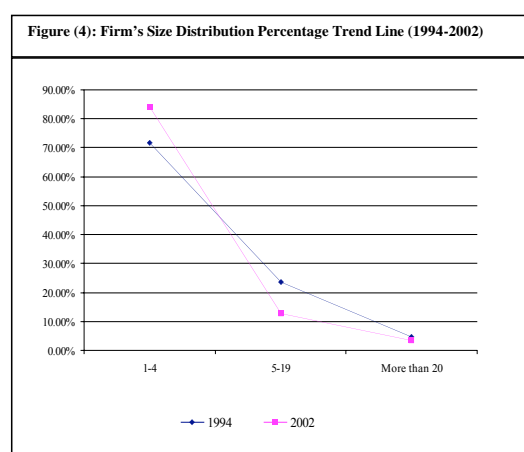
Whenever the start up cost is low, sectors seems to be dominated by small firms as shown above. The structure of these firms is small plants or workshops and not proper factories as conventionally defined. Small plants or workshops are competing at the lower level of the market segment and their contribution to the total value added is limited. Hence there might be some changes within the same group of small firms but very few can progress to join the larger group overtime. Normally production techniques are simple in this group and it is owned-managed style. Unlike the case in the developed countries, SMEs are concentrated in labor intensive and traditional activities with low levels of productivity and poor quality of products. There is very

little dynamism in this group, and few graduates into larger sizes and modern technologies.⁴

The second group (5-19), represents what could be classified as the medium scale industries for the purpose of this analysis. Start up cost in these industries is higher than the first group and require minimum level of professionalism and skills to run. These industries include chemical products, paper and paper products and plastic and plastic industries.

The third group includes either regulated industries such as tobacco and petroleum, or large scale industries by definition such as: metal industries or intensive capital industries such as manufacture of machinery and electrical. The communality between large industries is that they need high capital and must function at minimum capacity which entails large scale investment. The cost of entry and exist is also high. Indeed export ratio in these industries is also low, indicating that they primarily cater for the domestic market subject to certain arrangements. Moreover, sectors dominated by these firms are highly concentrated.

Structure of firm's size has not altered fundamentally over the last few years. Small firms group continues to dominate the sector. There share even increased from 71.7% in 1994 to 84% in 2001, due to the easy entry to the market and low cost to start-up such businesses. The medium scale group share seems to be declining with its share dropped from a level of 25.5% in 1994 to only 12% in 2002. The large firms' number has proportionally declined over the same period. Apparently, growth in terms of the number of small firms outpaced that for the other groups.



Source: Estimated from the Department of Statistics Data

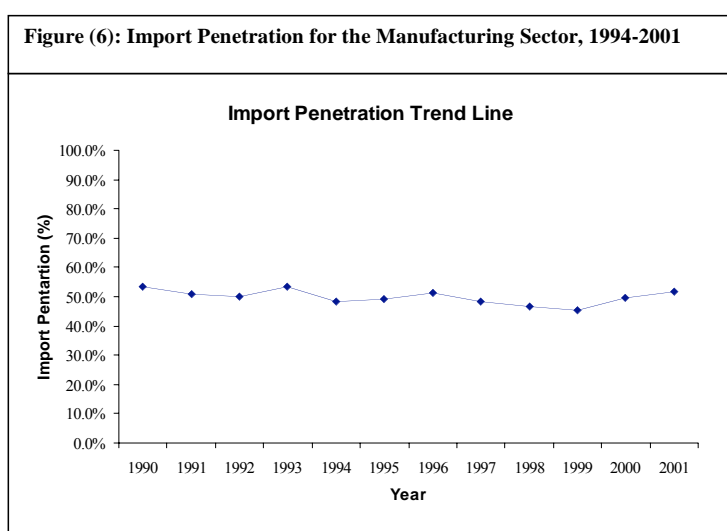
Yet, the percentage of value added generated by small firms is not easy to determine, data on the distribution of value added according to size is also not directly available. Given our earlier findings regarding the concentration level, it is quite clear that large firms, despite their small number, are generating most of the value added at sub-sectoral level. Hence leaving little market share for the small and medium scale industries.

⁴ Mansour Antinio (2001), "Support Services and the Competitiveness of SMEs in the MENA region", Working Paper No. 56 ESCWA. Beirut-Lebanon.

From the above, it is obvious that manufacturing sector is not highly specialized in terms of Gini coefficient for the value added and employment. Within each sector, however, there exists a high degree of concentration, in terms of the value added. This analysis reveals that while at inter-industry level there is nearly an oligoplistic structure with few producers controlling the market, at intra-industry level, the value added and employment are not concentrated in specific sectors.

Considering import penetration, markets may be highly contestable even if domestic activities are highly concentrated. This mainly happens when they are sufficiently open to competition from foreign goods and services. Import penetration is a measure of openness equal to the ratio of imports to domestic demand. The Jordanian manufacturing sector didn't witness significant changes in the value of import penetration during the period 1990 to 2001. The highest ratio that was witnessed during that period was 53.6% in year 1990, while the lowest ratio was 45.3% in the year 1999. However, the year 2001 witnessed an increase over its level during 1999 to reach 51.8%.

Import penetration shows substantial variation across industries and less variation over time. High import penetration is found in transport, electrical machinery and basic metal. Moderate rates are found for paper products, printing, chemical and metal products. The lower rates are in industries such as beverages and tobacco, leather and non-metallic products, petroleum industry.



Source: Estimated from the Department of Statistics Data

Import penetration decreased slightly from 53.6% in 1994, to nearly 51% in 2001. Variations in import penetration were modest over time. Standard deviation in import penetration for the whole sector was 2% during the period 1994 to 2001. These results, in many cases, reflect developments in trade policies and manufacturing sector in Jordan. The relatively high import penetration suggests that intra-industry is high and that many manufacturers were exposed to competition from abroad. Price differences between imported items and domestically produced goods exist as a result of tariff and non-tariff barriers and transportation costs.

Inter-industry differences in import penetration rates suggest that these differences are the result of enforced policies and are not sector's specific. Government policies prohibit import and/or to monopolize imports caused such phenomenon in many cases.

Table (4): Average Import Penetration Percentage, 1994-2001

ISIC2	Description	Average Import Penetration (1990-2001) (%)
290	Other Mining	8.8%
311	Food manufacturing	52.4%
313	Beverage industries	13.3%
314	Tobacco manufactures	3.4%
321	Manufacture of textiles	74.0%
322	Manufacture of wearing apparel, except footwear	65.5%
323	Manufacture of leather and products of leather, leather substitutes and fur, except footwear and wearing apparel	35.1%
324	Manufacture of footwear, except vulcanized or moulded rubber or plastic footwear	41.8%
331	Manufacture of wood and wood and cork products, except furniture	78.4%
332	Manufacture of furniture and fixtures, except primarily of metal	63.6%
341	Manufacture of paper and paper products	13.2%
351	Manufacture of industrial chemicals	44.1%
352	Manufacture of other chemical products	67.6%
353	Petroleum refineries	16.2%
355	Manufacture of rubber products	93.2%
356	Manufacture of plastic products not elsewhere classified	65.3%
362	Manufacture of glass and glass products	86.0%
369	Manufacture of other non-metallic mineral products	8.5%
371	Iron and steel basic industries	50.8%
372	Non-ferrous metal basic industries	82.0%
381	Manufacture of fabricated metal products, except machinery and equipment	54.0%
382	Manufacture of machinery except electrical	93.4%
383	Manufacture of electrical machinery apparatus, appliances and supplies	88.3%
384	Manufacture of transport equipment	96.7%
385	Manufacture of professional and scientific, and measuring and controlling equipment not elsewhere classified, and of photographic and optical goods	97.0%
390	Other Manufacturing Industries	67.6%
410	Electricity, Gas and Steam	0.0%

Source: Estimated from the Department of Statistics Data

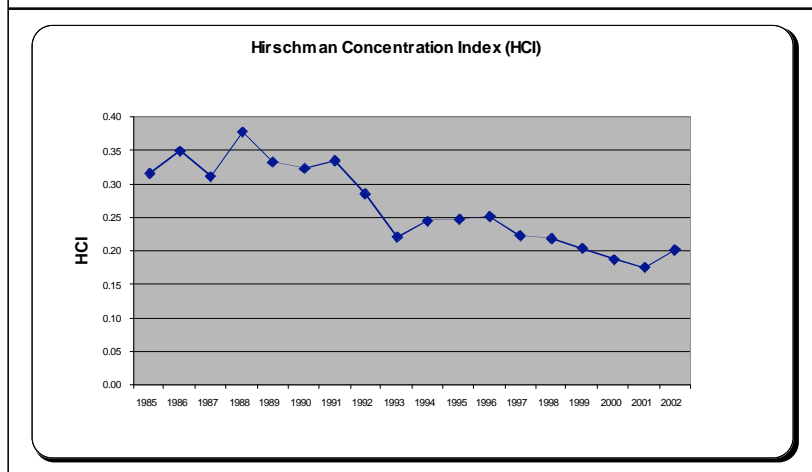
In order to examine further the issue of commodity concentration, export concentration index, which is known also as Hirschman Concentration Index (HCI), was estimated. The indicator was computed according to the following equation:

$$HCI = \frac{\sqrt{\frac{n}{\sum_{i=1}^n \left(\frac{x_i}{X}\right)^2}} \sqrt{\frac{1}{n}}}{1 - \sqrt{\frac{1}{n}}}, \text{ where } X = \sum_{i=1}^n x_i$$

Where (x_i) is the Jordan's exports of four ISIC digits-products, (X) denotes Jordan's total export for each year, and (n) denotes the number of trade lines included in each year. Our estimation covers the period 1985-2002. The lower the value of this index, the less concentrated the country's exports.

According to estimated results, HCI index has been declining since 1985. As the figure below demonstrates, HCI index decreased from a level of 0.317% in 1985, to 0.20% in 2002. It is difficult to decide whether this outcome has resulted from policy changes or was a natural consequence. It requires disentangling policy implications, from what would have been the case if there have been no liberalization measures. Based on the above analysis, one can argue that there was some commodity diversification in Jordan during the period 1985-2002, although this was not accompanied by similar geographical diversification. This indicates that commodity diversification was driven by changes in demand in Jordan's traditional markets and was new demand in more challenging markets.⁵

Figure (7): Hirschman Concentration Index (HCI)



Source: own estimates based on the external trade statistics 1985-2002, DOS.

It has been argued (Hoekman *et al.* 2002) that intra-industry trade (IIT) has positive influence on the success or failure of efforts to promote industrialization and growth. Exchanging intra-industry trade exchange is expected to produce extra gains from international trade and above those associated with comparative advantage. It allows a country to take advantage of larger markets. By enhancing IIT, countries can simultaneously reduce the number of similar products while increasing the variety of goods available to domestic consumers. The IIT index ranges between zero and one, with larger value indicating a greater level of trade between firms in the same industry. Higher IIT value suggests that net gain from specialization in different products is being exploited and that the participating country is increasing its integration into the world economy. IIT is calculated as follows:

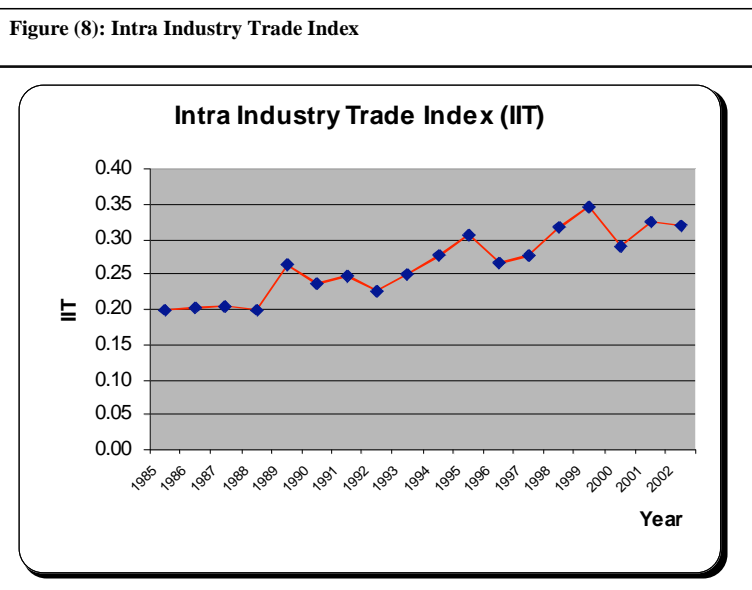
$$IIT_{jk} = 1 - \frac{\sum |X_{ijk} - M_{ijk}|}{(X_{ijk} + M_{ijk})}$$

Where (X_{ijk}) and (M_{ijk}) represent exports and imports of products from industry (i) in country (j) to and from country (k).⁶

⁵ it is worth noting that Jordan managed to increase its export from the software and high technology industries over the last few years. According to the World Development Report, Jordan's high technology exports constitutes nearly 8% percent of its manufactured exports in 2001.

⁶ for more details on this measure and other indicators see : Hoekman *et al.* (2002), *Development, Trade, and the WTO*. The World Bank, Washington DC.

However, according to the estimations done for Jordan, the country achieved a good progress with the IIT indicator from a level of nearly 20% in 1985 to 32% in 2002. A particular improvement was witnessed during the period 1995-2002. This mirrors higher level of specialization and competition. The IIT in Europe is over 70%, reflecting an advanced level of specialization and indicating the wide variety of choices available in the EU markets. The figure below exhibits the case for Jordan



Source: own estimates based on the external trade statistics 1985-2002, DOS

The Herfindahl index for industry-level shows substantial variation across industries in each year and less variation within industries over time.

High values of the concentration index suggest that there exists a large dispersion in plant size within each industry which we have demonstrated when we present firms size in terms of employment.

The preceding analysis brings out two important factors that may weaken domestic competition in Jordan; firstly, the high degree of concentration and its stable trend over time, secondly, the little improvement in import penetration since 1990.

Nevertheless, there has been a declining trend in the concentration ratio since 1994, it dropped from 80% in 1998, to about 75% in 2001, with many of the sub-groups witnessing a decline in their concentration ratio. This could be viewed as a move towards a more competitive environment.

Productivity Analysis

The aim of this section is to investigate the link between market structure variables and Total Factor Productivity (TFP) in the manufacturing sector in Jordan over the period (1980-2002). The period under investigation will be divided into two sub-periods reflecting the different economic and trade policies that were adopted.

The first period will cover the years (1980-1989), which was a period of high growth accompanied by restricted trade regime especially during the last years of the decade. The second period will cover the years (1990-2001) and can be referred to as the period of liberalization. This period witnessed the adoption of the economic adjustment program.

In this analysis (SR) will be estimated under constant return to scale (CRS), and then the assumption of perfect competition assumption will be relaxed by introducing the estimated mark-up in the analysis. Moreover, variables that reflect market structure such as concentration, import penetration will be introduced in order to investigate how market structure affects the overall performance for some sectors.

The analysis will focus on the following sectors, according to the project's methodology: Textile and Clothing, Beverages, Paper and Paper products, Electrical Machinery, Pharmaceuticals, Transport Equipment, in addition to dairy products and Plastic Industries which were added and will be considered especially when analyzing the vertical integration aspects.

Many industries in Jordan were originally established during an early stage of the country development to serve growing domestic demand. It was noticed that capital accumulation continued to grow during the decade of the nineties. There are two reasons that could explain the continuity in capital accumulation, despite the declining of output in some sub-groups, especially during the second period.

Firstly, during the decades of the seventies and eighties real interest rate was very low. The cost of borrowing was equal to or even less than the level of inflation, thus encouraging firms to borrow from the commercial banks and the Industrial Development Bank (IDB) in order to finance their purchase of capital. On average, the rate of inflation, as measured by the GDP deflator during the seventies and early eighties, averaged 7% annually, compared to 8% interest rate on the industrial loans advanced by IDB.

Secondly, investment laws were introduced in 1971 and 1973 which provided full exemption from import duties on all imports to all projects benefiting from these laws. In addition, imported capital equipments were also exempted from tariffs. Moreover, this period was one with an abundant foreign reserve accompanied by an overvalued exchange, rate thus encouraging further imports.

The other factor of production is labor. The number of employees for all sectors grew consistently for the period under investigation. It is easier to follow developments in the number of employees and their compensation more than the capital because it is easier to estimate. It can be argued that, value added per employee is a reliable index of the actual capital input used. This is based on the assumption that the degree of

utilization of capacity is directly proportional to the level of employment and the fact that Labor Productivity (LP) is not a function of the degree of utilization of capacity.

Labor productivity, which is measured as the real value added in real terms divided by the number of employees, increased at a rapid rate during the period (1980-1990) for most of the sectors under investigation as can be seen from table 5 below. However it witnessed a slowdown during the decade of the nineties.

Table (5): Value Added per Worker at Constant 1994 Prices (1980-2001)

ISIC2	Sector	Value added per employee (1980) JD000	Value added per employee (1990) JD000	Value added per employee (2001) JD000
311	Food Manufacturing	6.0	6.6	5.3
321	Manufacture of Textiles	2.8	11.7	6.5
322	Manufacture of wearing apparel except footwear	2.2	4.1	3.2
313	Beverage Industries	6.2	23.6	17.7
341	Manufacture of Paper and Paper Products	2.8	8.9	11.9
382	Manufacture of Electrical Machinery, Apparatus, Appliances and Supplies	-----	9.6	5.8
352	Manufacture of Other Chemical Products	4.8	5.7	13.4
384	Manufacture of Transport Equipment	2.6	6.5	7.5
356	Manufacture of Plastic Products not Else where Classified	4.4	5.9	6.8

Finally, while interpreting labor productivity alone one should keep in mind that the contribution of capital is being implicitly misattributed to labor. This necessitates the estimation of TFP in order to account for all production factors.

Having examined the partial productivity measures, it would be more accurate to examine further the total factor productivity measure. The analysis will use the neo-classical growth by employing the aggregate Cobb-Douglas production function which is going to be used and defined as:

$$Y_t = A_t K_t^\alpha L_t^\beta$$

Where the variables Y, K and L denote real value added, capital stock and labor (Number of employees) respectively. α and β are the output elasticities with respect to capital and labor respectively. A_t denotes productivity growth with t denotes a time subscript. The above equations could be written in terms of growth rate as follows:

$$\Delta A = \Delta Y - (\alpha \Delta K + \beta \Delta L) \quad (\text{where } \Delta \text{ denotes rates of growth}).$$

ΔA is the total factor productivity growth, or what is referred to normally as “Solow Residual” (SR). The coefficients α and β represent the shares of capital and labor in value added respectively. β was estimated as the share of wages to the value added for each sector over the period under investigation. The share of capital was estimated as a residual (1- β).

Many studies, however, estimated the (SR) in manufacturing sector by using aggregated standard production function such as Cobb-Douglas production function. This stems from the neo-classical view of firms as the key productive factors transferring inputs into outputs according to a production function. In return, the production function defines the maximum output level achievable with any given quantity of inputs.

Comparison of performance patterns among the different sub-groups is likely to reveal things about trade variables and market structure, because all industries were subject to roughly the same measurement errors and changes in macro conditions with some industries undergoing different amount of changes in protection.

Table 6 shows the results of estimating (SR)⁷ over the period (1980-2001). The calculations utilized the least square method as the basis for analysis, in this methodology; productivity growth was measured as the “residual”.

The first round of estimation assumes perfect competition and constant return to scale. In the second round of calculations the assumption of perfect competition will be relaxed by introducing the mark-up figures in the analysis.

The results revealed that, on average the estimated (SR) over the decade of eighties were negative. This trend was reversed during the decade of the nineties. These results were valid for all the sectors under investigation, except for that of the textile sector.

Appendix 1 shows the fluctuation in the estimated (SR) and Technical Efficiency (TE) over the period under investigation.⁸ Performance at sub-sectoral level seems to be influenced by the overall performance of the economy. This can be seen by observing the decline in most of the sectors we are investigating during the late eighties and early nineties when the economy gone through a time of turbulence.

The first sub-period (1980-90) was faced with a series of disturbances following the fall in demand both in the domestic and the regional markets. This led the government to deploy tariffs and non-tariff measures in order to increase protection offered to the domestic industries.

Many of the industries that achieved negative or low growth in the (SR) during the first period had subsequently succeeded on average in improving their performance during the period (1990-2001), amongst them are, beverages, printing, chemical products and transport equipments. However, few other industries such as, textile and clothing, wearing apparel, and basic metals achieved a moderate growth in the estimated (SR). Since, during this period, these industries started to take their share in the domestic market after achieving a level of maturity that allows them to compete in the domestic market with the competitive imports.

The estimates of (SR) should not be interpreted as measuring technical change only in the sense of a shift in the frontier of production possibilities. Instead, the measures must be interpreted broadly to include factors such as industries and plant organization, know-how, or changes in response to disruptions in the production process that affect capacity utilization (Nihimizu *et al.* 1986: 288). Overall, the current analysis did not deviate from the standard neo-classical mainstream which treats the production unit as a ‘black box’. Industries that appear to have undergone negative productivity change may reflect irregularities attributable to the sustained use of inappropriate economic policies or errors in calculations.

⁷ We are using in this section SR to represent the TFP as conventionally estimated. Whenever we use the terminology productivity we mean to generalize both the SR and the TE.

⁸ We introduce the technical efficiency here for comparison reasons only. More elaboration will be made in the following sections.

According to Nishimizu et al. (1991: 251-52), long-run competitive equilibrium should minimize differences in TFP growth rates among different industries. This is the case because high rates of TFP growth permit producers to increase more rapidly the compensation of production factors. Resources should be pulled toward high productivity growth industries until differential in growth rates and levels of productivity are eliminated. Apparently, this conclusion assumes that factors of production are movable and that there are no other impediments to resource mobility such as lack of information and government intervention. Following is a detailed analysis in the performance of some sectors in Jordan

The estimated (SR) for the food industries reveals that during the decade of eighties (SR) was fluctuating up and down. However, over the period (1987-1990), there was a continues decline, this trend was reversed throughout the period (1992-1998) with the year 1999 witnessing a decline before it regain its momentum over the years 2000 and 2001. For the whole period, output elasticity for the factors of production seems to be below than the expected values, with that for labor estimated at 14% and 20% for capital. The estimated coefficient holds the expected positive trend and was spastically significant.

Table (6): Parameters Estimates of the Production Function (1981-2001)					
ISIC	C	A	1-A	Adjusted R²	D-W
311	11.69432 (0.0184)	0.142745 (0.06765)	0.203151 (0.0028)	0.439719	2.146286
313	18.89191 (0.0000)	0.601322 (0.0231)	0.884954 (0.0209)	0.532445	1.712272
321	14.34068 (0.0000)	0.574813 (0.0001)	0.243692 (0.0187)	0.784499	1.7017991
322	10.63630 (0.0016)	0.540533 (0.0523)	0.695484 (0.0000)	0.844515	1.863461
331	2.487800 (0.1322)	0.760670 (0.0001)	0.051121 (0.1044)	0.538642	1.715388
341	12.95908 (0.0207)	0.920925 (0.0631)	0.836825 (0.0000)	0.691501	1.880725
342	20.88156 (0.0152)	0.726363 (0.0142)	0.655344 (0.0763)	0.743643	1.609850
351	35.95951 (0.0001)	1.900854 (0.0005)	0.605485 (0.0078)	0.571485	1.767174
352	23.06991 (0.0026)	0.813248 (0.0000)	0.387469 (0.0964)	0.768107	1.813280
356	5.297260 (0.0005)	0.201661 (0.0062)	0.534559 (0.0034)	0.500233	1.688641
371	9.506581 (0.0000)	0.081621 (0.1352)	0.267487 (0.0002)	0.641897	2.039713
383	44.11841 (0.0150)	0.781825 (0.0263)	0.740394 (0.0005)	0.450049	1.610678
384	26.88306 (0.0018)	0.734294 (0.0115)	0.616624 (0.0646)	0.238471	1.618172
Equation: $q = C + \alpha K + \beta L + SR$					

For beverage industries the story is rather different. Output is positively and highly correlated with the labor and capital. The estimated elasticity with respects to labor was found to be 60% and 88% for capital. The period (1981-1984) was a period of strong growth and the estimated TFP was positive. However, as the purchasing power in the domestic market declined, the sector started to suffer. TFP witnessed a decline throughout the period that started in 1985 and lasted until 1993. Indeed the period which referred to as the period of liberalization witnessed positive growth of the estimated (SR) for this sector.

Considering the textile sector, during the decade of eighties, the estimated (SR) witnessed a decline. This negative trend was reserved during the period (1987-1990) before it slums again. During the period of liberalization, performance has deteriorated further probably as a result of opening the market and the inability of the sector to compete with imports crossing the board from neighboring Syria benefiting from a duty free access. Furthermore the sector could not compete with cheap imports from Asia as well. The estimated TE for the sector followed the same performance path as the (SR).

The sector that relates to textiles is the wearing apparel sector, the performance of this sector and its trend analysis was identical to that of textiles except for the last few years when it witnessed a slightly different pattern.

Table (7): Estimated Solow Residual (1980-1990)

year	RES-311	RES-313	RES-321	RES-322	RES-331	RES-341	RES-342	RESID351	RES-352	RES-356	RES-371	RES-383	RES-384
1981	-0.0781	0.2370	-0.1159	0.0718	0.1322	0.2390	0.3319	0.0223	0.0157	0.1809	0.1063	-0.4173	0.5073
1982	0.0822	0.1692	-0.2707	-0.2812	0.1858	-0.3854	0.2196	-0.2323	-0.0584	0.1803	-0.0229	-1.1544	-0.6741
1983	-0.0345	0.0874	-0.0266	-0.3991	-0.2001	-0.8100	-0.0781	-0.1673	-0.2730	0.0571	0.0772	-0.9187	0.1668
1984	0.0982	0.1338	0.1270	-0.1454	0.1474	-0.4826	0.0405	0.5811	-0.1870	-0.0308	-0.2430	-0.1247	-2.5702
1985	0.0469	-0.0775	0.2539	0.1144	0.2437	0.0869	-0.2274	-0.2526	-0.3414	-0.1819	-0.0878	-0.7925	-1.6252
1986	0.0718	-0.0913	-0.0328	0.2117	0.0263	-0.1091	0.1897	-0.9189	-0.1061	-0.0743	-0.0426	-0.4513	-1.5834
1987	-0.0999	-0.0135	0.1262	0.0024	-0.1760	0.3115	-0.4804	-0.1859	-0.0296	-0.2835	0.0276	1.1755	-0.6824
1988	-0.3034	0.0369	0.0808	0.0782	-0.4539	0.1555	-0.0570	-0.0807	-0.3201	-0.5058	0.1125	0.0170	0.1668
1989	-0.0288	-0.2391	0.0094	0.0000	0.0743	-0.1553	-0.5539	-0.3675	-0.3440	-0.0619	0.0338	0.8327	-0.2596
1990	0.0174	-0.4426	-0.1363	-0.1494	-0.1584	-0.1442	-0.6377	-0.8615	-0.2727	-0.2650	-0.2062	0.5784	-1.2494
1991	-0.5429	-0.4781	0.1216	0.1391	-0.0781	-0.0772	-0.4829	-1.2158	-0.1524	0.4560	0.0681	0.6376	-0.9036
1992	0.2166	-0.6041	-0.0687	-0.1014	-0.0479	0.0680	0.6551	0.6955	0.5901	0.0022	0.0421	-0.7856	1.4590
1993	-0.1698	-0.2794	-0.2012	-0.2602	0.1702	0.4194	-0.1138	0.9349	0.3899	-0.4110	0.0211	-0.2486	1.6282
1994	0.2512	0.0655	0.0323	0.5337	0.0959	0.4268	0.0377	0.6162	0.3326	0.0480	0.0803	0.6923	2.5039
1995	0.2654	0.2551	0.2770	0.2753	0.1058	0.4511	0.4788	0.4362	0.4472	0.2499	-0.0458	0.0699	2.1260
1996	0.0543	0.3846	0.2521	-0.1156	0.1003	0.0144	0.1507	-0.4362	0.2733	-0.1823	0.0149	-0.2315	-0.0670
1997	0.0209	0.1726	0.1263	0.1699	-0.0760	-0.1480	0.2227	-0.4854	0.7197	0.1471	-0.1419	0.1801	0.0064
1998	0.1772	-0.2872	-0.0130	-0.2831	0.0818	-0.4163	-0.0601	0.3402	0.1728	-0.0430	-0.1260	0.7534	-0.2055
1999	-0.1293	0.3890	-0.2265	-0.0195	-0.0394	-0.1690	0.0762	0.6522	-0.4391	0.2632	0.2395	0.1126	0.2496
2000	0.0582	0.2594	-0.3061	-0.1450	-0.0742	0.1072	0.0461	0.5223	-0.4016	0.2016	-0.1221	0.6896	0.3321
2001	0.0245	0.3225	-0.1159	0.3034	-0.0595	0.6171	0.2423	0.4133	-0.0159	0.2531	0.2148	0.6896	0.6741

Source: own estimates based on UNIDO and DOS data.

On the other hand, the chemical industries sector, which covers; pharmaceuticals, soaps, detergents, cosmetics, witnessed a strong setback in TFP growth during this period. For many items in this sub-group customers have the choice of domestic or imported products. This market structure would expect to create strong incentives for development of products with proper quality and design.

In this sector, most of the Jordanian pharmaceutical companies focused on the same product categories, mostly reproduction of in-patent products, due to high profit margin and highly local demand as revealed by a study conducted by the Ministry of Planning (1999). Therefore, this sub-group suffered from the low level of capacity utilization. In order to achieve reasonable economies of scale, this sub-group was highly dependent on exports which reached about 67% of the industry gross output over the period (1990-2001). Therefore, performance in the sector has been vulnerable to downturn in the region, due to the fact that most of its exports are directed to the neighboring countries. This high vulnerability could be seen from the fluctuations in the estimated (SR) and (TE) over the two sub-periods that were investigated. Furthermore, it is worth mentioning that pharmaceutical products are subject to strict control and determined by a joint committee from both the public and the private sectors. The committee sets the price according to the international prices whenever they are available for the same product or by observing prices in the regional market. Namely the benchmark is the Saudi Arabia market, the rationale for this is that Saudi Arabia is richer country and it imposes no taxes on pharmaceutical. Some official arguing that many items, where there are adequate competition, especially the over-counter items should be freed with their prices determined subject to market forces. However, it seems there exist a strong lobby that prefers the status quo and enjoy the existing market arrangements.⁹

⁹ This argument is based on personnel interview conducted with the Director of Food and Medicin n Jordan.

Similar to the other groups, chemical industries are highly dependent on imported raw materials, therefore competitiveness is a direct function of the cost of raw material and efficiency of its usage.

The rest of the sectors comprise the non-metallic mineral products, Plastic and the basic metal industries. These industries are linked to the domestic market and the estimated (SR), as mentioned earlier, was negative during the eighties and on average positive during the nineties. Their estimated elasticities with respect to labor and capital are reasonable and consistent with the overall performance indicators.

The non-electrical machinery sector is characterized by the large number of the small firms operating in the sector. Most of the firms in this sub-group were highly dependent on the development of the domestic construction sector. Therefore, performance in this group was highly sensitive to the growth in the domestic demand. Industries in this sub-group achieved a low growth rate in their (SR) during the first period. Many of this sub-group's products such as basic metal and non-metallic output enjoy natural protection due to the high transportation costs associated with the competitive imports.

However, the strongest performer in the decade of the nineties was the transport sector, with a growth of nearly 70% in its (SR) values, followed by electrical machinery sector, which is a modern sector that utilizes new technology.

Overall the behavior of the estimated (SR) is not consistent overtime or a cross sectors. Performance seems to be sector specific. The results did not distinguish any of the sectors over time, that has a clear performance trend, most if not all sectors went through a high and low times. This pattern makes it difficult to draw conclusion regarding the relationship between market structure variables, the state of competition in the country and the overall performance.

In general the correlation coefficient as estimated explains on average more than 50% of the changes in the dependent variable for the entire sectors. However there were some variations in the magnitude of the relation with sectors such as transport where the explanatory power is fairly low, thus casts doubt on the exceptionally high (SR) estimates. While other sectors such as wearing apparel shows high correlation coefficient.

Technical efficiency

In order to estimate the technical efficiency, the mark up was first estimated. The estimates revealed some variations in the estimated mark up during the period (1980-2001), and over the intervals which was identified for the mark up estimation.

Mark-up represents the ratio of prices to marginal cost and was estimated according. This means, at least in theory, that the higher the mark-up, the lower the competition. The highest mark-up was estimated for the chemical sector, and reached 2.15 which resulted basically as a result of high mark-up after 1991. The concentration ratio in this sector was estimated at an average of 62% during the period (1996-2001), while the import penetration reached 67% during the period (1990-2001). Nevertheless, these indicators do not justify the high-mark-up ratio in this sector.

On the other extreme, there are few sectors that barely cover their costs such as, the furniture and wood products and the transport industry. The furniture and wood

products sector is characterized by its low level of concentration which is estimated 24% and a relatively high import penetration estimated at 78%, a combination that means a high level of competition and hence low mark-up.

Table (8): Estimated Mark-Up Ratio

ISIC2	1981-1986	1987-1991	1991-1996	1996-2001	Average 1981-2001
311	1.64476	1.55863	1.63592	1.76008	1.63592
314	1.56746	1.62814	1.96509	2.63771	1.84445
321	1.42173	1.02613	1.57191	1.27723	1.23924
322	2.12085	0.85592	0.94844	0.99899	1.02738
331	0.84984	1.12203	1.69971	0.65393	0.95237
341	1.51368	0.95101	1.36823	1.31763	1.31763
342	1.01196	0.99741	1.29685	0.75256	1.07472
351	1.52896	1.45427	2.15902	2.91757	2.15902
352	1.49121	1.11438	1.59064	1.00624	1.22766
356	0.77695	1.78252	2.56976	2.11748	1.86665
371	1.96126	1.35658	1.68129	1.56735	1.54847
383	1.21796	0.75794	1.89469	1.89650	1.18643
384	0.99234	0.83247	1.09439	0.91196	0.99234

Dr. Hana the only activity that exceeds 2 is the activity 351 and not the 322 and 356 as appeared in your evaluation comments. The above estimate followed the methodology described by Khaled, I think we need to look into variations in the several sub-periods which might explain this outstanding figures. We tried to estimate it again and ended up with the same figures. I elaborated above that we take MU as the prices relative to MC and intuitively I think given the distortion in the market it may exceeds 2.

For the transport sector, the low mark-up seems to be a result of the high import penetration ratio, which is estimated at 96% though the sector enjoys a high level of concentration. This suggests that high level of concentration alone does not necessarily lead to high exploitation of the market, what is puzzling though in this sector in particular is the high (SR) and (TE) estimates, which has not been reflected in a high mark-up.¹⁰

It should be noted that, within each sector there are firms that make profit and there are the under achievers who incur losses. The aggregation leads some times to misleading conclusions regarding the overall sector's performance.

Changes in (TE) over time followed the same pattern similar to that of the (SR), which implies a strong association between the two variables. Indeed a positive and significant relation was found between the two variables for all sectors. However, fluctuations in the (SR) were higher than that for the TE, indicating that for some sectors there was a movement towards the production frontier while for some sectors

¹⁰ It seems that one has to double check the data concerning this sector. Especially the capital stock series.

there was a movement away from the production frontiers. Needless to say the distinction between the two kind of movement is practically very difficult.

Although we conclude that, the manufacturing sector in general is highly concentrated, it seems that this concentration has not been translated into high mark-up figures. Reasons for this, we believe, are related to the high import penetration and the external competition which offers many alternatives in the domestic market for the consumer to choose.

However, there are some price differences between domestically produced goods and the similar imported items. Moreover, moderate mark-up could be attributed to some government policies which have kept prices under control, especially the prices of the basic commodities and food items. In addition, there are several state owned/managed consumer associations that function in the country. These associations enjoy tax exemptions and can import products up to a certain limit on duty free basis. These associations, according to some officials, operate as anchor, and through them, the government can influence and fix the prices. This healthy picture was re-enforced by our fieldwork findings which indicate that there are limited anti-competition practices in general.¹¹

The overall trend in the (TE) is similar to that for (SR) (see graphs in Annex 1). The decade of the eighties witnessed a decline, while during the nineties a progress was achieved.

Table (9): Estimated Technical Efficiency for the Selected Sectors 1981-2001

year	RES-311	RES-313	RES-321	RES-322	RES-331	RES-341	RES-342	RES-351	RES-352	RES-356	RES-371	RES-383	RES-384
1981	-0.22208	0.21123	-0.09797	-0.04548	0.12002	-0.49382	-0.02006	-0.13654	-0.31517	0.19968	-0.12184	-0.49849	0.69921
1982	0.09487	0.34352	-0.22274	-0.25250	0.17553	-0.31082	0.30073	-0.39057	0.03933	0.33957	0.05988	-0.68284	-0.45550
1983	0.07202	0.34386	-0.05563	-0.21768	-0.06531	-0.63571	0.08778	-0.14346	-0.13988	0.22012	0.13570	-1.26769	0.17324
1984	0.00912	0.03526	0.02247	-0.02274	0.02190	0.09477	0.18317	0.79386	-0.41737	0.16494	-0.29988	-0.47079	-2.36013
1985	0.08209	0.07745	0.23374	0.02854	0.24679	-0.10281	-0.35654	-0.39735	-0.19692	-0.20212	-0.19300	-0.94003	-1.49901
1986	0.15608	0.13533	0.15485	0.13781	0.12783	-0.08359	-0.25338	-1.36733	-0.11190	-0.16089	-0.03543	-0.28561	-1.63396
1987	-0.05127	-0.22781	0.11019	-0.04312	-0.13116	0.11140	-0.21045	-0.90500	-0.03806	-0.36692	0.03598	0.66958	-0.72130
1988	-0.37743	-0.57694	0.12979	0.29758	-0.36366	0.26830	-0.20705	-0.19710	-0.12578	-0.78870	0.13977	-0.22950	-0.42594
1989	-0.44990	-0.68587	-0.20103	0.04975	-0.13949	0.04523	0.36399	-1.11551	-0.30505	-0.65686	-0.08244	-0.06767	0.03388
1990	-0.13974	0.33136	-0.24382	0.01353	-0.09511	-0.27968	-0.83006	-1.96079	-0.27052	-0.51088	-0.30569	0.53038	-0.16998
1991	-0.57277	-0.59029	0.05131	0.15493	-0.11537	-0.14845	-0.59614	-1.91971	-0.19447	0.30358	0.04319	0.88182	-0.77019
1992	0.00596	-0.08872	0.01785	-0.11964	-0.05572	-0.08513	0.22612	-0.05110	0.02519	0.12565	0.15633	0.06522	0.02348
1993	-0.09285	0.00981	-0.21514	-0.07066	0.08734	0.23035	-0.03245	1.41233	0.62239	-0.59844	0.04732	-0.55885	1.62553
1994	0.26340	-0.13413	-0.00885	0.55622	0.11176	0.23273	0.07826	2.12931	0.74126	-0.13302	0.12163	0.12737	2.75560
1995	0.46468	-0.38622	0.25698	0.17405	0.09931	0.59436	0.50743	1.01131	0.20356	0.39815	-0.00668	-0.00109	1.82806
1996	0.22105	-0.33082	0.31088	-0.12909	0.09510	0.19137	0.18393	-0.77160	0.32097	-0.09062	0.04841	-0.19466	-0.43244
1997	0.12213	-0.34277	0.28758	0.13442	-0.00548	-0.01505	0.22411	-0.14587	0.56899	0.48576	-0.05609	0.05125	0.04146
1998	0.21106	0.49067	-0.00137	-0.14340	0.01138	-0.49241	-0.10620	0.08684	0.29539	-0.00809	-0.22745	0.67495	-0.19001
1999	0.02511	0.50514	-0.10342	-0.16720	0.00934	-0.15244	0.07946	1.80007	-0.33899	0.38802	0.24800	0.07917	0.43104
2000	0.05443	0.38882	-0.29782	-0.33533	-0.07245	0.25129	0.09436	1.18135	-0.34461	0.42192	0.02369	0.93115	0.41937
2001	0.12404	0.49112	-0.12785	-0.61232	-0.06254	0.78011	0.28301	1.08688	-0.01836	0.46913	0.26860	1.18633	0.62757

Source: own estimates, employing data from several industrial surveys, DOS.

*Estimates of transport industries are not reliable. Many problems have been observed when estimating capital and output for these two sub-groups.

In order for the study to relate market structure with performance, three hypotheses will be tested. The first claims that high concentration will be negatively correlated with technical efficiency, *citrus Paribas*. The second, concerns export orientation and hypothesizes that export expansion is positively correlated with (TFP) or technical efficiency. The third argues that high import penetration should stimulate productivity in the domestic market all through the competition pressure. Annex II present the results of the correlation matrix.

¹¹ In Jordan there are eleven commodities that are still subject to either the monopoly of the government in import such as the wheat. The Ministry of Trade and Industry has a list of commodities classified as strategic. The list could be expanded if the government observe any anti-competition behaviour. Currently the list of the strategic commodities includes *inter-alia*, bread, medicine, wheat and chaff.

It should be noted that these hypotheses are not mutually exclusive. Neither the postulated effects of policy choices on productivity performance is independent of each other. It is likely that, the net effect is a combination of these phenomena simultaneously. However, the distinction between these policies may prove difficult in the applied world.

In order to test these hypotheses, ideally, a multiple panel regression should be run with the estimated technical efficiency as the dependent variable. However due to data insufficiency, a bivariate correlations was used to test the three hypotheses between the different variables. The results indicated the following:

One of the most striking fact emerged out of the correlation matrix which covers the period 1980-2002, was the relationship between concentration and the estimated productivity. For most of the sectors, the spearman correlation coefficient between concentration index and technical efficiency was significant and negative. This simply means that less competition is associated with low productivity. A finding that is consistent with the neo-classical paradigm, which claims that competition, is the road to enhance productivity. The pattern of this relation applies both on the (SR) and the (TE), though it was more consistent with the (TE).

From a policy making point of view, this indicates that concentration has not led to the exploitation of the economies of scale, but was misused and has negative implications on productivity. This also suggests that, we need to compare the performance of the large and small firms, since productivity gain could be generated at the second level in terms of size in few sectors.

What could not be established is the expected negative correlation between concentration and the (IMP). Although, there were few cases when the correlation was significant and took the expected negative signs.

Export expansion, measured as the share of export to gross output, was found to be insignificantly correlated with the growth of the (SR) or (TFP), hence challenge the conventional wisdom that engagement in export should enhance productivity. Although exports grew at a rapid rate, however, the estimated coefficients was insignificant, nevertheless, it holds the expected positive sign in few cases.

This weak correlation between export and (SR) or technical efficiency came as no surprise, since Jordanian exporters perceived the export markets as an expansion of the domestic market. Moreover exports were, in many cases, the result of bilateral government arrangements and were directed to few markets only. Weak correlation could be explained in terms of the high concentration of exports in few markets, whereby export oriented industries became very vulnerable to the swings in the regional markets, without succeeding in penetrating new markets to compensate the lost markets.

It is worth mentioning as well that during the ‘liberalization period’, industries with high level of exports, i.e. export-oriented industries, have not showed a different pattern of behavior in order to face the adverse effects of external shocks. Trade literature argues that export oriented industries, except primary exports, which show low demand price elasticity, can cope better with the adverse economic conditions, because they are able to diversify their sources of income and they are in a better position to restore their lost markets. For this argument to be true, manufactured

exports should be based on true price competitiveness. There are few cases where exports found to be positively correlated with the technical efficiency, however, this could not be generalized. In this context, it is worthy to note that in 2003 the value of goods exported from Jordan under trade agreements constitutes more than 90% of the total Jordanian exports. That is, exports are more or less the product of bilateral agreements and official intervention.

Import penetration (IMP), is expected to enhance productivity. The findings do not lend support to this argument. The IMP was found negatively correlated with the estimated (SR) or with the level of concentration. This indicator was also insignificant in determining the level of the (SR). The behavior of the coefficient varies between sectors without clear pattern. The level of aggregation utilized in this analysis might hide some details which might reveal the true relationship between the market structure variables.

One of the reasons behind this unexpected relationship between openness and the (SR) growth may be attributed to some measurement errors that could arise from the definition of the openness as adopted here. The measure does not differentiate between imported raw materials and the final goods; this may overstate the level of manufactured imports relative to the gross output and could lead to wrong conclusions in a country characterized by its high dependency on imports. For example we found that imported raw material for metal products and pharmaceuticals industries are classified as imports of final goods according to the harmonized system for foreign trades.¹²

It seems that over the entire period under investigation, (TFP) growth was not a significant factor in achieving growth. Factors accumulation seems to be the major contributor to the growth.

Technical progress was unimportant as a source to be ascribed, due to the following reasons:

In many of (SR) studies, gross capital stock, normally, was used to represent the capital element to the extent that physical depreciation is significant, the measured capital stock will overstate the correct capital stock, and the estimated capital augmentation rate may understate the true augmentation rate;

Jordanian manufacturers have invested very little in research and development, thus limit the potential of achieving high rate of technical efficiency;

Industries in Jordan employed matured technologies and imported capital goods at prices reflecting amortized research and development and other development costs;

Capital goods installed in Jordan are likely to be on shelf variety, and therefore the possibility of indigenous improvement is limited;

Furthermore, many industries nurtured behind walls of protection.

Finally, the direction of causation between the explanatory variables and the dependent variable has not been established. There are certainly some other missing

¹² More puzzling in this regard is the fact that some times custom officers are concerned about the tariff rates more than classification of the commodity. That is weather the imported item is subject to for example 5 or 10 percent more than where it should be classified in terms of its economic function. This practice which is difficult to estimate might overstate the import figures from certain items.

variables which might influence the behavior of (TFP). These variables include; the type of ownership, the size of the firm and the management of the firm...etc.

Unfortunately, these indicators are not available at the second digit of the ISIC classification for the entire period (1980-1990), which made it difficult to pursue a meaningful comparison using the missing variables. It is more likely that what is observed is the net effect of all the hypothesized forces. Since the hypotheses are not mutually exclusive, making a distinction among all the different hypotheses can be quite difficult.

In conclusion, the analysis showed that there are differences in the level of the growth of (SR) between the different sub-groups of the analyzed industries over time. However, no consistent trend has emerged to support the argument that (SR) variations over time can be ascribed to trade policies or to the market structure alone.

Overall, the findings support the argument that there is a correlation between trade policies and market structure on one hand, and the growth in productivity on the other hand. The analysis revealed a significant negative relation between concentration and productivity. In addition, an argument exist that high concentration has been associated with over-pricing as estimated by the mark-up.

However, the association between productivity and trade variables seems to be weaker than what postulated in the theory, especially the one between (IMP) and the estimated productivity. Two reasons may explain this; first, it is widely recognized in the industrial literature that one can not explain changes in productivity in the context of market structure alone. Second, there are some other distortions prevail in the market, such as government intervention and pricing policies which influence the pattern of the relationship between trade policies and the productivity growth.

However, at this level of aggregation, it was difficult to attribute part of the productivity growth differences to the market structure and the trade policies per se. Moreover, no unique pattern of productivity growth in the export oriented industries has emerged. Hence, one cannot easily argue that export oriented industries outperformed other industries over the period under investigation.

Thus far we have assumed the horizontal aspects of the markets are the only industrial relations that dominate the market. We have not presented the kind of relation that exist between market players and to what extent they influence their behavior. In the following section we will present the main findings of nearly 50 structures interview conducted for the purpose of the study by utilizing the suggested questionnaire in the methodology report.

Vertical Aspects of Competition: Questionnaire Analysis and Results

This section examines the subsistence and effect of vertical aspects of competition in the Jordanian economy. Vertical restraints (Vertical aspects of competition) by definition are restrictions that are set through agreements or concerted practices among two or more firms at different levels of production or distribution chains relating to the conditions under which parties may purchase, sell or resell certain goods or services. Vertical restraints fall under two categories: price related or resale price maintenance (RPM) and non-price related, including exclusive dealing, exclusive purchasing, territory and consumer allocation, tying etc.

The impact of vertical restraints on market competition is mixed. On the one hand, vertical restraints can facilitate market penetration by new entrants, reduce transaction costs and get rid of free riders, thus enhancing inter-brand competition. On the other hand, vertical restraints can partition and foreclose the market, increase barriers to other entrants and stifle intra-brand competition.

For the purpose of this study, and to have a closer look at the vertical aspects of competition and market entry barriers in Jordan, around 50 companies were interviewed from eight selected industries: Textiles and Clothing, Beverage, Paper and Paper products, Electrical Machinery, Pharmaceuticals, Cars, Paintings and chemicals, Vegetable Oil and Plastic. Most of these companies are legally stated as Unincorporated and Limited Liabilities, while few of them were Corporations.

The interviewed sample was a mix of manufacturers, suppliers and distributors. In this regard, more than 54% of the surveyed companies are producers of final products, 23% are suppliers of intermediate products and 19% are distributors or wholesalers.

Packing firms are mostly suppliers of intermediate products while Pharmaceutical, Food and Beverage and Electrical Machineries are mostly producers of final product. Textile & clothing are supplier of intermediate products, producer of final products and distributors.
--

The size of companies interviewed tends to be medium to large. Around 79% of the interviewed companies are employing more than 20 employees, while only 2% employs between 5-20 and 0.4% have less than 5 employees. The majority of the interviewed companies are owned by Jordanians. Yet, only one company was fully owned by foreigners and none of them was owned by the public sector.¹³

Most of the interviewed companies (87%) own one plant only. However, there are two companies who owned 7 and 22 plants respectively. While the rest of the 13% own between 2 to 3 plants.

Majority of the interviewed companies are engaged in export activities. About 33% of the interviewed companies export directly more than 30% of their products, 24% of the companies export between 10 - 30% of their products, 15% export less than 8%, while 28% of the companies sell their products to the domestic market and do not export at all. However, none of the exporting companies export indirectly through distributors or exporters.

Except for the pharmaceutical industry which has about 50% share in the regional market, none of the other surveyed industries have any market share in the region. Their average share in the national market is 25%.

Investigating certain arrangements between undertakings at different levels in the production/ distribution chain, e.g. agreements between suppliers and their distributors and/or retailers in the Jordanian market is the core of the current survey analysis.

¹³ Although the sector is dominated by the small companies in terms of number. However, vertical aspects of the market relation are more likely to exist between medium to large firms.

To understand the current relations at the vertical level, the type of customers of the interviewed companies were firstly analyzed. In the local market, 23% of the companies sell to wholesalers, 16% to large domestic firms, 19% to SMEs domestically owned, 24% to foreign firms located in Jordan and 8% directly to the consumers. Nonetheless, only 3% of the companies sell their products to their parent companies or affiliated subsidiaries with a share that ranges from 20% to 80%. Also, a small share which does not exceed 6% of the companies sells their products to government and local communities.

Table (11) : Survey Results on Vertical Aspect of Competition

Percentage of companies sell in the local market to:							
	whole saler	large domestic firms	SMEs	foreign firms	Govern ment	parent company	Cons- umers
Packaging	1%	40%	4%	37%	0%	15%	3%
Pharmaceuticals	14%	5%	27%	49%	6%	0%	0%
Food & Beverage	40%	4%	32%	12%	10%	1%	1%
Electricals	41%	3%	15%	16%	0%	20%	6%
Chemicals	15%	36%	31%	11%	2%	0%	5%
Cars	5%	15%	0%	26%	5%	0%	49%
Paper	38%	39%	7%	4%	10%	0%	2%
Textile & Clothing	20%	9%	15%	27%	6%	3%	20%

On the other end of the supply chain, suppliers which may impose certain arrangements on their customers and hinder fair competitive practices are considered, of which the availability of suppliers is considered an important factor. In Jordan, only 15% of the surveyed companies indicated that their suppliers are sole in the market (one supplier only for each firm). While 55% said that there are only few suppliers (2-8) and 33% pointed out that there are numerous suppliers (10 and above).

The intensive of suppliers of a same product in the same market varies from one industry to another. For example, suppliers to Chemical and Paints products are much more intensive than other industries (235 supplier); while there are only few for the car industry and electrical products (10 suppliers).

	No. of firms that supply same product in the market
Packaging	20
Pharmaceuticals	74
Food & Beverage	54
Electrical Products	10
Chemicals & Paints	235
Cars	10
Paper	42
Textile & Clothing	87
Grand Total	532

As far as the concentration of suppliers, most of the interviewed companies stated that there are no special requests or conditions imposed from their suppliers regarding their selling price. Only 9% of the interviewed companies mentioned that they have such arrangements with their suppliers and that it is mentioned explicitly in the contract, but agreed that such conditions have positive impact on their profits and not the other way around.

Only one company, represents 2% of the total sample, mentioned that it has an implicit long term contract with its supplier where the supplier requests selling a minimum quantity below a certain price. Furthermore this company was not allowed to buy its product from alternative supplier. This company pointed out that such

arrangement does not affect its profit and that they do not get additional services or concessions in return for their compliance with the agreement.

However, all the companies agreed that their suppliers do not request that they do not sell similar products or brands or buy other products only from their suppliers.

Table 12 : Survey Results : Share of Raw Material

These results are reasonably understood when considering that, in average, 68% of the raw materials used by the interviewed companies are imported directly from outside Jordan, while 25% is purchased from the local market.

	Share of Raw Material		
	Local Market	Directly Imported	Indirectly Imported
Packaging	0%	97%	3%
Pharmaceuticals	16%	84%	0%
Food & Beverage	33%	67%	0%
Electrical Products	34%	66%	0%
Chemicals & Paints	35%	47%	18%
Cars	13%	20%	0%
Paper	28%	73%	0%
Textile & Clothing	28%	72%	0%
Grand Total	25%	68%	2%

To measure this independence of distributors from their suppliers, an indicator was created indicating to what extent the suppliers finance the assets of their distributors. Most of the Jordanian interviewed companies stated that their assets are self-financed including rental or purchase of building, furniture, tools, machinery and cost of advertising and marketing. Only one company states that their supplier finances the costs of advertising and marketing.

Therefore, competition in the local market is fierce, where all the surveyed companies have competitors in the local market except for the car industry who has single supplier and no competitors.

In the pharmaceutical industry, one can observe a clear healthy situation as there are foreign and local competitors and suppliers. This also applies to vegetable oil and paper products' market.

However, the persistence of foreign competitive companies in the local market was not seen for electrical equipments industry, plastic products, paintings and chemicals, and beverages producers. As for the garment industry, the results which indicates the absence of foreign competitive companies in the local market was mainly due to the fact that most of the foreign companies that operate in the Jordanian market are targeting exports and do not sell in the domestic market.

Moreover, vertical aspects of competition become vital, when competitiveness is mainly determined by the prices only. In Jordan, most of the interviewed firms agreed that not only the price but the quality also play a critical role in their products competition. This fact reduces the effect of the vertical aspects which arises as a result of imposing unfair competitive practices.

In Jordan, Most of the interviewed firms agreed that price and quality play a critical role in their products competition. Around 57% believes that a combination of both price and quality is the most important means of competition. Yet, 33% believes that

price is the most important competition factor while only 11% considers quality as the only critical competition factor.

This fact is reinforced even further, when considering the government controls over prices. In this regard, the majority of the interviewed companies (92%) believe that prices are market driven. While, only 8% of the companies, mainly in the Pharmaceutical industry, agree that government imposes controls over their products' prices which affect negatively their economic performance. In Jordan, the Ministry of Health still determines ceilings for pricing local produced pharmaceuticals arguing that such products are socially and politically sensitive and thus should be kept under control. On the other hand, the government gives preferential treatment to Jordanian pharmaceuticals in government tenders.

Furthermore, one company in the beverage sector producing alcoholic drinks indicated that the special tax imposed by the government on their product is very high and unjustifiable, and affects their product's competitiveness.

Marketing on the other hand, is a factor that affects the existence of a fair competitive market. Whenever marketing and promotional activities exist, a more competitive market environment is expected. In Jordan, the marketing and promotion function are very weak. Although 37% of the interviewed companies described that advertising, marketing and public relations are very important factors to their economic performance. 22% of the companies perceive it as less important. Most of these companies allocate a very small budget for marketing activities that does not exceed 0.007% of their total budget, except for the pharmaceutical and beverage industries, which spend in average 0.05% and 0.03% of their budget respectively.

Another factor that plays a vital role when analyzing the vertical aspects of competition in any market is entry barriers of the industry. If the entry barriers to any industry are significant and deter new entrants to the sector, unfair competitive practices may exist due to high level of concentration that could associate it. Furthermore, according to the interviewed companies, there are major entry barriers to their respective industries. Around 87% regards limited access to funds as the major entry barrier. Another 70% of the companies stated that economies-of-scale is the second important obstacle while 41% said that legal restriction is another major impediment. The companies classified the major entry barriers to their respective industries from the most to the least important as follows:

1. Limited access to funds
2. Economies of scales
3. Limited access to human resources
4. legal restrictions
5. limited access to technological knowledge
6. the need to establish a new brand identity (high advertising cost)
7. high costs of learning (in production, marketing, etc.)
8. existence of patents or other IPRs

A closer look at the sectoral level reveals that textiles and clothing, pharmaceuticals, paper and paper board rated limited access to fund as the major entry barrier to their industry. While the other surveyed sectors classified economies of scale as their major entry barrier. The only exception was the electrical machinery sector who rated legal restrictions as their major entry barrier followed by economies of scale and limited access to fund respectively. Also, the vegetable oil sector puts both economies

of scale and limited access to fund on equal footing when considering the major barrier to their industry.

To a certain extent, it is understandable that vegetable oil products, plastics, beverages and chemicals rated economies of scale as their major entry barrier due to the fact that these industries are highly dependent on the local market. The other industries, meanwhile, which rated limited access to fund as their major entry barrier are the ones characterized as being export oriented industries and to some extent capital intensive.

In conclusion, all the previously stated results indicate that the Jordanian market does not suffer badly from unfair competitive practices due to vertical restraints (vertical aspects of competition). It was noticed that, rarely the supplier and distributor are engaged in any price related or non-price related agreement that impose a vertical restraint. Nonetheless, the importance of getting the market players aware of their right to fight against such measures should be an important government endeavor.

It was clearly noticed from the survey that the Jordanian industrialists are not aware of the competition Law and its contents. Around 52% of the interviewed companies are not aware of the lately endorsed Jordanian Competition Law. From the 48% who are aware of the law, only 4% know about it in details while 35% have just a general knowledge of its content. Yet, 54% of the companies didn't answer this question regarding their knowledge of its contents.

Around 41% of the surveyed companies gave their assessment of the Competition Law which rated as follows:

- 79% of the 41 percent respondents agree that the law stimulate investment while 16% disagreed and 5% strongly disagreed,
- in answering the question on how restrictive the law is, 84 % disagreed that the law is very restrictive and impose penalties while 16% thought it is, and finally
- 83% agreed that the law meets its context while 17% disagreed.

In general, the received answers of the respondents suggest that there is a fair satisfaction of the law and its context.

The findings of the survey indicate that the Jordanian market enjoys a fairly good competitive environment. Almost 90% of the surveyed companies did not report that they need to go to court as their partners comply with fair competition rules. From the rest 10%, four companies had to go to court as their partners imitated design, brand and trade name of their products. Three of these cases were finalized. However, it was mentioned that there are many cases still in courts regarding intellectual property rights rather than cases related to horizontal or vertical aspects of competition.

It is worth mentioning that from the cases dealt with by the Competition Directorate at the Ministry of Trade and Industry so far in the survey none is classified as unfair competition case related to the vertical restraints. Imitating brands or copying trade names or violating Intellectual Property Rights (IPRs) is not considered unfair competition case.

A competition case is when distortion in the market occurs due to vertical or horizontal restraint. This indicates that Jordanian industrialists lack the proper understanding of the Competition law especially the economic perspective of it as it was previously mentioned in the analysis where 4% only from the surveyed companies know in details about the law.

The State of Competition Policy

In 2004, Jordan has enacted the Competition Law No. (33) For year 2004 (Hereinafter referred to as the “Law”) as part of the modernization of its national legal framework towards consolidating market economy. This Law replaced the temporarily Law No (49) which was ratified in August 2002.

The Law in its final version fortifies the efforts made at the regulation and affirmation of competitive freedoms within the country. It takes into account common international standards, national interests and current economic transition that the national economy is undergoing.

The Competition Law aims at establishing and securing principle of market forces and economic freedoms especially freedom of prices. It takes necessary measures to the regulation of free competition in a manner which serves the national economy of Jordan and protects the interests of the consumer.

Box (1): Freedom of Prices

The law is based on freedom of prices in accordance with market conditions and principles of free competition, excluding:

- Prices of basic commodities such as bread and fuel that are regulated by other laws.
- Prices that are set by the Council of Ministers to cope with exceptional circumstances.

The endorsement of the Competition Law came to:

- Maintain an environment based on healthy competition that is vital for improving economic efficiency, developing competitiveness, enhancing consumer welfare and thus achieving sustained growth.
- Provide strong incentives for promoting private entrepreneurship and attracting foreign direct investment.
- Protect consumers from anti-competitive practices
- Contribute to the success of economic reforms and market openness.

The main principles upon which the Law was drafted are:

- Prohibiting arrangements and acts that aim to disrupt competition through sharing of markets or hindering of prices.
- Establishing freedom of prices as a general rule.
- Conciliation of the provisions of the Law with the rules and commitments of Jordan such as the Arab Project for the Harmonization of Competition Rules and the Euro-Jordan Association Agreement.
- Prohibiting abuse of dominant positions in the market.
- Subjecting economic concentration operations to administrative regulation and licensing.
- Updating the systems responsible for the application of the Law and the protection of competition.
- Setting deterrent sanctions to prevent violations.

The provisions of the Law shall apply to all activities of production, commerce and service provision in Jordan, in addition to any economic activities that take place outside Jordan but have an effect within it. (Article 3)

The Law tackles the following main areas of competition:

Anti-Competitive Practices (Horizontal Practices)

The Law prohibits all practices, alliances and agreements that disrupt or limit competition, particularly those that are aimed at fixing the prices of products or services, sharing of markets, hindering the entry of establishments or collusion in tenders.

With the exception of the prices of certain products or services, the Law provides that the prices of products and services shall be set in accordance with **market conditions** and the principles of free competition.

Moreover, it is prohibited in the Law for an enterprise with a dominant position in the market to abuse its position by disrupting competition including the fixing of prices or conditions of resale of products or services, hindering the entry of other establishments into the market, discriminating between customers in similar contracts or seeking to monopolize resources necessary for the operations of a competitor.

Certain practices may, by virtue of decisions of the Council of Ministers or, in certain other circumstances by a decision of the Minister of Industry and Trade (hereinafter referred to as the “Minister”), be excluded from being considered as practices that disrupt competition within the meaning of the Law.

Some practices are deemed permissible by the government to cope with exceptional circumstances, an emergency or a natural catastrophe. Meanwhile, some other practices are exempted by the Minister based on their positive outcomes and the resulting public interest. Relevant enterprises should request to be granted this exemption in accordance with as designated forms.

Practices Detrimental to the Fairness of Commercial Transactions (Vertical Practice):

The Law regulates the activity of any producer, importer, wholesaler or service provider whereby it prohibits any such person from setting a minimum resale price for a product or service, or subjecting another party to or receive from it preferential and unjustified prices or conditions of sale or purchase in a manner which imparts to such party a benefit as regards competition or causes harm thereto.

Moreover, the Law prohibits any enterprise from resale of a product as is at a price below its actual purchase price plus the applicable taxes, charges and transport costs, if any, if the purpose of such sale is the disruption of competition.

Economic Concentration:

Articles (9) and (10) of the Law deal with economic concentrations whereby certain economic concentrations are made subject to

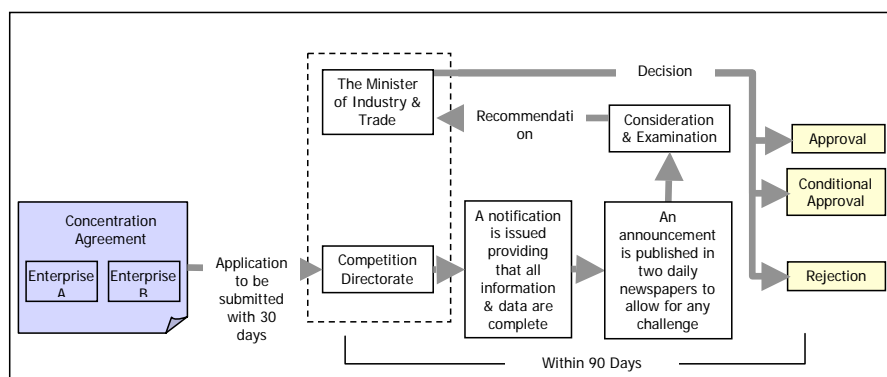
Box (2) What is an Economic Concentration?

It is the control of one enterprise over another through a complete or partial transfer of any of the following:

- Ownership
- Usufruct in property
- Rights
- Stocks
- Shares
- Obligations

the approval of the Minister. An economic concentration is any activity which results in the full or partial transfer of ownership of or interest in the property, rights, shares or obligations of an enterprise to another, and which may enable an enterprise or group of enterprises to control another enterprise or group of enterprises.

Economic concentration operations that have an impact on the level of competition in the market by causing or enforcing a dominant position shall be subject to the approval of the Minister, if the total share of the enterprise or enterprises concerned in the operation exceeds (40%)¹⁴ of the total transactions in the market. Accordingly, a petition shall be submitted to the Directorate of Competition at the Ministry of Industry and Trade, and the Directorate shall publish the petition in an announcement in two daily newspapers. Such announcement shall contain an invitation to any interested party to present its opinion regarding such petition.



The following must be attached to the application form:

- The Articles and Memorandum of Association
- Draft of the Concentration Agreement
- A list of the main goods and services of the enterprise.
- A report on the economic implications of the operation.
- Financial Statements for the last two years.

The Minister may issue a decision regarding the petition as follows:

- Approve the economic concentration operation.
- Approve the economic concentration operation provided that the enterprise concerned undertakes to meet conditions specified by the Minister.
- Reject the economic concentration operation.

The decision of the Minister may be appealed before the Higher Court of Justice.

Sanctions:

The Law specifies the sanctions to be applied upon violation of the provisions of the Law, all of which are constituted of fines. However, the issuance of a verdict setting a

¹⁴ One has to be careful when interpreting the size of the market. The law has not specified the geographical boundaries or limits. The definition of what is the market even is not clear not only in Jordan but in countries such as the USA.

fine in accordance with the provisions of this Law shall not preclude an order of imprisonment in accordance with the provisions of the Penal Code or any other law as provided in Article (26) of the Law.

The Law provides that the amount of benefit received by the violator and the value of the damage suffered by others shall be taken into consideration when setting the amount of the fine.

Reconciliation of Status:

It is provided in the Law that every establishment is required to reconcile its status with the provisions of this Law within a period not exceeding four months after the date of coming into force of this Law, including the removal of every practice, agreement or arrangement that **took place** prior to the coming into force of this Law or **the request** for exemption as per Article (7) of this Law.

Who can launch a trial?

Lawsuits related to anti-competitive practices maybe instituted by the following parties:

- The Minister of Industry and Trade.
- Private sector enterprises
- Licensed consumer protection associations.
- Any group of at least five consumers who have suffered damage
- Chambers of industry and trade
- Professional and union associations
- Sectoral and regulatory commissions.

Cases not considered as anti-competitive practices according to the Jordanian Law:

The following cases are not considered anti-competitive practices:

- Practices that result from the implementation of an enforceable law.
- Practices that are deemed permissible by the government to cope with exceptional circumstances, an emergency or a natural catastrophe.
- Practices exempted by the Minister of Industry and Trade based on their positive outcomes and the resulting public interest. Relevant enterprises should request to be granted this exemption in accordance with a designed form.

The Law exempted agreements with minor importance provided that they do not fix price levels or share markets. The Minister of Industry and Trade sets the threshold for market share below which agreements qualify as minor importance agreements. This threshold should not exceed 10%.

Exemptions are granted to achieve positive outcomes that are in the public interest and which may not be achieved without such exemptions, such as improving the competitiveness of enterprises, improving the production and distribution processes, and providing benefits to consumers.

Enforcement of the Competition Law

Enforcement of the law is the responsibility of the Competition Directorate at the Ministry of Industry and Trade in Jordan. The duties and powers of the Competition Directorate at the Ministry of Industry and Trade in Jordan are stipulated in Article (12) of the Law, and they include:

- Contributing to setting the general plan for competition and the legislation relating thereto.
- Promoting and protecting the culture of competition.
- Conducting investigations into those practices it uncovers or receives complaints of, or those assigned to it by the competent courts, and preparing reports on its findings.
- Receiving and following up petitions relating to economic concentration operations.

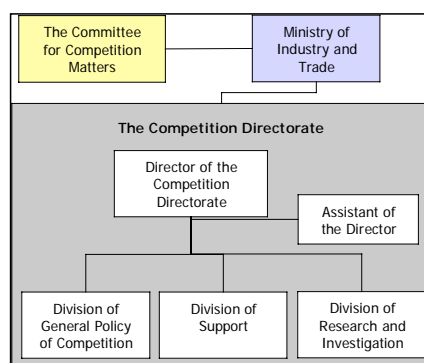
The investigative powers of the Directorate include the power to enter into commercial establishments and inspect documents, and the Director may request any person who has or may have knowledge of information relating to a violation, to testify in an investigation. If the violation is established, the Minister shall, upon the recommendation of the Director, refer the violation to court.

Competition Directorate in its endeavor to enforce the articles of the Competition Law depends currently on performing its duties on the following competent staff:

- Director, legal background
- 2 economists
- 3 legal staff
- 1 industrial engineer intern
- 1 short-term international legal adviser
- 1 long-term local economist adviser

Moreover, the Law provides for the formation of a committee called the “Committee for Competition Matters”. The Committee shall be chaired by the Minister and include the membership of certain other persons such as the Director General of the Insurance Regulatory Board, the Chief Executive Officer of the Telecommunications Regulatory Commission and the Director General of the Transport Regulatory Board. The Committee shall be responsible for presenting consultations and advice regarding the general plan of competition in various sectors and reviewing matters related to the provisions of this Law.

Furthermore, the Court of First Instance (the Amman Court in the first two years) shall have the jurisdiction to hear cases relating to any violation of the provisions of this Law pertaining to anti-competitive practices, economic concentrations and non-compliance with certain decisions issued by the Minister pursuant to this Law. All other violations of the provisions of this Law shall be subject to the general rules of



court jurisdiction. Moreover, one or more specialized judges who have been appointed by a decision of the Judicial Board shall be assigned to hear cases of practices that are in violation of competition.

The Law specifies the parties that may institute cases relating to practices in violation of competition, and such cases shall be granted summary status while the court shall have the power to issue **temporary** orders or decisions. Decisions of the court may be appealed before the Court of Appeal and the Court of Cassation.

Nevertheless, evaluation of the degree of enforcement is limited due to the fact that the Competition Directorate experience in enforcing the law is still short. A salient feature of the directorate record is the number of cases brought to it by the industry. Over a two-year period, from its creation in August-2002 to mid-2004, the directorate addressed the following cases:

Exemption petitions:

- Steel industry:
The steel cartel petitioned to be exempted from articles 5 & 6 of the Competition Law, and accordingly an extension for realignment. Both applications were rejected by the Directorate.
- Specialized Tourism transport:
A ticketing alliance of three companies who operate in tourism transport petitioned to be exempted from articles 5 & 6 of the Competition Law. The Directorate initiated an economic analysis of the impact of this alliance and established contact with the tourism and transport ministries to incorporate their visions in the study. A decision has not been issued yet.
- Energy Sector:
The Ministry of Energy petitioned to exempt the company resulting from the joint venture between Jordan, Egypt, Syria, and Lebanon from articles 5 & 6 of the Competition Law. The formed company will enjoy exclusivity rights in gas transport. The Directorate is looking into the petition.

Complaints:

- Aluminum profiles industry:
 - a. One of the colluding companies in the aluminum profile cartel filed a complaint with the Directorate to dismantle the cartel in accordance with article 5 of the Competition Law. The Directorate underwent an elaborate economic study, and will soon issue its findings.
 - b. A company filed a complaint claiming that a competitor is selling below cost to disrupt competition. The Directorate conducted an economic study, and issued its ruling rejecting the complaint since the accused party was not found guilty of selling below cost to disrupt competition.
- Machinery and vehicles spare parts:
A company filed a complaint claiming that a competitor is selling at a price below its cost in order to disrupt competition. The Directorate initiated an investigation into the case and issued its findings that the accused party is not selling below cost to disrupt competition. The complaint has been thus rejected.

- Dairy Products:
The union for cow nurturers complained orally to the Directorate regarding the abuse of dominant position practiced on them by the informal cartel of dairy products producers. The complaint came at a time when the dairy producers are threatening to raise prices. Such a collective raise sheds suspicion on potential implicit collusion between the dairy producers.

Economics concentration applications:

- Agricultural seeds:
The Directorate received a petition to approve an economic concentration operation. The operation involves a take over of an agricultural seeds producer by a private equity firm. Both firms are located in the US. The Directorate published an announcement in two daily newspapers asking interested party to supply the Directorate with their opinions. The Directorate is currently studying the application to issue its decision.

Consultations:

- Cement industry:
The Directorate was consulted regarding the applicability of the Competition Law on the cement company's decision to raise prices. The Directorate concluded that this practice is not in conflict with Jordan's Competition Law and issued recommendations on how to address this issue in the concerned sector in the short and long run.
- Meat industry:
Couple of months prior to the holy month of Ramadhan, the Directorate received a consultation request regarding the increase in meat prices which could have potentially resulted from anticompetitive activities in that sector. This issue was addressed with a sense of urgency especially before a serious problem would arise as a result of the anticipated increased demand during the holy month of Ramadhan the Directorate conducted field investigations which pointed out to the barriers that prevent competitors from entering the market. Talks were held between the various bodies that regulate this industry such as the Ministry of Agriculture and Ministry of Health to discuss the potential for opening up new import markets, and removing barriers of entry to this industry. The adopted policies succeeded in bringing the prices down and maintaining them at reasonable levels during Ramadhan.
- The Potash industry:
A consultation was requested from the Directorate regarding an amendment to a law which grants exclusivity rights to the privatized Potash mining company. The Directorate issued a communication regarding this issue.
- The Steel Industry:
A consultation was requested regarding an application to establish a union for the oligopolistic steel producers industry for fears of using the union as an umbrella to engage in anti-competitive activities. The Directorate issued a communication regarding this issue.

However, the level of activity that is currently taking place is expected to accelerate in the coming future, since the directorate was assigned the task to protect and foster competition in a country that has been undergoing profound economic restructuring and where economic power has been shifting from the public to the private sector. It is easy to believe that some Jordanian markets are suffering from collusive behavior and abuse of dominant positions, particularly in view of the high degree of concentration observed in many sectors. This record shows that developing a competition tradition and culture is a slow process and that the enactment of a competition law is only a starting point in that process.

Conclusion

It was evident that there is a strong link between market structure and performance. As Jordan moves towards a more liberal economy there has been a growing need to adopt laws and regulations that will mitigate the adverse implications of this openness on consumers. However any analysis of competition and performance should consider the horizontal as well as vertical aspects of the market structure.

As the case in several countries there is a high degree of concentration within the manufacturing sector that needs to be addressed in order to protect small producers from the anti-competitive practices. The overall picture that emerged in the case of Jordan is not too bad and indicate that there is a fairly good level of competition that exists.

There is a need to empower the competition directorate in order strengthen the enforcement of the law and clearly there is a need to advocate the competition law more vigorously.

:

Bibliography

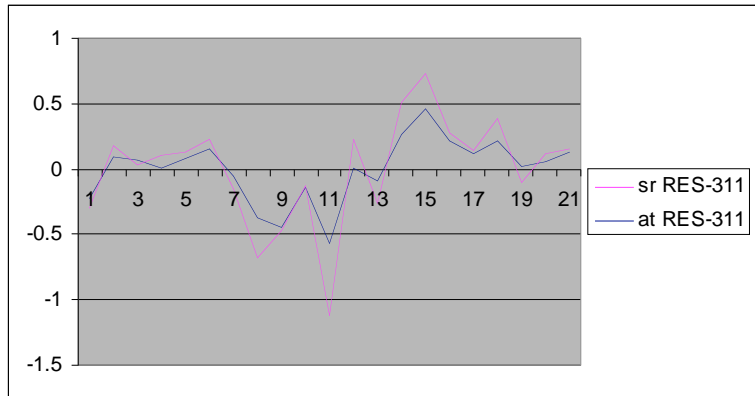
- Abu Hammour, A. (1988). "Industrial development in Jordan" (Arabic), MA Dissertation. Economics Department. Amman, University of Jordan.
- Al-Badri, S. (1995). "Productivity in Jordanian Industry." *Mu'ta for Research and Studies* 6 (6): 33-50.
- Al-Hajji, T. et al. (1997a). "The competitiveness of Jordan's products and upgrading options" (volume 1, in Arabic). Amman, Royal Scientific Society.
- Al-Hajji, T. et al. (1997b). "The competitiveness of Jordan's products and upgrading options" (volume 2, in Arabic). Amman, Royal Scientific Society.
- Al-Hammori, K. and S. Al-Badri (1996). "The impact of technological progress on output of Jordanian industrial sector." *Abhath Al-Yarmouk: Human and Social Sciences* 12 (1): 219-241.
- Al-Homsi, J. (2002). "Microfoundations of Industrial Competitiveness in a Small Developing Economy: The Case of Jordan's Manufacturing Industries". PhD thesis (unpublished), Department of Economics. Leicester, University of Leicester.
- Bani-Hani, A. and A. Shamia (1989). "The Jordanian industrial sector: output and productivity (1967-1986)- an econometric analysis." *Abhath Al-Yarmouk: Human and Social Sciences* 5 (2): 52-78.
- DOS (Department of Statistics) (1986-2003). Industrial Survey. Amman, Department of Statistics.
- El-Khatib, S. et. al. (1996). "An econometric empirical study of large Jordanian industries using the generalized constant elasticity of substitution production function (CES)." *Abhath Al-Yarmouk: Human and Social Sciences* 12 (3): 9-25.
- ESCWA (Economic and Social Commission for Western Asia) (1995). The management of change in Jordanian industry: Draft report. Amman, ESCWA..
- IMF (1998). The dynamics of economic growth in Jordan (unpublished Memo). Washington, DC.
- Lall, S. (1999). Competing with labour: Skills and Competitiveness in developing countries. Issues in development, Discussion paper 31, Queen Elizabeth House, Oxford University.
- Mazur, M. (1979). "Economic growth and development in Jordan". London, Croom Helm.
- Muhtaseb, B. (1995). "International competitiveness of Jordan's manufacturing industry", PhD Thesis. Department of Economics, University of Strathclyde.
- Nishimizu, M. and Page, J. (1986) "Productivity Change and Dynamics Comparative Advantage", *Review of Economics and Statistics* , August: 241-247.
- Saif, I. (2004) " The Jordanian Economy in A changing Environment" Edited Volume , Center for Strategic Studies, University of Jordan. Amman-Jordan.
- Saif I. (2002), "Trade Liberalization , Profitability and Wages in the Manufacturing Sector in Jordan 1976-1999", METU Conference 11-14 September 2002, Ankara, Turkey.
- Saif I. (2001), "Export versus Import Substitution Industries: The Food Industry in Jordan". ERF Working Paper 0128 , Egypt.
- UNIDO (1987). "Jordan: Stimulating manufacturing employment and exports", Industrial Development Review Series, UNIDO.
- World Bank (1988). "Jordan: policies and prospects for small and medium scale manufacturing industries". Report No. 6848-JO.
- World Bank (1992). "Export incentives and technological capabilities: An outward-looking strategy for Jordan". The main report. Report No. 10228-JO.

World Bank (2002). "Jordan: Development policy review- A reforming state in a volatile region". Report No. 24425.

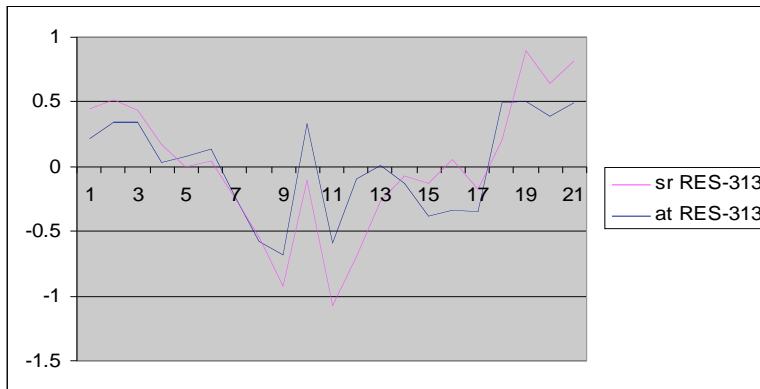
Zaghlool, I. and M. Hazaima (1999). Upgrading competitiveness in the Jordanian economy: Policies and plans (in Arabic). Amman, Central Bank of Jordan.

Annex 1
Technical Efficiency (at) and Solow Residual (sr).

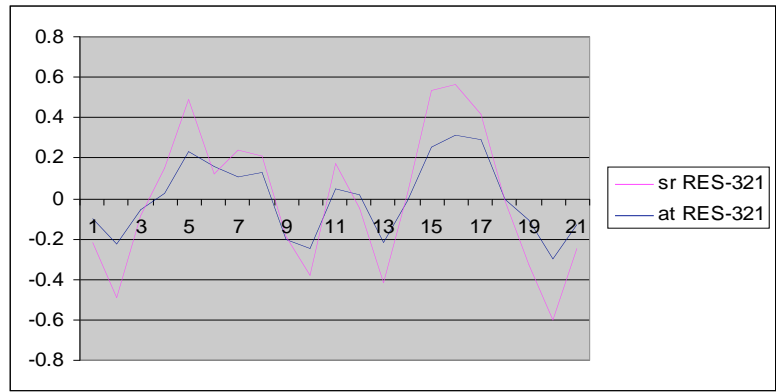
Food Industry



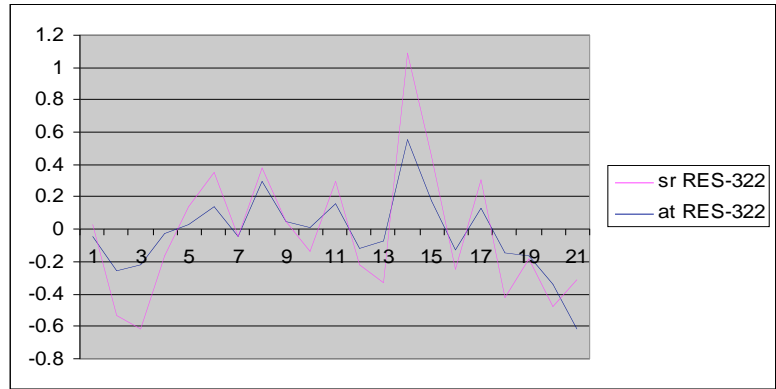
Beverages



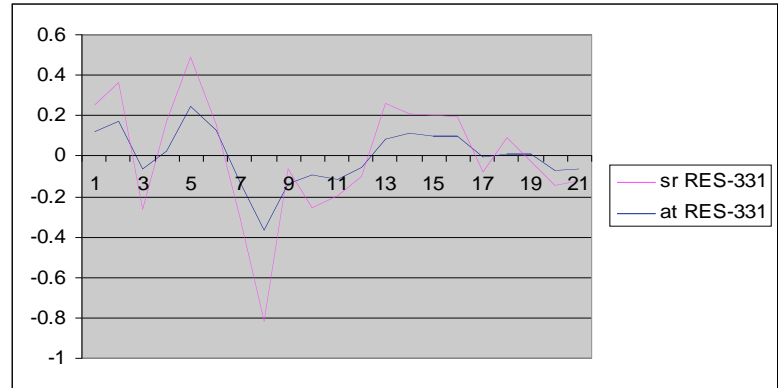
Textile



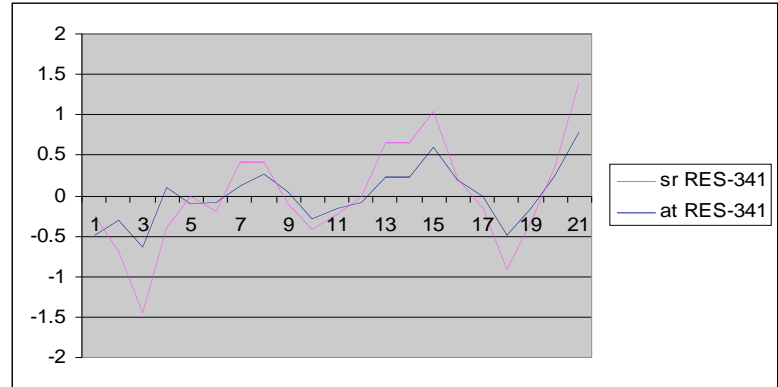
Wearing Apparel



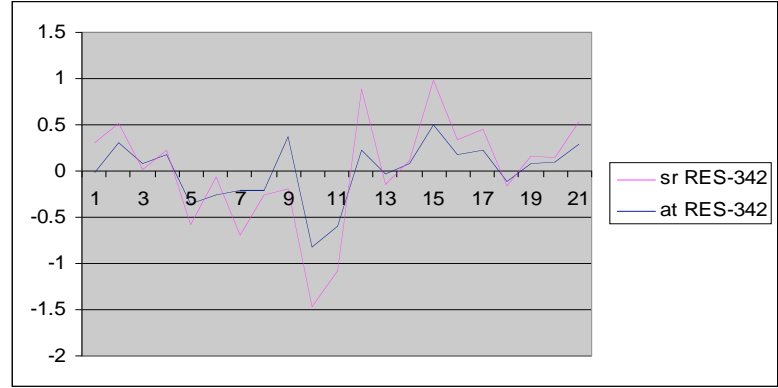
Wood and Furniture



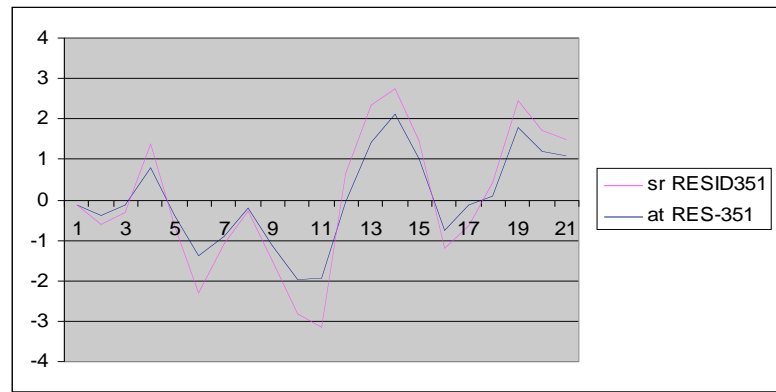
Paper and Paper Products



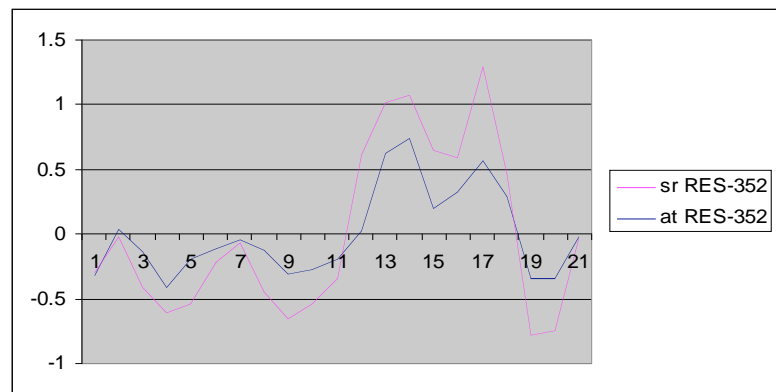
Printing and Publishing



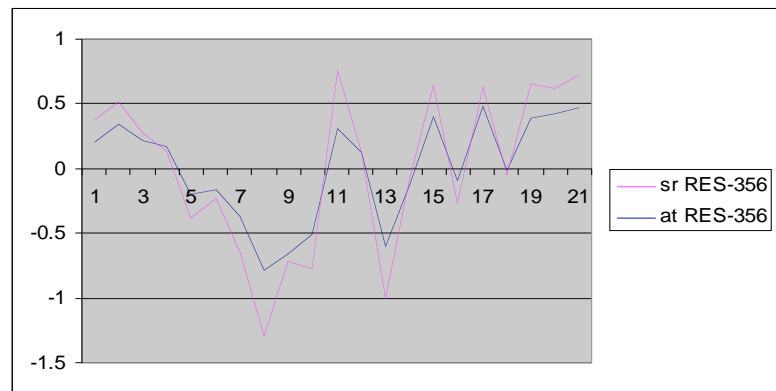
Industrial Chemicals including pharmaceutical



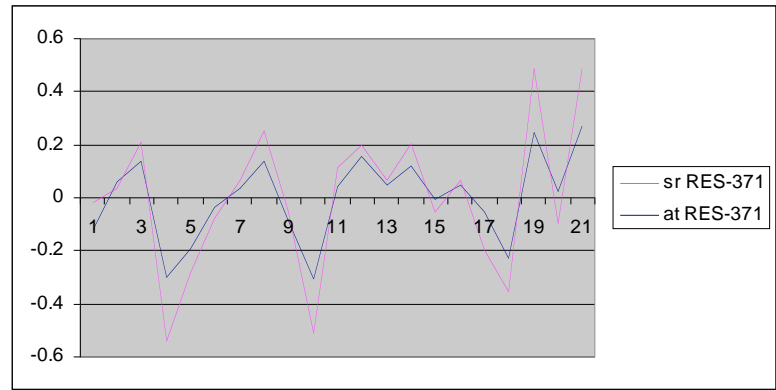
Industrial chemicals



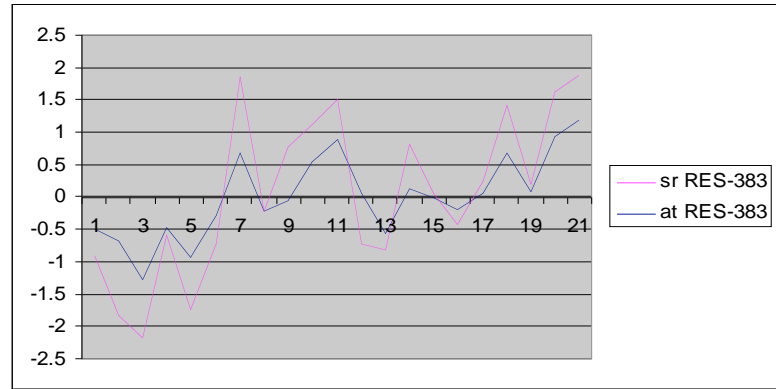
Plastic Products



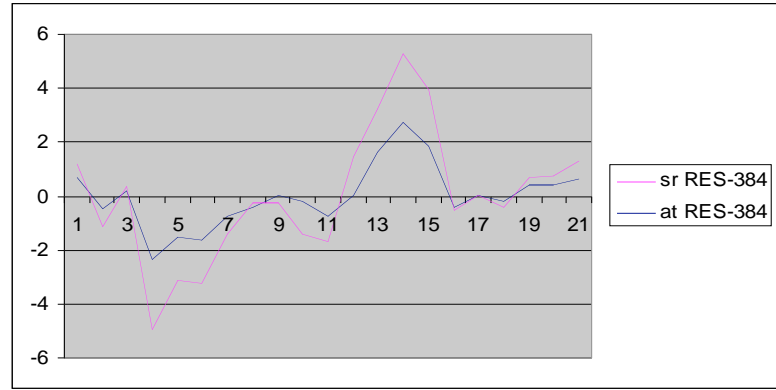
Basic Metal and Fabricated metal



Electrical Machinery



Transport Equipment



Annex II

Correlation Analysis (1980-2002)

AT denotes technical efficiency, SR: Solow Residual, CONVA, concentration Index,
EXP: exports, IMPO Import penetration.

ISIC : 311 Food Industries
Correlations

		AT	SR	CONVA	EXP	IMPO
AT	Pearson Correlation	1	.815(*)	.594	.916(**)	.767(*)
	Sig. (2-tailed)	.	.026	.121	.001	.026
	N	8	7	8	8	8
SR	Pearson Correlation	.815(*)	1	.712	.638	.497
	Sig. (2-tailed)	.026	.	.073	.123	.257
	N	7	7	7	7	7
CONVA	Pearson Correlation	.594	.712	1	.494	.246
	Sig. (2-tailed)	.121	.073	.	.213	.556
	N	8	7	8	8	8
EXP	Pearson Correlation	.916(**)	.638	.494	1	.716(*)
	Sig. (2-tailed)	.001	.123	.213	.	.046
	N	8	7	8	8	8
IMPO	Pearson Correlation	.767(*)	.497	.246	.716(*)	1
	Sig. (2-tailed)	.026	.257	.556	.046	.
	N	8	7	8	8	8

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Correlations

			AT	SR	CONVA	EXP	IMPO
Spearman's rho	AT	Correlation Coefficient	1.000	.714	.548	.905(**)	.833(*)
		Sig. (2-tailed)	.	.071	.160	.002	.010
		N	8	7	8	8	8
	SR	Correlation Coefficient	.714	1.000	.571	.536	.250
		Sig. (2-tailed)	.071	.	.180	.215	.589
		N	7	7	7	7	7
	CONVA	Correlation Coefficient	.548	.571	1.000	.619	.357
		Sig. (2-tailed)	.160	.180	.	.102	.385
		N	8	7	8	8	8
	EXP	Correlation Coefficient	.905(**)	.536	.619	1.000	.881(**)
		Sig. (2-tailed)	.002	.215	.102	.	.004
		N	8	7	8	8	8
	IMPO	Correlation Coefficient	.833(*)	.250	.357	.881(**)	1.000
		Sig. (2-tailed)	.010	.589	.385	.004	.
		N	8	7	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

ISIC 313 Beverage
Correlations

		AT	SR	EXP	IMPO	CONVA
AT	Pearson	1	-.172	-.399	.681	-.453
	Correlation					
	Sig. (2-tailed)	.	.684	.327	.063	.260
	N	8	8	8	8	8
SR	Pearson	-.172	1	.406	.291	-.311
	Correlation					
	Sig. (2-tailed)	.684	.	.318	.484	.454
	N	8	8	8	8	8
EXP	Pearson	-.399	.406	1	-.513	-.460
	Correlation					
	Sig. (2-tailed)	.327	.318	.	.193	.252
	N	8	8	8	8	8
IMPO	Pearson	.681	.291	-.513	1	-.188
	Correlation					
	Sig. (2-tailed)	.063	.484	.193	.	.655
	N	8	8	8	8	8
CONVA	Pearson	-.453	-.311	-.460	-.188	1
	Correlation					
	Sig. (2-tailed)	.260	.454	.252	.655	.
	N	8	8	8	8	8

Correlations

			AT	SR	EXP	IMPO	CONVA
Spearman's rho	AT	Correlation	1.000	.333	-.429	.619	-.619
		Coefficient					
		Sig. (2-tailed)	.	.420	.289	.102	.102
		N	8	8	8	8	8
	SR	Correlation	.333	1.000	.119	.476	-.667
		Coefficient					
		Sig. (2-tailed)	.420	.	.779	.233	.071
		N	8	8	8	8	8
	EXP	Correlation	-.429	.119	1.000	-.405	-.190
		Coefficient					
		Sig. (2-tailed)	.289	.779	.	.320	.651
		N	8	8	8	8	8
	IMPO	Correlation	.619	.476	-.405	1.000	-.524
		Coefficient					
		Sig. (2-tailed)	.102	.233	.320	.	.183
		N	8	8	8	8	8
	CONVA	Correlation	-.619	-.667	-.190	-.524	1.000
		Coefficient					
		Sig. (2-tailed)	.102	.071	.651	.183	.
		N	8	8	8	8	8

ISIC: 321 Textile
Correlations

		AT	SR	EXP	IMPO	CONVA
AT	Pearson Correlation	1	.946(**)	.049	-.712(*)	-.752(*)
	Sig. (2-tailed)	.	.000	.909	.048	.031
	N	8	8	8	8	8
SR	Pearson Correlation	.946(**)	1	-.042	-.694	-.717(*)
	Sig. (2-tailed)	.000	.	.921	.056	.045
	N	8	8	8	8	8
EXP	Pearson Correlation	.049	-.042	1	-.075	-.617
	Sig. (2-tailed)	.909	.921	.	.860	.103
	N	8	8	8	8	8
IMPO	Pearson Correlation	-.712(*)	-.694	-.075	1	.606
	Sig. (2-tailed)	.048	.056	.860	.	.112
	N	8	8	8	8	8
CONVA	Pearson Correlation	-.752(*)	-.717(*)	-.617	.606	1
	Sig. (2-tailed)	.031	.045	.103	.112	.
	N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Correlations

			AT	SR	EXP	IMPO	CONVA
Spearman's rho	AT	Correlation Coefficient	1.000	.881(**)	.000	-.810(*)	-.690
		Sig. (2-tailed)	.	.004	1.000	.015	.058
		N	8	8	8	8	8
	SR	Correlation Coefficient	.881(**)	1.000	.071	-.667	-.667
		Sig. (2-tailed)	.004	.	.867	.071	.071
		N	8	8	8	8	8
	EXP	Correlation Coefficient	.000	.071	1.000	.238	-.595
		Sig. (2-tailed)	1.000	.867	.	.570	.120
		N	8	8	8	8	8
	IMPO	Correlation Coefficient	-.810(*)	-.667	.238	1.000	.476
		Sig. (2-tailed)	.015	.071	.570	.	.233
		N	8	8	8	8	8
	CONVA	Correlation Coefficient	-.690	-.667	-.595	.476	1.000
		Sig. (2-tailed)	.058	.071	.120	.233	.
		N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

ISIC 322 Wearing Apparel
Correlations

		AT	SR	EXP	IMPO	CONVA
AT	Pearson	1	.493	-.850(**)	.383	-.754(*)
	Correlation					
	Sig. (2-tailed)	.	.215	.008	.349	.031
	N	8	8	8	8	8
SR	Pearson	.493	1	-.046	-.513	-.121
	Correlation					
	Sig. (2-tailed)	.215	.	.914	.193	.775
	N	8	8	8	8	8
EXP	Pearson	-.850(**)	-.046	1	-.706	.794(*)
	Correlation					
	Sig. (2-tailed)	.008	.914	.	.050	.019
	N	8	8	8	8	8
IMPO	Pearson	.383	-.513	-.706	1	-.353
	Correlation					
	Sig. (2-tailed)	.349	.193	.050	.	.392
	N	8	8	8	8	8
CONVA	Pearson	-.754(*)	-.121	.794(*)	-.353	1
	Correlation					
	Sig. (2-tailed)	.031	.775	.019	.392	.
	N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Correlations

			AT	SR	EXP	IMPO	CONVA
Spearman's rho	AT	Correlation	1.000	.381	-.833(*)	-.190	-.810(*)
		Coefficient					
		Sig. (2-tailed)	.	.352	.010	.651	.015
		N	8	8	8	8	8
	SR	Correlation	.381	1.000	-.405	-.929(**)	-.095
		Coefficient					
		Sig. (2-tailed)	.352	.	.320	.001	.823
		N	8	8	8	8	8
	EXP	Correlation	-.833(*)	-.405	1.000	.310	.548
		Coefficient					
		Sig. (2-tailed)	.010	.320	.	.456	.160
		N	8	8	8	8	8
	IMP O	Correlation	-.190	-.929(**)	.310	1.000	-.095
		Coefficient					
		Sig. (2-tailed)	.651	.001	.456	.	.823
		N	8	8	8	8	8
	CON VA	Correlation	-.810(*)	-.095	.548	-.095	1.000
		Coefficient					
		Sig. (2-tailed)	.015	.823	.160	.823	.
		N	8	8	8	8	8

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

ISIC 331 Wood and Furniture
Correlations

		AT	SR	EXP	IMPO	CONVA
AT	Pearson	1	.872(**)	-.782(*)	-.569	-.412
	Correlation					
	Sig. (2-tailed)	.	.005	.022	.141	.310
	N	8	8	8	8	8
SR	Pearson	.872(**)	1	-.768(*)	-.484	-.342
	Correlation					
	Sig. (2-tailed)	.005	.	.026	.224	.407
	N	8	8	8	8	8
EXP	Pearson	-.782(*)	-.768(*)	1	.811(*)	.663
	Correlation					
	Sig. (2-tailed)	.022	.026	.	.015	.073
	N	8	8	8	8	8
IMPO	Pearson	-.569	-.484	.811(*)	1	.517
	Correlation					
	Sig. (2-tailed)	.141	.224	.015	.	.190
	N	8	8	8	8	8
CONVA	Pearson	-.412	-.342	.663	.517	1
	Correlation					
	Sig. (2-tailed)	.310	.407	.073	.190	.
	N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Correlations

			AT	SR	EXP	IMPO	CONVA
Spearman's rho	AT	Correlation	1.000	.857(**)	-.738(*)	-.500	.000
		Coefficient					
		Sig. (2-tailed)	.	.007	.037	.207	1.000
		N	8	8	8	8	8
	SR	Correlation	.857(**)	1.000	-.714(*)	-.119	.048
		Coefficient					
		Sig. (2-tailed)	.007	.	.047	.779	.911
		N	8	8	8	8	8
	EXP	Correlation	-.738(*)	-.714(*)	1.000	.548	.571
		Coefficient					
		Sig. (2-tailed)	.037	.047	.	.160	.139
		N	8	8	8	8	8
	IMP O	Correlation	-.500	-.119	.548	1.000	.405
		Coefficient					
		Sig. (2-tailed)	.207	.779	.160	.	.320
		N	8	8	8	8	8
	CON VA	Correlation	.000	.048	.571	.405	1.000
		Coefficient					
		Sig. (2-tailed)	1.000	.911	.139	.320	.
		N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

ISIC 341 Paper and Paper Products

		Correlations				
		AT	SR	EXP	IMPO	CONVA
AT	Pearson	1	.943(**)	-.025	.071	-.082
	Correlation					
	Sig. (2-tailed)	.	.000	.953	.868	.846
	N	8	8	8	8	8
SR	Pearson	.943(**)	1	-.191	-.112	-.091
	Correlation					
	Sig. (2-tailed)	.000	.	.650	.792	.830
	N	8	8	8	8	8
EXP	Pearson	-.025	-.191	1	.769(*)	-.371
	Correlation					
	Sig. (2-tailed)	.953	.650	.	.026	.366
	N	8	8	8	8	8
IMPO	Pearson	.071	-.112	.769(*)	1	.214
	Correlation					
	Sig. (2-tailed)	.868	.792	.026	.	.611
	N	8	8	8	8	8
CONVA	Pearson	-.082	-.091	-.371	.214	1
	Correlation					
	Sig. (2-tailed)	.846	.830	.366	.611	.
	N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

			Correlations				
			AT	SR	EXP	IMPO	CONVA
Spearman's rho	AT	Correlation	1.000	.976(**)	.095	.167	-.333
		Coefficient					
		Sig. (2-tailed)	.	.000	.823	.693	.420
		N	8	8	8	8	8
	SR	Correlation	.976(**)	1.000	-.048	.048	-.214
		Coefficient					
		Sig. (2-tailed)	.000	.	.911	.911	.610
		N	8	8	8	8	8
	EXP	Correlation	.095	-.048	1.000	.738(*)	-.571
		Coefficient					
		Sig. (2-tailed)	.823	.911	.	.037	.139
		N	8	8	8	8	8
	IMPO	Correlation	.167	.048	.738(*)	1.000	-.071
		Coefficient					
		Sig. (2-tailed)	.693	.911	.037	.	.867
		N	8	8	8	8	8
	CONVA	Correlation	-.333	-.214	-.571	-.071	1.000
		Coefficient					
		Sig. (2-tailed)	.420	.610	.139	.867	.
		N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Correlations

		AT	SR	EXP	IMPO	CONVA
AT	Pearson	1	.987(**)	.288	.157	.179
	Correlation					
	Sig. (2-tailed)	.	.000	.490	.711	.672
	N	8	8	8	8	8
SR	Pearson	.987(**)	1	.343	.037	.201
	Correlation					
	Sig. (2-tailed)	.000	.	.406	.931	.633
	N	8	8	8	8	8
EXP	Pearson	.288	.343	1	.186	.870(**)
	Correlation					
	Sig. (2-tailed)	.490	.406	.	.660	.005
	N	8	8	8	8	8
IMPO	Pearson	.157	.037	.186	1	.429
	Correlation					
	Sig. (2-tailed)	.711	.931	.660	.	.289
	N	8	8	8	8	8
CONVA	Pearson	.179	.201	.870(**)	.429	1
	Correlation					
	Sig. (2-tailed)	.672	.633	.005	.289	.
	N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

Correlations

			AT	SR	EXP	IMPO	CONVA
Spearman's rho	AT	Correlation	1.000	.976(**)	.071	.214	.143
		Coefficient					
		Sig. (2-tailed)	.	.000	.867	.610	.736
		N	8	8	8	8	8
	SR	Correlation	.976(**)	1.000	.024	.048	.071
		Coefficient					
		Sig. (2-tailed)	.000	.	.955	.911	.867
		N	8	8	8	8	8
	EXP	Correlation	.071	.024	1.000	.286	.976(**)
		Coefficient					
		Sig. (2-tailed)	.867	.955	.	.493	.000
		N	8	8	8	8	8
	IMP O	Correlation	.214	.048	.286	1.000	.405
		Coefficient					
		Sig. (2-tailed)	.610	.911	.493	.	.320
		N	8	8	8	8	8
	CON VA	Correlation	.143	.071	.976(**)	.405	1.000
		Coefficient					
		Sig. (2-tailed)	.736	.867	.000	.320	.
		N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

ISIC 351 Industrial Chemicals including pharmaceutical
Correlations

		AT	SR	EXP	IMPO	CONVA
AT	Pearson	1	.879(**)	-.202	.027	-.489
	Correlation					
	Sig. (2-tailed)	.	.004	.632	.950	.219
	N	8	8	8	8	8
SR	Pearson	.879(**)	1	-.154	-.107	-.177
	Correlation					
	Sig. (2-tailed)	.004	.	.715	.801	.675
	N	8	8	8	8	8
EXP	Pearson	-.202	-.154	1	.620	.168
	Correlation					
	Sig. (2-tailed)	.632	.715	.	.101	.691
	N	8	8	8	8	8
IMPO	Pearson	.027	-.107	.620	1	-.054
	Correlation					
	Sig. (2-tailed)	.950	.801	.101	.	.899
	N	8	8	8	8	8
CONVA	Pearson	-.489	-.177	.168	-.054	1
	Correlation					
	Sig. (2-tailed)	.219	.675	.691	.899	.
	N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

Correlations

			AT	SR	EXP	IMPO	CONVA
Spearman's rho	AT	Correlation	1.000	.929(**)	-.095	.071	-.381
		Coefficient					
		Sig. (2-tailed)	.	.001	.823	.867	.352
		N	8	8	8	8	8
	SR	Correlation	.929(**)	1.000	.024	.000	-.333
		Coefficient					
		Sig. (2-tailed)	.001	.	.955	1.000	.420
		N	8	8	8	8	8
	EXP	Correlation	-.095	.024	1.000	.714(*)	.024
		Coefficient					
		Sig. (2-tailed)	.823	.955	.	.047	.955
		N	8	8	8	8	8
	IMPO	Correlation	.071	.000	.714(*)	1.000	-.143
		Coefficient					
		Sig. (2-tailed)	.867	1.000	.047	.	.736
		N	8	8	8	8	8
	CONVA	Correlation	-.381	-.333	.024	-.143	1.000
		Coefficient					
		Sig. (2-tailed)	.352	.420	.955	.736	.
		N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

ISIC 352 Industrial chemicals
Correlations

		AT	SR	EXP	IMPO	CONVA
AT	Pearson Correlation	1	.881(**)	.589	.532	.386
	Sig. (2-tailed)	.	.004	.125	.175	.345
	N	8	8	8	8	8
SR	Pearson Correlation	.881(**)	1	.736(*)	.677	.647
	Sig. (2-tailed)	.004	.	.038	.065	.083
	N	8	8	8	8	8
EXP	Pearson Correlation	.589	.736(*)	1	.989(**)	.339
	Sig. (2-tailed)	.125	.038	.	.000	.412
	N	8	8	8	8	8
IMPO	Pearson Correlation	.532	.677	.989(**)	1	.322
	Sig. (2-tailed)	.175	.065	.000	.	.436
	N	8	8	8	8	8
CONVA	Pearson Correlation	.386	.647	.339	.322	1
	Sig. (2-tailed)	.345	.083	.412	.436	.
	N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Correlations

			AT	SR	EXP	IMPO	CONVA
Spearman's rho	AT	Correlation	1.000	.786(*)	.571	.571	.405
		Coefficient					
		Sig. (2-tailed)	.	.021	.139	.139	.320
	SR	N	8	8	8	8	8
		Correlation	.786(*)	1.000	.690	.690	.619
		Coefficient					
		Sig. (2-tailed)	.021	.	.058	.058	.102
	EXP	N	8	8	8	8	8
		Correlation	.571	.690	1.000	1.000(**)	.333
		Coefficient					
		Sig. (2-tailed)	.139	.058	.	.	.420
	IMPO	N	8	8	8	8	8
		Correlation	.571	.690	1.000(**)	1.000	.333
		Coefficient					
		Sig. (2-tailed)	.139	.058	.	.	.420
	CONVA	N	8	8	8	8	8
		Correlation	.405	.619	.333	.333	1.000
		Coefficient					
		Sig. (2-tailed)	.320	.102	.420	.420	.
		N	8	8	8	8	8

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

ISIC 356 Plastic Products
Correlations

		AT	SR	EXP	IMPO	CONVA
AT	Pearson Correlation	1	.854(**)	-.101	-.725(*)	-.760(*)
	Sig. (2-tailed)	.	.007	.812	.042	.028
	N	8	8	8	8	8
SR	Pearson Correlation	.854(**)	1	-.243	-.765(*)	-.598
	Sig. (2-tailed)	.007	.	.562	.027	.117
	N	8	8	8	8	8
EXP	Pearson Correlation	-.101	-.243	1	.710(*)	.278
	Sig. (2-tailed)	.812	.562	.	.048	.504
	N	8	8	8	8	8
IMPO	Pearson Correlation	-.725(*)	-.765(*)	.710(*)	1	.625
	Sig. (2-tailed)	.042	.027	.048	.	.098
	N	8	8	8	8	8
CONVA	Pearson Correlation	-.760(*)	-.598	.278	.625	1
	Sig. (2-tailed)	.028	.117	.504	.098	.
	N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Correlations

			AT	SR	EXP	IMPO	CONVA
Spearman's rho	AT	Correlation Coefficient	1.000	.524	-.048	-.571	-.905(**)
		Sig. (2-tailed)	.	.183	.911	.139	.002
		N	8	8	8	8	8
	SR	Correlation Coefficient	.524	1.000	-.167	-.548	-.595
		Sig. (2-tailed)	.183	.	.693	.160	.120
		N	8	8	8	8	8
	EXP	Correlation Coefficient	-.048	-.167	1.000	.714(*)	.143
		Sig. (2-tailed)	.911	.693	.	.047	.736
		N	8	8	8	8	8
	IMPO	Correlation Coefficient	-.571	-.548	.714(*)	1.000	.476
		Sig. (2-tailed)	.139	.160	.047	.	.233
		N	8	8	8	8	8
	CONVA	Correlation Coefficient	-.905(**)	-.595	.143	.476	1.000
		Sig. (2-tailed)	.002	.120	.736	.233	.
		N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

ISIC 371 Basic Metal and Fabricated metal

Correlations

		AT	SR	EXP	IMPO	CONVA
AT	Pearson Correlation	1	.902(**)	.496	.099	.201
	Sig. (2-tailed)	.	.002	.211	.816	.632
	N	8	8	8	8	8
SR	Pearson Correlation	.902(**)	1	.437	.142	.324
	Sig. (2-tailed)	.002	.	.279	.737	.433
	N	8	8	8	8	8
EXP	Pearson Correlation	.496	.437	1	.363	-.271
	Sig. (2-tailed)	.211	.279	.	.377	.516
	N	8	8	8	8	8
IMPO	Pearson Correlation	.099	.142	.363	1	.534
	Sig. (2-tailed)	.816	.737	.377	.	.173
	N	8	8	8	8	8
CONVA	Pearson Correlation	.201	.324	-.271	.534	1
	Sig. (2-tailed)	.632	.433	.516	.173	.
	N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

Correlations

			AT	SR	EXP	IMPO	CONVA
Spearman's rho	AT	Correlation Coefficient	1.000	.929(**)	.286	.095	.214
		Sig. (2-tailed)	.	.001	.493	.823	.610
		N	8	8	8	8	8
	SR	Correlation Coefficient	.929(**)	1.000	.214	.119	.429
		Sig. (2-tailed)	.001	.	.610	.779	.289
		N	8	8	8	8	8
	EXP	Correlation Coefficient	.286	.214	1.000	.357	-.190
		Sig. (2-tailed)	.493	.610	.	.385	.651
		N	8	8	8	8	8
	IMPO	Correlation Coefficient	.095	.119	.357	1.000	.429
		Sig. (2-tailed)	.823	.779	.385	.	.289
		N	8	8	8	8	8
	CONVA	Correlation Coefficient	.214	.429	-.190	.429	1.000
		Sig. (2-tailed)	.610	.289	.651	.289	.
		N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

Correlations

		AT	SR	EXP	IMPO	CONVA
AT	Pearson Correlation	1	.796(*)	.472	.597	-.079
	Sig. (2-tailed)	.	.018	.237	.118	.852
	N	8	8	8	8	8
SR	Pearson Correlation	.796(*)	1	.272	.234	-.097
	Sig. (2-tailed)	.018	.	.514	.578	.819
	N	8	8	8	8	8
EXP	Pearson Correlation	.472	.272	1	.687	.036
	Sig. (2-tailed)	.237	.514	.	.060	.932
	N	8	8	8	8	8
IMPO	Pearson Correlation	.597	.234	.687	1	.048
	Sig. (2-tailed)	.118	.578	.060	.	.910
	N	8	8	8	8	8
CONVA	Pearson Correlation	-.079	-.097	.036	.048	1
	Sig. (2-tailed)	.852	.819	.932	.910	.
	N	8	8	8	8	8

* Correlation is significant at the 0.05 level (2-tailed).

Correlations

			AT	SR	EXP	IMPO	CONVA
Spearman's rho	AT	Correlation Coefficient	1.000	.786(*)	.738(*)	.476	-.048
		Sig. (2-tailed)	.	.021	.037	.233	.911
		N	8	8	8	8	8
	SR	Correlation Coefficient	.786(*)	1.000	.405	.000	-.238
		Sig. (2-tailed)	.021	.	.320	1.000	.570
		N	8	8	8	8	8
	EXP	Correlation Coefficient	.738(*)	.405	1.000	.619	-.024
		Sig. (2-tailed)	.037	.320	.	.102	.955
		N	8	8	8	8	8
	IMPO	Correlation Coefficient	.476	.000	.619	1.000	.119
		Sig. (2-tailed)	.233	1.000	.102	.	.779
		N	8	8	8	8	8
	CONVA	Correlation Coefficient	-.048	-.238	-.024	.119	1.000
		Sig. (2-tailed)	.911	.570	.955	.779	.
		N	8	8	8	8	8

* Correlation is significant at the 0.05 level (2-tailed).

		Correlations				
		AT	SR	EXP	IMPO	CONVA
AT	Pearson Correlation	1	.980(**)	-.006	-.597	.321
	Sig. (2-tailed)	.	.000	.988	.118	.438
	N	8	8	8	8	8
SR	Pearson Correlation	.980(**)	1	-.034	-.567	.280
	Sig. (2-tailed)	.000	.	.936	.143	.502
	N	8	8	8	8	8
EXP	Pearson Correlation	-.006	-.034	1	.484	.194
	Sig. (2-tailed)	.988	.936	.	.224	.645
	N	8	8	8	8	8
IMPO	Pearson Correlation	-.597	-.567	.484	1	-.515
	Sig. (2-tailed)	.118	.143	.224	.	.191
	N	8	8	8	8	8
CONVA	Pearson Correlation	.321	.280	.194	-.515	1
	Sig. (2-tailed)	.438	.502	.645	.191	.
	N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).

		Correlations					
			AT	SR	EXP	IMPO	CONVA
Spearman's rho	AT	Correlation Coefficient	1.000	.952(**)	.119	-.190	.143
		Sig. (2-tailed)	.	.000	.779	.651	.736
		N	8	8	8	8	8
	SR	Correlation Coefficient	.952(**)	1.000	.143	-.214	-.024
		Sig. (2-tailed)	.000	.	.736	.610	.955
		N	8	8	8	8	8
	EXP	Correlation Coefficient	.119	.143	1.000	.690	.000
		Sig. (2-tailed)	.779	.736	.	.058	1.000
		N	8	8	8	8	8
	IMPO	Correlation Coefficient	-.190	-.214	.690	1.000	-.333
		Sig. (2-tailed)	.651	.610	.058	.	.420
		N	8	8	8	8	8
	CONVA	Correlation Coefficient	.143	-.024	.000	-.333	1.000
		Sig. (2-tailed)	.736	.955	1.000	.420	.
		N	8	8	8	8	8

** Correlation is significant at the 0.01 level (2-tailed).