

*Final Report*

**EFFECTIVE RATES OF PROTECTION IN EGYPT**

**Prepared for  
The Government of Egypt**

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## PREFACE

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This report is a description of a study of the effective rates of protection in Egypt. Its substance is a combination of theoretical arguments and discussions of matters for practical policy. The principal focus is on policy in the main sections of the report, including discussions of institutional needs and data problems, while the more technical aspects are placed in annexes to the report.

Many, perhaps most, readers will view it as being an unusual report, and difficult to read. It is unlike other reports on policy studies because considerable attention is committed to theoretical concepts and their particular significance for trade policies. Unfortunately most of the theory must be discussed at the beginning.

The text contains very little of the easy-to-read descriptions of such matters as the main features of Egypt's economy or a chronology of recent policy reforms, and only a small amount of empirical information. Moreover, for a great many readers, the concepts and how they are applied will seem to be clear at one point, but will become cloudy moments later when the discussion turns to the implications for policy. Or, the essential idea of a concept may be lost while focusing on the statistical data and adjustments to the data, which are frequently required for deriving important statistics that are both comparable and consistent.

Despite the heavy demands for mental concentration on certain aspects of the subject, the effort of acquiring a full understanding of the measures of the effective rates of protection (ERPs) is beneficial for policy formulation, including setting tariff rates and exceptions for certain investors or consumers. Knowing the relative values of ERPs for a large number of product sectors, and the possible implications for economic impacts, provides a crucial advantage in making policies for trade and investment, and in managing the economy's development.

One final point should be emphasized within this preface. That is, the reader should keep in mind that the conceptual and theoretical aspects, as well as empirical evidence, discussed or mentioned in this report are mostly in the field of microeconomics — ERP analysis properly falls outside macroeconomic comparisons or analysis. Consequently, the discussions are mostly in terms of particular tariffs, prices, specific product industries, markets, and investment in specific sectors of industry. The discussion almost exclusively concerns sectoral economic policies, and has very little bearing on macroeconomic policies and management. Therefore, there is virtually no mention of economy-wide levels of tariffs, prices, employment, investment, savings, foreign exchange rates, foreign exchange reserves, or average rates of investment, savings, rates of economic growth, or other single dimensional indicators.

The study was carried out by Maurice Thorne, Chemonics International Inc, Economist and Deregulation Advisor on the Development Economic Policy Reform Analysis (DEPRA) Project, with assistance from Dr. Mahmoud M Abd-El-Hai Salah, Professor of Economics with The Institute of National Planning of the A.R.E., Cairo. Mr. Haggag

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The author is responsible for the statements and implicit viewpoints of the arguments, as well as the format of the data presented in this report, and they should not be attributed in any manner to the Ministry of Economy, the Government of the Arab Republic of Egypt, the United States Agency for International Development, or their representatives.

Maurice Thorne  
Cairo, August 1998

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## EXECUTIVE SUMMARY

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### Introduction

This report is a presentation of a study of the effective rates of protection (ERP) in Egypt, including the method and results, along with the pertinent data analysis. It is "difficult" reading — as the reader is told in the "Preface" — because the study is built upon a foundation of a few theoretical concepts. The main theme is the application of ERP analysis in setting relevant policies for trade and investment. Emphasis is also put on the institutional needs and problems of collecting and analyzing necessary data.

The study was designed for a cooperative effort by the Ministries of Economy (Policy Research and Information Sector), Finance (Customs Authority), and Trade and Supply (Foreign Trade Sector). It was intended to be a pilot study (1) to determine whether sufficient data are available for computing the ERPs of Egypt's manufacturing industries, product-by-product and, if so, (2) to develop an institutional capacity for ERP analysis. The proposed institutional capacity would be a unit of data specialists and economists who would regularly compute ERPs for an increasing number of product sectors, upgrade their data base, and periodically report on the significance and implications of their analysis for trade and investment policies and administration, especially for tariff rate changes.

The ERP study is covered in five parts of this report: (1) an introduction to the study, (2) tariffs and the notion of protection, (3) a comprehensive view of ERP analysis and computation, (4) an application of the procedure to data on the shoe industry in Egypt, and (5) various pivotal factors for ERP analysis in Egypt. Technical information and other details are placed in annexes.

### Tariffs and Protection

Tariffs and other barriers are imposed on commodity imports for several purposes. The most traditional purpose for a tariff is the creation of a revenue flow to the government, and it is still the standard objective in countries where customs duty is a large source of government revenue and the alternative tax bases are small or taxpayers' obligations are costly to enforce. Tariffs and non-tariff barriers (NTBs) are also imposed purposely to restrict imports. The commonly suggested functions of trade restriction include the protection of the local market for local producers, a restraint on expenditures on imports and thus preservation of the economy's monetary reserves of foreign exchange, or the prevention of the importation of commodities that might threaten the moral standards or health of the citizens. The dominant reason for tariffs in most economies today seems to be the protection of the local market for particular domestic industries. The standard argument is that a local industry and its workers need protection against competition.

Whatever might be the ultimate purpose, tariffs and NTBs constrain the price, quantity, or quality of imported commodities. As a consequence, the degree of market competition among suppliers is reduced, favoring the nation's producers at the expense of its consumers. The impacts of trade barriers on the allocation of resources and market prices reduce the efficiency in overall national production and lower the standard of living.

Tariffs are often said to be needed for improving the trade balance or for increasing employment. Both arguments appear sensible, considering that a tariff on a commodity raises its market price, thereby normally causing buyers to purchase fewer imports of that

kind and expanding the market for local producers in the sector. These arguments are fallacious, however, because they are made from a narrow point of view. If the demand for an importable commodity is price-elastic, a tariff would tend to induce consumers to reduce their expenditures on that particular import, but they then buy other imports or buy domestic products, thereby diverting resources away from exportables or other import-competing commodities, and consequently offsetting the initial change in the trade balance. On the other hand, the reduction in imports induce the foreign producers to shift their resources to other exports or to import-competing products. In the end, the trade balance tends to fall back to its previous level because the reduction of imports in one sector tend to be offset by an increase of imports in other sectors or a reduction of exports.

Aggregate employment, which is determined by the conditions that set wages in the labor market and the level of aggregate demand, is similarly affected and offset. The level of employment might well rise in those sectors where demand for domestic output rises, but falls in the sectors from which resources are diverted. Tariffs and NTBs are poor instruments for correcting the trade balance and the levels of production and employment.

### **Effective Rate of Protection (ERP)**

A widely advocated reason for imposing a tariff, or its expected effect, is to erect a wall of "protection" around the national market against competition from merchants of foreign-made goods. The rate of protection is the increase in the price of an imported commodity and the import-substitute (an equivalent product made by a local manufacturer) in proportion to its border price. The price increase is the amount of market "protection" provided to domestic producers. It equals the tariff rate, if there is no other trade barrier. The "effective" rate of protection (ERP) is the proportional increase in the domestic "value-added", which is the portion of the price that is attributed to the domestic producer. It is the share that is paid to the manufacturer and his employees. Specifically, ERP is the relative increase in value-added in a tariff-protected economy over its magnitude under free trade, or in terms of border prices.

This definition, or concept, is shown by example in Part III, in preparation for (1) the applied calculations on Egyptian production data in Part IV, and (2) a comprehensive discussion of the impacts of tariffs on market prices and the magnitude of value-added. High ERPs created by escalating tariffs not only reinforce policies of import-substitution, but also favor the least beneficial kinds of production. The larger the proportion of low-tariff imports used in production the higher the ERP, and therefore the more attractive the sub-sector is for investment. Likewise, the magnitude of ERP rises steeply as the amount of value-added components becomes smaller relative to inputs. Production by simple procedures of formulation by mixing imported materials, packaging, or assembly of "knock-down kits" — especially manufacturing by only "screw-driver" operations — are the typical low value-added and high ERP industries.

### **Method of Measurement of ERP**

In order to have a sufficient basis for critical discussions of the impacts of protection and the benchmarks for policy decisions, analytical methods and tools are required for measuring the effects of tariffs, NTBs, or the exchange rate on industry sub-sectors, broad economic sectors, or aggregate demand. ERP analysis is an appropriate tool, although not without limitations. If ERPs were calculated for all product sectors, they would provide a vital map of how the present tariff structure influences production and the distribution of benefits and costs among the owners and workers in Egypt's industries and the consumers.

The shoe industry was selected for the subject in an application of the tool on Egyptian empirical data in Part IV. It is a practical example of the accepted approach to computing an ERP coefficient and interpreting the results. The demonstration shows data management and calculation procedures, and how the procedure is a potentially useful tool for setting tariff rates and making consistent trade and investment policy.

It is difficult, however, to interpret an ERP of one product sector alone. When many ERPs are calculated from the same data base, a comparison of the degree of protection becomes interesting and useful. The usefulness increases when changes in the relative sizes of ERP due to changes in various tariff rates are considered in the analysis. Despite the constraint of having only one ERP, a few salient points can be mentioned.

The ERP of the shoe industry is either highly negative or positive and very much higher than the tariff rate, depending upon which part of the shoe sector, or year, is being considered. The published statistics reveal that the public sector producers paradoxically contribute a negative value-added, in both domestic and world prices. The publication also shows a negative value-added, meaning that even in domestic prices the factors of production, themselves, appear to be subsidizing the buyers of shoes by selling below the cost of materials. Possibly the owners, managers, and workers can do this because they are supported from transfers of funds that are not reported with the production statistics, but this is inexplicable. Moreover, the coefficient of ERP unexpectedly swings between highly negative and positive from year-to-year as determined by the data, and various significant proportions also change noticeably.

These peculiar fluctuations raise questions about the performance quality of data collection and processing procedures by the country's official source of national data. Possibly, the results are not true, and that data errors lead to false values, or that a problem is created because the data were not collected and reported with a view toward using them in ERP calculations. Too little is known about the data. The prominent obstruction to ERP analysis, however, is a lack of data — a problem that is discussed in the final part (Part V) of the report. At present, it is impossible to obtain a data base that would be adequate for calculating ERPs for other product sectors, comparing them, or analyzing the sensitivity of ERPs to changes in various tariff rates.

### **Practical Value of ERP Measurement in Egypt**

The basic argument of this document is that ERP measurement is a highly useful tool for tariff policy, which itself has diverse and major impacts on the economy. Although ERP, alone, has no particular significance for government revenue, the relative size of each ERP has importance for estimating the impact of tariffs and other trade barriers on the structure

of the economy. The measures provide information which can be significant for assessing the potential effectiveness of policies formulated to influence, for example, the development of production, income distribution, efficiency of markets and the economy, and international trade relations.

The overall tariff regime continues to be the main tool to be used for liberalizing trade and conforming to international trade conventions, while average rates of tariff are the available indicators of trade liberalization. On the other hand, ERPs of sufficiently disaggregated product sectors reveal the economic implications of specific tariff rate changes on investment and production decisions. ERP methods of calculation provide useful tools for analyzing a potential pattern of the impacts of tariff reform on the domestic economy, and therefore they are practical for making decisions on the sequence and the magnitude of tariff changes. The use of ERP analysis built upon a good data base would provide the basis for determining the best way of shifting the tariff-induced bias away from import substitution to export expansion, and especially to investment in the production of non-tradables, which are usually the crucial elements upon which most production is based.

Good data are the crucial basis of useful ERP analysis. Moreover, the practical value of ERP analysis depends upon an institutional facility for (1) maintaining and managing a good data base, (2) analyzing the results of ERP computations and formulating useful statements of the conclusions and recommendations for policy, and (3) dialog with the policy makers who have the essential questions for analysis and who will use the results for national economic management.

The difficulties in conducting the study is suggestive of the limited prospects for an eventual undertaking of continuous assessment of the impacts of Egypt's instruments for trade restraint or facilitation. Future efforts in this area may also be hampered by lack of understanding and ability to put the results to good use. However, the efforts are more likely to be hampered by problems of data collection and management. There are many obstacles in the way, impeding the establishment of a practical force and procedure for systematic measurement and evaluation of the ERPs of all significant product sectors and using the analytical results in the formulation of tariff policy.

Market intervention by the government in investment and production decisions, by differential treatment of producers through tariffs and other trade policies, is economically inefficient. When government sets escalating tariffs by stages of production, the impact favors the production of final goods over intermediate goods, processed materials, and non-traded commodities. This is typical of the now-disfavored import-substitution policy, and it imposes a heavy cost on consumers and some producers for the limited benefit of others.

The ultimate trade and investment policy objective should be a market-balanced economy, that is, market determination of prices. Prices that are determined in the market place are efficient — they minimize costs of production and maximize economic welfare because they are set through the balance of decisions and final agreements reached by the buyers and sellers, with no intervention by government. The ultimate form of this would be a free-trade economy; the next best would be the adoption of a low uniform tariff.

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## I. INTRODUCTION

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The study of effective rates of protection (ERP) was designed for a cooperative effort by the Ministries of Economy (Policy Research and Information Sector), Finance (Customs Authority), and Trade and Supply (Foreign Trade Sector). It was a pilot study intended to determine whether sufficient data are available for computing the ERP of Egypt's manufacturing industries, product-by-product, and, if the data were available, to develop an institutional capacity for calculating ERPs and analyzing the results. The intended institutional capacity would be a unit of data specialists and economic analysts who would continuously do the following:

- augment their base of regularly computed ERPs for an increasing number of product sectors;
- expand and upgrade their data for more precision and for measuring changes in ERP over time as the tariff structure and other barriers to trade are revised, and
- periodically report on the significance and implications of their updated analysis for trade and investment policies and administration.

The aim of this report is to provide (1) a general explanation of the concept of ERP and its computation, including its data requirements, and its application in economic analysis for support of policy-making, and (2) an explanation of the methodology, results, conclusions, and recommendations of the study.

Following this introduction (Part I), the discussion in Part II concerns tariffs, in the context of trade and barriers to trade. The discussion sets the basis for the notion of protection — what it is and how its magnitude is measured. Part III moves the discussion from tariffs and protection to a broad picture of ERP analysis and computation, which is then explained in detail in Part IV where the ERP procedure is applied to empirical data on the shoe industry in Egypt. Part V completes the main body of the report with discussions of various factors in the practical value of ERP measurement in Egypt.

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## II. TARIFFS AND PROTECTION

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This Part is a brief discussion about tariffs and protection. It is a review and reminder of the fundamentals that underlie tariff policy and the analysis of the economic impacts of tariffs, and accordingly the basis for ERP analysis. All readers, and particularly those who have special interests and would appreciate an extensive explanation, are invited to refer to Annex B for a comprehensive review of the subject.

### 1. Tariffs

Tariffs and non-tariff barriers (NTBs) such as quotas, quality restrictions, and procedures are imposed on commodity imports for several purposes. Perhaps the most traditional reason for a tariff is the creation of a revenue flow to the government, but a tariff may serve other purposes, too. Tariffs and especially NTBs are commonly applied purposely to restrict imports in order to protect the local market for local producers, to restrain expenditures on imports and thus preserve the economy's monetary reserves of foreign exchange, or to restrict the importation of commodities that might threaten the moral standards or health of the citizens.

Whatever the ultimate purpose, tariffs and NTBs constrain to some degree the price, quantity, or quality of imported commodities. As a consequence, the degree of market competition among suppliers is reduced, favoring the nation's producers at the expense of the consumers. A tariff, like any other tax imposed upon a commodity, will raise the market price of that particular commodity and near substitutes. If a tariff rate is applied to imports, and if the domestic product is not equally taxed, the domestic producer can reap a windfall profit simply by raising the price of the domestic product, correspondingly. Although the overall effect of a tariff is usually a higher market price, and consequently a reduction in the quantity purchased, the domestic producer would still gain a higher profit per unit. Moreover, the producer would take some or most of the market from the importer, while expanding his own sales, by holding the price to less than the duty-paid price of the equivalent import.

If the government were to impose a tariff on all imported goods at one specified rate, that is, a uniform rate, the tariff would be like a sales tax on imports, without any particular market distortion among imports. Nevertheless, without an equivalent tax applied to all domestically produced goods, the government's intervention in the market by imposing an import tariff — even though it is set at one uniform rate — would raise the market prices of imports, reducing the quantities sold relative to domestic products. Due to the resultant high market prices of imports, the profit opportunities are raised for investors and producers in these markets. Investors and producers are induced to allocate more resources for the production of import substitutes, withdrawing resources from the production of exports of all kinds and non-tradables, such as locally consumed farm produce, clothing, books, medical clinics, schools, roads, or bridges, for example.

Without a unified rate applied to all imports, the large number of different rates causes many interacting price distortions in the markets. The impact is always complex, with the

market bias favoring some commodities more than others, but in principle and in practice tariffs create market biases in favor of import substitutes, drawing resources out of production of exports and non-tradables.

## **2. Distribution of the Effects of Tariffs**

The dominant reason for a tariff in most economies today seems to be the protection of the local market for a particular domestic industry. The argument states, in various ways, that a local industry and its workers need protection against competition.<sup>1</sup> Therefore a tariff or other barrier to trade — meaning barrier to the importation of competing goods — is needed as compensation for the lack of advantages or for the presence of disadvantages, such as other distortions in the market, faced by the local industry, and apparently is needed for the industry's survival.

The question should be asked, what — or who — is being protected and how? The answer is obvious, the industry or the entrepreneurs are the direct beneficiaries, and the employees — as far as they can be regarded as permanently engaged in the enterprises — are beneficiaries, too. Some may say that the nation and therefore the people gain, too, by the indirect benefits of tariffs on the competing imports and the income taxes on the business and the employees. This, however, is not the case. The impacts of tariffs and other trade barriers on the market prices of goods and the allocation of resources reduce the efficiency in overall national production and lowers the standard of living.

Another way of viewing the protection provided by a tariff is to see it as "assistance" to the industry.<sup>2</sup> The concept of ERP shows that, indeed, most tariff structures provide assistance — actual financial assistance — to certain industries. Just how this financial assistance is divided among the entrepreneurs, workers, suppliers, customers, and creditors is another matter, but it could be readily assumed that the entrepreneurs are the major decision-makers in the distribution, and therefore the major beneficiaries of the assistance. The assistance is provided largely at the consumers' expense. The market price of a commodity is elevated above the free market price by the amount of the tariff. The entrepreneurs who produce for the market have two fundamental choices: (a) reduce the cost of production to the international norm and otherwise be efficient, and capture a higher than normal profit, made possible by the elevated market price, or (b) accept market conditions as they are, with the tariff in place, and be slothful, wasteful, or otherwise inefficient — or what amounts to the same behavior — allow the workers and suppliers to be inefficient.

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<sup>1</sup> The force of this argument implies a need to protect a weaker or disadvantaged producer against the more fortunate or bigger and more advantaged producers, suggesting that open competition would be unfair or unjust to some degree, even without unfair or improper manipulation or interference in the market.

<sup>2</sup> The Australian government uses the terminology "effective rate of assistance" (ERA) for their concept, which is explained in their publication by the Department of Foreign Affairs and Trade, *Using the Effective Rate of Assistance in Trade Negotiations*, Canberra, n.d. (ca 1989). As defined in the publication, ERA is essentially the same as ERP, which is the main subject of this present report.

In conclusion, the government collects revenue on imports and the entrepreneurs of the industry either gain extra profits or they work less hard while the nation bears the costs of inefficiency in production. Ultimately, the entrepreneurs benefit from a profit, or reduced delivery of effort, and the consumers pay the bill — some pay the customs duty on imports and others pay a higher price on domestically produced goods.

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### III. EFFECTIVE RATE OF PROTECTION (ERP)

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A specific definition of ERP in this document has been postponed until now because it was essential to consider the economic significance and impact of "protection" first, in order to have a basis for talking about an "effective" rate of protection. Also, it is necessary to be conscious of the place and relative importance of "protection" within the context of the tariff structure, which also serves other purposes.

#### 1. Protection and ERP

The reason for imposing tariffs, and the intended effects, have been covered in the foregoing section. One particular major purpose, or expected effect, is to build a degree of "protection" of the national market for the domestic producers from the competition of merchants of foreign-made goods. A by-product of a protective policy is protection of consumers from opportunities to buy at lower prices, and thereby from increasing their personal welfare.

The price of an imported commodity is raised above its border price by the amount of a tariff and in general, but not necessarily, the price of an import-substitute (an equivalent product made by a local manufacturer) will be the same. The price increase is the amount of market "protection" provided to national producers who can produce at the same level of costs. Any amount by which costs are lower is an additional gain earned by the producer due to efficiency, and any higher level of costs would be a reduction in the benefit created by a protective tariff. The amount of protection, however, remains equal to the tariff, regardless of the degree of efficiency or inefficiency, even if the domestic product is offered for sale by the producer at a lower price than the import price plus customs duty. In other words, if there is no other trade barrier, the rate of protection is the tariff rate — the ratio of the customs duty to the declared customs value of the imported commodity.

The "effective" rate of protection (ERP) is the proportional increase in the domestic "value-added", which is the portion of the price that is attributed to the domestic producer. It is the share that is paid to the manufacturer and his employees. Specifically, ERP is the relative increase in value-added in a tariff-protected economy over its magnitude under free trade, or in terms of border prices. This definition, or concept, will be more formally stated after it has been given extensive examination in the following sections of this report, where the concept is more clearly represented by a descriptive, hypothetical example, rather than a definition. By either route, however, a point is soon reached where considerable mental effort is required to remember the essential difference between a tariff, sometimes called the nominal rate of protection, and the effective rate (ERP). They are crucially different in definition and nature of economic impact, and therefore they have different implications for national economic management.<sup>3</sup>

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<sup>3</sup> These variations of terminology are defined in the glossary in the annex to this document. Simple terminology has been used as much as possible in this document, and therefore most of the discussion focuses on "tariffs" and "effective rates of protection (ERP)", only. Several terms, however,

For the hypothetical example, take a specific product, such as an ordinary pencil. It is made of a thin rod of graphite (pencil lead) contained within a stick of wood, which is coated with paint, and completed with a rubber eraser attached at one end by a brass ring. We should consider several possible situations of trade and production, and several variations, which are the following:

- (1) The pencil, and the tariff rate on pencils, only.
- (2) The pencil, its parts, and one tariff rate on pencils and all parts.
- (3) The pencil, its parts, and different tariff rates on pencils and parts.

The data for the hypothetical tariff rates, price of the final product, and prices of component parts of the pencil are itemized in the tables, below, for each situation, where the definitions of local and world price are also specified.

The first situation is very simple. Assume that the buyers of pencils can choose between an imported or locally manufactured product. In this case the wholesale price of the imported pencil would be LE 0.60, equal to its landed cost of LE 0.50 plus LE 0.10 in customs duty at 20%. If a local producer can produce an identical pencil for the same cost, an extra profit up to LE 0.10 per pencil could be earned due to the market effect of the tariff. The ERP and tariff are equal at 20%, if all raw materials and components of the pencils are produced by each firm in the industry.<sup>4</sup> This is shown in Table 1.

The second example, situation (2), is almost as simple as the first. The tariff structure is made somewhat complex, however, by setting a rate not only on the final good, but also on each of its component parts. Assume the tariff is set at a uniform 20% on a complete pencil and each of its parts, and that some of the parts, such as the wood, rubber, and brass parts, are perhaps imported. In this case, nothing has changed in the market that would affect the price of a complete pencil. The imported pencil will still carry a price of LE 0.60 and the locally made competitive pencil, if it is truly identical, can be sold at the same price. The tariff and ERP remain equal at the 20% because the price of the pencil as a whole unit and the individual components have an equal degree of protection under this tariff regime.

For the third scenario we establish an almost realistic situation (3), representative of most economies, including Egypt, when we assume that some parts are imported, and that tariff rates are different for the final product and each of the parts. Despite an unchanged final product market due to an unchanged nominal rate of protection on the finished pencil,

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namely, "tariffs", "rates of tariffs" or "tariff rates" , and "customs duties" are used interchangeably in the same sense, to mean the same as the nominal or published tariff rates, or simply tariffs, applied by customs officials on imports at the border.

<sup>4</sup> In this case, and in the following cases as well, the prices of the pencils are compared as they would be upon either leaving the customs area or at the local factory gate. Therefore, the assumption must be that any additional costs of distribution are the same for imported pencils and locally produced pencils, alike.

**TABLE 1. PENCIL INDUSTRY (SITUATION 1)**

	Market Price (value) per unit output (quantity)		Customs Tariff Rate
	LE d	LE w	
Product: pencil	0.60	0.50	20%
<b>VALUE-ADDED</b>	<b>0.60</b>	<b>0.50</b>	<b>ERP = 20%</b>

LE d = local "factory-gate" price or value (in the domestic, Egyptian market)

LE w = world price or value (cif or fob value, ie border price or price under free trade)

**TABLE 2. PENCIL INDUSTRY (SITUATION 2)**

	Market Price (value) per unit output (quantity)		Customs Tariff Rate
	LE d	LE w	
Product: pencil	0.60	0.50	20%
Imported input: wood	0.30	0.25	20%
Imported input: rubber	0.07	0.06	20%
Imported input: brass	0.05	0.04	20%
Local input: paint	0.02	0.02	20%
Local input: graphite	0.02	0.02	20%
<b>VALUE-ADDED</b>	<b>0.13</b>	<b>0.11</b>	<b>ERP = 20%</b>

LE d = local "factory-gate" price or value (in the domestic, Egyptian market)

LE w = world price or value (cif or fob value, ie border price or price under free trade)

situation (3) is different from (2). The significant difference in the situations springs from the difference between the tariff on the finished pencil and its component parts. All parts of the imported pencil, each taken separately, are subject to the same tariff rate as the finished pencil when they are imported in a whole product, but the parts can be imported by the local producer at a lower customs duty. Thus, the prices of all materials and the value-added component of the imported pencil are raised by the tariff rate, whereas the local producer pays a lower tariff rate on imported parts, and gains the difference in the rates, increasing the market price of the producer's value-added. Consequently, the size of

value-added in the third scenario is larger than in the second case, increasing the ERP from 20% to 62%.<sup>5</sup>

**TABLE 3. PENCIL INDUSTRY (SITUATION 3)**

	Market Price (value) per unit output (quantity)		Customs Tariff Rate
	LE d	LE w	
Product: pencil	0.60	0.50	20%
Imported input: wood	0.26	0.25	5%
Imported input: rubber	0.07	0.06	15%
Imported input: brass	0.05	0.04	20%
Local input: paint	0.02	0.02	10%
Local input: graphite	0.02	0.02	0%
<b>VALUE-ADDED</b>	<b>0.18</b>	<b>0.11</b>	<b>ERP = 62%</b>

LE d = local "factory-gate" price or value (in the domestic, Egyptian market)

LE w = world price or value (cif or fob value, ie border price or price under free trade)

The case is a demonstration that a particular rate of tariff sets the nominal rate of protection, and that the tariff structure as a whole determines an effective rate of protection. The effective rate is usually greater than the nominal rate, which is the normal intention for setting low tariffs on inputs and higher tariffs on the competitive imports of the protected industry. The effective rate may be equal or lower than the nominal rate, and can even be negative under particular conditions.

A fourth situation may be illustrated to show that the ERP could be lower than the tariff rate on the pencil. If the average tariff on the inputs is greater than the tariff on the output, the ERP will be less than the corresponding tariff. This is shown in Table 4, where ERP

<sup>5</sup> A significant difference would be seen in the inter-industry transactions and distribution of the benefits of nominal protection, if the pencils and the parts are made in separately owned local enterprises. In this case, the smaller benefit of nominal protection to the input producers would be matched by a larger benefit to pencil producers. The ERP would differ among the sub-sectors of the domestic pencil industry, and the payments to workers and owners would be reduced in the input sub-sector and enlarged in the final stage of production (at the expense of the input stage) in comparison to the situation of a single tariff rate.

has fallen to as low as 0%. It is easy to see that if the difference between the average tariff on inputs and the pencil were still greater, ERP would be negative.

**TABLE 4. PENCIL INDUSTRY (SITUATION 4)**

	Market Price (value) per unit output (quantity)		Customs Tariff Rate
	LE d	LE w	
Product: pencil	0.60	0.50	20%
Imported input: wood	0.28	0.25	10%
Imported input: rubber	0.10	0.06	70%
Imported input: brass	0.07	0.04	70%
Local input: paint	0.03	0.02	25%
Local input: graphite	0.02	0.02	1%
<b>VALUE-ADDED</b>	<b>0.11</b>	<b>0.11</b>	<b>ERP = 0%</b>

LE d = local "factory-gate" price or value (in the domestic Egyptian market)

LE w = world price or value (cif or fob value, ie border price or price under free trade)

## 2. Comparison of Tariffs and Effective Rates of Protection

Why is the ERP not likely to be equal to the tariff? The answer is really quite simple, particularly if we keep in mind (a) that the ERP is not a tariff, and (b) that its magnitude has meaning only when compared to the tariff and to the ERPs of other sectors. Interpretation and comparisons of ERP magnitudes will be discussed in another section. For now attention will be given only to the simple reason for the usual differences between ERPs and tariffs.

In this section the focus is entirely on (a) definitions, (b) economic significance, (c) comparisons of ERPs with tariffs, and (d) the role of each in meaningful economic assessments, and as instruments for policy decisions. The imaginary numerical example of the pencil and its production inputs will continue to be used for illustrating the arguments. In principle, the following points are the main objectives for demonstration in this section:

- (i) Although tariffs and ERPs are related in a particular way, they are significantly different. Tariff barriers originate and remain within the tariff structure. An ERP, which is definitely not a tariff of any kind, is just one form of an acceptable measure of certain production and investment incentives, which per se are not trade barriers.<sup>6</sup>

<sup>6</sup> A good, general measure of the magnitude of the barrier to trade is the nominal rate of protection (NRP), defined as the difference between the domestic and international prices of an import relative to the international price. The tariff rate is a measure of an existing trade barrier due only to the tariff. The NRP, however, measures the full magnitude of a trade barrier due to many factors besides the tariff, including any number of non-tariff barriers, such as the importer's costs of quality controls, red tape, and other costs of port and customs clearance. The NRP is a superior indicator and proper reference measure in formulating trade liberalization policy. Nevertheless it might also misleadingly include the influences

- (ii) To the extent that a high or low ERP demonstrates anything about the tariff structure, and degree of trade liberalization, the same can be more clearly shown and explained by a direct study of the tariff structure, itself. While a wide dispersion of values of ERP coefficients is indicative of a wide dispersion of tariff rates, and while changes in ERPs can be a reflection of changes in the tariff rates. ERPs cannot in themselves explain whether the movement is toward or away from trade liberalization.
- (iii) Importers of foreign-made commodities and the foreign producers are affected by and understand tariff barriers, but typically they do not understand ERPs.
- (iv) Tariffs affect market prices. They are market interventions, and affect the decisions of buyers and consumers. ERPs have no impact on market prices, rather they, themselves, are passively, and only partly, determined by market prices. Being the result of market prices and other determinants, ERPs affect the decisions of investors, or producers, and this is quite enough, without influencing prices or their other determinants.
- (v) Reduction of a tariff is normally a sign of trade liberalization, but the same change in policy may simultaneously increase ERPs, and indeed many tariff reductions do increase the ERP of some sectors of production, while decreasing the ERP of others.
- (vi) Finally, tariffs are essential indicators of trade regimes and liberalization, and figure among the principal determinants of market prices and consumer decisions. ERPs, on the other hand, while not completely independent or separated from issues of tariff structures, reveal the sectoral location of influences that are particularly significant in shaping the structure of an economy — by investment decisions and resource allocation.

How does an ERP for a product differ from the tariff? The simple answer is that a tariff is a tax rate set by government and the ERP is an economic concept calculated by a formula. There are other factors, too, such as the influence of non-tariff barriers, consumer preferences due to promotional efforts of suppliers, or differences in costs of establishing sales and services facilities, all of which are determinants of ERP.

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of barriers that are beyond the control of the government of the importing nation, such as barriers attributable to market impediments confronting agencies and dealers of a foreign product, or to unidentified consumers' preferences, etc. Unfortunately, an NRP is more difficult to measure than a tariff rate and therefore many researchers, who would like to use NRP measurements but cannot, resort to substituting tariff rates and give them the NRP label, instead of frankly identifying them as tariff rates.

### 3. Purpose of ERP — Its Relevance and Application

By this point in the discussion, the reader should be aware of the close association between the tariff structure and ERP, and also of their essential differences. The nature of the connection is indisputably a matter of protection and protectionism. The pivotal significance of protecting producers against market competition from importers, however, seems to be easily misinterpreted. As will be shown in the following description of the development of the ERP concept and technique, the theorists and researchers were trying, at first, to devise a measure of the general level of protectionism of an economy, which they soon neglected, after they found a good method for measuring a particular level of protection.

Protectionist policies of high tariffs were adopted by many trading nations some years ago, especially during the depression of the 1930s, for the purpose of preserving the national markets for local producers, and keeping joblessness in check. High tariffs once legislated remained. Many researchers ardently attempted to compare the "height" of tariffs among the industrial countries in the 1950s and 60s, aiming to obtain an index of the restrictive effect on trade caused by a tariff.<sup>7</sup> Nobody succeeded in finding the index, or a measure of the degree of openness to trade produced by tariff reductions. Nevertheless, even without such an index, it still can be shown that a low, uniform tariff, or a narrow range of low rates of tariff, is more favorable in bringing about an efficient competitive economy than generally high tariffs or widely dispersed rates, especially a structure of tariffs that increases with higher stages of production.

The development of the concept and measurement of ERP rose out of the intensive interest in measuring the heights of tariffs levels for assessing the magnitude of the restrictive effect of tariffs on trade — particularly for cross-country comparisons of market protection. The measures included unweighted and trade-weighted average tariffs. The weights were either the proportional size of national or world commodity imports. In the course of arguing the merits of various systems of weight, the experts decided that the tariff rates on agricultural commodities should be excluded. Eventually they favored excluding tariffs on manufactures of food, beverages, and tobacco because the products were subject to numerous other protective measures, and it was soon realized that adjustments should be made for such policy measures as subsidies and quotas. These concerns prompted the important thought, stated by Bela Balassa, that

... we face a further problem that has been largely disregarded in making international tariff comparisons: the implications of duties on raw materials and intermediate products for the protection of goods at a higher level of fabrication. It is easy to see that high duties on materials and intermediate

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<sup>7</sup> Bela Balassa, "Tariff Protection in Industrial Countries: An Evaluation." *Journal of Political Economy*, 73, 6 (December 1965). The article is introduced with an important point expressed in 1950 by Viner that "there is no way in which the 'height' of a tariff as an index of its restrictive effect can be even approximately measured, or, for that matter, even defined with any degree of significant precision." (Jacob Viner, *The Customs Union Issue*. New York: Carnegie Endowment for International Peace, 1950, pp 66-67.)

products will raise the average level of tariffs on non-agricultural commodities but will reduce the degree of protection accorded to final goods by increasing the cost of inputs.<sup>8</sup>

The subject of protection, however, was changed by Balassa apparently without notice, or at least without objection from his fellow economists. By this statement, he discarded the economists' prevailing concern for finding a measure of market protection in terms of comparative market prices of the commodity. Instead, he focused on a different concept of protection. It concerns protection of the amount of value-added by the domestic producers to the imported materials, as already discussed in the hypothetical example of the pencil market. The new concept concerns the protection of the payment, which equals the value-added, going to the producers of the particular import-substitute commodity.

The essential feature of the market forces that are influenced by tariffs, or a high level of the tariff rates, is the negative affect on the volume of international trade in general and the quantity of imports restrained by higher domestic market prices. On the other hand, differences among the tariff rates are responsible for an entirely different kind of protection, which is more difficult to determine. Balassa said:

We have to distinguish, therefore, between nominal and effective rates of tariff when the latter will take account of duties levied on material inputs. Under the usual assumptions . . . , the effective rate of duty will indicate the degree of protection of value added in the manufacturing process.<sup>9</sup>

A tariff barrier, or protection by high tariffs, affects the market price of a commodity, but effective protection furnished by a structure of non-uniform tariffs affects the decisions of investment and production, the allocation of resources, and the distribution of income-earning capacity. High tariffs have the effect of raising market prices and reducing international trade, assuming elastic market demand, while differences in tariff rates *per se* have no effect on market prices, but may increase or decrease the amount of value-added in certain lines of production, depending upon the structure of the tariff differences. Tariffs are proportional to the prices of commodities; they are the parameters of trade protection and market liberalization, whereas effective rates of tariffs, that is, ERPs, are proportional to value-added in production; they are parameters of risk and profit, resource allocation efficiency, and the productive structure of the economy.

As already mentioned, economists had been trying to define a general measure of protectionism when they devised a product-by-product measure. They made a break-

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<sup>8</sup> Bela Balassa, "Tariff Protection in Industrial Countries: An Evaluation," *Journal of Political Economy*, 73, 6 (December 1965). Balassa referred to the written work of others, including the already published work of Harry G Johnson, who had developed the concept of ERP. The concept was later elaborated by W Max Corden. All of them — Balassa, Johnson, and Corden — promptly discarded any further inquiry into the measurement of the effects of protectionism on trade, and turned to analyzing the effects of tariff structures upon resource allocation, and the distribution of gains from protective policy measures.

<sup>9</sup> *Ibid.* Balassa applies the modifier "effective" to tariffs and duties, or their rates, with precisely the same algebraic definition given for the ERP concept explained in this paper.

through when they devised a measure that took into account the tariffs and taxes on material inputs. They found that their particular measure could show differences in the degree of protection among countries without a dispute over the weights to be given to the various tariffs, and they were satisfied.

Unfortunately, they apparently accepted their particular measure as a working alternative to an overall measure, and gave it a certain unwarranted significance. They concentrated their attention on final output, and overlooked important aspects of their measure:

1. Their effective rate of protection measure is a product-by-product measure, which does not show the overall degree of protectionism, or general level of liberalism in a trade regime, which prompted their research in the first place.
2. They became mainly engaged in measuring the ERPs of final consumer goods, and discussing cases of high protection. They failed to see, or failed to discuss the other side of the coin, which is the degree of trade liberalization and increased opportunities for importers created by lower tariffs on inputs. Inputs are often processed goods or manufactured components, and not simply locally produced raw materials.<sup>10</sup>
3. Large ERPs were taken to show an undesirable policy of protectionism. Yet, at the same time, import substitution was well accepted, especially for the less developed countries, and the results of this latter policy are large ERPs.

The relevance of ERP lies in its measurement of the bias in profit opportunities, investment decisions, and the pattern of resource allocation, which are generated by differences in tariffs and other costs of importing. When the differences in tariff rates are graduated by stages of production, they are said to be escalating, or cascading, tariffs.<sup>11</sup> Incrementally higher tariffs by level of production make the higher stages of production more attractive to investors and producers. The risk of investment, the need for efficiency, and the challenges of market competition are all reduced for the producers of final goods that are protected by high tariffs, while tariffs are low on their raw materials and intermediate inputs to production.

It is this aspect of ERP — higher ERP for some businesses than for others due to an escalating tariff structure — which is favored by certain local investors or producers and opposed by their competitors. The interested local investors recognize that an industry enjoying a relatively high ERP is either more profitable — the percentage of domestic

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<sup>10</sup> Processed inputs are also called semi-manufactures, intermediate inputs, or components, and include fully manufactured components in "knock-down kits" ready for final assembly, which itself can be very simple.

<sup>11</sup> "Escalating" is a better description than "cascading" in this discussion. The first is preferable because it more readily implies an incremental change in the level or "height" of a tariff from a low to a high level. The disadvantage of "cascading" is that it may wrongly suggest a degree of overlap or stacking of tariffs. It is more appropriate for describing cases where indirect taxes are calculated on prices that already include another tax paid on the same good, or one of its components, in a previous transaction. This latter is a "tax upon a tax" and, hence, economists in public finance refer to such as cascading taxes.

value-added per unit of output is correspondingly higher, without additional cost or effort — and the industry can be operated with a wider margin for high costs and inefficiency. Their competitors, who are the importers and foreign producers of competitive products, could possibly complain about a trade barrier — even though the tariff may be moderate — because increased local production satisfies a portion of the market demand, resulting in a smaller market share for the imported commodity. These perspectives would be held, perhaps reinforced, even if the tariff rate on the final product were reduced while increasing the ERP due to proportionately larger reductions of the tariffs on inputs. In either case, the issue concerns an incentive for production or investment, and certainly not an increase in a tariff or other trade barrier.

Investors are attracted to industries enjoying high ERPs not necessarily because they are able to sell in the home market with less competition from foreign-made products due to higher rates of tariffs, but because their profits — payments on value-added — per unit of output are higher.<sup>12</sup> The local importers, however, and the foreign producers, of the competing products can see that the protected local producers will be able to satisfy a significant share of the local market. A protected market, especially one that is highly protected, attracts more investment, and induces existing producers to expand production. The resulting enlarged competition from local producers is the real basis for any complaint from importers and foreign producers about a high rate of effective protection — even if the high ERP is not due to a high tariff on the final product, but high because of a wide spread between the tariffs on the final good and the inputs. Note, however, that such complaints as this could only apply to a very specific product market — the one showing a high ERP — because it would follow implicitly that other product markets would become more open to competitive imports.

The viewpoints of the various actors in the foregoing narrative of an economic drama can be briefly summarized. Domestic investors and producers justify their need for protection with a high ERP on the basis of their contribution to the national product and employment, while importers see that their share of the market, even a growing market, is reduced. Proponents of free trade, like the importers, also see the constraint on international trade. Moreover, they argue that the national and international efficiency in production and consumption is less than optimal because the production by efficient producers is constrained, and consumers pay more for their purchases.

The narrative, however, does not explain the economic impact due to the comparatively low tariffs on the inputs. The overall picture of trade liberalization or protectionism was lost when the economists turned their focus from the average height of tariffs to the specific magnitudes of ERPs of selected products. High ERPs occur when the tariff structure is either uniformly high or the rates are widely different. In the first instance, all

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<sup>12</sup> As said elsewhere in this document, the relative size of these payments can be increased even by reducing the tariff on the final good, providing the tariffs on inputs are lower initially and also reduced by an equal number of percentage points or more. As long as the percentage point spread between the tariffs on the final product and the inputs remains the same or widens, the ERP for the value-added in the final product will be expanded, as tariff rates are reduced.

ERPs tend to be high. If tariff rates differ widely, however, ERPs for products with high tariffs may be much higher, while the ERPs of inputs might be about the same as the low tariff on inputs.

The conclusion is that analysts and decision makers in matters of trade policy should take into account the whole tariff structure, composed of thousands of customs rates, and the computed ERPs of very many product sectors — thousands, or at least hundreds of the more significant products of the economy. If all ERPs tend to be high, a liberal trade policy would call for a reduction in all tariffs. Whereas, if the sizes of ERPs vary widely from very high to low, a liberal trade policy would call for bringing the tariff structure to a low, uniform rate. Both of the latter policy responses are consistent with, and conducive to, efficient resource allocation, economic development, and equitable income distribution.

#### 4. Objective and Usefulness of ERP Analysis

The most important questions to be answered about the subjects of computations and analysis of ERP, in the context of Egypt, are: "What is their importance, or relevance, to Egypt? What should be the objective? How should the measurements be calculated and applied? What is the potential usefulness of the results?" Final answers to these questions require some thought, particularly in view of the kinds of information and details required for decisions in trade negotiations, tariff schedule changes, and consistency and coordination of trade and investment policies.

The Australian government, for example, has for many years used an ERP technique for objective assessment of the impact made by their trade policies. The method, which they call an effective rate of assistance (ERA) framework, provides a "manageable and convenient way of measuring the effects of many different trade barriers."<sup>13</sup> The Australians offered and promoted their method during the Uruguay Round of trade negotiations under GATT, seeking to gain international adoption of a simple tool for assessing the combined protectionist effects of tariffs and non-tariff barriers to trade. Although they emphasize the international need to monitor the size of trade restrictive policies, Australia recommends every country to use the ERA method for enhancing an understanding of the economic costs that trade barriers impose on the country's own economy.

The results of monitoring ERPs for many sub-sectors of the economy are useful for estimating or identifying the economy-wide costs of inefficiency created by a multi-level tariff structure for the economic benefit of certain producers and selected sectors. As already emphasized, tariffs create (a) inefficiencies in the economy, (b) benefits to particular producers among all producers at the expense of consumers, in general, and

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<sup>13</sup> Australia, Commonwealth of, Department of Foreign Affairs and Trade, *Using the Effective Rate of Assistance in Trade Negotiations*, Canberra, no date [ca 1989], page 1. This is a useful guide (given in as few as 31 pages) for a good explanation of the appropriate and simple method used in Australia for continuous calculations and monitoring ERAs (effective rates of assistance), which are essentially the same as effective rates of protection (ERPs). The Australian authors' explanation of their method, however, is occasionally ambiguous. Careful reading is required in such places, for example, as the illustration by a numerical example, which incorporates inconsistent data or procedures. The imperfections are minor, nevertheless, and do not greatly detract from the authors' arguments in favor of their practical method of estimating ERPs — one that is useful for trade and investment policy and planning.

(c) a bias in market conditions and investment incentives against production of export commodities and non-tradables. Therefore, a bias is created against the more productive employment of domestic resources, including labor, thus reducing the generation of productive employment.

Uneven tariff levels are more egregious in these respects than a uniform tariff rate on all imports. Uneven market distortions and a strong import-substitution bias are set up in the market when tariffs are escalated downward at lower stages of production. A low uniform rate, of any type of tariff regime, is the least disruptive in the market. Nevertheless, a one-level tariff is still biased in general against exports and non-tradables.

High ERPs created by escalating tariffs not only reinforce policies of import-substitution, but also favor the least beneficial kinds of production. The larger the proportion of low-tariff imports used in production the higher the ERP, and therefore the more attractive the sub-sector is for investment. Likewise, the magnitude of ERP rises steeply as the amount of domestic value-added components becomes smaller relative to imported inputs. Production by simple procedures of formulation by mixing imported materials, packaging, or assembly of "knock-down kits" — especially manufacturing by only "screw-driver" operations — are typical low value-added and high ERP industries.

The prospects for Egypt to build a capacity to measure ERPs figures importantly in the next section. There, the focus is placed on a practical example of computing an ERP coefficient from Egyptian empirical data. The procedure is an example of analysis that could be useful for trade and investment policy formulation. If ERPs were calculated for all product sectors, they would provide a vital map of how the present tariff structure influences production, investment, and the distribution of the benefits and costs among the owners and workers in Egypt's industries and the consumers.

Carrying out ERP analysis for many product sectors was a principal objective of the study covered by this report. Although those who initiated the study held a consensus view that such ERP analysis would be important, it was impossible to obtain data for more than the one computation. The difficulties in conducting the study is suggestive of the limited prospects for an eventual undertaking of continuous assessment of the impacts of Egypt's instruments for trade restraint or facilitation. In brief, while future efforts in this area may also be hampered by lack of understanding and ability to put the results to good use, the efforts are more likely to be hampered by problems of data collection and management. There are many obstacles in the way, impeding the establishment of a practical force and procedure for systematic measurement and evaluation of the ERPs of all significant product sectors and using the analytical results in the formulation of tariff policy.

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## IV. METHOD OF MEASUREMENT OF ERP

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Policies in international trade and investment are encapsulated in (a) exchange rate policy and (b) commercial policy. The latter, concerning international commerce and trading relations, primarily covers tariffs, quotas, and product standards, and may also be linked to domestic policies on banking and financial investments. The effects, and purposes in most instances, of policies in these areas are to induce the consumers and producers in the economy to change their expenditures and usage of resources — to decrease or increase their expenditures or to alter the mix of commodities and resources. Tariffs are commonly applied for raising government revenue, but frequently they are used like other trade policy and exchange rate instruments, either for the purpose of reducing expenditures of foreign exchange or for promoting domestic production and employment. This latter purpose prompts the idea of protection — protecting the domestic market from incursions of foreign-made imports; creating a domestic market preserve exclusively for home producers, and consequently limiting the consumers' market choices and their welfare.

In order to have a sufficient basis for critical discussions of the impacts of protection and the benchmarks for policy decisions in these areas, analytical methods and tools are required for measuring the effects of tariffs, trade restrictions, or the exchange rate on industry sub-sectors, broad economic sectors, or aggregate demand. The purpose and objective for measuring the effects may be:

... to ascertain the aggregate impact of a country's various trade barriers for the sake of making appropriate macro-economic policy with respect to the level of aggregate demand or the exchange rate, or for the purpose of checking the progress of longer-term strategy as to the degree of openness; alternatively, it may be to discover the impact of trade barriers at the sectoral level, or at a quite micro level upon a particular industry or firm.<sup>14</sup>

### 1. What Is Measured and How?

Measurement of the level of barriers to trade, ie, degree of protection, by estimating the average height of tariffs, whether the height is taken as a simple arithmetic average or a trade-weighted average, is still a common technique. Averages are frequently mentioned descriptions of the openness of economies. However, the most intense disputes and debates in trade matters revolve around particular tariff rates and countervailing measures at a micro level of production — specific types of agricultural produce or industrial products. The range of these disputes and debates demarcate the scope of policy decisions and application of tools.

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<sup>14</sup> G K Helleiner, *International Trade and Economic Development*, Middlesex, England: Penguin Books, 1972, p 120.

For this reason, in practical applications, the usefulness of ERP coefficients increases as the industry becomes more specifically defined. A calculation of ERPs for broad industrial categories, as defined for inter-industry input-output analysis, presents a broad picture of the structure of protection, and enables tentative comparisons and identification of the relative strength or degree of protection among major sectors. The most recent input-output table for Egypt is composed of 38 sectors, including 22 commodity-production sectors for which meaningful ERP coefficients may be estimated.<sup>15</sup> The classifications of the 22 sectors in the table are aggregated in such sectors, for example, as processed foods, chemicals, rubber and plastic products, machinery and equipment, glass products, and transport equipment; all at the 3-digit level of ISIC classification, or combined classifications.<sup>16</sup>

Still, this definition is not sharp enough for many purposes for which ERP analysis was designed to serve. Sectoral ERPs are too general for setting specific tariffs or for supporting and defending a country's tariff structure in trade negotiations and disputes, where commodity trade is discussed in terms of specific products, such as potatoes, grapes, beans, cotton lint, or passenger vehicles, personal computers, TV sets, copying machines, and telephones. Particular rates of tariff are applied to these products, and therefore comparisons of the degree of market protection of only particular products and the protection provided to domestic value-added can yield useful information for policy decisions because the comparison entails only one tariff and one ERP.

In contrast, the ERP of each of the productive sectors of the input-output table is necessarily determined by six or more tariff rates, on average, ranging from the lowest rates to the highest, on the output products, besides the technical coefficients and tariffs on inputs, which are also averages of as many as six or more tariff rates.<sup>17</sup> The comparison of ERP by broad category and average rates of tariff is only a rough measure, using a tool that is designed for a detailed comparison.

Even for the most general analysis the products must be as specific as ready-made garments, for example, or pharmaceuticals, or paper, for a meaningful image of the size and dispersion of sizes of ERPs relative to tariffs. Even this degree of specification is usually inadequate since tariffs are set for categories of commodities which are described in greater detail according to an 8-digit level of HS classification.<sup>18</sup>

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<sup>15</sup> Parallel with the study reported in this present document, ERP coefficients were computed for 22 commodity sectors in a study by Hanaa Kheir-El-Din, "Effective Protection in Egypt Due to the Tariff Structures in 1996 and 1997 Compared to 1994", study prepared for USAID/DEPRA, February 1998, 14pp.

<sup>16</sup> ISIC stands for the International Standard of Industrial Classification of Economic Activities, which is widely used for industry and inter-industry analysis.

<sup>17</sup> Only the tariff rate for which there were imports in 1997 were counted.

<sup>18</sup> HS is the Harmonized commodity description and coding System (HS) of the Customs Co-operation Council (CCC). The CCC is an international organization with headquarters in Brussels, Belgium. The HS system is a standard classification for international comparisons of trade treatment. Each category is distinctive and labeled by a code of 6 digits, commonly extended to 8, and even 10, by the customs laws

The descriptions of the products cannot be as general as "paper"; they must be as specific as "uncoated, hand-made paper for writing or printing" (which is subject to a 15% rate of tariff), "uncoated, hand-made paper, not elsewhere specified or included" (20% tariff), or "waste rubber, compound, unvulcanized, excluding hard rubber" (5% tariff), "rubber, compound, unvulcanized" (15% tariff), or "rubber, unvulcanized, in solution" (20% tariff). The tariffs on rubber parts for transport vehicles may be "free" or 5%, 10%, 20%, or 30%, depending on the type of vehicle. The tariff rates on transport vehicles vary according to type and size, and therefore, one ERP for the transport equipment sub-sector may not be useful in the supporting arguments in trade negotiations concerning a tariff rate for small trucks for farm use, for example, or for setting tariff rates that would provide appropriate protection of the potential investors' income — neither too little nor too much protection — for the inducement of local investment in the production of small trucks for farm use.

In Egypt, ERP analyses by broad sectors of production have been carried out for industries at the detail of categories of 3-digit ISIC level.<sup>19</sup> These studies provide useful evaluations of the ERPs among the major sectors of commodity production, showing which sectors provide the heaviest protection to the VA factors of production, and those which appear to be less protected than average nominal tariffs would suggest. What is particularly important, is that certain studies of this nature show how the rates are changing over recent years. Another interesting aspect is a comparison of how the tariff changes in late 1996 and mid-1997 have effected the overall protection of earnings in agriculture and industry. The most recent study shows that ERP has fallen since 1994 in both major sectors of the economy, but declined somewhat more in the more heavily protected manufacturing sector in comparison to agriculture.

A more detailed, and therefore more meaningful, view of the measure of protection could be seen from data taken at the 4-digit ISIC level of the type specified in the periodic industrial surveys by CAPMAS.<sup>20</sup> However, for a particularly pertinent and useful basis

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in many countries. The purpose of the international standard of classification of traded commodities is to enable true comparison of treatments among nations on any given one or more commodity or type of commodity, say, with respect to customs duties, excise taxes, sales taxes, embargos, quantity restrictions, etc.

<sup>19</sup> Shaltout, Hafiz Mahmoud. "Measuring the Effective Rate of Protection in Egypt", Cairo, 1987. Kheir-El-Din, Hanaa A. "Evaluation of the Structure of Protection and Anti-Export Bias in the 1986 Customs Tariffs in Egypt", *L'Egypte Contemporaine*, No 417-418 (June-October 1989), pp 73-96 (23-46). Kheir-El-Din, Hanaa and El-Sayed, Hoda. "Potential Impact of a Free Trade Agreement with the EU on Egyptian Textile Industry", paper presented to the Egyptian Center for Economic Studies Conference, "How Can Egypt Benefit from its Partnership Agreement with the EU?", Cairo, Egypt, June 26-27, 1996. Hoekman, Bernard and Djankov, Simeon. "Towards a Free Trade Agreement with the European Union: Issues and Policy Options for Egypt", paper presented to the Egyptian Center for Economic Studies Conference, "How Can Egypt Benefit from its Partnership Agreement with the EU?", Cairo, Egypt, June 26-27, 1996.

<sup>20</sup> CAPMAS is the acronym for the Central Agency for Public Mobilization and Statistics. It is the national statistical office of the Egyptian government.

for tariff and trade policy, information at the level of 5-digit ISIC codes, corresponding to most of the 6-digit HS codes is needed.

Much of the 4-digit ISIC level data is collected and published in the CAPMAS Annual Industrial Production Statistics. The questionnaire that is used in the survey of Industrial Production appears to be designed to obtain data that could very well provide the needed information for analysis of industry at the 5-digit level, if they were made available.<sup>21</sup>

Furthermore, data are collected, and published, with respect to both the public and private sector enterprises. Unfortunately, by the time CAPMAS has done its data management task, the data are already very old, having limited relevance for current analysis and policy formulation. The most recent data available for this study are for the year 1993/94. They apply to production as it was long before the significant tariff changes in 1996 and 1997, and even before the changes in 1994.

## **2. Data**

The leather shoe industry in Egypt (ISIC 3240) was selected to be the example product sector in this study. The principal source of data for the industry is the published Annual Industrial Production Statistics, for 1993/94, which provides part of the requirements. The data are insufficient, particularly on input materials, for ERP calculations and additional data must be obtained from other specialized sources.<sup>22</sup>

The published industry data for 1993/94 were organized as shown in Table 5. A number of assumptions are required for using the data. A basic assumption, must be that the data are aggregated statistics from questionnaires that are representative of the whole sector. That is, it is assumed that either no questionnaires were rejected or that the exclusion of data due to rejections does not bias the representation of the sector. Also, it is assumed that each line of the data is likewise representative of the whole sector. That is, the figures in any particular line are accurately proportional to all other lines and truly representative of the whole product sector. It is also assumed that the data collected from all reporting firms are for the same period of time and comparable; that no unusual transactions are included, and that the supplemental information on material inputs and sales are representative of the average for the whole product sector, and not merely approximate numbers for a typical firm in the industry. Another crucial assumption is that the total

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<sup>21</sup> The questionnaire is reproduced in Annex G.

<sup>22</sup> The published source is CAPMAS publication, *Annual Industrial Production Statistics, 1993/94*. Cairo: December 1996. Some data was collected for the public sector from a volume of the previous year, 1992/93. The crucial information on material inputs were necessarily supplemented by data and information from an industry specialist.

sector revenue is the value of products that are identical or comparable in all important aspects to the competing imported or importable products.

**TABLE 5. SHOE INDUSTRY: ANNUAL PRODUCTION (LE' 000), 1993/94,  
1992/93; AND CUSTOMS TARIFF RATE (%)**

	Tariff	1993/94		1992/93
	Rate	Public	Private	Public
Products, subsidies, taxes	70			
Finished products		37742	102091	82061
Unfinished products		-18672	135	-386
Subsidies				
Taxes and commodity duties		1033	851	1076
Tradable material inputs				
Upper	40	8395	18010	11575
Lining	40	2858	6170	3933
Sole	5	4661	10259	6375
Inner sole	30	206	507	271
Fiber pad	20	480	1029	661
Metal shank	10	360	772	496
Metal eyelets	30	69	245	76
Thread	30	103	253	135
Cord	30	103	253	135
Adhesives	20	755	2010	964
Finishing materials	40	1029	2533	1354
Nails, tacks	30	240	515	331
Instep pad	60	720	1544	992
Stiffening materials	30	240	515	331
Filler, stiffening materials	15	120	257	165
Ornaments	10	669	1532	902
Heels	30	1501	3560	2001
Sponge, foam materials	30	120	257	165
Heel/toe taps	30	378	1005	482
Other tradable inputs				
Packaging materials	5	949	1364	1908
Spare parts, prod components	5	334	2260	1233
Equipment depreciation	5	1722	5074	1888
Non-tradable inputs				
Fuel		383	378	917
Electricity		903	1072	449
Industrial services purchased			647	
Maintenance		1097	690	2497
Other services		2594	5301	3678

Moreover, the published data are insufficiently detailed for foreign trade analysis and ERP calculations. The values of inputs are given by domestic and import supply only; they are not classified by type or by separate tariff rates, or separated into type, according to being tradables or non-tradables. The degree of consistency and accuracy might be questioned. The problems of the published data are discussed later while explaining an actual ERP calculation based on the available published data.

After organizing the collected data in the logical categories of Table 5, the data were next prepared for calculating the ERP of the leather shoe sector in Egypt. These are presented in Table 6 for the public and private sectors and the total sector in the year 1993/94, and in Table 7 for the public sector in the years 1992/93 and 1993/94 and average for the period.

### **3. Formula and Computation**

The concept and general formula for calculating ERP is covered already in Section I of Part III of this document (starting on page 16) by illustration in a hypothetical example of an imported pencil and the amount of nominal and effective protection provided to the local producers of pencils. No algebra was shown in the examples, and the calculations were explained in verbalized logic. Nevertheless, an algebraic formula was implicitly applied, and it could have been given in a written form for illustrating the concept and method of calculation.<sup>23</sup> Building on the example, the approach and formula are adjusted for application to the empirical data from the leather shoe industry in Egypt. The data are in greater detail and the formula is an algebraic variation of the one that was implied in the pencil examples. The proof of the exact equivalence of the formulas, and full details of the calculation, are covered in an annex.<sup>24</sup>

The ERP formula is designed for an analytical comparison of the size of protection provided to the market price and the size of protection provided to the payments to factors of production, both with regard to a particular product. The tariff rate is the degree of protection on the market price, while the effective rate of protection is the degree of protection on the amount of payment apportioned to the domestic producers. In principle, either of these rates can be measured with respect to the protection provided only by the tariff, or by all impediments to trade in the imported competitive product. When the total difference in market price is the basis for the measure, that is, when the impact of tariffs and also other impediments are considered in the calculations, then the protection to the price is usually called the "nominal rate of protection." The effects of all impediments, not just a tariff alone, in total are assumed by definition to enter into the calculations of ERP.

The data provide a good basis for computing the domestic market values of the final product and inputs, which include all materials, depleted physical capital (depreciation of equipment, machinery, buildings, and other facilities), power and overhead, and non-factor services. The difference between the domestic value of total production and the market costs of inputs is the amount of domestic value-added. The resulting figure provides a

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<sup>23</sup> The formula is presented with a comprehensive explanation in Annex A: "Methodology: The Concept and Computation of ERP."

<sup>24</sup> Annex A: Methodology: The Concept and Computation of ERP.

start toward computing the ERP coefficient by the basic formula of the concept. Computation of the value-added under conditions of free trade, however, requires many adjustments to the known factory-gate price. Preferably it is based on border prices of competing output and input products found by considerable research in the markets. This type of information is not normally published and, therefore, must be obtained by specific research and calculations.

Since market prices of outputs and inputs, and proportions of inputs to total output, that is, the technical coefficients of production, under free trade are unknowable in the prevailing market conditions under the influence of a tariff regime, researchers prefer to apply the derived formula that is expressed in terms of current technical coefficients of production. This is the formula that is applied in arriving at the ERP coefficients shown in Tables 6 and 7. The formula, which is explained in detail in the annex titled "Methodology in Detail", is the following:

$$\text{ERP} = \left( (1 - \sum_i a_i') / \left( (1 / (1 + t)) - \left( \sum_i (a_i' / (1 + t_i)) \right) \right) \right) - 1$$

where the variables are defined as follows:

ERP = effective rate of protection on shoes

t = tariff rate on imported shoes equivalent to the domestic output

$t_i$  = tariff rate on tradable input  $i$  in the production of shoes

$a_i'$  = value of input  $i$  per unit of shoe output, which is the technical coefficient of production in the tariff-distorted market economy, and

$\sum_i$  = summation of values within a specified numerically ordered sequence, where  $i$  represents a number in the sequence. In this case, the sequence includes all inputs in the production of shoes.

The value of each  $a_i'$  is obtained by taking the ratio of the total cost of each input to the total value of production. For example, the technical coefficient of production,  $a'$ , for the instep pad in shoe production is  $0.0399 = 720 / 18037$ . In the next to the last term of the formula, this value of  $a'$  is divided by 1.70, which is one plus the tariff rate (where 70% = 0.70). After finding all coefficients and inserting them into the formula, and computing the formula, the results are the ERP values given in Tables 6 and 7. Figures 1 and 2 graphically illustrate the statistics of Tables 6 and 7, respectively.

The first line of Table 6 and Table 7 gives the domestic price and the border price of the net total product of the leather shoe industry in a one-year period. Specifically, the amounts are the total revenues from the sale of net finished output, which equals the value of finished products less the net use of partially finished products from factory stocks (inventory) plus subsidies less indirect taxes on output. The total revenue is the unit of value upon which the coefficients of inputs to production were calculated. Alternatively, if the statistical had included the physical quantity of production, that is, the number of shoes, the unit of value could be the price of a pair of shoes. Notice that the private sector's sale of finished goods shown in Table 6 (for the year 1993/94) is less than the net output because a small amount (LE 135000) of the finished product was put into the sector's

stock of goods in process, and the value of sales of the total product is further reduced by the amount of indirect taxes paid on the sector's output.<sup>25</sup>

**TABLE 6. EFFECTIVE RATE OF PROTECTION (ERP) IN THE SHOE INDUSTRY: ANNUAL PRODUCTION (LE '000), 1993/94 IN DOMESTIC AND BORDER PRICES; AND CUSTOMS TARIFF RATE (%)**

	Tariff	1993/94 Domestic Prices			1993/94 Border Prices		
	Rate	Public	Private	Total	Public	Private	Total
<b>TOTAL PRODUCT</b>	<b>70</b>	<b>18037</b>	<b>101375</b>	<b>119412</b>	<b>10610</b>	<b>59632</b>	<b>70242</b>
Finished products		37742	102091	139833			
Unfinished products		-18672	135	-18537			
Subsidies							
Taxes, commodity duty		1033	851	1884			
Tradable material inputs							
Instep pad	60	720	1544	2263	450	965	1415
Upper, lining, finishing	40	12282	26713	38995	8773	19080	27854
Heels, innersole, thread	30	2960	7110	10066	2277	5469	7743
Adhesive, fiber pad	20	1235	3039	4274	1029	2533	3562
Filler, stiffeners	15	120	257	377	104	224	328
Ornaments, metal parts	10	1028	2304	3332	935	2094	3029
Sole	5	4661	10259	14920	4439	9771	14210
Other tradable inputs							
Packaging, parts, deprec'n	5	3005	8698	11703	2862	8284	11146
Non-tradable inputs							
Fuel, electricity, ov'rhead	0	4977	8088	13065	4977	8088	13065
<b>Total non-factor cost</b>		<b>30988</b>	<b>68011</b>	<b>98996</b>	<b>25846</b>	<b>56507</b>	<b>82350</b>
ERP		-0.1500	9.6763	-2.6862			
<b>ERP</b>		<b>-15%</b>	<b>968%</b>	<b>-269%</b>			

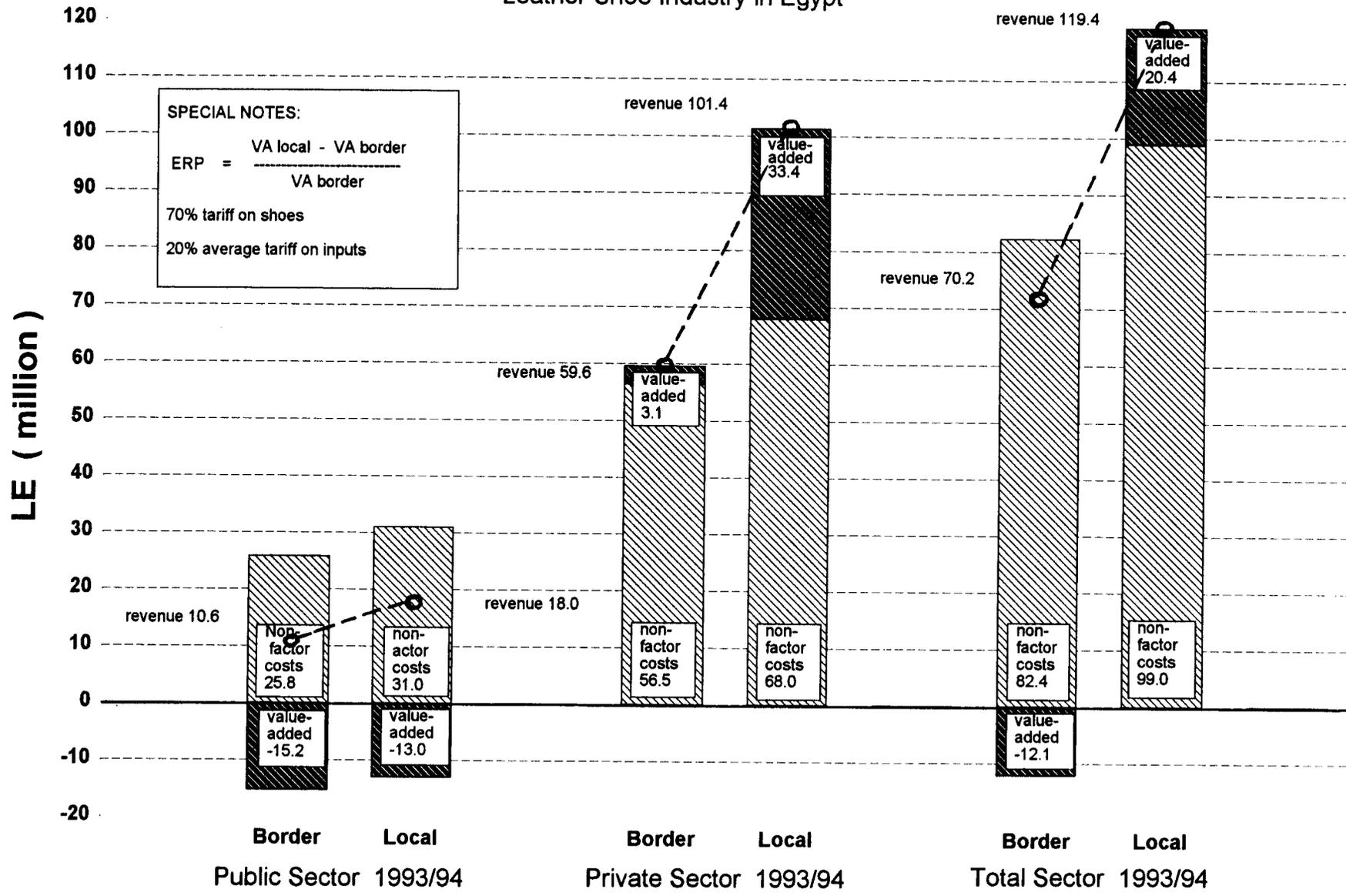
Note: The values of ERP shown in percentages is equivalent to definitions that include a multiplication factor of 100.

<sup>25</sup> Net output equals total finished products for sale plus the amount added to stocks and less the amount taken from stocks. Value of the total product equals net output plus subsidies less taxes on products (indirect taxes). Therefore the figures in thousands of Egyptian pounds are 102,091 + 135 - 0 + 0 - 851 = 101,375.

**GRAPH 1**

**BORDER vs LOCAL MARKET VALUES**

Leather Shoe Industry in Egypt



Subsidies are paid to producers so that they can reduce the prices of their products, but they will raise prices by the amount of indirect taxes charged on their outputs. Therefore, the subsidy amount must be added to the ex-factory price and taxes deducted to obtain the value of output. In this case, no subsidies on products are paid to the producers but their products are taxed. Consequently, the value of actual output for the reported period is reduced by the amount drawn from the stock of semi-finished goods produced in a previous period and by deducting the amount by which the output price is increased due to taxes. The cost of intermediate material inputs, services, fuel, power, and other overheads are grouped and listed

**TABLE 7. EFFECTIVE RATE OF PROTECTION (ERP) IN THE PUBLIC SECTOR SHOE INDUSTRY: ANNUAL PRODUCTION (LE '000), 1992/93 - 1993/94; AND CUSTOMS TARIFF RATE (%)**

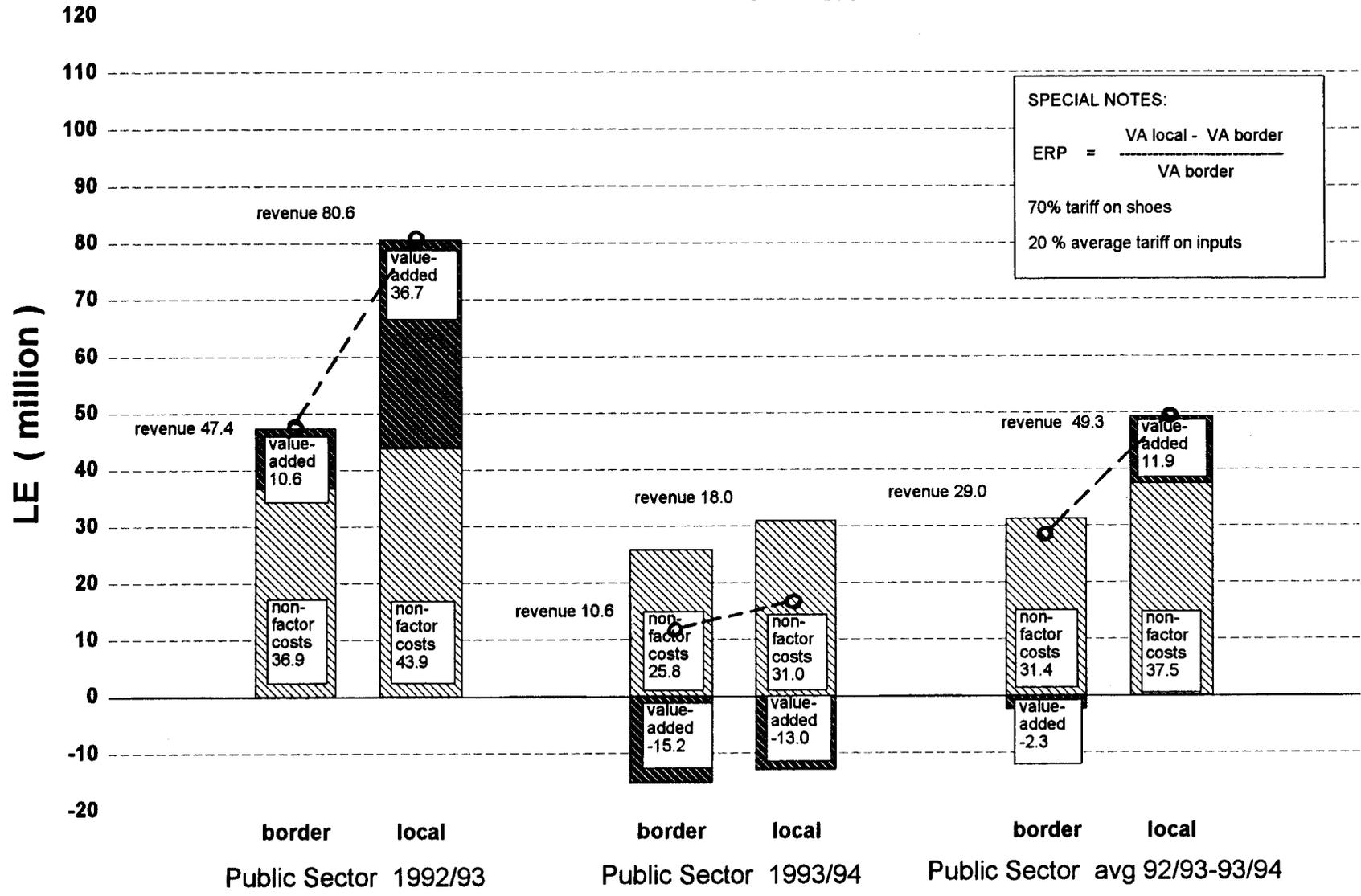
	Tariff	Domestic Prices			Border Prices		
	Rate	1992/93	1993/94	AVG*	1992/93	1993/94	AVG*
<b>TOTAL PRODUCT</b>	<b>70</b>	<b>80599</b>	<b>18037</b>	<b>49318</b>	<b>47411</b>	<b>10610</b>	<b>29011</b>
Finished products		82061	37742	59902			
Unfinished products		-386	-18672	-9529			
Subsidies							
Taxes, commodity duty		1076	1033	1055			
Tradable material inputs							
Instep pad	60	992	720	856	620	450	535
Upper, lining, finishing	40	16862	12282	14572	12045	8773	10409
Heels, innersole, thread	30	3927	2960	3444	3021	2277	2649
Adhesive, fiber pad	20	1625	1235	1430	1354	1029	1192
Filler, stiffeners	15	165	120	143	144	104	124
Ornaments, metal parts	10	1398	1028	1213	1271	935	1103
Sole	5	6375	4661	5518	6072	4439	5256
Other tradable inputs							
Packaging, parts, depre'n	5	5029	3005	4017	4790	2862	3826
Non-tradable inputs							
Fuel, electricity, ov'rhead	0	7541	4977	6259	7541	4977	6259
<b>Total non-factor cost</b>		<b>43916</b>	<b>30988</b>	<b>37452</b>	<b>36857</b>	<b>25846</b>	<b>31352</b>
ERP		2.4757	-0.1500	-6.0689			
<b>ERP</b>		<b>248%</b>	<b>-15%</b>	<b>-607%</b>			

Note: The values of ERP shown in percentages is equivalent to definitions that include a multiplication factor of 100.

\* AVG = average of 1992/93 and 1993/94.

**GRAPH 2**

**BORDER vs LOCAL MARKET VALUES**  
**Leather Shoe Industry in Egypt**



by levels of import tariffs without any need for adjustment. Aggregating the inputs, as done here, simplifies the tables and explanation of the procedure. In practice, however, the actual data base is necessarily large because as much detail as can be obtained is needed for the analysis of tariff levels and the impacts of changes. The 8 groups of tradable inputs in Tables 6 and 7 are derived from 18 classifications in the actual data base for this case, while 5 categories of non-tradable inputs have been combined in only one group for the tables. The number of aggregated groups shows that seven different tariff rates, plus one for the "other" group, apply to the tradable inputs, and that the non-tradables can be aggregated into a single group because there is no applicable tariff rate.

Now, the analyst might be able to turn to the interesting task of interpreting the results. Little can be said about an ERP of one product sector alone. When very many ERPs are calculated from the same data base, a comparison of the degree of protection becomes interesting and useful. The usefulness is increased especially when changes in the relative sizes of ERP due to changes in various tariff rates are considered in the analysis, and more so, when impacts of non-tariff barriers can be quantified and considered.

Despite the constraint of having only one ERP, a few salient points can be mentioned about the present case. The ERP of the shoe industry is either highly negative or positive, and very much higher than the tariff rate, depending upon which part of the shoe sector, or year, is being considered. The public sector shoe producers produced under a low negative ERP in 1993/94, possibly suggesting comparatively high efficiency and high virtual taxation due to a comparatively highly protected market for the sector's inputs. This might be the conclusion upon first observation in the light of the model interpretations given in another part of this report, where it was said that a low ERP coefficient between 0% and -100% indicated an efficient industry which is being virtually taxed more than other producing sectors. It was also said that if the ERP is still more negative, ie, less than -100%, that the industry is very highly protected but highly inefficient because it characterized producers whose value-added is negative when valued in free-market prices. These interpretations are based on the following appropriate assumptions that:

1. Value-added is always positive in domestic prices, which is a normal business condition in any economy.
2. Value-added of very efficiently produced commodities might be lower in domestic prices than free-trade prices, resulting in a negative ERP, which would indicate a comparative advantage for exports.
3. Negative value-added in free-trade prices would show that the sector survives on very highly subsidized inputs.

On examination of the figures, however, one should see that the public enterprises in the shoe sector paradoxically contribute a negative value-added, in both domestic and world prices. The published source of the data also records a negative value-added. That is, even in domestic prices the factors of production, themselves, appear to be subsidizing the buyers of shoes by selling below the cost of materials. Possibly the owners, managers, and workers can do this because they are supported from some source that is not shown in the Annual Industrial Production Statistics, but this is incomprehensible from the statistics

alone. Further explanation and a study of the data for other years are necessary. The total non-factor costs of materials and services plus the value of unfinished products from stocks exceed the value of finished products by over 30%.

In the previous year, however, the value-added from public enterprises is about three and a half times larger in domestic prices than in free-market prices, yielding a high positive ERP of 248%. This appears more in keeping with the high degree of protection provided to the private sector in 1993/94 when the ERP is estimated to be an extremely high 968%. Both rates of protection on value-added greatly exceed the level that might be presumed by the high degree of price mark-up permitted by the 70% tariff rate, which itself is remarkably high.

One may be tempted to look at the production data very thoroughly with an intent either to find convincing evidence that the ERP estimations are based on valid data, and therefore very likely to be correct, or to find questionable data values that would justify dismissing the results. This should not be done for either reason, however, because the data were not collected and reported with a view toward using them in ERP calculations. Too little is known about the data, inducing questions and requiring many assumptions, as mentioned above. The data base is inadequate for calculating ERPs for other product sectors, comparing them, or analyzing the sensitivity of ERPs to changes in various tariff rates.

Data published by CAPMAS was used as much as possible, and supplemented with data provided by an industry specialist. The product sector corresponds to the thirteenth industry sector of the national inter-industry input-output matrix for 1991/92, also prepared by CAPMAS. Production data varies widely from year-to-year in the industrial survey taken by CAPMAS and in comparison to the input-output matrix. Even the simple proportions of intermediate inputs or value-added to the total value of production varies considerably. For example, the 91/92 input-output matrix indicates about 40% of the product is value-added, whereas the published data for the 93/94 industry survey indicates only 17%, both figures are computed as the residual difference between output and non-factor inputs. Even considering that the periods are two years apart, the difference is amazingly large when comparing similar data bases prepared by the same agency with regard to a large and established industry, and therefore the data and computations must be considered with a considerable degree of tolerance for error. The main obstruction to ERP analysis is a lack of data — another is a question of the accuracy and consistency of data.

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## V. PRACTICAL VALUE OF ERP MEASUREMENT IN EGYPT

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The basic argument of this document is that ERP measurement is a highly useful tool for tariff policy, which itself has diverse and major impacts on the economy. Although ERP, alone, has no particular significance for government revenue, the relative size of each ERP has importance for estimating the impact of tariffs and other trade barriers on the structure of the economy. The measures provide information which can be significant for assessing the potential effectiveness of policies formulated to influence, for example, the development of production, income distribution, efficiency of markets and the economy, and international trade relations.

The study, which is the subject of this report, was designed to be a pilot study, serving several useful purposes. First, it was intended to demonstrate the procedures and alternative steps in collecting data and calculating ERPs of at least two representative product sectors in the Egyptian economy. Next, it was to be the means for establishing a permanent unit and skilled staff within the government for calculating ERPs of all product sectors, updating and improving the data base, and presenting analysis and recommendations for tariff policy. Not all of the objectives could be fulfilled for reasons that are discussed elsewhere — the insufficiency of available data and the uncooperativeness and high cost of data from CAPMAS were the major obstacles that required the planned efforts of the study to be curtailed. However, the ERP methods were studied by a significant number of GOE staff, and actual data were collected from a published source of official data, and an ERP calculation made for one product sector.

Reforming the overall tariff regime continues to be the main tool to be used for liberalizing trade and conforming to international trade conventions, while average rates of tariff are the available indicators of trade liberalization. On the other hand, ERPs of sufficiently disaggregated product sectors reveal the economic implications of specific tariff rate changes on investment and production decisions. Calculated ERPs are useful for analyzing a potential pattern of the impacts of tariff reform on the domestic economy, and therefore they are practical for making decisions on the sequence and the magnitude of tariff changes. The use of ERPs built upon a good data base would provide the basis for determining the best way of shifting the tariff induced bias away from import substitution to export expansion, and especially to investment in the production of non-tradables, which are usually the crucial elements upon which most production is based.

### **1. Situation and Problems of Data and Measurement**

Good data is the crucial basis of useful ERP analysis. Moreover, the practical value of ERP analysis depends upon an institutional facility for (1) maintaining and managing a good data base, (2) analyzing the results of ERP computations and formulating useful statements of the conclusions and recommendations for policy, and (3) dialog with the policy makers who have the essential questions for analysis and who will use the results of analysis in practice for national economic management.

### Lack of data

Any suggestion of a lack of data is paradoxical in Egypt, where data is collected and used by countless persons. Extensive data collecting efforts are going on all the time, as all informed observers know. Data is being collected and used by a number of institutions — both national and international, scholarly and business or financial — including, donor agencies and representatives of donor countries, potential investors, banks, technical assistance projects, and so on, besides ministries and many other government agencies.

The existence of so many data collectors and users, however, is symptomatic of a very serious problem. The existence of many users, alone, is a good sign, but that there are also many collectors of data is not. The existence of many users would generally mean that information is reliable and readily available, which should also be indicative that policies, planning, and actions have a sound basis. Decision makers and their advisors and analysts want and need data to answer their questions and to support their decision-making responsibilities. The problem is that their wants and needs are not satisfactorily answered by an established source of consistent and credible data. The researchers and analysts need data, and the only expedient way they can get data is to collect it themselves — by their own efforts and methods. Consequently, the national economy is incurring excessive costs in the following several, and perhaps many more, major ways:

- inefficient and unnecessary duplication in use of human and material resources for data collection,
- wasteful use of respondents' time, possibly depleting sources of future useful data by loss of good will due to redundant interviews and questionnaires,
- limited usefulness of each data base due to the specific nature of the purpose for its collection, and perhaps a budget constraint, and therefore its scope is likely to be narrow and inconsistent with other uses,
- limited use of each data base because it may be compiled perhaps for only one short time period, and therefore a time series cannot be analyzed.
- many, if not most, of the data bases are likely to be used only once, and then forever lost without any future use, and consequently
- most, if not all, of the data bases are inconsistent with others, and therefore cannot be combined with other data bases for comparative analysis either in cross sections or over a series of time periods.

These points highlight an essential nature of most data — any data base should be treated as a public good; a data base actually is a public good in its basic quality.<sup>26</sup> Unfortunately,

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<sup>26</sup> By one definition, a public good, for example, street lighting, is one that cannot be withheld from any person unless it is withheld from everyone. Data bases can be withheld from others — as they are in Egypt — therefore a data base is not a public good by this definition. By another widely accepted definition, however, a public good is one which can be enjoyed or "consumed" by any number of individuals without diminishing the consumption of any person. Street lighting, national military defense, and also any data base, are all public goods by this latter definition. By either definition, a public good can be used by any number of people — the greater the number of people who use the good, the greater is

data bases in Egypt are rarely shared or used efficiently. Even the data bases compiled at public expense are rarely made available to the public or utilized to the fullest possible extent.

The nation's most prominent collector of data is CAPMAS, the central statistical agency of the government, which declares itself "always keen to provide accurate data in suitable time and form."<sup>27</sup> CAPMAS describes itself on the international Internet in the following expression:

... the official source of providing all the country organizations, universities, research centers, individuals and international organizations, with data, on statistics and information that help in planning, development, evaluation, policy formulation and decision making purposes. The Agency with its huge human capabilities, technical expertise and advanced equipment is considered one of the most important agencies in the country at a time data and information represent the most important factor to achieve success and development in every area and activity....<sup>28</sup>

Contrary to expectations, and despite the agency's promotional statements extolling its capacity and performance of data delivery, it is a common view that CAPMAS is not a good source of statistical data, and that data are expensive and extremely difficult, or impossible, to obtain from the agency. However, one does hear about exceptions to data unavailability, in which limited amounts of data are provided upon the payment of fees in the thousands of Egyptian pounds.<sup>29</sup>

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its value. Therefore, data bases should be made available to everyone at no cost to any user above the marginal cost of replicating the document on paper, diskette, or the Internet — and that cost might be paid from public revenue because data bases are so widely used for public purposes, such as the basis for policy formulation.

<sup>27</sup> CAPMAS, Internet site, 13 October 1997 and 28 April 1998. On both dates, the same text was carried on the site. The full text of the introductory paragraph in the CAPMAS promotional statement is the following word-for-word unedited statement: "The Central Agency for Public Mobilization and Statistics (CAPMAS) is considered according to the presidential decree No.2915 the year 1964 the official source of providing all the country organizations, universities, research centers, individuals and international organizations, with data, on statistics and information that help in planning, development, evaluation, policy formulation and decision making purposes. The Agency with its huge human capabilities, technical expertise and advanced equipment is considered one of the most important agencies in the country at a time data and information represent the most important factor to achieve success and development in every area and activity. CAPMAS carries out regularly several and various censuses, surveys and research statistics, public mobilization, and information systems and the related activities, through conducting field surveys, technical studies, system analysis and designing, and collecting data from its resources, and conducting data processing and tabulation for these data, The agency is considered as an experience house at the national level in the field of statistical data and information techniques, and is always keen to provide accurate data in suitable time and form." [Quoted exactly as published.]

<sup>28</sup> *Ibid.* This extract is also an actual and exact quote from the same published statement by CAPMAS.

<sup>29</sup> One example is the cost of import data, which is collected by CAPMAS from the Customs Authority. The data on import values were desired for use in the calculation of the weighted average tariff rates needed for one part of this present study. The data were the annual values of imports for each customs line of the HS code by each of Egypt's trading partners (countries) — data that would fit on a computer

The agency collects detailed data on production in annual industrial surveys at product sector level, corresponding to the detail of the 4-digit ISIC code. This is the level used by CAPMAS in making its 38-sector matrix of inter-industry transactions in the economy. Detail at this level is adequate for most ERP analysis, although detail at a 5-digit level would be still more useful because the categories align more closely with the HS classifications of the Customs Authority.

#### Lack of analysis unit

Although a source of adequate data is crucial, ERP analysis also depends upon a permanent institutional facility for

- maintaining and managing a good data base,
- analyzing the results of computations, and
- formulating conclusions and recommendations for policy.

In order to maximize the unit's effectiveness, the analysts would also need to maintain a frequent dialog with the policy makers who have the essential questions for analysis and who will use the results of analysis for national economic management. At the present time there is no unit with this capacity in Egypt.

#### Uncertain interest

An encouraging degree of interest in ERP calculations and analysis was shown initially by Egyptian policy-makers and officials. Although interest was passively sustained while the study was being started, it remains a question as to how long the interest would last, and how much commitment and future effort would be given to a permanent analytical unit for this purpose.

The ERP study was attempted upon an initial request from the Ministry of Economy. Interest was quickly shown within the Ministry of Finance, as demonstrated by the Minister's prompt action of delegating two senior staff officials to participate in the study immediately after receiving the proposal for the study. The Ministry of Trade and Supply, through its Foreign Trade Sector, was strongly interested, and responded soon to the proposal with a firm request for a commitment to be made at the level of the Council of Ministers concerning the long-term location of an ERP analysis unit, and the supervisory responsibility for it.

The question of sustainable interest arises because the study could not be continued beyond the pilot phase when it became apparent that CAPMAS would not provide data as expected. This problem and its impact on the study is discussed above. It might be explained here, however, that the scope of work and the consideration of establishment of an institutional unit for continuing and elaborating upon the study were predicated on the

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spreadsheet having approximate dimensions of 6100 records by 100 variables, perhaps 150, which is not unusually large. The price quoted by CAPMAS for each annual set for Egypt's imports, only, was LE 4000 (US\$1180) on paper or LE 5000 (US\$1475) on diskette. The quotation would not be given in writing before the actual placement of an order.

ability to use statistical data prescribed by the CAPMAS questionnaire for its annual industrial survey. Data collected in the survey had been offered, during a meeting in December 1996, in response to a letter of request from the Minister of Economy. However, the only material provided by the Agency was composed of partial replicas of questionnaires as examples of completed questionnaires from a half-dozen sectors of industry, and a blank questionnaire. The sample questionnaires were intended to be used for modifying the data request in a format that would simplify and otherwise facilitate CAPMAS's response to the request.

Without data, the pilot study and the work of the staff was frustrated and ended without setting up a detailed procedure for calculating ERPs with a significant degree of accuracy at a level comparable to the customs classifications. The circumstances and impact of the data collection problem is discussed further in an annex titled "Assessment of the Data Collection Efforts."

## **2. Last word on policy**

The ultimate trade and investment policy objective should be a market-balanced economy, that is, market determination of prices. Prices that are determined in the market place are efficient — they minimize costs of production and maximize economic welfare because they are set through the balance of decisions and final agreements reached by the buyers and sellers, with no intervention by government. The ultimate form of this would be a free-trade economy; the next best would be the adoption of a low uniform tariff.

Pressure due to market intervention by the government on investment and production decisions created by differential treatment among the array of sectors of production through tariffs and other trade policies is economically inefficient. When government sets escalating tariffs by stages of production, the impact promotes the production of final goods in place of intermediate and capital goods, other material inputs, and non-traded commodities. This is typical of the now-disfavored import-substitution policy, and imposes a heavy cost on consumers and some producers for the benefit of others.

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## ANNEXES

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**ANNEX A.****METHODOLOGY: THE CONCEPT AND COMPUTATION OF ERP**

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The rate of customs duty, which is commonly called the tariff rate, on imports is no mystery — it is the rate of taxation contributed by importers to the government's revenue or, from another perspective, it is the percentage increase in the market price of imports. The latter notion defines the rate of protection of the home market for local producers. Normally there are other influences on the price of imports, such as the charges by various agents for port handling, customs clearance, and transport within the port, and fees and costs of items provided for various inspections, other procedures and delays, and so forth. Due to these other factors, the final market price of imports is likely to be increased by more than the customs duty alone. The rate of increase in the final market price over the landed cost (cif-price) is usually called the nominal rate of protection by economists.

Accordingly, we have several terms for a conventional tax on imports — the rate of customs duty, tariff rate, or rate of protection — which is levied on arrival of the imports into a national port of entry, and another term for the increase in the final price of imports — the nominal rate of protection — which is determined in a comparison of the prevailing market price to the pre-customs or duty-free price. So far, we are dealing with only two different rates; two different price changes to a single base price, which is the landed cost of imports.

It is important, however, to maintain a distinction between these two rates. The rate of protection (the tariff rate) is easy to obtain since tariff rates are usually published, but the nominal rate of protection requires a greater research effort for obtaining the average market price and the average cif-price of identical commodities. The latter rate of a price change is the more interesting of the two for economic analysis, and therefore analysts would like to use it, if possible. All too often, however, the researchers are obligated to cut corners in their budgets, and to use a proxy for the nominal rate of protection, labeled NRP. Naturally, this proxy is usually the tariff rate, but its label should not be changed — it should be honestly called the tariff rate, in true academic accuracy, and never the nominal rate of protection (NRP), even when the former is used as a proxy for the latter. A third important ratio is the effective rate of protection (ERP), which is the focus of this paper. ERP is entirely different from the simple rate of protection or the NRP because it is a ratio of another price difference to another base, as will be shown here.

The nominal rate of protection, also called a nominal rate of assistance, is applicable only in economies that put up barriers to international trade.<sup>30</sup> It is the producer's percentage increase in revenue per unit of output over the amount of revenue that would be earned in

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<sup>30</sup> The Australian government uses the terminology "nominal rate of assistance" (NRA) and "effective rate of assistance" (ERA) for their concept, which are explained in their publication by the Department of Foreign Affairs and Trade, *Using the Effective Rate of Assistance in Trade Negotiations*, Canberra, n.d. (ca 1989). NRA and ERA are essentially the same as NRP and ERP.

a free-trade economy — one without tariffs. In another way of saying the same thing, NRP is the percentage increase in the market price of an import or its identical locally made substitute in comparison to the duty-free price of the imported product. The price increase is normally equivalent to the customs duty paid, or payable, on the import plus other costs incurred due to other trade impediments, if any, against imports.

In sharp contrast, ERP is computed on a different basis. The measure of ERP is the percentage increase in the amount of value-added per unit of output over the amount of value-added that would be imputed to the product in a free-trade economy, where no tariffs or other barriers impede the free trade of imported and locally produced products. Since value-added is the amount of payment accruing to the profit or wage-earning factors of production, ERP represents the percentage increase in payments to investors and their employees due to tariffs or other barriers to selling imports on the domestic market.

Although tariffs are major influences in the magnitudes of NRP and ERP, other barriers to international trade are important determinants, too. Tariffs are the easiest to take into account because they are well known and easily identified, they have numerical values, which are conveniently used in formulas and mathematical analysis, and they are specific to products at a detailed level. The notion of tariffs could easily include all impediments to trade in imports, and this should be the intent in all treatments of NRP or ERP, because all barriers tend to raise the market price of both the imports and their domestically produced competing products.

Tariffs, and other barriers, protect the domestic market from trade in imports, preserving it for trade in domestically produced goods. The producers and their dealers are protected against the competitive businesses of the country's importers. This is the meaning of protection. Local producers and their dealers enjoy a protected market due to the impact of tariffs at the expense of the domestic buyers — whether consumers or investors — who must pay the tariff-protected high prices of domestic or foreign products.

NRP is the proportional change in the sum of the two components of the market price of a product — (1) value-added and (2) material inputs. The sum as it would be without tariffs is subtracted from the actual sum of the two components in a tariff regime, and the difference is expressed as a percentage of the free-trade sum. The ratio is a measure of the percentage change in the price of a product when an economy changes from free-trade to one that is tariff burdened. Therefore, NRP can be compared to the appropriate tariff.

ERP is simpler. It is the difference between only the value-added component of the price as it is under a tariff regime and would be in a free-trade economy expressed as a percentage of the latter. The ERP ratio is a measure of the difference in the size of the payments to the value-added factors of production, namely the owners and workers of the particular industry, due to tariffs on competitive imports.

In comparison to NRP and tariffs, ERP provides very little information about protectionism or trade liberalization and the average height of tariffs. ERP has a different purpose. NRP and tariffs describe product market conditions, such as competitive prices and trade walls, for the sale of products. ERP describes a measure of investment

profitability — the relative size of profits and wages — higher than normal in highly protected product sectors. Investors do not need to calculate ERP to know which product industries provide an opportunity for extra profit, or the softest cushion for the absorption of inefficient work or use of materials, due to heavy protection.

The value of NRP is comparable to the size of a tariff because it represents a change in the market price due to the imposition of a tariff and other trade barriers. Whereas ERP represents the change in the returns to the factors of production. Both NRP and ERP — and it is important to note this — are statistics that are determined by tariffs and other barriers or conditions of the international trading environment of an economy. They change as the structure of tariffs is changed, but they, themselves, are not determinants of tariffs. However, both NRP and ERP, in a particular way, influence decisions. Buyers of goods for investment or consumption are aware of the impact of tariffs on prices, and they use the information while deciding on purchases — they have some kind of understanding of NRP. Quite similarly, investors and producers have a kind of awareness of ERP, which they include in the basis for their investment and production decisions. They would prefer, everything else being equal, to engage in the production of goods enjoying the highest ERP because they understand that the potential returns to the investor and workers — the value-adding factors — or the absorption of inefficiency and error will be highest in this activity.

The concept of ERP is a measure of the proportional change in the magnitude of payments to value-adding factors of production due to tariffs in comparison to a free-trade economy.

The concept is algebraically given in equation (1), below. Because the tariff structure is assumed to be the major condition of protectionism, and because value-added can be computed from technical coefficients of production, a useful technique for illustrating ERP has been built in terms of the tariff on the final product and the tariff-weighted values of material inputs per unit of output. This latter technique, which is shown in equation (2), below, is commonly used for explanations of this economic tool. In principal, both of these approaches yield the same result. However, the technical coefficients of production under free trade, on which the textbook formula is based, cannot be obtained directly. The coefficients of actual production have been shaped by conditions and market prices that are already distorted by tariffs. Therefore, the formula has been modified for application to real economic situations, and given in equation (3). Nevertheless, the formula yields the same results as the others, when the collected data is accurate and comparable. Small variations occur in practice due to differences in the data records of various sources, and the applied techniques of handling incomplete data.

The standard definition of ERP is given in three equivalent formulas, which are implicitly but not necessarily expressed for a unit value of output:

The basic concept:

$$e_j = (Vd_j - Vw_j) / Vw_j = (Vd_j / Vw_j) - 1 \quad (1)$$

The textbook explanation:

$$e_j = (t_j - \sum a_{ij}t_i) / (1 - \sum a_{ij}) \quad (2)$$

The practitioners' application:

$$e_j = ((1 - \Sigma a_{ij}') / ((1 / (1 + t_j)) - (\Sigma(a_{ij}' / (1 + t_i)))) - 1 \quad (3)$$

where the variables are defined as follows:

$e_j$  = ERP<sub>j</sub>, which is the effective rate of protection on output j,

$Vd_j$  = value-added in domestic market prices in producing output j,

$Vw_j$  = value-added in world (free-market) prices in producing output j,

$t_j$  = tariff rate on tradable<sup>31</sup> product j, which is equivalent to output j,

$t_i$  = tariff rate on tradable input i

$a_{ij}$  = value of input i per unit of output j, which is the technical coefficient of production in a free market economy (without tariffs on imports),

$a_{ij}'$  = value of input i per unit of output j, which is the technical coefficient of production in the tariff-distorted market economy, and

$\Sigma$  =  $\Sigma_i$ , which is the symbol for the summation of values within a specified numerically ordered sequence, where i represents a number in the sequence. The symbol shows the summation of all inputs in the production of a specific output in the above formulas.

All three formulas are theoretically consistent definitions, and yield algebraically equivalent results. In practice, however, numerical solutions for the coefficient of ERP may differ among the definitions because they are expressed in terms of different variables. Each variable is determined by specific and available data, and certain differences in sources and procedures of collecting data may lead to unique results for each formula. Actual differences in results of different ERP calculations for any one product are unlikely to be observed, however, because data are not usually available for each variable of all three formulas and, therefore, only one formula would be applied, according to the available data. Even after the data are collected for the application of a particular formula, it is likely that some of the data will either be insufficient, or of uncertain accuracy, requiring expert interpretation and adjustment.

The question may be asked, "Can these three algebraic expressions of the definition of ERP be shown to be mutually consistent formulas and yield equivalent results?" This is a good question because authors of economic papers and textbooks are likely to present either the first equation or the second, and occasionally both, depending upon the needs of their expositions. The third formula is less commonly given — it is used mostly in applied analysis. The answer to the question is, "Yes."

<sup>31</sup> "Tradable" characterizes a product that could be economically imported or exported in the absence of trade barriers. The term is applicable whether or not the product is actually traded, and applies to both outputs and inputs. A tradable product might not be actually traded due to differences in customs and tastes, or other market factors. A non-tradable product, however, has characteristics that make trade impractical. For example, many types of infrastructure, such as roads, bridges, and other heavy special purpose constructions, or schools and medical facilities, or certain mineral ores, and electric power, but with a few ideal conditions for exceptions, are all nontradables in the general sense.

To see the equivalence, let:

$$Vd_j = (1 + t_j) - (\Sigma a_{ij} + \Sigma a_{ij}t_i)$$

$$Vw_j = (1 - \Sigma a_{ij})$$

and show that the first two equations are equivalent by substituting the right hand side of the above definitions of  $Vd_j$  and  $Vw_j$  in equation (1):

$$e_j = (Vd_j - Vw_j) / Vw_j \quad (1)$$

$$= ((1 + t_j) - (\Sigma a_{ij} + \Sigma a_{ij}t_i) - (1 - \Sigma a_{ij})) / (1 - \Sigma a_{ij})$$

$$= (t_j - \Sigma a_{ij}t_i) / (1 - \Sigma a_{ij}) \quad (2)$$

QED

The next step is to show that formula (2) is equivalent to (3), which will be proof that formulas (3) and (1) are equivalent. This step requires a few roundabout, but nevertheless ordinary, algebraic manipulations. First, define the technical coefficient of production in the tariff-distorted market economy, as already explained above:

$$a_{ij}' = a_{ij} (1 + t_i) / (1 + t_j)$$

It follows that:

$$\Sigma a_{ij}' = \Sigma a_{ij} (1 + t_i) / (1 + t_j).$$

Next, take equation (2), add  $(1 - \Sigma a_{ij})$  to the numerator, and immediately subtract it:

$$e_j = (t_j - \Sigma a_{ij}t_i) / (1 - \Sigma a_{ij}) \quad (2)$$

$$= ((t_j - \Sigma a_{ij}t_i) + (1 - \Sigma a_{ij}) - (1 - \Sigma a_{ij})) / (1 - \Sigma a_{ij})$$

rearrange:

$$= ((t_j - \Sigma a_{ij}t_i + 1 - \Sigma a_{ij}) / (1 - \Sigma a_{ij})) - ((1 - \Sigma a_{ij}) / (1 - \Sigma a_{ij}))$$

$$= ((1 + t_j - \Sigma a_{ij}t_i (1 + t_i)) / (1 - \Sigma a_{ij})) - 1$$

and divide each element of the first term on the right hand side of the equation by  $(1 + t_j)$ . Multiply the last element in the divisor by  $((1 + t_i) / (1 + t_i))$ , which does not change the equation because the operation is simply dividing or multiplying the terms by one:

$$= (((1 + t_j) / (1 + t_j)) - \Sigma a_{ij} ((1 + t_i) / (1 + t_i))) / ((1 / (1 + t_j)) - (\Sigma a_{ij} (1 / (1 + t_j))) ((1 + t_i) / (1 + t_i))) - 1.$$

Again, rearrange:

$$= \frac{((1 + t_j) / (1 + t_j)) - \sum a_{ij} ((1 + t_i) / (1 + t_j))}{((1 / (1 + t_j)) - (\sum a_{ij} (((1 + t_i) / (1 + t_j)) / (1 + t_i)))) - 1}$$

and arrive at equation (3) by substituting 'a' for its value in the above equation:

$$e_j = ((1 - \sum a_{ij}') / ((1 / (1 + t_j)) - (\sum (a_{ij}' / (1 + t_i)))) - 1 \quad (3)$$

QED

Therefore the three formulas have been shown to be equivalent:

$$\begin{aligned} \text{ERP}_j &= e_j \\ &= (Vd_j - Vw_j) / Vw_j \end{aligned} \quad (1)$$

$$= (t_j - \sum a_{ij} t_i) / (1 - \sum a_{ij}) \quad (2)$$

$$= ((1 - \sum a_{ij}') / ((1 / (1 + t_j)) - (\sum (a_{ij}' / (1 + t_i)))) - 1 \quad (3)$$

Even if it were possible to collect all the necessary data for all three formulas, practical calculations would likely produce three different results. The size of the variation should be small, however, depending upon the quality of the data. All three formulas should produce about the same rank ordering of ERPs.

The calculated  $e_i$  can be any value between negative and positive infinite, but the range of values is usually somewhat greater than the tariff rate, and sometimes several times greater. If the data are known, with a high degree of confidence, to be generally accurate and complete, the ERP values merit analysis and consideration for policy formulations. Very high, or low and negative values draw more attention than values near the tariff rate because they are likely to be the result of unusual conditions of production or incentive policies.

The following three reference points are the critical values of ERP (or,  $e_j$ ): (1) the value that is equal to the rate of tariff on the potential import equivalent to the output product, which is the subject of the ERP calculation, (2) zero, and (3) negative one. This requires a small amount of explanation. The formulas, above, are expressed in normal algebraic notation, where a tariff rate of twenty percent would be written in its numerical form as 0.20 — not 20, although the tariff rate could be handled, awkwardly, if written as 20%. Accordingly, the critical values of ERP, from the above equations in the case of a twenty percent tariff, would be 0.20, 0.00, and -1.00 in their numerical form. However, because tariff rates are usually expressed in terms of percentage, researchers frequently add a multiplying factor of 100 to the right hand side of their formulas for results that should have the percent sign, %, attached, and be compared to tariff rates that should also be written in the percentage form. The critical values of the example in this paragraph would then become 20%, 0%, and -100%.

These critical values are the same for all ERP calculations, irrespective of the formula applied for calculations. They are most clearly understood, however, with reference to the algebraic expression of the concept, that is, equation (1), which shows that ERP is the rate

of increase in value-added due to the distortion of trade barriers, in contrast to the tariff rate, which is the rate of increase in the price of the whole product, not just the value-added portion, due to the tariff.

Take the first formula, and focus on the simple variation to the right of the second equal sign (=). It is a ratio of the value-added in domestic prices to the value-added given in free market prices, from which one is subtracted:

$$e_j = (Vd_j - Vw_j) / Vw_j = (Vd_j / Vw_j) - 1 \quad (1)$$

If the value-added of production under a tariff regime is equal to the amount that would prevail under free trade, ERP would equal zero because  $Vd_j / Vw_j = 1$ . If this were the results, the tariff would be shown to be unnecessary, or perhaps there are no tariffs. In any event, tariffs are unnecessary for the producer to be competitive, either in the domestic or the export market, assuming that transport and other distribution costs are either negligible or no greater for the domestic producer than for the foreign producer. Hence, zero, or 0%, is a critical value of ERP.

When market prices are driven to a level such that  $Vd_j$  exceeds  $Vw_j$  by a ratio equal to the tariff, ERP equals the tariff rate, another critical value. For example, if the tariff rate were 0.30, ie, 30%,  $Vw_j$  equal to LE 100.00, and  $Vd_j$  equal to LE 130.00, then  $e_i = (Vd_j / Vw_j) - 1$  equals  $1.30 - 1.00 = 0.30$ , or 30%, which is equal to the tariff rate. This is the results within a regime of a uniform tariff, where all imports — final products and inputs alike — are taxed by a common tariff rate. An explanation of a uniform tariff rate and this critical value is seen most clearly in a numerical example based on formula (2).

When  $Vd_j$  is less than  $Vw_j$ , the ratio,  $Vd_j / Vw_j$  is less than 1 and the resultant ERP is negative, showing that the producers of output  $j$  are in some way being taxed, rather than being protected. The protection given to the producer by the tariff on competing imported products is reduced to less than nil due either to higher tariffs on imported inputs or to the unavailability of imported inputs in combination with higher priced domestic inputs. In this case, the producers of the sub-sector are very efficient, assuming that they are earning normal profits.

The third critical value, -1.00, or -100%, means that the production of the output is extremely inefficient, such that the value-added in the industry is negative when valued at world prices. This would be possible when an industry is being subsidized (directly by government to offset the high cost of imported inputs or high cost of non-tradable inputs, or less directly, without subsidy payments, by unusually distorted domestic market prices, such as severely depressed prices of inputs due to price controls) sufficiently for the output to be more valuable than the inputs, both valued in domestic market prices, yet less valuable in free market prices. In other words, the cost of using domestic inputs or importing them is greater than the import price of the output. In this case  $Vw_j$  is negative, resulting in an ERP of less than -1.00, or -100%. Other factors of extreme inefficiency might be high intra-firm transfer prices of inputs, or high wastage and pilferage in production.

A negative ERP below -1.00 shows a highly inefficient and subsidized activity that would likely attract strongly protected investment resources. A zero value or a negative ERP between -1.00 and 0.00 characterizes efficient activities that are, or have potential to be, competitive in the world market. Any positive value of ERP reveals a relatively inefficient activity. The higher the ERP, whether due to a higher tariff, non-tariff barriers to import trade, or lower tariffs on inputs, the stronger is the attraction of investment resources, due to the higher rate of value-added payment to each unit of investment and labor. An ERP above the tariff rate means that the activity is more highly assisted than would be indicated by the tariff, and correspondingly, the assistance to an activity showing a lower ERP is less than might be estimated by the tariff rate.

A negative  $Vd_j$  has not been discussed as a possible reason for a negative ERP. While it would be plausible in an abstract mathematical function, it would be economic nonsense to consider a potential case in a real economy in which the factors of production — the owners of the industry and the workers — would subsidize the consumers of the products of their labor by working for negative profits and wages.

From a different viewpoint, an interesting ratio of value-added is  $(Vd_j - Vw_j) / Vd_j$ , or  $1 - (Vw_j / Vd_j)$ . This ratio would always be positive under tariff protection. The resulting coefficient can be regarded as the proportion of value-added which is attributable to protection.<sup>32</sup>

In conclusion, ERP is a useful tool of measurement, but has a limitation. It is a tool of partial analysis; employed to measure the impact of trade barriers upon specific industries or industry groups without taking into account possible indirect impacts or feedback effects. This quality detracts no more from the concept, or is no more serious, than the limitations of other tools for measuring the significance of tariffs.

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<sup>32</sup> G K Helleiner. *International Trade and Economic Development*, Middlesex, England: Penguin Books, 1972, page 126.

## ANNEX B.

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### TARIFFS AND PROTECTION

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The content of this annex is an expansion of the brief discussion in Part II of this report, giving a fuller review of the principal economic purposes of tariffs and protection. The subject of the discussion is essential for any treatment of the definition and significance of the ERP concept and measurements, and ERP analysis.

#### 1. Tariffs

Tariffs and non-tariff barriers (NTBs) such as quotas, quality restrictions, and procedures are imposed on commodity imports for several purposes. Perhaps the most traditional reason for a tariff is the creation of a revenue flow to the government, but a tariff may serve other purposes, too. Tariffs and especially NTBs are commonly applied purposely to restrict imports in order to protect the local market for local producers, to restrain expenditures on imports and thus preserve the economy's monetary reserves of foreign exchange, or to restrict the importation of commodities that might threaten the moral standards or health of the citizens. Whatever the ultimate purpose, tariffs and NTBs constrain to some degree the price, quantity, or quality of imported commodities. As a consequence, the degree of market competition among suppliers is reduced, favoring the nation's producers at the expense of the consumers.

The effect of tariffs on the prices of imports is obvious. We know that a tariff, like any other tax imposed upon a commodity, whether imported or domestically produced for the market, will raise the market price of that particular commodity. Also, many people have learned that the magnitude of the rise in the price is often less than the amount of the tax because some producers — foreign and domestic, alike — are inclined to absorb some part of the tax by lowering the before-tax prices of their products in order to retain their competitiveness, and share, in the market. If a tariff rate is applied to imports, and if the domestic product is not equally taxed, the domestic producer can reap a windfall profit simply by raising the price of the domestic product, correspondingly. Although the overall effect of a tariff is usually a higher market price, and consequently a reduction in the quantity purchased, the domestic producer would still gain a higher profit per unit. Moreover, the producer would take some or most of the market from the importer, while expanding his own sales, by holding the price to less than the duty-paid price of the equivalent import.

If the government were to impose a tariff on all imported goods at one specified rate, that is, a uniform rate, the tariff would be like a sales tax on imports, without any particular market distortion among imports. Nevertheless, without an equivalent tax applied to all domestically produced goods, the government's intervention in the market by imposing an import tariff — even though it is set at one uniform rate — would raise the market prices of imports, reducing the quantities sold relative to domestic products. Due to the resultant high market prices of imports, the profit opportunities are raised for investors and producers in these markets. Investors and producers are induced to allocate more resources for the production of import substitutes, withdrawing resources from the

production of exports of all kinds and non-tradables, such as locally consumed farm produce, clothing, books, medical clinics, schools, roads, or bridges, for example.

Without a unified rate applied to all imports, the large number of different rates causes many interacting price distortions in the markets. The impact is always complex, with the market bias favoring some commodities more than others, but in principle and in practice tariffs create market biases in favor of import substitutes, drawing resources out of production of exports and non-tradables.

The deviations in market prices are made more complicated by a diverse array of exceptions — such as tariff exemptions, temporary admissions, duty drawbacks — and the resulting impacts on the cost of working capital. Distortions are also created by specific inspections for customs valuation, standards, and quality inspections. These are additional to quantitative restrictions (QRs) and other types of non-tariff constraints on imports, including differences, if any, in the treatment among import consignments by the customs officials and other authorities.

## **2. Purposes of Tariffs**

A good picture of how individuals, or different sectors of the economy, are affected by tariffs is also a fair representation of the purposes of tariffs. Tariffs are usually expected to bring about one or more of the following overall impacts:

- increased government income (revenue);
- reduction of imports, and consequently an improved balance of trade and balance of payments, and a larger reserve of foreign currency held in the central bank;
- increased national production and protection of jobs and industry, which translates to increased national income; and
- social welfare gains through protection against health and safety hazards, restrictions on foreign influences in social customs and morals, and strengthening of the capacity for national defense.

These few reasons can be expanded and expressed differently to include protection of infant industries, correction of market distortions by second best solutions, prevention of the bad effects of trade dumping, creation of external economies and economies of scale, improvements in income distribution, and modernization of technology. Whatever the reason for justifying the imposition of a tariff, standard economics nearly always provides proof that a tariff is an expensive means to the desired end. Other policies are more efficient. Although tariffs may produce the wanted effects, they also entail economic costs due to other effects.

A government's need for revenue has traditionally been the basic reason for imposing tariffs. It is still a standard objective in countries where customs duty is a large source of government revenue and the alternative tax bases are small or taxpayers' obligations are costly to enforce. Customs duties on imports are imposed for other reasons, too, and these are likely to be more important as an economy becomes more developed, even though tariff rates may be reduced in general.

One reason that has a long history, and is still widely invoked, is a tariff's effect of reducing expenditure on foreign goods. Mercantilists in Europe of the 16th and 17th centuries associated policy measures of this type with the growth of national wealth, arguing that exports brought an inflow of precious metals (money or gold or silver bullion), and that a reduction of payments on imports would preserve the nation's wealth. A modern statement would emphasize the effects upon the balance of payments and monetary reserves. Both, the payments balance and reserves, would move in a positive direction by reducing imports, if export income either remained constant or increased — or, if it fell by a smaller proportion than imports. Although it is natural to think that import tariffs affect only imports, economists and governmental trade negotiators know that exports are affected, too, sooner or later.

Prohibitive tariffs can be used to limit or block the importation of commodities that would have significant influences on social morality or traditions, but a quantitative restriction (QR), such as a ban, provides more controlled protection. Very high tariffs, like high excise taxes, effectively limit the purchase of specific goods to the wealthier inhabitants, allowing the introduction and consumption of certain commodities, but inhibiting the spread of tastes for such goods among the general population. Import bans and other quantitative restrictions are more widely used than tariffs to protect the society against products that are hazardous to health and safety. Similarly, a QR is likely to be used to prevent the decline of a capacity to produce items that are crucial to national defense or security. Examples of the latter type of need for QRs are not easily identified.

The various impacts of tariffs, however, neither necessarily occur as intended nor occur with equal force. The effects of any tariff or set of tariffs depend upon the economic behavior of buyers, investors, and other agents in the economy. The various responses are influenced by prevailing economic circumstances, which are also shaped by changing conditions and development of the international economy.

The actual impact of a tariff might be the opposite to the normally expected affect. To give one hypothetical example, instead of bringing an increase in government revenue, an increased tariff rate might induce an overwhelming decrease in the purchase of imports and, therefore, result in reduced payments of customs duty. In another situation, where reduced imports are desired for curbing the outflow of foreign exchange, or for reducing the importation of competing products, the volume of imports might not be reduced to any measurable degree, while government revenue becomes significantly greater.<sup>33</sup> Well-considered tariff policy changes that are based on adequate economic data and analysis are not likely to produce surprises, rather, the results are likely to be much as expected. Good data and sensible analysis are essential ingredients of the foundation of sound policies.

Maritime ports, toll stations on roads, and narrow stretches of rivers are traditional points for imposing customs duties on goods. The procedure of collecting taxes on goods as they are imported across a border is relatively easily managed, compared to assessing and collecting

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<sup>33</sup> The hypothetical market responses shown in these two examples are normally explained in terms of the price-elasticity of demand and the Marshallerner condition.

taxes on personal and business income, or on the value of buildings or parcels of land, and other forms of wealth or sources of income.

Revenue from customs duties is an important part of government income in countries where a large proportion of the population are farmers or informal sector operators, producing and exchanging goods outside the formal economy, and where the institutional capability to assess income or audit business records is weak or inefficient. Despite the relative effectiveness of indirect taxes in terms of revenue generation, they introduce distortions in the market and tend to be regressive. Consequently, tariffs on imports are economically inefficient. The negative market impacts are compounded when the tariff structure is not a single rate applied uniformly on all imports, and such a tariff structure is likely to increase the degree of market inefficiency.

Irrespective of its purpose and effectiveness, a tariff is a market intervention by the government. Tariffs cause the prices of some goods to be raised relative to the prices of others, depressing the market sales of the goods on which tariffs are imposed and inducing a tendency toward more expenditures for other goods. Economic theory, supported by empirical studies, demonstrates that tariffs and other taxes on goods reduce market efficiency.

This is true, despite the government's need for revenue, and overriding merits for fulfilling that need by imposing taxes of various types on goods and commercial services in place of, or in addition to, taxes on income or wealth.

Supported by theoretical proofs and real world experience, economists agree that universal free trade is by far the best world trading arrangement. Even unilateral free trade is best for the country which adopts the policy. Accordingly, a government's need for revenue could be better met either by a uniform tax on all commodities, both domestically produced and imported, or by direct taxes on incomes. Nevertheless, exceptions for tariffs on certain imports can be justified in theory, but only within very special conditions. The included exceptions are primarily the tariff protection of infant industries and national defense industries.<sup>34</sup> On the other hand, non-tariff barriers in the form of an absolute ban on the importation and local manufacture of certain commodities can be justified for the protection of the safety, health, and moral standards of the people.

### 3. Markets

It should be noted that "a tariff" refers, in this document, to one particular rate of customs duty, and that "the tariff structure" refers to the complete schedule of all rates, which usually comprises many different rates. Therefore a discussion or analysis of the impact of a tariff —

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<sup>34</sup> Anne O Krueger, *American Trade Policy: A Tragedy in the Making*, Washington, DC: The AEI Press, 1995; pp 13-14. Krueger explains only three exceptions that can be supported theoretically, but only if highly restrictive conditions prevail. The exceptions allow for protection of (a) infant industries, only if the nation would gain from "spill over" effects, if not, public support of such industries would be uneconomical; alternatively, future returns of an infant industry would amply reward the investors' burden or initial losses; (b) national defense industries, only if their locations are unlikely to be affected by eventual hostilities and they are producing truly military equipment, such as weapons; and (c) an industry that is potentially in an international oligopoly or monopoly market, in which the first international entrant captures the market and get the rents or profits, but only if the government successfully "picks the winner." Krueger follows with an explanation of stronger arguments that put down the exceptional cases.

beyond any general or superficial treatment — must refer to one or more specific products, or one or more groups of products, separately, as defined by a particular customs classification or a specified list of classifications. The effects of tariffs or other market constraints on imports cannot be adequately analyzed by taking imports, in general, as a single, aggregate category because the effects of the tariff rates and regulations vary from product to product. Variations in the effects are due to many different market conditions, such as the location and structure of the market, transaction terms and conditions, kinds of buyers and sellers, variations in market intervention by authorities, and official policies and regulations.

When analyzing the effects of tariffs and other price interventions, economists prefer to view the economy as made up of separate markets for each commodity. The practicality of this approach will become apparent later, during the discussion of protection, and the comparison of the nominal tariff, nominal protection, and effective rate of protection. In other words, an analysis of the impact of tariffs requires a product-by-product approach. The point may be seen by recognizing that not all imports are sold to the final consumers, that is, imports are not always final goods — actually, most are not.

More than 60 percent of the nation's imported commodities are material inputs to production, businesses, or social services for making final products, or delivering commercial and social services.<sup>35</sup> Each tariff, or each commodity, is the basis of the definition of a specific market, or markets. The importance of a product-by-product analysis will become more apparent later when the procedure for calculations of the effective rates of protection are examined.

#### **4. Distribution of Market Effects**

So far, the focus has been on the tariff. The subject should be concluded with a brief review of the main implications for the market and economic gains for the economy before looking at the so-called effective rate of protection, or ERP. The dominant reason for a tariff in most economies today seems to be the protection of the local market for a particular domestic industry. The argument states, in various ways, that a local industry and its workers need protection against competition.<sup>36</sup> Therefore a tariff or other barrier to trade — meaning barrier to the importation of competing goods — is needed as compensation for the lack of advantages or for the presence of disadvantages, such as other distortions in the market, faced by the local industry. The protection is apparently needed for the industry's survival.

The question should be asked, what — or who — is being protected and how? The answer is obvious, the industry or the entrepreneurs are the direct beneficiaries, and the employees — as far as they can be regarded as permanently engaged in the enterprises — are beneficiaries, too. Some may say that the nation and therefore the people gain, too, by the indirect benefits of tariffs on the competing imports and the income taxes on the business and the employees. This, however, is not the case. The impacts of tariffs and other trade barriers on the market

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<sup>35</sup> Computed from an inter-industry transactions table for Egypt, 1996/97, in the National Development Plan.

<sup>36</sup> The force of this argument implies a need to protect a weaker or disadvantaged producer against the more fortunate or bigger and more advantaged producers, suggesting that open competition would be unfair or unjust to some degree, even without unfair or improper manipulation or interference in the market.

prices of goods and the allocation of resources reduce the efficiency in overall national production and lowers the standard of living.

Another way of viewing the protection provided by a tariff is to see it as "assistance" to the industry.<sup>37</sup> The concept of ERP shows that, indeed, most tariff structures provide assistance — actual financial assistance — to certain industries. Just how this financial assistance is divided among the entrepreneurs, workers, suppliers, customers, and creditors is another matter, but it could be readily assumed that the entrepreneurs are the major decision-makers in the distribution, and therefore the major beneficiaries of the assistance. The assistance is provided largely at the consumers' expense. The market price of a commodity is elevated above the free market price by the amount of the tariff. The entrepreneurs who produce for the market have two fundamental choices: (a) reduce the cost of production to the international norm and otherwise be efficient, and capture a higher than normal profit, made possible by the elevated market price, or (b) accept market conditions as they are, with the tariff in place, and be slothful, wasteful, or otherwise inefficient — or what amounts to the same behavior — allow the workers and suppliers to be inefficient.

The foregoing may be bluntly summarized in the following words. The government collects revenue on imports and the entrepreneurs of the industry either gain extra profits or they work less hard while the nation bears the costs of inefficiency in production. Ultimately, the entrepreneurs benefit from a profit, or reduced delivery of effort, and the consumers pay the bill — some pay the customs duty on imports and others pay a higher price on domestically produced goods.

An increase in the market price is the direct economic effect of a tariff irrespective of its purpose — whether the purpose is to bring in revenue to the government, to improve the balance of trade, to reduce the outflow of foreign reserves, to protect the local market for local producers, or to curb the influence of foreign tastes. In order to make this argument, we must assume that the goods are traded internationally, or could be, if the tariff is not prohibitively high — such goods are called tradables. If goods were not possibly traded, even without tariffs, then tariffs would have no impact on domestic market prices.

Obviously, if there are tradables, there are non-tradable goods and services, too. There are not many examples, but they usually include civil engineering products, such as roads and railroads, or social services, such as schools and hospitals, and materials and products that are costly to transport, such as many mineral ores, perishable farm produce or products such as bread and other bakery goods, beverages, or large carpentry components of buildings.<sup>38</sup> All

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<sup>37</sup> The Australian government uses the terminology "effective rate of assistance" (ERA) for their concept, which is explained in their publication by the Department of Foreign Affairs and Trade, *Using the Effective Rate of Assistance in Trade Negotiations*, Canberra, n.d. (ca 1989). As defined in the publication, ERA is essentially the same as ERP, which is the main subject of this present report.

<sup>38</sup> Other examples include electricity, water for irrigation or household uses, river control (dams and barrages), most or many kinds of public infrastructure, building sand and products, such as concrete blocks and bricks. Also included are such products as piped gas, which can be exported to neighboring countries but not across oceans, without processing into a different form. The exportation of electricity has limitations, too, and the trade is usually by a reciprocal arrangement.

of these have exceptions, of course. For example, more and more seasonal fruits and vegetables are being internationally traded as the means of transportation are improved, markets are growing, and tastes are becoming more internationalized. Moreover, services of toll roads and trains are sold to foreign visitors, and foreigners may come to a country for education or medical facilities and services. The export earnings of these exceptions are small, and making them subject to customs duties is certainly difficult.

Tariffs are often argued to be needed for improving the trade balance or for increasing employment, as mentioned above. Both arguments appear sensible, considering that a tariff on a commodity raises its market price, thereby normally causing buyers to purchase fewer imports of that kind and expanding the market for local producers in the sector. These arguments are fallacious, however, because they stem from only a narrow viewpoint or a partial analysis. If the demand for an importable commodity is price-elastic, a tariff would tend to induce consumers to reduce their expenditures on that particular import, but they would then buy other imports or buy domestic products, thereby diverting resources away from either exportables or other import-competing commodities, and consequently offsetting the initial change in the trade balance. On the other hand, the reduction in imports induce the foreign producers to shift their resources to other exports or to import-competing products. In the end, the trade balance tends to fall back to its previous level because the reduction of imports in one sector is offset by an increase of imports in other sectors or a reduction of exports.<sup>39</sup>

Aggregate employment, which is determined by the conditions that set wages in the labor market and the level of aggregate demand, is similarly affected and offset. The level of employment might well rise in those sectors where demand for domestic output rises, but falls in the sectors from which resources are diverted. Tariffs and NTBs are ill-suited policy instruments for correcting the trade balance and the levels of production and employment.

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<sup>39</sup> Krueger, *ibid.*, pp 17-19, explains this line of reasoning in more detail, including the generally accepted concept that the balance of trade is determined by the savings-investment ratio, in which tariffs are not factors.

### 1. Tariff Reforms in Egypt

Egypt's tariff structure has been modified frequently by the government over the past couple of decades. Most of the changes have been in gradual steps toward trade liberalization, commencing in 1976 with Presidential Decree 88 of that year, which brought about a tariff regime in keeping with the *infitah* (open-door) policy. The decree established a revised schedule of tariffs and the specifications for customs valuation, rules of origin, temporary admission, duty drawback, and tariff exemptions. The revisions greatly modified the prevailing basis created by the 1963 Customs Law (Law 66 of 1963), which had been adopted in its time in light of the government's post revolutionary objectives and the nationalization of all import-export companies.

The tariff structure was again revised by Presidential Decree 75 of 1980, reducing the costs of production to Egypt's manufacturers. The decree also encouraged higher levels of processing by revising the tariff rates from low to high levels according to the stages of manufacturing from production of raw materials to intermediate components and final products. Although the tariff revisions in 1976 and 1980 modestly contributed to Egypt's reorientation toward a market economy, the tariff reform of 1986 by Presidential Decree 351 is firmer evidence of a commitment to implementing policies for trade liberalization, albeit in gradual steps.

The 1986 decree reduced tariff rates, with the general maximum rate set at 160%. It also simplified the rate structure by decreasing the number of different rates from 43 to 12 levels. The government has since moved forward through gradual reductions of tariffs, non-tariff barriers, and the range of tariff rate levels, and also through improvement in transparency of trade policies. Tariff rates were further reduced in 1989 by Presidential Decree 305 of 1989. They were lowered by 30 percentage points, on average, although the reductions were smaller for higher levels.

Mixed steps were taken in the early period of the economic reform and structural adjustment program (ERSAP) of this present decade. Presidential Decree 178 of 1991, the year of launching ERSAP, brought the dispersion of tariff rates within a narrower range. Tariff rates, however, were increased by the regulation. Two years later, non-tariff restrictions were reduced by Ministerial Decree (Economy) 288 of 1993, which removed all but 3 commodities from the list of import bans and made them subject to tariffs. Many of them, however, became protected by another non-tariff barrier as they were added to the list for mandatory quality control inspection.

In 1994, a significant reform was implemented by Presidential Decree 38, which introduced a major modification to Egypt's tariff structure of customs codes and tariff rates — the government adopted the international Harmonized Commodity Description and Coding System (HS) with specific adaptations for the Egyptian economy. HS is the international standard for customs classification formulated by the intergovernmental Customs Cooperation Council (CCC) in Brussels. The new tariff structure establishes a

firm base of about 6110 classifications for tariff rates and facilitates future international trade agreements and negotiations, as well as the rationalization of trade policies.

Presidential Decree 304 of 1996 reduced the general maximum rate from 70% to 55% and lowered other rates by 10 to 15 percentage points, except for the reduction from 160% to 135% on large automobiles and retention of high rates on tobacco, poultry and poultry meat, and alcoholic beverages. Shortly afterwards, in an agreement with the IMF for a 2-year credit Standby Arrangement, the government obligated itself to further tariff reductions over the following two years — by the beginning of the fiscal year in 1997 and 1998 — particularly on higher tariffs. In the 1997 Presidential Decree 229, tariff rates were generally lowered by 5 percentage points and the general maximum rate was reduced to 50%, with high exceptional rates applying to automobiles, beverages, poultry and poultry meat, and tobacco. The 1998 tariffs rates are expected to be once again generally reduced by a forthcoming Presidential Decree.

## **2. Profile of Egypt's Tariff Policy**

The underlying policy or rationale for promulgating changes in the tariff rates in recent years is not prominently reported, other than in vague accounts about forging a greater degree of liberalization of Egypt's trade regime. The liberalization of trade is implicit in the overall rate reductions, and perhaps it could be regarded to be a sufficient reason for revising tariffs. A good tariff regime, however, could accomplish more.

The tariff structure could provide an efficient source of revenue and foster minimized market-price distortions, and still be a liberal trade regime. A discussion in the present report is centered around the point that the adoption of a low uniform rate would practically eliminate a market bias among imports and also reduces the anti-export bias created by tariffs. This approach to tariff reform is upheld as the best because it is relatively efficient, allowing the nation's producers to pursue and develop their own comparative advantages, while sparing the government of the heavy responsibility for predicting "winners." Moreover, it would greatly simplify and ease the tasks of the customs administration, and therefore should lower the social costs of law enforcement.

Another rationale for tariff reform could be the implementation of a liberal reduction of tariffs while simultaneously creating a bias in favor of higher levels of processing. This rationale is evident in the Presidential Decree 75 of 1980 that implemented a tariff policy for reducing the costs of production to manufacturers and intentionally encouraging higher levels of processing through a format of escalating tariffs in line with advancing stages of production. This policy is an elaboration of the principle of Egypt's 1930 regulation on the protection of an infant industry.

The consistency of the policy of favoring higher levels of processing has been weakened or eroded over time, despite a reinforcement in 1992, by Presidential Decree 431, which raised the rates on final goods and lowered them on raw material and parts for assembly.

There is no longer a clear scheme for the structure of rates for general types of products, such as unified rates for unfinished raw materials or intermediate components for all industries, or for general types of production. Today, there is a wide dispersion of tariff

rates among commodities at each stage of production of raw materials, intermediate goods, as well as final products. Even for raw materials to manufacturing, there are as many as 10 or 12 different levels of tariff rates. The wide variations suggest that advocacy and influence are more effective than analysis and industrial development policies in setting tariff rates.

The 1997/98 structure comprises 10 tariff rate bands in the lower range of tariffs up to the general maximum at 50%, and 10 in the range above, including the 54% rate on textiles imposed on the 1<sup>st</sup> of January 1998. The tariffs of 22 product groups from Egypt's 38-sector input-output table were examined in a recent study. Those sectors used inputs from 5 other sectors, on average, and each entailed about 7 or 8 tariff rates, usually ranging from 5% to 50%. For example, about 8 tariff rates are applied to each of two significant input categories — tariffs on machinery and equipment range from 5% to 135% and tariffs on iron, steel, and other basic metal products range from 1% to 40%.

### **3. Customs Law Promulgated since 1963**

A table of the customs regulations enacted and revised since 1963 with a brief synopsis of the features of each is inserted below. The legislation of the past few years are readily accessible and, therefore, can be accurately described. The descriptions of the contents of regulations of earlier years have been drawn from secondary sources, which partly differ in some details. An effort was made to be accurate, but some discrepancies may remain, especially in items of the list in the earlier part of the chronological spectrum and a few of the distinctions in labels between a law and a presidential decree.<sup>40</sup>

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<sup>40</sup> The table includes additional legislation and amendments to the descriptive information and other supplements to the table in Box 6: "Customs Decrees Implemented Before and During the ERSAP" from Lord and others (1994); see the Annotated Bibliography in the annex above.

**CUSTOMS REGULATIONS**

P = Presidential Decree, MD = Ministerial Decree, LAW = an act of the People's Assembly.

<b>Regulation</b>	<b>Year</b>	<b>Title/Subject(s) (date of effect)</b>
LAW 158	1997	Amendment of certain provisions of the Customs Law
PD 293	1997	Amendment to PD 38/1994 — further tariff reductions to those of PD 229/1997 (19/8/97)
PD 229	1997	Amendment to PD 38/1994 (1) Reduction of tariff rates by 5 percentage points, putting the general maximum tariff rate at 50% (from 55%), others above 30% reduced by 5 percentage points, high rates remain on tobacco (85%), poultry (70%) and poultry meat (80%), automobiles (135%), and still higher on alcoholic beverages (600%-3000%) (9/7/97)
PD 228	1997	Amendment of Article 6 of PD 351/1986 — Reduction of duties pro rata by increments of proportion of local content of manufactured final products (9/7/97)
LAW 71	1996	Amendment to Law 186/1986 regarding Customs Exemptions
PD 304	1996	Amendment to PD 38/1994 (1) Reduction of the general maximum tariff rate to 55% (from 70%), (2) reduction of other rates by 10 to 15 percentage points: 45% (from 60%), 40% (from 50%), 30% (from 40%), (3) tariff rate on automobiles reduced to 135% maximum (from 160%) (29/9/96)
PD 57	1996	Amendment to PD 38/1994 (22/1/96)
MD 895 (Finance)	1996	Amendment to the Executive Regulations for Law 186/1986 regarding Customs Exemptions
MD 446 (Finance)	1996	Amendment to the Executive Regulations for Law 186/1986 regarding Customs Exemptions
MD 11 (Finance)	1996	Amendment to the Executive Regulations for Law 186/1986 regarding Customs Exemptions
MD 794	1995	Amendment to the Executive Regulations for Law 186/1986 regarding Customs Exemptions
PD 64	1995	Amendment to PD 38/1994 — 10% tariff reductions (22/2/1995)
PD 7	1995	Amendment to PD 38/94 (7/1/95)
PD 38	1994	Promulgation of customs codes and tariff rates by HS (the Harmonized Commodity Description and Coding System) (13/2/94)
PD 294	1993	(1) required minimum local content raised from 40% to 60% (with exemptions by Ministry of Industry allowable) for parts used in assembly of final goods, (2) removal of import tariff preferences, except for milk for babies (license required and 1% tariff rate) and

### CUSTOMS REGULATIONS

P = Presidential Decree, MD = Ministerial Decree, LAW = an act of the People's Assembly.

Regulation	Year	Title/Subject(s) (date of effect)
		pleasure boats for tourism companies (tariff reduced from 80% to 40%), (3) new tariff rates imposed on 120 commodities, (4) no change in rates from minimum of 5% to maximum of 80%
MD 288 (Economy)	1993	(1) 75 out of 78 commodities removed from list of import ban and made subject to custom duties; 34 of the 75 listed for mandatory quality control inspection (among a total of 159 items as of March 1993), (2) cancellation of list of imports permitted under special conditions, (3) removed last remaining item (tanned hides and skins) from list of export quota; maintain export ban on 2 commodities (raw high & skin and scrap metals), (4) permission for barter trade in all commodities
PD 432	1992	(1) 33 commodities removed from list of import ban, (2) large exporters (annual proceeds of LE 1 million or more) permitted to import 1 passenger car, (3) cancellation of requirement of cash advance for letter of credit, (4) list of imports permitted under special conditions reduced to 9 commodities
PD 431	1992	(1) quality controls specified for 42 commodities, (2) new tariff rates on 106 commodities, mostly reduced on raw materials and parts for assembly, and raised on final goods
PD 180	1991	Consumption tax replaced by sales tax at 10% on most items
PD 178	1991	Tariff rates increased within a narrower range and fewer levels; certain non-tariff restrictions removed
MD 275	1991	Executive regulations implementing the Import and Export Law concerns <i>inter alia</i> inspection and certification of commodities for export
MD 32 (Finance)	1991	Amendment to the Executive Regulations for Law 186/1986 regarding Customs Exemptions
PD 305	1989	Tariffs reduced by an average of 30%; less on high tariff rates
PD 304	1989	Tariff reductions: (1) 50% reduction for hotels and tourist establishments in rates on appliances, machinery and equipment (except passenger cars), (2) 20% to 75% reduction in rates on complete knock-down kits classified under finished products, according to proportion of local content of manufactured final products, (3) reduction for Arab Petroleum Pipe Line Company in all rates to 1% on materials, technical appliances, equipment (including transport equipment, except passenger cars), machinery, and spare parts
MD 134	1989	Automobile spare parts and durable consumer goods and their spare parts added to list for mandatory quality inspection

**CUSTOMS REGULATIONS**

P = Presidential Decree, MD = Ministerial Decree, LAW = an act of the People's Assembly.

<b>Regulation</b>	<b>Year</b>	<b>Title/Subject(s) (date of effect)</b>
MD 56	1988	Decreed that value of import is based on the exchange rate which is prevailing on the day of registration of the Customs Declaration
MD 40 (Finance)	1987	Amendment regarding Customs Exemptions
LAW 187	1986	Abolishing existing surcharges on imports, such as customs statistical tax, economic development duty, maritime consolidation duty, and local government duties on imports and exports. [and Quantitative Restrictions upon issue of new Presidential Decree on Customs Duties (PD 351)]
LAW 186	1986	Re-organization of Customs Exemptions
PD 351	1986	Customs Tariffs (1) all tariffs reduced by 50%, (2)tariff rates decreased from 43 to 12 levels, (3)standard range of tariffs between 5% and 160% with exceptions at 1% on basic foodstuffs and high rates on automobiles, beverages, and luxury goods, (4)tariff rebates introduced. (August 1986) [in accordance to Law 187/1986; by which (5)tariffs replaced QRs]; and (6) Article 6: provides reduction of duties pro rata by increments in the proportion of local content of manufactured final products]
MD 333 (Finance)	1986	Abolishes import licensing system; establishment of import "ban" list
MD 193 (Finance)	1986	Executive Regulations for Law 186/1986 regarding Customs Exemptions
LAW 91	1983	Organization of Customs Exemptions; (canceled by Law 186/1986)
PD 56	1981	Export Drawback and Temporary Admission System Regulations, including exporters to establish a cash or bank guarantee on regularly imported goods under the temporary admission system.
PD 75	1980	Revised schedule of tariff rates with levels from low to high related to stages of production from raw materials to intermediate components to final products
PD 88	1976	Established General Regulations for Customs Duties, Rules of Origin, Customs Valuation, Temporary Admission, Duty Drawback, and Exemptions; establishes a regime appropriate to the new "infatih" ("open door") policy
LAW 66	1963	Customs Law on new tariff regime appropriate to nationalization of all import-export enterprises
LAW (?)	1930	Tariff protection of infant industries (first law of this kind)

**1. References to Studies of Egypt or Other Countries of the Region**

Brown, Drusilla K; Deardorff, Alan V; and Stern, Robert M. "Some Economic Effects of the Free Trade Agreement Between Tunisia and the European Union", paper prepared for the Egyptian Center for Economic Studies Conference, "How Can Egypt Benefit from its Partnership Agreement with the EU?", Cairo, Egypt, June 26-27, 1996. This paper is not about ERP. It is significant because the authors are concerned with effects on economic welfare, rather than trade, due to reductions of tariffs and non-tariff barriers. The analysis is focused on development and foreign direct investment, and employs a GCE model (computational general-equilibrium model).

Hoekman, Bernard and Djankov, Simeon. "Towards a Free Trade Agreement with the European Union: Issues and Policy Options for Egypt", paper presented to the Egyptian Center for Economic Studies Conference, "How Can Egypt Benefit from its Partnership Agreement with the EU?", Cairo, Egypt, June 26-27, 1996. The authors present good treatments of tariffs and ERPs in their analysis (Section IV on trade liberalization and Section V on their conclusion). It is interesting, however, to compare their calculations of ERP for about the same sectors in 1994 as Hanaa Kheir-El-Din (1998), and note that their results are very different — not only in rank order of the dispersion, but also in relative magnitudes in comparison to tariff rates.

Kheir-El-Din, Hanaa A. "Evaluation of the Structure of Protection and Anti-Export Bias in the 1986 Customs Tariffs in Egypt", *L'Egypte Contemporaine*, No 417-418 (June-October 1989), pp 73-96 (23-46). ERP calculations for 30 sectors of the 37-sector input-output table for the Egyptian economy in 1983/84 by CAPMAS (December 1987). The results show that, in most sectors, the ERP is higher than the nominal rate of protection (NRP) which is the rate by which the domestic price exceeds the world price, although ERP and NRP are not significantly correlated. The 1986 tariff structure is shown to be more protective at higher stages of production, favoring the consumer goods, iron and steel, and transport sectors with moderate protection of the intermediate goods and the tools and machinery industries while discriminating against cotton ginning, which is the principal traditional industry. Despite a small improvement over the previous tariffs, the 1986 tariff structure places an anti-export bias on all but one of the 21 industries of the study. The exception is cotton ginning.

Kheir-El-Din, Hanaa. "Effective Protection in Egypt Due to the Tariff Structures in 1996 and 1997 Compared to 1994," study prepared for USAID/DEPRA, February 1998, 14pp. ERP analysis of 22 product sectors based on Egypt's 38-sector input-output table compiled by CAPMAS. Kheir-El-Din's conclusions are as follows: the 1997 tariff changes had little effect on ERPs for agriculture, and caused a small decline in ERPs for manufacturing; overall, the ERP is about 7% for agriculture and 35% for manufacturing; the ERPs are positive for manufacturing sectors, except cotton ginning, indicating discrimination against this activity; the beverage sector is very highly protected; tobacco is highly protected and an important source of tariff

revenue; ERPs declined overall as a result of the 1996 tariff changes, and were further reduced by the 1997 changes.

Kheir-El-Din, Hanaa and El-Dersh, A. "Egypt's Foreign Trade Policy, 1986-1991: Description and Assessment", mimeo, Cairo, 1991.

Kheir-El-Din, Hanaa and El-Sayed, Hoda. "Potential Impact of a Free Trade Agreement with the EU on Egyptian Textile Industry", paper presented to the Egyptian Center for Economic Studies Conference, "How Can Egypt Benefit from its Partnership Agreement with the EU?", Cairo, Egypt, June 26-27, 1996. This extensive analysis of an important manufacturing sector includes a good explanation of a detailed study of tariffs and ERPs of the sub-sectors of the textile and clothing industry.

Lord, Montague, et al. "New Directions in Egypt's Trade Policy and Customs Reforms", Final Report of a 3-week Study, submitted by Nathan Associates Inc to U.S. Agency for International Development/Egypt, April 1994. This report is a brief, but comprehensive, review of trade policy from 1980 to 1994 and customs regulation issues, and presentation of recommendations in the areas of tariff-reduction strategy, regulations and procedures for customs, quality controls and other trade impediments, and export competitiveness.

Mabro, Robert and Radwan, Samir. *The Industrialization of Egypt 1939-1973: Policy and Performance*, Oxford: The Clarendon Press, 1976.

Shaltout, Hafiz Mahmoud. "Measuring the Effective Rate of Protection in Egypt", Cairo, 1987. This appears to be the first study of ERP in the Egyptian economy, and among the first for a developing country. The author calculated the ERP for 25 sectors of the input-output table for the Egyptian economy of 1979 prepared by A Mohie Eldin and others, including the author, of the Development Research and Technological Planning Center, Cairo University. The ERP of only 3 sectors (beverages, spinning & weaving, and final wear, ie, garments) are very high, one (for other agriculture) is close to the tariff rate, and the remaining are less than the tariff, of which 9 are positive and 12 are negative. The tariff rates and the ERPs are highly rank correlated, in contrast to the results of Kheir-El-Din (1989), but the differences in dispersion are great.

Subramanian, Arvind. "The Case for Low Uniform Tariffs", *Finance & Development*, June 1994, pp 33-35. While not addressed to the subject of ERP, the theme delivers important implications for tariff policy, which are relevant to the impact of widely dispersed ERPs among sectors of manufacturing.

World Bank, "Trade Policy Analysis: Using SINTIA with Egyptian Data", n.d. (ca 1991).

## **2. Other References**

Australia, Commonwealth of, Department of Foreign Affairs and Trade. Using the Effective Rate of Assistance in Trade Negotiations, Canberra: n.d. (ca 1989). This is an interesting document, presenting a format for calculating a statistic, called the

effective rate of assistance (ERA), which is more or less equivalent to ERP. The country's negotiators advocated the adoption of the format by all signatory nations of GATT during the Uruguay Round of trade negotiations. The designers of the format seem to assume that ERAs should be the basis for trade negotiations, missing the essence of the ERP concept. Accordingly, the procedure is built on the premise that most structural development policies are anti-trade, apparently including all kinds of incentives for employment and investment, various tax allowances for business expenses, reduction of business tax rates, as well as tariff reductions on capital equipment, materials, and components for manufacturing, etc.

Balassa, Bela. *Trade Prospects for Developing Countries*. Homewood: Richard D Irwin, Inc, 1964. Especially page 116 for a discussion of the tariff burden on value-added in the production process for potential exports.

Balassa, Bela. "Tariff Protection in Industrial Countries: An Evaluation". *Journal of Political Economy*, 73, 6 (December 1965): pp 573-94. Reprinted in *American Economic Association, Readings in International Economics*, vol 9, edited by Richard E Caves and Harry G Johnson, Homewood: Richard D Irwin, Inc, 1968, pp 579-604. This is a classical reference, and gained early attention. Others were already discussing the idea and developing the concept, which is widely credited to Harry G Johnson and William Max Corden, jointly.

Balassa, Bela (ed). *The Structure of Protection in Developing Countries*, Baltimore: Johns Hopkins University Press, 1971. This has become a standard reference along with Corden's work, also published in the same year. Both are comprehensive.

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Barber, Clarence L. "Canadian Tariff Policy", *Canadian Journal of Economics and Political Science* (Nov 1955): pp 513-530. Early discussion relevant to the ERP concept for its consideration of the influence of tariffs on raw materials and intermediate goods on the degree of protection of goods produced at higher levels of fabrication; cited by Bela Balassa, "Tariff Protection in Industrial Countries", p583, n18.

Basevi, G. "The US Tariff Structure: Estimates of Effective Rates of Protection of US Industries and Industrial Labor:", *Review of Economics and Statistics*. Balassa mentioned that after completing the first draft of his seminal article in the December issue of the *Journal of Political Economy*, he saw this paper which was already in press when his paper was submitted for publication.

Corden, W M. "The Tariff", in Alex Hunter (ed), *The Economics of Australian Industry*, Melbourne: Melbourne University Press, 1963. Early discussion relevant to the ERP concept for its consideration of the influence of tariffs on raw materials and intermediate goods on the degree of protection of goods produced at higher levels of

fabrication; cited by Bela Balassa, "Tariff Protection in Industrial Countries", p583, n18.

Corden, W M. "The Structure of a Tariff System and the Effective Protective Rate," *Journal of Political Economy*, 74, 3 (June 1966), pp 221-237. A paper that was being developed concurrently with the earlier work on the subject by Harry G Johnson and Bela Balassa.

Corden, William M. *The Theory of Protection*, Oxford: Clarendon Press, 1971. This is the most comprehensive written discussion of the ERP concept, including a summary of the literature on negative value-added in terms of ERP or DRC, on p 51.

Corden, William M. *Protection, Growth and Trade*, Oxford: Blackwell, 1985. Corden presents his second thoughts on the subject in this work.

Greenaway, D + Milner, C R. *Evaluating Trade and Industrial Policy in Developing Countries*, London: Macmillan. The authors find a direct correlation between the nominal rate of protection and ERP.

Grubel, Herbert G and Johnson, Harry G, eds. *Effective Tariff Protection*, Geneva: GATT, 1971.

Helleiner, G K. "The Measurement of Protection", ch 8 in *International Trade and Economic Development*, Middlesex, England: Penguin Books, 1972. An excellent, brief treatment, which is valuable to the reader who already knows the importance of ERP for measuring the domestic impact of tariff and other trade restrictions, and who also knows that ERP is not another measure of the height of tariff barriers.

Johnson, Harry G. "The Theory of Tariff Structure, with Special Reference to World Trade and Development", in Harry G Johnson and Peter B Kenen, eds, *Trade and Development* ("Etudes et Travaux de l'Institut Universitaire de Hautes Etudes Internationales"), Geneva: Librairie Droz, 1965, pp 9-29. This is the genesis of the ERP concept and precursor to Balassa's seminal article in the December issue of the *Journal of Political Economy*.

Johnson, Harry G. "Tariffs and Economic Development: Some Theoretical Issues", *Journal of Development Studies*, 1, 1, (Oct 1964), pp 3-30. This is the seminal statement of the ERP concept.

Lindert, Peter H. *International Economics*, 9th edition, Homewood, IL: Richard D Irwin 1991. There are a number of textbook treatments of the subject. Lindert's explanation is good, and his treatment of the whole subject of protection is very useful. Refer especially to Part II on trade policy and especially to chapters 6 to 8 on the analysis of a tariff, the arguments for and against a tariff, and other policies, particularly the protection of agriculture on pages 287-289, and Appendix D on measuring the effects of protection.

Tukey, John. *Exploratory Data Analysis*.

## ANNEX E.

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### ACRONYMS AND GLOSSARY OF TERMS

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The terms in this annex are commonly found in publications and used in discussions on the subject of ERP. Many, but not all are used in the discussions in this report. Whenever more than a single meaning is common, the name of the author is mentioned for each definition, if possible, within parentheses. The references can be found under the author's name in the bibliography annexed to this document.

**CAPMAS:** Central Agency for Public Mobilization and Statistics. This is the national statistical office of the Egyptian government.

**domestic price, market price:** The average price of the import and its locally produced equivalent product on the final goods market.

**effective price:** The domestic price of a unit of value-added (Corden).

**effective rate of assistance — ERA:** A terminology used by the Australian government, meaning the effective rate of assistance to value-added. It is a measure of the impact on value-added due to many different actions by a government of assistance to industrial activities in the broadest possible sense. The measure is about the same as ERP but fits into a framework that incorporates more than tariffs and trade barriers, in the usual sense of bans, quotas, administrative constraints of inspections, procedures, etc, and incorporates all other kinds of incentives to investment and production.

**effective rate of protection — ERP:** (1) The rate of protection provided to the value-added in the production of a product. (2) The proportion by which the domestic price of a unit of VA exceeds the world price of the unit of VA. (3) The proportional increase in the domestic price of a unit of VA. (4) The rate of protection provided to the value-added in the production of a product (Corden). (5) The proportion by which the domestic price of a unit of value-added exceeds the world price of a unit of value-added. (6) The proportional increase in the domestic price of a unit of value-added (Corden). (7) "The effective rate of protection of an individual industry is defined as the percentage by which the entire set of a nation's trade barriers raises the industry's value added per unit of output." (Lindert). (8) The "excess in domestic value added, obtainable by reason of the imposition of tariffs, as a percentage of value added in a free-trade situation" (Balassa); Balassa uses "effective rate of protection" interchangeably with several other terms, for example, "effective rate of tariff," "effective rate of duty", and simply the "effective tariff."

**ISIC:** International Standard of Industrial Classification of Economic Activities; a system of classification that is widely used for industry and inter-industry analysis. It is used with some modification by CAPMAS in data base management and input-output analysis.

**nominal rate of protection — NRP:** (1) The proportional increase in the nominal price (Corden). The nominal rate of protection is more general than nominal tariff (Corden). NRP is also called, implicit protection. (2) The difference between the domestic and international prices of a specific product relative to the international price. The measure is

normally expressed as a percentage and compared with the nominal rate of tariff, that is, the customs tariff rate.

**nominal tariff:** The official customs tariff (Corden).

**non-tariff barrier — NTB:** Any barrier to trade other than a tariff such as a quota (QR), product and label standards, or government purchasing policies. The term and acronym are usually used in the plural: non-tariff barriers (NTBs).

**quantitative restriction — QR:** A quota or regulated limit on the quantity of imports, or any other matter or an activity. Often mentioned as an import quota, and used in the plural: quantitative restrictions (QRs).

**tariff rate — TR, nominal rate of tariff, nominal tariff, tariff, import tariff or import duty, customs duty, etc:** (1) The ratio of customs duty to the nominal market value of the taxed commodity at the border. (2) The percentage tariff paid by consumers, which some authors give the label, the "nominal" rate of protection (Lindert, p121). Note that **tariffs** are often called **nominal tariffs** in contrast to **effective tariffs**, and they also often called **nominal rates of protection**, in contrast to **effective rates of protection**.

**value-added — VA** (also written: value added): The difference between the price of output and the total cost of material inputs, including raw materials, consumables (fuels and lubricants), overhead costs, and depreciation of physical capital. In principal and in national income accounting, value-added equals the amounts paid to the factors of production, namely, wages, profits, rents, and interest paid on capital.

**world price, border price, free-market price:** The cif value, that is the landed cost of an import, which is equal to the foreign exporters price of the commodity plus insurance and freight charges to the port. This is also called the duty-free or before-customs price.

As explained in the report, a computation of ERP for a specific product industry requires data covering the details of the output of the finished and semi-finished products, the inventory changes, all inputs used in production, as well as the domestic and border values (prices) of each item, and the customs tariff rates applied to the inputs and outputs. It was clear, however, at an early stage of designing the ERP study that published sources of data in Egypt are not sufficient for these requirements. Since DEPRA was tentatively assured from the start that the necessary data could be obtained from CAPMAS, this source presented a way of bridging the gap between the published data and the requirements for the ERP study.

### **1. First Meeting with CAPMAS**

The Ministry of Economy and DEPRA met with officials of CAPMAS in December 1996 and conveyed a letter to the Chairman of CAPMAS from the Minister of Economy requesting data for use in the ERP study.<sup>42</sup> The purpose of the first meeting was to explain and discuss the objectives for the study and its significance to the government's economic reform program, including an exchange of information concerning the following points: (1) the focus of the study on the computation of ERP coefficients of specific products, (2) the needs and possibilities of using CAPMAS published and unpublished data for the ERP study, (3) the selection of products to be studied according to the availability of essential data and use of the Agency's resources, (4) the Agency's requirements for the format and details in the specification of DEPRA's request for data, and (5) a feasible timetable for the availability of the data.

DEPRA was given a blank questionnaire used by CAPMAS in collecting data for its annual industrial production survey and a copy of the "Annual Industrial Production Statistics, 1992/93" — the Agency's annual publication of the aggregated results of the survey. A few weeks later, CAPMAS provided replicas of six sample questionnaires. These materials, particularly the blank and sample questionnaires, were requested by DEPRA for use in specifying the data in a format that would facilitate CAPMAS's work in providing the necessary data. DEPRA never intended to rely upon the samples, one from each of six different manufacturing product sectors, for actual use in the ERP computations and analysis. The samples were incomplete and contained meaningless responses to a number of items and, therefore, were unusable on their own and, moreover, would need to be excluded from an aggregation of data from an adequate number of additional questionnaires completed by other producers in the same sector.

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<sup>41</sup> This annex was written by Dr Mahmoud Abd-El-Hai Salah and edited by Maurice Thorne.

<sup>42</sup> It was then, in December 1996, the Ministry of Economy and International Cooperation.

The blank CAPMAS questionnaire was translated into English and reviewed thoroughly together with the sample questionnaires in order to specify which classifications of data collected by the Agency would be useful for carrying out a study of ERPs of product sectors in the Egyptian economy. The classifications were written in CAPMAS's format, and also marked in a bright color on the blank questionnaire for the Agency's convenience in providing the data.

## **2. Second Meeting with CAPMAS**

Another meeting was held with CAPMAS's principal advisor in May for renewing the request for data. Specifications of the required data categories for calculating ERPs were given in the Agency's format. The purpose and topics discussed in the previous meeting were reviewed and much attention was given to a few topics, especially the essential data categories that were presented in a prepared format and marked blank questionnaire. The advisor, however, claimed that CAPMAS had already fulfilled the Minister of Economy's request by giving us the blank questionnaire and the 6 replicas of incomplete sample questionnaires. He rigidly insisted that the specifications given during the meeting in the format suitable for CAPMAS was a new and different request and that still another formally written letter from the Minister of Economy to the head of CAPMAS was needed before he could provide anything more. The advisor said the task of satisfying the restated needs of the ERP study would require about 6 months of work by a large number of CAPMAS's staff.

In view of (1) the poor quality of the information contained in the questionnaires as shown by the samples and (2) the magnitude of the estimated effort required of the CAPMAS staff, the study team concluded that they would need to be involved in the work. Therefore, they offered to participate and assist CAPMAS in reviewing the questionnaires for assessing the quality of the responses. DEPRA viewed their collaboration to be essential for assuring a good choice of product sectors for study and selection of a sufficient quantity of satisfactory questionnaires for making up the data base. Unfortunately CAPMAS would not agree to such a procedure, and explained their reasons. The advisor emphasized that working with the raw data entails complicated procedures in accessing the old files of the industrial survey of 1992/93, which were the latest available. The work would take much time and be expensive.

The CAPMAS advisor offered recommendations about the selection of product sectors and an alternative source of data on production in the pharmaceutical industry. Furthermore, he recommended that we reduce the listed number of industries. He also advised us to prepare another list of required data categories to replace the one already handed to him early in the meeting, and to rely upon it instead of marking the CAPMAS questionnaire. Significantly, he then suggested that it might be more useful for our study, if a special sample survey were to be undertaken in order to get recent and detailed data as needed for the ERP calculations.

Our list of industries was long because it was suggestive. We intended that it would be reduced to two or three products, keeping within our capacity for a pilot study. We did not expect that all of the possible product sectors on the list would be feasible and perhaps the

data base would be more suitable for the analysis of certain industries than others, leaving the final choice of two or three for the study team to make. Our list comprised the following product industries: (1) processed vegetables, fruits and legumes; (2) edible oils, fats and margarine; (3) carpets and rugs; (4) leather shoes; (5) medicines; (6) soap and detergents; (7) tires and tubes; (8) cement; (9) ceramics; (10) pumps; (11) radio and television sets; (12) automobiles; and (13) sports equipment.

We laid out our request in view of information that seems to be acquired in the annual of production by CAPMAS, as indicated in the questionnaire and also by the publication of the "Annual Industrial Production Statistics". We estimated the feasible capacity of CAPMAS for providing data and accordingly requested the following: (1) data on 10 public firms and 10 private firms in each finally chosen industry, relative only to the single major product of the specified industry; (2) data only for the specified categories of market costs and revenue for total production of the product or one unit of the product from the questionnaire used for the "annual industrial production statistics", therefore excluding the names of the firms, status, and other identifying and unnecessary details; (3) inventory data classified by local production and imports of finished products, semi-finished products, and raw materials; each further classified by the customs HS classification or with a mention of the customs tariff that applies to the input; and (4) the data should be extracted from the surveys of 1985, 1991, and 1996 (or the latest survey).

### **3. Another Meeting with CAPMAS**

Since there was apparently no difference in the prospects concerning the quality and quantity of data among the sectors of our list of 13 products, we decided upon four product sectors: (1) carpets and rugs, (2) leather shoes, (3) cement, and (4) automobiles. A precise list of the necessary data classifications was prepared in the format of a new questionnaire that would meet the particular requirements of ERP calculations. The list of products and the questionnaire were made the subjects of yet another meeting in June 1997 with the advisor to CAPMAS. The advisor said that we still have the problems of (1) access to the raw data files of 1992/93, or whatever year, that should be authorized by the Chairman of CAPMAS; (2) freeing 10 or more employees of CAPMAS to work on the raw data files for at least four months; and (3) the element of cost in terms of money and time. Moreover, in response to a repeated inquiry, he emphasized that all work on the raw data files must be done, supervised, and revised only by the staff of CAPMAS. In response to a different question about the possibility of doing our own sample survey, he indicated that it would be possible after obtaining special authorization from CAPMAS and observing certain procedures.

### **4. More Meetings with CAPMAS and Alternative Data Collection**

The dialogue with CAPMAS was carried on as a means to probing for a measure of the quality of the data and the probability of obtaining it from that source. It was also a means to finding, if possible, a feasible arrangement for obtaining it. While holding the dialogues with CAPMAS, we were also looking into the feasibility of two alternative routes. One route would be the engagement of a professional service or employment of a short-term staff to conduct a survey independently but with the required authorization from CAPMAS

— a potential block to taking this route. Another possibility under consideration was using data from the "Annual Industrial Production Statistics, 1992/93" for the public sector.

Eventually a suggestion for a promising arrangement was set before us, whereby CAPMAS staff would obtain detailed and recent data in a special survey of 15 firms in each of four industries in different governorates, using our questionnaire (see Annex H). The cost would be approximately US\$ 5,000 for the survey and data processing in the format required for ERP analysis by the inter-ministerial study team under DEPRA. This appeared to be a feasible method. Also, in the course of the continuous dialogue, CAPMAS gave us the latest edition of the "Annual Industrial Production Statistics, 1993/94" in two volumes of statistics from the public sector in one and the private sector in the other, published in December 1996 and May 1997, respectively. The dialogues continued through July 1997.

### **5. The Next Step**

The situation was appraised for determining the next step and making final modifications in the procedural plan for the ERP study since time was passing. The choice could be, indeed must be made, from among the alternatives. One, which would be to obtain old statistics directly from the CAPMAS data base, had to be ruled out due to the ever-present obstacles. The alternatives comprised (1) two procedures for making a special survey by questionnaire and (2) using published data, providing that industrial expertise could be found and used to obtain supplementary production information and data.

The idea of undertaking a special survey was eliminated on two grounds: (1) although funds could be made available for the proposed sample survey of a handful of product sectors for the pilot phase of the study, further and future funding for surveying other industries and for updating the data base could not be assured and was considered unlikely to be available, and (2) the period required for a survey in addition to the unknown and possibly large amount of time required for CAPMAS to negotiate for a survey or to authorize an independent one might become excessive and too unpredictable for scheduling. The decision against making a special survey was based on other considerations, too, such as compounding the current weaknesses in data utilization in Egypt, some of which are mentioned on page 40 of the report under the subheading "Situation and Problems of Data and Measurement" in Part V: "Practical Value of ERP Measurement in Egypt."

The study team decided to adopt the alternative of using published information, despite its insufficiency, from the "Annual Industrial Production Statistics" in combination with data from industrial specialists. The advantages of this alternative were strengthened by the availability of the most recent volumes for both public and private sectors, and by finding potential sources of complementary data and information with help from industrial experts.

### **6. Making a Data Base**

Knowledge of the type of data to be found in the published production statistics was acquired from our earlier exploration of the data for an arbitrarily chosen example of the public sector leather shoe industry (ISIC 3240) from the volume on 1992/93 statistics.

The procedure was replicated for the extraction of statistics from the "Annual Industrial Production Statistics, 1993/94" on both public and private sectors of seven industries: leather shoes (ISIC 3240); radio and television sets (ISIC 3832); carpets, tapestries, rugs (ISIC 3214); automobiles (ISIC 3843); tires and inner tubes (ISIC 3551); sugar (ISIC 3118); and cement and gypsum (ISIC 3692).

Statistics were extracted from various sections in both volumes of the production statistics, one on the public sector and the other on the private sector. The statistics are organized in the publication in the following way: Part I costs and value of production by industrial sector in ISIC 4-digit classifications; Part II size of firms according to number of workers by industrial sector in ISIC 4-digit classifications; Part III size of firms according to number of workers by governorates; and Part IV value of various kinds of inventory at the beginning and end of the year by industrial sector, by size according to number of workers, and by governorate. The data were extracted and arranged in a format suitable for calculations of ERP coefficients similar to the order in Table 5 of the main section of this report. The initial format is the following:

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Source: CAPMAS: Annual Industrial Production Statistics; 1993/94  
 Public (or Private sector) Cairo, (date of publication)  
 Industry: (descriptive name of the classification)  
 Activity guide: (CAPMAS/ISIC 2-, 3-, 4-digit classification code number)  
 Number of establishments:

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(1) Commodity Inputs (LE '000):

Major raw materials:	domestic
	imported
Minor raw materials:	domestic
	imported
Packaging materials	
Fuel	
Electricity	
Spare parts and other commodity inputs	

Total commodity inputs

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(2) Service Inputs (LE '000):

Industrial services from others
Maintenance expenses
Other service expenses

Total service inputs

Total commodity and service input

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(3) Depreciation of Fixed Assets (LE 000)

Total commodity and service inputs and depreciation

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(4) Production (LE '000):

Finished products
Unfinished products
Industrial services for others
Other revenues

Total

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(5) Value-Added (LE '000):

Subsidies  
Taxes and commodity duties  
Production at factor costs  
Total of inputs and depreciation  
Net value-added

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(5a) Other categories of sales revenue:

Exported products  
Merchandise for sale  
Purchases for sale

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(6) Number of Employees by Job:

Owners working without wage payments (private sector only)  
Owners working with wage payments (private sector only)  
Management personnel, technicians, and clerks  
Production supervisors and foremen  
Operating laborers  
Technical services laborers  
Sales laborers  
General services laborers

Total number of employees

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(6a) Other categories of employees

Recruited, and sent-out trainees/scholars  
Industrial apprentices

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(7) Money Wages and Social Insurance (LE '000):                      Wages Soc'l Ins Total

Management personnel, technicians, and clerks  
Production supervisors and foremen  
Operating laborers  
Technical services laborers  
Sales laborers  
General services laborers

Total

---

(8) Fringe Benefits (LE '000):

Total of money wages, social insurance, and fringe benefits

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(9) Rents and Interest Payments (LE '000):

Rents (effective payments)  
Rents (calculated or estimated)  
Interest (effective payments)  
Interest (calculated)

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This is the list of relevant categories of statistical data which are found in the CAPMAS publication. All of the categories of data are not strictly necessary for calculating the ERPs of productive sectors, but some of the redundant data can be used with other information for obtaining alternative statistics either for alternative ERP computations or for

plausibility or consistency checks. Certain essential categories of data, however, are not published. They must be collected or estimated by other means, and include the following types:

- quantity volume of production of the relevant output and inputs (in quantity with a mention of the unit);
- value and quantity in detailed categories of the output (for example, the categories in the leather shoe industry would likely be men's, women's, children's, and infants');
- value and quantity in detailed categories of the inputs by original supply (domestic or imported);
- value and quantity of changes in inventories of the relevant output and inputs by original supply (domestic or imported); and
- the HS classification code and customs tariff rate applied to the same kind of product as the output and each input.

The gaps in the information in the publication on the industrial production statistics were filled by factual information or estimations made in intensive collaboration with a specialist in the industry. The result of this work was sufficient for computing the ERP of the leather shoe industry (ISIC 3240) and to complete the pilot study for one industry. The same procedure could be applied to other industries, using seems to be very difficult to achieve, depending on the availability and ability of an industry specialist in every case.

## 7. Conclusions

The questionnaire used by CAPMAS for the annual industrial production survey includes detailed categories for data that can be used in analyses for various objectives, including ERP studies. Many of these categories, however, are not published by CAPMAS in the "Annual Industrial Production Statistics." A possible major reason for not publishing data in these categories could be that the responses are not given or they are inadequate.

For example, while the questionnaire demands data for the details of commodity inputs, the replicated sample questionnaires show that respondents tend to aggregate items and give only one amount for all commodity inputs or give two amounts, one for the major commodity inputs and another for the auxiliary (minor) inputs, without identifying the particular commodities. Therefore, even if most respondents fill in all the spaces of the questionnaire — and no evidence is seen for believing that this is the case — data on the types and quantities of inputs are inadequate because the responses are not proper answers to the questions. The same seems to be true for other categories of data.

The industrial production statistics are published more than two years after the end of the production year. CAPMAS is trying to reduce this time lag to a year or less, and thus would meet international recommendations.

Item (9) in the above list of data categories from the "Annual Industrial Production Statistics" published by CAPMAS comprises two categories: "rent" and "interest", which are further classified by "effective payments" and "calculated or estimated" rents and

interest. The "calculated or estimated" rent and interest mean the same as imputed rent and interest. The procedure for deriving such hypothetical payments is comparable to the business accounting convention of subtracting a value equivalent to the market cost of own capital and real estate (land and buildings) as if they were supplied by others.

This convention is usually applied in business firms to get the taxable net profit (or loss) of the firm by subtracting the imputed rent and interest from gross profits to get to the firm's taxable net profits. Therefore the imputed payments of rent and interest are treated as cost elements for the computation of company tax obligations, instead of being treated as components of value-added, as they should be from a national accounting perspective. The same items are classified as costs of production in the CAPMAS statistics, too, and not included in the value-added amount. In CAPMAS 's classification structure, however, item (3) "Depreciation of Fixed Assets" refers only to fixed assets other than real estate, and is treated as value-added, not as a material cost of production as they are in national income accounts.

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**SCOPE OF WORK**

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**DEVELOPMENT ECONOMIC POLICY REFORM ANALYSIS (DEPRA) PROJECT**

Cairo, Egypt

9 January 1997

Task Order 010 - Contract No. 263-0233-C-00-6001-00

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**SCOPE OF WORK FOR:**

**RESEARCH STUDY ON  
EFFECTIVE RATES OF PROTECTION  
IN EGYPT  
-- (PILOT PHASE) --**

**1. BACKGROUND**

This research study will be one of the major studies carried out under the USAID/Egypt-funded DEPRA project, whose purpose is to support the economic reform program of the Government of Egypt (GOE). The project is designed for improving the government's abilities to gather and analyze information, and developing recommendations for policy reforms to alleviate regulatory and other constraints on trade, investment, private sector development and economic growth.

The GOE has a need to reduce effective rates of protection (ERPs) on Egypt's domestic production, and to rationalize its import tariff rate structure. Policy changes are crucial in order to reduce ERPs where high protection no longer serves an economic development purpose. Lower ERPs would shift the balance of investment risk from favoring investment and production for import-substitution toward export-orientation, or a neutral trade position. The movement would be a step toward leveling the playing field for all producers, and encouraging investment in production for export.

The computation of ERP, which is an indicator of competitiveness, should be used in analyzing the effects of various tariff reform scenarios on selected industries and, to the extent possible, on other important economic variables. Since the collection of customs duties on imports is a major source of government revenue in Egypt, the fiscal implications of tariff reform and lower ERPs will be investigated separately in this study.

A number of obstacles and unknowns commonly impede studies of this kind, for example, it is difficult to know in advance all that must be known about the availability, quantity, and quality of data. A pilot phase is a practical and frequently necessary step for starting a study. It provides a period of discovering and understanding the problems and opportunities for collecting data, and to develop the capacity for processing and analyzing it. Therefore, this ERP needs to be started with a pilot phase, which can be expanded for analyzing all the important product sectors of the economy.

**2. OBJECTIVES AND ASSOCIATED TASKS**

The proposed study is designed to meet the following general objectives:

- Provide GOE with the calculated coefficients of ERP for selected sub-sectors of industry.
- Assist GOE in developing a capacity for calculating and analyzing the ERPs for any sub-sector of industry, and drawing conclusions for policy.

The activities described in this "scope of work" (SOW) for the study and its outputs are designed to support decisions to be taken by GOE in formulating trade policy. Accordingly, the study team will focus on tariffs and protection, and other relevant issues such as value-added and competitiveness.

This SOW is designed under the assumptions that (1) selected GOE professional staff will actively participate in all aspects of the study, and (2) the professionals will be selected from the Ministry of Economy and International Cooperation (MOEIC), Ministry of Supply and Trade (MOST), and Ministry of Finance (MOF), although the staff of other ministries might also collaborate in the study. It is particularly important that the professionals actively participate together and collaborate in all activities of the study. The major activities will be data collection, data base management, ERP calculation, analysis of the results, and reporting on the implications and recommendations for policy, as well as on-the-job training (OJT). The accomplishment of

the task of data collection is especially important to the study, and ultimately dependent upon GOE provision of data.

The DEPRA study team and GOE staff will compute the coefficient of effective rate of protection for two or more industries, depending upon the availability of the relevant and necessary production data. The results can be compared with the broad measures of protection, mentioned in earlier studies, of the major sectors of the economy based on the aggregated data in the official input-output table (the social accounting matrix) for the economy. The exercise of collecting data, computing ERPs, and interpreting the results will be the core basis for the establishment of a permanent capacity for ERP analysis within MOEIC or MOST.

The following is a list of component tasks of the study:

1. Devise a detailed work plan for accomplishing the components of the study mentioned in this SOW statement. The plan must be designed to provide analysis in support of a simplified, restructured tariff regime and appropriately reduced ERPs.
2. Collect the necessary data for the calculation of the coefficients of ERP of the selected, specific products of Egyptian industry. This will entail the following sub-tasks:
  - Survey and review the known sources and types of data available in Egypt.
  - Search and select the required data for ERP calculations.
  - Prepare the collected data for use in the computations of ERPs.
3. Calculate ERP coefficients at the specific product level and provide an analytical interpretation to GOE, with an explanation regarding:
  - Methodology.
  - Conditions concerning the reliability of the data
  - Degree of accuracy of the computed coefficients.
  - Policy implications of the ERP coefficients of the products, and recommendations for policy.

4. Integrate alternative scenarios for tariff reduction within an analysis of the potential impacts on government revenue, subject to the following proviso. This particular effort and output would be conditional upon accessing the "Egypt Indirect Tax Model" in the Ministry of Finance, who would be responsible for measuring the impact of tariff changes on government revenues. An analysis of the revenue impact would be developed in collaboration with the Ministry of Finance and the Public Finance Administration Project managed by the Barents Group.
5. Assist MOST and MOEIC in developing the capacity for calculating coefficients of ERP by providing the staff with on-the-job training, using a computer program designed specifically for calculation of ERPs. This may include the following sub-tasks:
  - Develop the capacity for adapting, and working with, a computer program for ERP calculation.
  - Provide additional training to selected staff in advanced use and techniques of the computer and the installed software, as well as building and managing a data base.
6. Assist MOST and MOEIC in developing the capacity for interpreting the computed ERPs, analyzing the economic impacts of changes in tariff rates, and formulating practical policy recommendations.

### 3. METHODOLOGY

The Team Leader should propose - in the detailed work plan - whatever methodologies are deemed appropriate and cost effective to complete the tasks, and meet the objectives. Suggested steps in the methodology would include, but may not be limited to:

- Review of relevant GOE, USAID, World Bank and other academic papers and reports of studies on tariffs, protection, and ERPs and DRCs, particularly those related to Egypt.
- Enquiries and discussion with authorities in MOST and MOEIC, the Ministry of Finance, the Ministry of Planning; USAID; and other official entities.
- Demonstrations, lectures, seminars, and other forms of training.
- Exploration of potential impacts on government revenue from alternative scenarios of tariff reduction, possibly using the "Egypt Indirect Tax Model" in collaboration with the Ministry of Finance and the Public Finance Administration Project.

### 4. DELIVERABLES

- Detailed work plan, including a brief report on data availability and the feasibility of using existing computer programs for data management and ERP calculations, due from the team leader one week after the starting date.
- Analytical report on the calculated ERPs, including an explanation of the methodology, results, conclusions, and recommendations - specific to the ERPs and Egypt's tariff structure, addressing the matter of rationalization and simplification of the tariff structure and reduction of all tariff rates and the overall maximum.
- Outline of a program of courses for the training component; syllabus (outline of course structure, requirements, and list of readings) of individual courses, covering the theoretical basis of ERP coefficients.
- Written reference manual(s) used for training and for permanent reference covering the computational procedures of the ERP coefficients. Note: This deliverable will be feasible within the proposed time frame only if it also proves feasible to adapt manuals and a proprietary software program (ERPCALC) developed by Nathan Associates, Inc.
- Approximately six weeks of OJT (on-the-job-training) of the professional staff (trainees) of MOEIC, MOST, and MOF.
- Evaluation of the trainees; an evaluation of the training program by the trainees.
- Report of all components of the study and training activity within four weeks after completion of the study.

Submitted reports will be written in English and a summary in Arabic. The Team Leader will submit the documents and reports to the DEpra Chief of Party or his designated Study Supervisor in a clear format on paper and on computer diskette in a format that can be read by DEpra (WordPerfect or MS Word for text files, Excel, Quattro Pro, or Lotus 1-2-3 for tables and graphs.)

## 5. LEVEL OF EFFORT, STAFFING REQUIREMENTS, AND DEPRA BUDGET ALLOCATIONS

The work will be carried out over a period of three months by a team comprising staff of MOEIC, MOST, and the DEPRA Project, as well as professional consultants having specialized experience described below. A fourth month will be utilized for writing the final report and recommendations, and for the GOE team members to complete the transition from a short-term study to a permanent analysis unit.

The two principally concerned ministries, MOEIC and MOST, will each appoint six staff members to participate more or less full-time on the team for an approximate period of three months. Half of these persons will constitute a permanent ERP analysis unit for maintaining, expanding, and improving upon the data base and analysis. Egyptian specialists, specified below, will be recruited to render specific services in economic analysis, statistical data, training, and technical writing. The computer program will be designed and installed by an expatriate consultant. Another expatriate specialist in tariff regimes and institutional trade affairs will be engaged for an assessment of the results and collaboration in writing policy recommendations. The DEPRA Economic Advisor on Deregulation, in addition to being the designated Study Supervisor mentioned in the section "Reporting and Other Conditions", will be the Team Leader for this study unless precluded by an overriding cause. Other staff of DEPRA, especially the Industrial/Market Economist, will contribute expertise on a part-time basis.

With regard to the DEPRA task budget, the level of effort (time allocation) for the activity described in this SOW is expected to be divided between tasks for "policy reform studies" and "training" in the approximate proportion of 2:1, that is, two-thirds of the level of effort will be for the policy reform study and the remainder for training. Individual specialists on the study team might be qualified and perform in more than one area of specialization, for example, computer programming and training.

### Staff: from MOEIC, MOST, and MOF

The principally concerned ministries will appoint professional staff members to participate more or less full-time on the study team during the study period, and for continuation of the activity as a more or less permanent capacity within GOE. MOEIC and MOST will each appoint six staff members and MOF will appoint two.

*The level of effort estimates in this scope of work are preliminary. They will be revised by the study team leader to reflect additional information about the requirements to be obtained in the pilot phase of study, in particular, information regarding (a) availability and quality of data, (b) the two specific industries to be selected for the study, and (c) the working arrangement with GOE participants.*

### Expatriate:

- Economist / Team Leader (DEPRA project staff):

Economist with experience in international trade policy and tariffs, trade regulations and GATT, and especially in the calculation and analysis of ERPs and tariff regimes.

Three person months.

- Computer Programmer / Trainer:

Computer programmer with experience in statistical data management, computer model development, working with economic analysts, and appropriate computer hardware and software, as well as experience in training for computer program use and development.

Up to three person months.

- International Trade and Tariff Policy Economist:

Economic specialist in tariff regimes and trade affairs, including GATT and determination of tariff rates, as well as a sound background in public finance, structural adjustment, and/or macroeconomic modeling.

Up to six person weeks, starting in the third month of the study or soon after, or possibly in two periods/in-country visits of three weeks each.

### Egyptian:

- Economist

Economist(s) with experience in quantitative analysis of economic problems in Egypt, and capabilities for making contacts and coordinating data collection, and experience in ERP calculations.

Up to four person months.

- Statistician

Statistician with considerable experience in working with computers and data management, as well as knowledge of data sources in Egypt and experience with data collection.

Two months.

- Trainer / Interpreter

Economist with experience in teaching principles of economics, and working with computers and statistical data bases.

One month.

- Technical Writer

Technical writer with experience in writing procedure instructions and teaching materials, and desktop publishing.

Two months.

## 6. REPORTING AND OTHER CONDITIONS

The Team Leader will report directly to the Chief of Party of the DEPRA Project (COP/DEPRA) or his designated Study Supervisor, and will assume responsibility for collaboration with DEPRA, as well as the management of the work schedule and activities of the team. The Team Leader and members will work closely with MOEIC and MOST, and other GOE officials stipulated by COP/DEPRA or his designated Study Supervisor.

A six-day work week is authorized for the work performed outside the United States by the short-term consultants on the proposed study in this Scope of Work.

The DEPRA Project will provide local logistical support, including local transportation for long-distances, and short-distances as feasible, office space with basic furniture and access to a telephone for local calls, essential photocopying, and basic secretarial assistance. Each expatriate consultant is expected to provide his or her own personal computer for own use, but not for training or data management and analysis. A printer in the DEPRA office will be available to the study team. The Egyptian members of the team, in addition to their professional duties, will be expected to act as interpreters and translators, as needed, for interviews, essential documents and reports, and to facilitate the activities of the Team Leader, expatriate consultants, and the Study Supervisor.

## 7. START AND COMPLETION DATES

The study team should mobilize to begin the initial steps of the study by December, if possible, or latest by January 1997. The team should complete the essential computations and analysis within three months after starting. Although the study is scheduled to begin in December, or possibly in January, and to be accomplished within three months, the schedule might require an adjustment at any time in the event of an unforeseen major cause for delay. Such causes could include unavailability of a significant amount of key data, an unavoidable requirement to collect primary data by a field survey and questionnaire directly from industrial firms, lack of installed and operational computers, or insufficient office space within either MOEIC or MOST. While none of these impediments are likely to arise, the DEPRA Project will take all possible steps to overcome the block promptly, if such should occur. The COP/DEPRA will determine whether a postponement or suspension of the study would be required.

The COP/DEPRA shall, with advice from his designated Study Supervisor, determine the required period and completion date of each component of the study, including the dates of participation of each member of the study team. The dates of participation of the study team will be estimated by the Team Leader in the study work plan, and confirmed by the COP/DEPRA at least two weeks prior to end of the assignment of each participant.

The contributions to the final report and other documents by an expatriate must be completed before departure from Egypt. The due date for the contributions to the final report and other documents by residents in Egypt shall be determined by COP/DEPRA or his designated Study Supervisor. The due date for the final report will be three to four months after starting the study.

## ANNEX H.

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### CAPMAS QUESTIONNAIRE

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The attached questionnaire is a copy of the one used each year by CAPMAS for the agency's annual industrial survey.<sup>43</sup> The attachment includes short translations inserted by hand.

CAPMAS tabulates summary statistics, by ISIC 4-digit categories of industry, from the results of the industrial surveys and publishes them under the title, "Annual Industrial Production Statistics", three or four years after the date for which the data are collected.<sup>44</sup> The statistics are published in two volumes; the public sector industries are covered in one and the private sector in the other.

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<sup>43</sup> CAPMAS is the acronym for the Central Agency for Public Mobilization and Statistics. It is the national statistical office of the Egyptian government.

<sup>44</sup> ISIC is the International Standard Industrial Classification of Economic Activities by the United Nations.

Questionnaire No 500 AMA Duplicate / Form T.K. Current C A P M A S

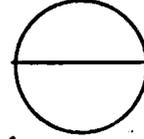
استمارة رقم ٥٠٠.١.م.١٥٠٠ مكرر/منشأة (ت.ق) جارية



الجمهورية العربية السورية  
وزارة الميزان والقياس

تخضع صحة وسرية البيانات الواردة بهذه  
الاستمارة لاحكام القانون رقم ٢٥ لسنة ١٩٦٠  
المعدل بالقانون رقم ٢٨ لسنة ١٩٨٢  
Confidentiality → Law 35/1960 amended by 28 of 1982

التعداد الاقتصادي ١٩٩٢/٩١  
Economic Senses of (1991) 192



رقم مسلسل المنشأة بالاطار  
Serial Number of the firm in the frame

### استمارة

نشاط استغلال المناجم والهاجر والصناعات التحويلية

في منشآت القطاع العام

عن السنة المالية المنتهية في ١٩٩٢/٦/٣٠

Questionnaire: Mining & Quarrying & Manufacturing Activities  
in the Public Sector end Fiscal Year 30/6/1992

بيانات الرقم القومي للمنشأة \*

Data on the national Number of the firm

محافظة Governorate	قسم/مركز Kism / Markez	القطاع Sector	مسلسل الشركة Serial N <sup>o</sup> of the Firm	مركز رئيسي / فرع / مفرد Main Center / Branch / Unit	النشاط الاقتصادي Economic Activities	محافظة Governorate الفرع Branch

\* تترك لاستخدام الجهاز To be left for Agency use

Date التاريخ: Signature التوقيع: Name of Researcher اسم الباحث:  
Date التاريخ: Signature التوقيع: Name of Reviewer اسم المراجع:  
Date التاريخ: Signature التوقيع: Name of Controller اسم المراقب:

تنبيهات عامة

General Instructions

- ١ - تستوفى استمارة مستقلة للمركز الرئيسي (١٥٠٠ م ١) سواء وقع في مبنى مستقل او في احد مباني المنشآت التابعة له .  
كما تستوفى استمارة ١٥٠٠ م ١ مكرر لكل منشأة على حده تابعة لهذا المركز الرئيسي
- ٢ - اذا كانت اى من المنشآت الصناعية قد تأسست او توقفت عن النشاط خلال سنة الاحصاء تستوفى عنها استمارة عن الفترة الواقعة خلال تلك السنة مهما كانت مدتها .
- ٣ - ترفى صوره من ميزانية المنشأة والحسابات الختامية بكشوفها التفصيلية ان وجدت مستقلة .

1. A separate questionnaire is filled for the main center (500 A M A) whether the building is located in a separate one or any related firm.  
Questionnaire 500 A M A duplicate is filled for each firm separately that is related to the main center
2. In case any industrial firm is established / stopped activities during the year of the census, a questionnaire must be filled for the period of the year whatever its duration.
3. A copy of the budget & income statement with all their closing detailed end-of-year Statement must be enclosed.

بيانات عامة

١ - اسم الشركة التابعة لها المنشأة Name of the Company the firm belongs to

٢ - اسم المنشأة المستوفاه عنها هذه الاستمارة : Name of the firm filling the questionnaire

٣ - عنوان المنشأة : محافظة : Address: Governor: مدينة : City

قسم / مركز : Kum, Markaz شيخه / قرية : Shakhat, Village

٤ - اسم الشارع : Street رقم التنظيم او اسم مالك المبنى : No of owner

رقم التليفون : Tel. No

٥ - سنة تأسيس المنشأة Date of establishment

٦ - تاريخ بدء النشاط الفعلي للمنشأة : Actual Date of Start

٧ - النشاط الصناعي الرئيسي للمنشأة Main industrial activity

(صناعي / رئيسي) لتترك الاستخدام الجهاز

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٨ - أوجه النشاط الصناعي الاخرى للمنشأة : Other industrial activities

٩ - رقم السجل الصناعي للمنشأة No of industrial register

تترك لاستخدام الجهاز

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Certification:  
إقرار

I certify that data reported in this questionnaire is true & in compliance to what appear in registers & books  
أمر بأن البيانات الواردة بهذه الاستمارة صحيحة ومطابقة للواقع ولما هو وارد بالسجلات والدفاتر

The Responsible Director المدير المسئول  
الاسم : \_\_\_\_\_  
الوظيفة : \_\_\_\_\_  
التوقيع : \_\_\_\_\_  
التاريخ : \_\_\_\_\_

خاتم المنشأة  
Firm Stamp

استماره رقم ١٥٥٠ م ١ مكرر (ت.ق) جاريه  
Egyptian Pound

(LE)  
(القيمة بالجنية)

المشتغلون حسب المهنة والنوع والاجور والمزايا النقدية  
والعينية والتأمينات الاجتماعية خلال العام

Employees according to Profession, type, wage,  
monetary & fringe benefits & social insurance in one year

Table No 1

الاجور النقدية والتأمينات الاجتماعية خلال العام				العدد في نهاية العام			معلومات Information	مسلل Serial No	
المجموع Total	مساهمة المنشأة في التأمينات الاجتماعية Share of firm in social insurance	الجملة Total	المكافآت Compen- sations والإجازات and allowances	الاجور Wages, Salaries والمرتبات and allowances	الاجور Total	الذكور Males			الاناث Females
								١- فنيون ومديرون وإداريون وكتبة Techn. Directors, Adminis. Clerks	
								٢- المشرفون على الانتاج والملاحظون Controllers & Supervisors	
								عمال Workers	
									٣- عمال تشغيل Industrial Workers
									٤- عمال انتاج Workers
									٥- عمال خدمات ٦- عمال فنية ٧- عمال ٨- البائعين ٩- عمال الخدمات ١٠- العامه Public Services
									١- دائمون
									٢- مؤقتون
									٣- دائمون
									٤- مؤقتون
									٥- دائمون
									٦- مؤقتون
								٧- دائمون	
								٨- مؤقتون	
								٩- دائمون	
								١٠- مؤقتون	
								١١- المجموع Total	
								١٢- المزايا العينية Fringe Benefits	
								١٣- اجمالي الاجور النقدية والتأمينات الاجتماعية والمزايا العينية Total Monetary & Fringe Benefits & Social Insurance	
								١٤- المبتدئون والمبعوثون Under emscruption or in missions	
								١٥- التلاميذ الصناعيون Industrial apprentice	

استمارة رقم 1 000 م 1 مكرر (ت.ق) جاريه

- 0 -

المزايا العينية

## Fringe Benefits

Table 2  
(الجدول رقم 2)

القيمة بالجنيه LE	البيان Information	القيمة بالجنيه LE	البيان Information	القيمة بالجنيه LE	البيان Information
	Cultural Services, Social, Sports & entertainment	0 -	الخدمات الثقافية والاجتماعية والرياضية والترفيهية		Food
	Housing	6 -	سكن		Clothing
	Others indicate	7 -	اخرى تبين		Transport
					العلاج الطبي
					Medical Care
	Total	8 -	اجمالي القيمة		

Average number of Working hours

Shifts & Working Hours

الورديات وساعات العمل خلال سنة الاحصاء

Table 3

( الجدول رقم ٣ )

مجموع ساعات العمل (رجل / ساعة) خلال السنة بكل وردية	عدد الملاحظين المشرفين على الانتاج				عدد ايام العمل الفعلية خلال الثلاثة شهور المنتهية في : Number of Working Days during the 3 months				متوسط عدد ساعات العمل بكل وردية	سلسل الوردية Shift	تسلسل Serial No
	ومعمال الانتاج والخدمات الانتاجية والتشغيل في المناجم والمخاض والمصانع التحويلية خلال فترات الصرف المنتهية في اقرب يوم الى:				الثلثة شهور المنتهية في :						
	٦/٣٠	٣/٣١	١٢/٣١	٩/٣٠	٦/٣٠	٣/٣١	١٢/٣١	٩/٣٠			
(١٢)	(١١)	(١٠)	(٩)	(٨)	30/6	31/3	31/12	30/9	(٣)	(٢)	(١)
	١١	١٠	٩	٨	٧	٦	٥	٤	٣	٢	١
										الاولى First	١
										الثانية Second	٢
										الثالثة Thurd	٣
										الرابعة Fourth	٤
										المجموع لاغراض الحاسب	
										Total	

× تشمل الدائمين والمؤقتين والموسميين من العاملين في كل من مراكز الانتاج ومراكز الخدمات الانتاجية فقط  
واللذين لهم طة مباشرة بالعمليات الانتاجية .

× × تترك خالية لاستخدام الجواز .  
× includes permanent , temporary & seasonal workers in all production & service centers

التوقف عن الانتاج خلال سنة الاحصاء

Stopping Production

Table 4  
( الجدول رقم ٤ )

Reason for Stoppage	عدد التوقف period of stoppage		
	من To	الى From	عدد الايام No of days

٧ يوضع مدد التوقف عن الانتاج محسوبة بالايام لاسباب غير عادية كنقص المواد الاولية او قطع الغيار او انقطاع التيار الكهربائي ... الخ .  
ولا تعتبر الاجازات الرسمية والاسبوعية والجماعية توقفا عن الانتاج .

Production stoppage is computed in days for reasons of shortage of raw material, spare parts, power cut & not because of official & weekly & group holidays















استمارة رقم 100 م 1 مكرر / منشأة (ت.ق) جارية

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الكهرباء  
Electricity

Table 8

( الجدول رقم ٩ )

( القيمة بالجنيه )

المجموع Total		كهرباء منتجة Electricity produced		كهرباء وشترام Electricity purchased		وحدة الكمية - Unit		معلومات Information			الدليل Code	مسل Serial
القيمة V	كمية Q	القيمة V	كمية Q	القيمة V	كمية Q	الدليل Code	الوحدة Unit	الدليل الاسمي Commodity Code	الدليل الانشطه Activity Code	النوع Type	المحاسب Code	
(13)	(12)	(11)	(10)	(9)	(8)	(7)	(6)	(5)	(4)	(3)	(2)	(1)
		—					ك و س			used in Operation كهرباء مستخدمة في التشغيل	٢٢٢٤	١
		—					ك و س			كهرباء مستخدمة في الانارة Used in lighting	٢٢٢٢	٢
										المجموع		
		—		—			ك و س			sold to others كهرباء مباعه للغير		١

\* left to agency use

\* تنترك لاستخدام الجهاز

استمارة رقم ١٥٥٠ مكرر / منشأة (ت.ق) جارية

- ١٥ -

مستلزمات طبيعية اخرى

Other

raw material & intermediates  
(الجدول رقم ١٥)

Consumed (القيمة بالجنبيه)  
LE

Inventories  
end of year

Sold

purchased

Inventories beg. of year

قيمة المستهلك خلال العام			المخزون آخر العام		قيمة المبيع	قيمة المشتري	المخزون اول العام		Information			مسل
مجموع Total (١٤)	مستورد Imported (١٢)	مطبخ Local (١٣)	الدليل المحاسب Code (١١)	الدليل المحاسب Code (٩)	بحالة الشراء (٨)	خلال العام (٧)	الدليل المحاسب Code (٥)	الدليل المحاسب Code (٤)	الدليل المحاسب Code (٣)	المصنف Type (٢)	(١)	
			٢٢٢١	١٢١٢١			١٢١٢١			Spare Parts & maintenance قطع غيار ومواد صيانة	١	
			٢٢٢٢	١٢١٢٢			١٢١٢٢			materials & varietes مواد ومهمات متنوعة	٢	
	—		٢٢٥	١٢١٥			١٢١٥			residuals مخلفات	٣	
			٢٢٦	—			—			stationary ادوات كتابية	٤	
	—		٢٢٢١	—			—			Water	٥	
										Total المجموع		

x تترك لاستخدام الجهاز

استمارة رقم ١٥٠٠ مكرر / منشأة (ت.و) جارية

- ١٦ -

## Service requirements

المستلزمات الخدمية

١ - الخدمات الصناعية التي حصلت عليها المنشأة من الغير x  
(مصرفات تشغيل لدى الغير - دليل محاسبي ٢٢٢ ماعدا المستحق لمتعهدي توريد العمال ومقاولي الباطن)

Industrial services rendered by others (Service to others excluding subcontracting)  
(الجدول رقم ١١) Table 11

رقم الخدمة خلال العام Value of service (٧)	الاصناف المقدمة للعميل			بيان الخدمة الصناعية Industrial Service		معدل (١١)
	الكمية Quantity (٦)	وحدة الكمية Unit (٥)	النوع Type (٤)	دليل النشاط Code (٣)	نوع الخدمة الصناعية Type (٢)	
						١
						٢
						٣
						٤
						٥
						٦
						٧
						٨
						٩
						١٠
					المجموع	

x تشمل الخدمات الصناعية التي حصلت عليها المنشأة من منشآت اخرى حتى ولو كانت تابعة لنفس المشروع الذي تتبعه المنشأة نفسها حيث تعتبر خدماتها الصناعية حصلت عليها المنشأة من العميل (تشغيل لدى الغير).

Service received by other firms

Table 11, (جدول ١١)

القيمة بالحميه

المستحق لمتعهدي توريد العمال ومقاولي الباطن خلال العام (مكمل الدليل ٢٢٢)

Service Accrued to the firm from suppliers & sub-contractors  
(جدول ١١ ب)

(القيمة بالحميه)

مصرفات صيانة (دليل محاسبي ٢٢١)

المجموع	صيانة اخرى	صيانة اثاث	صيانة وسائل النقل	صيانة الات ومعدات	صيانة طرق	صيانة مرافق وشبكات Infra-structure	صيانة مباني وانشاءات Building Maintenance	صيانة مجارى مائيه Maintenance of water drains
Total	Others	Furniture	Transp. mainte-	Equip-ment mainte-	Road Mainte-	structure & network Maintenance	Maintenance	

Other service requirements

مستلزمات خدمية اخرى ( دليل محاسبي ٢٢ ماعدا ٢٣١ ، ٢٣٢ )

Table 12  
( الجدول رقم ١٢ )

القيمة بالجنيه LE	الدليل المحاسبي Account number	البيان	القيمة بالجنيه Value	الدليل المحاسبي Account code	البيان	الدليل المحاسبي Account code	البيان
(٤)	(٢)	(٣)	(٤)	(٢)	(٣)	(٢)	(١)
	٢٢٨٢	مصرفات تأمين Insurance	٩	٢٢٢	خدمات ابحاث وتجارب research & experiment	١	
	٢٢٨٥	عموله ومصروفات بنك commission bank expenses	١٠	٢٢٤١	نشر وطبع publication & printing	٢	
	٢٢٨٢	مكافآت لغير العاملين compensations to non workers	١١	٢٢٤٢	دعايه و اعلان Advertisement & publicity	٣	
	٢٢٨٤	ضرائب ورسوم مدفوعه لحكومات اجنبيه Taxes & duties to foreign governments	١٢	٢٢٤٣	علاقات عامه واستقبال public relations & reception	٤	
	٢٢٨٦	عمولات اخرى Other commissions	١٣	٢٣٥	نقل وانتقالات عامه Transp. & communications ومواصلات	٥	
	٢٢٨٧	متنوعه	١٤	٢٣٦	استئجار معدات ووسائل renting equipment & transp.	٦	
				٢٣٧	تكاليف خدمات مصالح service cost of authorities & firms	٧	
		المجموع		٢٣٨١	اشتراقات في هيئات مليه واقليميه ودولية subscriptions in local, regional & international organizations	٨	

- 18 -  
 Services rendered by the firm to others  
 الخدمات المتعاين التي قدمتها المنشأة للغير  
 ( إيرادات تشغيل للغير )  
 (operating revenues from others Table 13  
 (الجدول رقم 13)

قيمة الخدمة بالجنيه	الإنتاج لحساب الغير production to others				الإضافي للخدمة rendered to others			نوع الخدمة Type of service	
	قيمة اجر تشغيل الوحدة		الكمية	وحدة الكمية	نوع الانتاج Type of product	الكمية	وحدة الكمية		الصف type
	حبه	مليم	Quant	Unit		Quant	Unit		
Value of Service in LE	Value of operating one unit LE Million								
اجمالي القيمة ( حساب رقم ٤١٦ بالنظام )									

Rent & Interest  
 الايجارات والفوائد  
 Table 14  
 (الجدول رقم 14)

القيمة بالجنيه Value LE	المحاسبين Information Code	الدليل الدليل المحاسبين Code	القيمة بالجنيه Value	المحاسبين Information Code	الدليل الدليل المحاسبين Code
	الفوائد المحلية local interest	٢٥٥		الايجارات الفعلية Actual Rent	٢٥٢
	الفوائد الخارجية foreign interest	٢٥٦		فرق الايجارات المحسوبة	٢٥٤
	فرق الفوائد المحسوبة difference in computed interest	٢٥٧			
	اجمالي القيمة Total Value			اجمالي القيمة Total Value	

الرسوم والضرائب والاعانات  
 Duties, Taxes & Subsidies  
 Table 14A  
 (الجدول رقم 14)

القيمة بالجنيه Value LE	المحاسبين Information Code	الدليل الدليل المحاسبين Code	القيمة بالجنيه Value	المحاسبين Information Code	الدليل الدليل المحاسبين Code
	اعانات الإنتاج production subsidy	٤٢١		رسوم جمركية Tariff	٢٥١١
	اعانات التصدير Export subsidy	٤٢٢		رسوم انتاج production duties	٢٥١٢
				ضريبة الخزائنه Treasury Tax	٢٥١٣
				ضرائب اخرى other taxes	٢٥١٤
	اجمالي القيمة Total Value			اجمالي القيمة Total Value	

processing during the year

Table 15  
( الجدول رقم ١٥ )

الانتاج التام  
Furnished Product

Total Sales  
( القيمة بالعملة )

صافي المبيعات خلال العام ( دليل محاسبي ٤١١ )						كمية المنتجين للتفصيل خلال العام		وحدة قياس الكمية Unit		بيان السلعة المنتجة Produced commodity				
Total		Export		Local		داخل المنشأة	لدى الغير	Code	Unit	Code	Code	Code	Name of commodity in detail	
قيمة	كمية	قيمة	كمية	قيمة	كمية	(٨)	(٧)	(٦)	(٥)	(٤)	(٣)	(٢)	(١)	
(١٤)	(١٣)	(١٢)	(١١)	(١٠)	(٩)									
													١	
													٢	
													٣	
													٤	
													٥	
													٦	
													٧	
													٨	
													٩	
													١٠	
													١١	
													١٢	
													١٣	
المجموع														

Start with main product, then secondary or subsidiary product

بعداً بذكر المنتجات الرئيسية ثم تليها المنتجات الثانوية أو الفرعية  
x تترك لاستخدام الجهاز  
( الجدول رقم ١٥ )

تغير مخزون الانتاج غير التام  
دليل محاسبي (٤١٤)  
Change in inventory

مخزون آخر العام  
دليل محاسبي ١٣١  
Inventory end of year

مخزون اول العام  
دليل محاسبي ١٣١  
Inventory beg. of year

استمارة رقم ١٥٥ م ١ مكرر / منشأة (ت.ق) جارية

Table 15 (suite)

(تابع الجدول رقم ١٥)

(تابع) الانتاج التام

(القيمة بالجنينة)

finished product at

change in estimation of change in inventory

الانتاج التام Selling price		الانتاج التام كمية Q (٤١٣) xx	مركز المخزون من الانتاج التام والتغير فيه						Serial # مسلسل
			التغير في مخزون الانتاج التام (٤١٣) xx	التغير في المخزون ٤١٣ xx	المخزون آخر العام ١٣٣	المخزون اول العام ١٣٣	المخزون اول العام ١٣٣	المخزون آخر العام ١٣٣	
قيمة V	كمية Q	قيمة V	كمية Q	قيمة V	كمية Q	قيمة V	كمية Q		
(٢٢)	(٢٢)	(٢١)	(٢٠)	(١٩)	(١٨)	(١٧)	(١٦)	(١٥)	(١)
									١
									٢
									٣
									٤
									٥
									٦
									٧
									٨
									٩
									١٠
									١١
									١٢
									١٣

+ve # written as if is  
-ve # between brackets

xx قد يكون الرقم موجبا (فيكتب عاديا) او سالبا (فيوضع بين قوسين) .

استمارة رقم ١٥٥٠ م ١ مكرر / منشأة (ت.ق) جارية

- ٢١ -

مشغولات داخلية تامة بالتكلفة خلال العام

( دليل محاسبي رقم ٤١٥ )

Internal finished works Table 16  
at cost during the year الجدول رقم (١٦)

LE  
(القيمة بالجنيه)

رقم سلسل	بيانات المشغولات Work Information			اسم الاصل Name of Asset	ملاحظات Remarks
	دليل النشاط Code	الدليل الطعي Code	القيمة Value		
(١)	(٢)	(٣)	(٤)	(٥)	(٦)
				Building, construction مباني واستثمارات ومرافق وطرق infrastructure & roads	
٢				equipment ; & الات ومعدات Machinery	
٣				Transp. & communication وسائل نقل وانتقالات	
٤				tools & utensils معدن وادوات	
٥				اثاث ومعدات مكاتب furnitures & fixtures & desks	
				الاجمال Total	

x تشرك لاستخدام الجهاز

استمارة رقم ١٥٠٠ م ١ مكرر / منشأة (ت.ق) جارية

مظففات الانتاج  
( دليل محاسبي ٤١٩ )

Production residuals

Table 17

( الجدول رقم ١٧ )

LE  
( القيمة بالجنيه )

ملاحظات Remarks	رقم ✓	كمية Q	وحدة قياس الكمية		بيان		
			الرمز Code	الوحدة Unit	الدليل الدليل السلعي Commodity Code	دليل النشاط Activity Code	اسم السلعة بالتعريف Retail of commodity
(٨)	(٧)	(٦)	(٥)	(٤)	(٣)	(٢)	(١)
				-			الاجمالي Total

x تترك لاستخدام الجهاز

Goods for Selling purposes

البضائع بغرض البيع ( دليل محاسبي ٤١٨ )

Table 18

( الجدول رقم ١٨ )

LE  
( القيمة بالجنيه )

ملاحظات Remarks	القيمة Value	اسم الحساب Name of Account	دليل محاسبي
		صافي المبيعات Net Sales	٤١٨١
		تغير مخزون بالتكلفة Change in inventory	٤١٨٢
		فرق تقويم التغير في المخزون change in assessment of changes of inventory	٤١٨٣
		الاجمالي Total	
		المشتريات بغرض البيع Purchases for selling purposes	٣٤

اسمائه رقم ١٥٥٠ م ١ مازر / مشاء (س) جارية

Revenues of Current Activities  
& Value Added

Table 19  
(الجدول رقم ١٩)

Value Added			Revenues		
القيمة بالجنه Value	الدليل المحاسبى AC code	البيان Information	القيمة بالجنه Value	الدليل المحاسبى Ac. code	البيان Information
	٤١١ من ٤١٩ الى	اجمالي ايرادات النشاط الجارى (قيمة الانتاج الاجمالي مع Current revenues at market p		٤١١	صافي مبيعات انتاج تام Net Sales of finished goods
	٤٢	+ Subsidies		٤١٢	تغير مخزون انتاج تام بالتلفه change in inventory at cost of finished goods
	٣٥١	- Taxes & duties		٤١٣	تغير مخزون انتاج تام بالتلفه change in inventory at cost of finished goods
		- Total Output at factor cost		٤١٤	تغير مخزون انتاج غير التام change in inventory of unfinished goods at cost
	٣٥٢	- Depreciation		٤١٩	تغير مخزون انتاج غير التام change in inventory of unfinished goods at cost
	٢٢	- raw material		٤١٧	ايرادات تشغيل للغير Revenues from operation to other's
	٢٢	- Service requirements		٤١٨	خدمات مباعه Services sold
				٤١٩	بضائع مرفوضه للبيع goods for selling purposes
				٤١٩	تأجيل مشتريات مرفوضه للبيع (٧٤) purchases for selling purpose
				٤١٩	مخلفات الانتاج production residual
		= Value added			اجمالي القيمة المضافه Total Value

LE for the year

Direct Taxes for the year

Table 2 b  
(الجدول رقم ٢٠)

قيمة المدفوع paid	ما يخص العام	ضرائب دخلية (٢٦٩) Income tax	سلسل Serial	قيمة المدفوع paid	ما يخص العام	ضرائب عقارية (٢٦٨) type of tax	Real Estate سلسل Serial
(٤)	(٣)	(٢)	(١)	(٤)	(٣)	(٢)	(١)
		ارباح الشمام profit	١			اطيمان Land	١
		قيمة منقوله transferred	٢			مبانى Building	٢
		Total				Total	

x يشمل المدفوع من الضرائب سواء كان يخص العام الحالى او اعوام سابقه .  
Taxes attributed to this year or other preceding years .

# Change in fixed assets during the year

حركة الأصول الثابتة خلال العام ( دليل محاسبي رقم ١١ )  
( مستوفى هذا الجدول عن الأصول الثابتة المتكاملة للإنتاج بالمنشأة )

( القيمة بالجنيه )

This table includes fixed assets ready for production  
(الجدول رقم ٢١)  
Table 21

discarded (addition to assets) (local)

Net Value of asset end of year

القيمة الصافية للأصل في آخر العام	إهلاك العام Depreciation	الاستهلاكات خلال العام		قيمة الإضافات على الأصول خلال العام			القيمة الصافية للأصل في أول العام Net asset value begin of year	بيان				ملاحظات
		damaged تالفة	sold مباعة	imported مستوردة	مستعملة second hand	جديدة New		× الدليل الدليل Commodity Codes	× دليل النشاط Activity code	نوع الأصل Type of asset	Account الدليل المحاسبي code	
(١٣)	(١٢)	(١١)	(١٠)	(٩)	(٨)	(٧)	asset	(٥)	(٤)	(٣)	(٢)	(١)
							Value			أراضي Land	١١١	١
							begin			مبانى وإنشاءات ومرافق وطرق Building	١١٢	٢
							of			الآت ومعدات Machinery & equipment	١١٣	٣
							year			وسائط نقل وانتقال Transp. & communication	١١٤	٤
										عدد وادوات Tools & utensils	١١٥	٥
										أثاث ومعدات مكاتب Furniture, fixture & dech.	١١٦	٦
										شجره حيوانيه ومائيه Animal & water wealth	١١٧	٧
										نفقات إيراديه مؤجله Deferred revenue expenses	١١٨	٨
										Total		

construct infrast road

يتمد بالأراضي الجديدة قيمة المنصرف على عملية التجهيز والتعبيد والتهيئة للاستخدام  
New Land includes land preparation  
بترك لاستخدام الجهاز  
harrow etc

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list of projects under construction

استمارة رقم ٥٠٠ مكرر/منشأة (ت.ق) جارية  
بيان المشروعات تحت التنفيذ الخاصة بالمنشأة (دليل محاسبي رقم ١٢)

Table 22  
(الجدول رقم ٢٢)

LE  
(القيمة بالجنيه)

Value of complete assets additions during the year

ملاحظات Remarks	قيمة الرصيد آخر العام Value of Asset at the end of year	قيمة أصول تكاملت ومعدة للانتاج خلال العام Value of complete assets	قيمة الاضافات خلال العام Value of additions during the year		قيمة الرصيد اول العام Value of Asset at the beginning of year	Information		مسلسل Account Name	الدليل المحاسبي Ac. code	(1)	
			مستورده Imported	محلية Local		اسم الحساب Account Name	(2)				
				استعملت Used							جديدة New
(10)		(8)	(7)	(6)	(5)	(4)	(2)	(2)	(1)		
	Asset end of year					beg. of year	commodity in process تكوين في	١٢١			
			-	-			Land اراضي	١٢١١		1	
							Buildings, construction, infrastructure مباني وانشاءات ومرافق وطرق	١٢١٢		2	
							Machinery & equipment الات ومعدات	١٢١٣		3	
							Transp. & Communal وسائط نقل وانتقال	١٢١٤		4	
							Tools & utensils عدد وادوات	١٢١٥		5	
							furniture, fixture & desk اشياء ومعدات مكاتب	١٢١٦		6	
							Animal & water wealth ثروة حيوانية وماشية	١٢١٧		7	
							postponed revenue cost نفقات ايرادية موجبة	١٢١٨		8	
							Inv. cost انفاق استثماري	١٢٢		-	
							Advances دفعات مقدمة	١٢٢١		1	
							Documents for purchase of fixed assets اعتمادات مستندية لشراء اصول ثابتة	١٢٢٢		2	
							المجموع (دليل محاسبي ١٢)				
							Total				

## احماء اطفاء الحريق

fire extinguish

Governorate

المحافظة :

Name of firm

اسم المنشأة :

أ - عدد معدات اطفاء الحريق الموجودة في ١٩٩٢/٦/٣٠ ( x )

اجهزة اطفاء يدوية manual equipment					مضخات مياه water pumps		سيارات اطفاء fire car		
بودره جابه (٥)	هالون (٤)	رابع كلوريد الكربون (١٣)	ثاني اكسيد الكربون (٢)	كيمياوي (٢) chemical	رغوي (١)	نقالى	مقطورة	حامله سلام فقط Track ladder	ثقيليه خفيفه light heavy

لا

نعم

- هل توجد اجهزة حساسة للحرارة وللدخان والحرارة لاعطاء اذار صوتي أو صوتي  
Are there apparatuses sensitive to temperature & smoke for automatic alarm.

لا

نعم

- هل توجد اجهزة اطفاء ذاتية  
are there self-fire extinguish

## ب - التامين ضد الحريق

Insurance against fire

لا

نعم

- هل المنشأة مؤمن عليها ضد الحريق :  
قيمة المؤمن عليه (في حالة التامين الجزئي) :  
قيمة مبلغ التامين :  
قيمة القسط السنوي للتأمين :

(x) تدون معدات الاطفاء الخاصة بكل منشأة داخل المصنع او الشركة باستمارة مستقلة وفي حالة المروع (للمصنع او الشركة) تستوفي استمارة مستقلة عن كل فرع توجد به معدات لاطفاء الحريق وفي حالة تعذر ذلك يتم ادراجها اجماليا ضمن بيانات المركز الرئيسي مع الاشارة بذلك .

(١) المستخدمه في اطفاء المواد البترولية وماشابهها (٢ جالون - ١٠ جالون - ٣٤ جالون)

(٢) المستخدمه في اطفاء الحرائق في المواد العادية

(٣) المستخدمه في اطفاء موتورات السيارات وغيرها من الاجهزة الكهربائيه

(٤) المستخدمه في الاماكن التي قد تؤثر المياه أو ثاني اكسيد الكربون على الاجهزة الموجوده بها كأجهزة الكمبيوتر .

(٥) المستخدمه في اطفاء الحرائق في المناطق الكهربائيه والبترولية بالمسطحات المائيه والارضه .

مضخات الاطفاء : يغمد بها ظلمبات المياه الماصه الكاسه التي تستخدم في ضخ المياه .

ANNEX I.

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**PROPOSED QUESTIONNAIRE**

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The attached questionnaire was designed by DEPRA for potential use in a special survey for the ERP study. It was made to obtain, in particular, necessary data on classifications and costs of material input in production, and to classify data at the ISIC 5-digit level of categories. The CAPMAS questionnaire more or less contains relevant questions for information, but either the industrial producers do not provide full information or CAPMAS does not enter it into its data base, as observed from 6 replicated completed questionnaires given by the Agency. The proposal of carrying out a special survey was abandoned because the funding required for the needed surveys by an independent firm or CAPMAS would not likely be available.

The questionnaire in this annex would be a good alternative to the one used by CAPMAS, which seems to be unnecessarily complex, requiring the respondents to divert excessive resources in materials and time from their own productive activities in order to provide the information required by CAPMAS. Perhaps it would be appropriate for the Agency to review its needs and uses of industrial data, and redesign the questionnaire accordingly.

البيانات المطلوبة لدراسة معدل الحماية الفعلى  
Data Required For ERP Study

يرجى التأكد من التماثل بين المنشآت المختارة من حيث منتجاتها الرئيسية والفرعية .  
Please make sure that the chosen firms are identical with regard to major and secondary products.

١- بيانات النشاط الأساسية :Basic data for activity identification

الدليل الجمركى Customs Code		المنتجات Products		النشاط الصناعى Industrial Activity		مسلن Serial N
م. ثانوية Sec. Pro.	م. رئيسية Maj. Pro.	ثانوية Second.	رئيسية Major	ثانوى Second.	رئيسى Major	
						١
						٢
						٣
						٤
						٥

٢- عدد المنشآت المجمع بياناتها : Number of firms for which data are aggregated

٣- الأجور والمرئبات :Wages and salaries

- مجموع الأجور النقدية بما فيها التأمينات الاجتماعية (بالجنه)

----- Total money wages including social insurance (L.E.)

----- Total fringe benefits (L.E.) (بالجنه)

----- إجمالى الأجور النقدية والتأمينات الاجتماعية والمزايا العينية (بالجنه)

----- Total money wages, social insurance, and fringe benefits (L.E.)



٦- وقود وزيوت وشحومات وكهرباء. Fuel, oils and lubricants, and electr. (بالجنيه L.E. Values in)

المستهلك خلال العام Consumed during the year			اسم السلعة بالتفصيل Commodity items	الدليل الجمركي Cust. Code
Total إجمالي	محلي Domestic	مستورد Imported		
			Fuel, oils , and lubricants	
			فحومات Coal	
			مازوت Mazout	
			سولار	
			كيروسين Kerosene	
			بنزين Gasoline	
			زيوت وشحومات and lubricants	
			غاز طبيعي Nat.Gas	
			بوتاجاز Butagas	
			أخرى Others	
			المجموع	
			ب - الكهرباء Electricity	
			للتشغيل For prod.	
			للإضاءة For lighting	
			مجموع Total	

٧- مستلزمات سلعية أخرى : Other commodity inputs (أقيم بالجنيه L.E. Values in)

المستهلك خلال العام Consumed during the year			اسم السلعة بالتفصيل Commodity items	الدليل الجمركي Cust. Code
Total إجمالي	محلي Domestic	مستورد Imported		
			قطع غيار ومواد صيانة Spare parts & maintenance mat.	
			مواد ومهمات متنوعة Various materials & logistics	
			مخلفات Scraps	
			أدوات كتابية & mat. for writing	
			مياه Water	
			المجموع Total	

٨- مستلزمات خدمية Service inputs:

أ- إجمالي قيمة الخدمات الصناعية التي قدمت للمنشآت (جنبيه)

----- Total value of industrial services from outside the firms (L.E.)

----- ب - إجمالي مصروفات الصيانة (جنبيه) Maintenance expenses(L.E.)

ج - إجمالي المستلزمات الخدمية الأخرى (جنبيه)

----- Total value of other service inputs (L.E.)

٩- إجمالي قيمة خدمات صناعية قدمتها المنشآت للغير (إيرادات تشغيل للغير بالجنبيه)

----- Total value (in L.E.) of industrial services to others (revenues from processing to others)

١٠- الإيجارات والفوائد (بالجنبيه) Rent and interests:

----- أ - إجمالي قيمة الإيجارات Total value of rents

----- ب - إجمالي الفوائد Total interests

١١- الرسوم والضرائب والاعانات (بالجنبيه) Taxes, duties, and subsidies (L.E.):

القيمة Value	الاعانات Subsidies	القيمة Value	الرسوم والضرائب Taxes and duties
	إعانات الإنتاج Production subsidies		رسوم جمركية عن المستخدم Customs duties on inputs
	إعانات التصدير Export subsidies		رسوم إنتاج Production duts.
			حصيلة الخزنة Treas. levies
			ضرائب أخرى Other taxes
	المجموع Total		المجموع Total



**ثانيا: القيمة المضافة Second: The value added**

• من أ الى ب إجمالي إيرادات النشاط الجارى (قيمة الانتاج الاجمالي بسعر السوق)

From a to j : Total revenues of current activity (value of gross production at market price)

-----  
-----

• زائدا الاعانات Plus subsidies

(-----) • ناقصا الضرائب والرسوم السلعية Minus taxes and commodity duties

----- Value of gross product. at factor costs قيمة الانتاج الاجمالي بتكلفة عوامل الانتاج

(-----) • ناقصا الاهلاك Minus depreciation

(-----) • ناقصا المستلزمات السلعية Minus commodity inputs

(-----) • ناقصا المستلزمات الخدمية Minus service inputs

----- Net value added القيمة المضافة الصافية

**١٤. الضرائب المباشرة Direct taxes**

مستحق عن العام Year's accr.	Income taxes ضرائب دخلية	مستحق عن العام Year's accr.	R.Estate Tax. ضرائب عقارية
	Prof. of the year أرباح العام		On land على الأظيان
	Circulating assets قيم منقولة		On buildings على المباني
	Total المجموع		Total المجموع

التقرير النهائي:

## معدلات الحماية الفعلية فى مصر

معد لأجل:

حكومة جمهورية مصر العربية

مقدم إلى:

الوكالة الأمريكية للتنمية الدولية  
بالقاهرة - مصر

مقدمة من:

نathan اسوشيتس انكوربوريشن  
وكيمونكس انترناشيونال انكوربوريشن

عقد رقم:

٢٦٣-٠-٠٠-٩٦-٠٠٠٠١-٠٠٠



سبتمبر ١٩٩٨

## استهلال

يمثل هذا التقرير وصفا لدراسة عن معدلات الحماية الفعلية في مصر . وجوهر التقرير عبارة عن توليفة من الأسانيد النظرية ومناقشات للأمور المتعلقة بالسياسة العملية . ويقع التركيز الأساسي للتقرير على أمور السياسة في الأقسام الرئيسية ، متضمنة المناقشات الخاصة بالاحتياجات المؤسسية ومشاكل البيانات ، على حين تم وضع الجوانب الفنية المتعلقة بالموضوع في ملاحق التقرير .

وقد ينظر كثير ، وربما معظم القراء للتقرير باعتباره غير عادي ، ومن الصعب قراءته . وهو ليس مثل التقارير الأخرى التي عالجت موضوع السياسات ، حيث تم إعطاء قدر كبير من الاهتمام للمفاهيم النظرية ، وأهميتها الخاصة بالنسبة للسياسات التجارية . كما أنه لسوء الحظ ، ينبغي تناول معظم هذه الأمور النظرية في البداية .

ويحتوي متن التقرير على القليل جدا من التوصيفات التي يسهل قراءتها للأمور مثل السمات الرئيسية للاقتصاد المصري ، والترتيب الزمني للإصلاحات الراهنة في السياسات ، بالإضافة إلى قدر ضئيل من المعلومات التطبيقية . علاوة على ذلك ، وبالنسبة لقدر كبير من القراء ، قد تبدو المفاهيم وكيفية تطبيقها واضحة في أحد مواضيع التقرير ، ثم تبدو غامضة بعد لحظات عندما تتحول المناقشات لتتناول مضامين السياسة . وأحيانا تضع الفكرة الأساسية للمفاهيم أثناء التركيز على البيانات الإحصائية ، وتعديل البيانات ، وهو أمر يكون مطلوباً لاشتقاق الإحصاءات الهامة لتكون قابلة للمقارنة ومتسقة في نفس الوقت .

وبالرغم من الحاجة الشديدة للتركيز الذهني على جوانب معينة في الموضوع ، فإن الجهد المطلوب للوصول إلى فهم كامل لمقاييس معدلات الحماية الفعلية يكون مفيداً لعملية صياغة السياسات ، ويتضمن ذلك وضع معدلات التعريفية الجمركية ، والاستثناءات الممنوحة لمستثمرين أو مستهلكين معينين . إن معرفة القيم النسبية لمعدلات الحماية الفعلية لعدد كبير من القطاعات السلعية ، والنشابات المحتملة للتأثيرات الاقتصادية ، يقدم ميزة حاسمة عند صنع سياسات التجارة والاستثمار ، وعند إدارة عملية التنمية الاقتصادية .

وهناك نقطة أخيرة ينبغي التركيز عليها في هذا الاستهلال ، وهي أنه ينبغي على القارئ أن يأخذ في اعتباره أن المفاهيم والجوانب النظرية ، وكذلك البرهان التطبيقي ، والتي تمت مناقشتها أو الإشارة إليها في هذا التقرير ، تقع معظمها في إطار التحليل الاقتصادي الجزئي - فتحليل معدل الحماية الفعلي مكانه الصحيح خارج إطار مقارنات التحليل الاقتصادي الكلي . وكنتيجة لذلك ، تدور المناقشات حول تعريفات جمركية معينة ، وأسعار معينة ، وصناعات سلعية محددة ، وأسواق محددة ، واستثمار في قطاعات محددة في الصناعة . وتقتصر المناقشات تقريبا على السياسات الاقتصادية القطاعية ، مع إشارة ضئيلة جدا إلى الإدارة والسياسات الاقتصادية الكلية . لذلك ، لا توجد في الحقيقة أية إشارة لمستويات التعريفية الجمركية ، والأسعار ، والتوظيف ، والاستثمار ، والادخار ، ومعدلات الصرف الأجنبي ، واحتياطيات النقد الأجنبي ، ومتوسط معدلات الاستثمار والادخار ، ومعدلات النمو الاقتصادي ، أو أي مؤشرات أخرى ، عبر الاقتصاد القومي ككل .

قام بإعداد الدراسة الأستاذ "موريس ثورن" ، من مؤسسة " كيمونكس انترناشيونال إنكوربوريشن" ، وهو يعمل مستشارا اقتصاديا في مشروع تحليل وإصلاح السياسات الاقتصادية والتنمية بوزارة الاقتصاد " مشروع ديبرا" ، وقد ساعده في إعدادها الدكتور/ محمود عبد الحي صلاح ، أستاذ الاقتصاد بمعهد التخطيط القومي بالقاهرة ، جمهورية مصر العربية ، والأستاذ / حجاج بدوي ، نائب مدير الغرفة المصرية للصناعات الجلدية ، والذي قدم المعلومات الفنية المتعلقة بصناعة الأحذية في مصر .

ويود كاتب التقرير أن يشكر الأستاذ الدكتور/ فاروق شقوير ، وكيل أول وزارة الاقتصاد ورئيس قطاع بحوث السياسات الاقتصادية والمعلومات بوزارة الاقتصاد . والأستاذ / السيد محمد أبو القمصان ، وكيل أول وزارة التجارة والتموين ، ورئيس قطاع التجارة الخارجية ، والأستاذ / عبد الرحمن فوزي بقطاع التجارة الخارجية بوزارة التجارة والتموين ، وذلك لما قدموه إلى كاتب التقرير من دعم ومساندة خلال التخطيط ومراحل البحث لإعداد هذه الدراسة .

ويذهب الشكر أيضا ، إلى الأستاذة الدكتورة / هناء خير الدين ، المستشار الاقتصادي وأستاذ الاقتصاد بكلية الاقتصاد والعلوم السياسية - جامعة القاهرة على آرائها العميقة خلال المناقشات مع كاتب التقرير .

ويمتد الشكر والتقدير إلى كل من الأستاذ الدكتور / حافظ شلتوت بقسم السياسات الاقتصادية بالوكالة الأمريكية للتنمية الدولية بالقاهرة ، والأستاذ الدكتور / ستيفارت كاليبسون ، رئيس مشروع ديبرا ، على الدعم والمساندة المخلصة خلال جميع مراحل إعداد هذه الدراسة ، بما فيها الالتزامات و الإجراءات الإدارية .

كما يذهب الشكر أيضا إلى السادة التالية أسماؤهم من العاملين بوزارة التجارة والتموين ، وزارة المالية ، وزارة الاقتصاد ، على إسهاماتهم سواء من خلال السيمينارات أو خلال إعداد الدراسة : أيمن أحمد شوقي ، هاني خليل ، تامر سلامة محمود ، محمد سيد عباس شعراوى ، رحاب السيد شواب ، محمود طه أحمد ، أحمد داود ، أيمن محمد شعيب ، فتحي رمضان ، عبير عبد الفتاح روبي ، ايناس سعيد سالم ، هبة السعدني ، وأماني إبراهيم ، من وزارة التجارة والتموين (قطاع التجارة الخارجية) . ومجدي مكي ، نجلاء عبد الخالق ، من وزارة المالية (مصلحة الجمارك) . وناجى شهدي صالح ، فاطمة عبد الله مصطفى ، ميرفت محمد خليل العراقي ، مصطفى محمود شاهين ، وليد إبراهيم محمود ، من وزارة الاقتصاد (قطاع بحوث السياسات الاقتصادية والمعلومات) . كما يمتد الشكر أيضا ، للسيد المهندس/ مصطفى سعيد ، رئيس نقطة التجارة الدولية بمصر ، والسيدة/أمينة محمد عبد المنعم عفيفي ، المدير العام بمركز المعلومات ، ومحمد أحمد الغوالبي ، مدير إدارة الإحصاءات والبحوث ، مصلحة الجمارك ، وزارة المالية .

ويعتبر كاتب التقرير هو المسئول عن كافة العبارات ، ووجهات النظر المتعلقة بالأسانيد ، بالإضافة إلى شكل تقديم البيانات في هذا التقرير ، ولا ينبغي أن تتسبب هذه الآراء بأي شكل إلى وزارة الاقتصاد - حكومة جمهورية مصر العربية - ، والوكالة الأمريكية للتنمية الدولية ، أو من يمثلهما .

موريس ثورن

القاهرة - أغسطس ١٩٩٨

## المخلص التنفيذي

### مقدمة :

يعتبر هذا التقرير عرضاً لدراسة معدلات الحماية الفعلية ، وهو يتضمن المنهجية ، والنتائج ، وكذلك تحليل البيانات . وقد تصعب قراءة هذا التقرير - كما أشرنا إلى ذلك في الاستهلال - لأن أساس الدراسة مبني على بضع مفاهيم نظرية أساسية ، والقصد الأساسي هو تطبيق تحليل معدل الحماية الفعلي عند وضع السياسات الملائمة للتجارة والاستثمار . كما تم التركيز أيضاً ، على الاحتياجات المؤسسية ، ومشاكل تجميع وتحليل البيانات الضرورية .

وقد تم تصميم الدراسة كجهد تعاوني بين وزارة الاقتصاد ( قطاع بحوث السياسات الاقتصادية والمعلومات ) ، ووزارة المالية ( مصلحة الجمارك ) ، ووزارة التجارة والتموين ( قطاع التجارة الخارجية ) . والقصد من الدراسة أن تكون استرشادية **Pilot** بهدف :

- ١- تحديد مدى كفاية البيانات المتوافرة ، لحساب معدلات الحماية الفعلية في الصناعات المصرية المنتجة للسلع المصنوعة ، سلعة بسلعة .
- ٢- تطوير قدرة مؤسسية للقيام بتحليل معدل الحماية الفعلي .

والقدرة المؤسسية المقترحة يمكن أن تأخذ شكل وحدة تضم اقتصاديين وأخصائيي بيانات ، يقومون بحساب معدلات الحماية الفعلية بشكل منتظم لعدد متزايد من القطاعات السلعية ، وتحسين قاعدة البيانات ، ثم عمل تقرير دوري عن أهمية ومضامين هذا التحليل لسياسات التجارة والاستثمار والإدارة ، وعلى وجه الخصوص بالنسبة للتغيرات في معدل التعريفات الجمركية .

وتتقسم دراسة معدل الحماية الفعلي في هذا التقرير إلى خمسة أجزاء :

- ١- مقدمة الدراسة .
- ٢- التعريفات الجمركية ومفهوم الحماية .
- ٣- نظرة شمولية لتحليل معدل الحماية الفعلي وكيفية حسابه .
- ٤- تطبيق إجراءات الحساب على بيانات صناعة الأحذية في مصر .
- ٥- العوامل المحورية المختلفة لتحليل معدل الحماية الفعلي في مصر .

أما المعلومات الفنية وغيرها من التفاصيل فقد تم وضعها في الملاحق .

### التعريفات الجمركية والحماية :

تفرض التعريفات الجمركية وغيرها من القيود على الواردات السلعية للعديد من الأغراض . والغرض التقليدي للتعريفات الجمركية هو توليد تيار من الإيراد إلى الحكومة ، ولإزالة هذا الغرض سائداً في الدول التي تمثل فيها الضريبة أكبر مصدر للإيرادات الحكومية ، على حين تكون القواعد الضريبية البديلة صغيرة ، أو يكون إلزام دافعي الضرائب مكلفاً . كما

تفرض القيود الجمركية وغير الجمركية أيضا ، بغرض تقييد الواردات ، إن الوظائف الأكثر شيوعا للقيود التجارية تتضمن حماية السوق المحلي من أجل المنتجين المحليين ، أو تقييد الإنفاق على الواردات ، ومن ثم الحفاظ على احتياطات الدولة من العملات الأجنبية ، أو منع استيراد السلع التي قد تهدد المعايير الأخلاقية أو صحة المواطنين . والسبب السائد لفرض التعريفات الجمركية في معظم الاقتصاديات في عالم اليوم هو حماية السوق المحلي من أجل صناعات محلية معينة . والحجة النمطية وراء ذلك هي أن الصناعة المحلية والعاملين فيها يحتاجون إلى الحماية لمواجهة المنافسة الخارجية .

وأيا كان الغرض النهائي ، فمن الملاحظ أن القيود الجمركية وغير الجمركية تؤدي إلى تقييد سعر ، وكمية ، أو جودة السلع المستوردة . وكنتيجة لذلك ، يحدث انخفاض في درجة المنافسة في السوق بين الموردين ، الأمر الذي يؤدي إلى محاباة منتجي الدولة على حساب المستهلكين . كما أن تأثير العوائق التجارية على عملية تخصيص الموارد وأسعار السوق يقلل الكفاءة في الإنتاج القومي ككل ، كما يؤدي إلى خفض مستوى المعيشة .

وغالبا ما يتم الادعاء بالحاجة إلى التعريفات الجمركية من أجل تحسين الميزان التجاري وزيادة مستوى التوظيف . ومن الملاحظ أن كلتا الحججتين ذات مغزى أخذا في الاعتبار أن فرض التعريفات على سلعة معينة يؤدي إلى رفع سعرها السوقي ، الأمر الذي يجبر المشتري على شراء عدد وحدات أقل ، وبالتالي يتسع السوق أمام المنتجين المحليين . وتعتبر هذه الحجج مضللة ، حيث تم صياغتها من وجهة نظر ضيقة . فإذا كان الطلب على السلعة الإستيرادية يتسم بالمرونة السعرية ، فإن فرض التعريفات يدفع المستهلكين إلى تقليل إنفاقهم على واردات معينة ، ولكنهم يقومون بشراء واردات أخرى أو منتجات محلية . وعندئذ ، يتم تحويل الموارد إلى سلع أخرى منافسة للواردات أو الصادرات ، وكنتيجة لذلك ، يلغى التغيير المبدئي الذي حدث في الميزان التجاري . وعلى الجانب الآخر ، نجد أن خفض الواردات يدفع المنتجين الأجانب إلى تحويل مواردهم إلى صادرات أخرى أو إلى منتجات منافسة للواردات . وفي النهاية ، يعود الميزان التجاري إلى مستواه السابق ، لأن خفض الواردات في أحد القطاعات يعوضه زيادة الواردات في قطاعات أخرى أو خفض الصادرات .

إن الأثر على التوظيف الإجمالي ، والذي يتحدد بالظروف التي تحدد الأجور في سوق العمل ، ومستوى الطلب الكلي ، يتم تعويضه بشكل مماثل . فقد يرتفع مستوى التوظيف بشكل جيد في تلك القطاعات التي يرتفع فيها الطلب على الإنتاج المحلي ، ولكن ينخفض في القطاعات التي يتم تحويل الموارد منها . وتعتبر القيود الجمركية وغير الجمركية أدوات غير ذات كفاءة في تصحيح الميزان التجاري ، ومستويات الإنتاج والتوظيف .

### معدل الحماية الفعلي:

من الأسباب الشائعة لفرض التعريفات الجمركية ، أو أثرها المتوقع ، هو إقامة سياج من الحماية حول السوق المحلي ضد المنافسة القادمة من سلع أجنبية . ومعدل الحماية هو عبارة عن مقدار الزيادة في سعر السلعة المستوردة وبدائلها المحلية ( سلعة مناظرة قام بإنتاجها صانع محلي) بالنسبة إلى سعرها الاستيرادي عند حدود الدولة . والزيادة السعرية تمثل مقدار الحماية السوقية المقدمة للمنتجين المحليين . وتمثل هذه الزيادة ، معدل التعريفات الجمركية ، ما لم يكن هناك عوائق أخرى على التجارة . أما معدل الحماية الفعلي ، فهو الزيادة التناسبية في القيمة المضافة المحلية ، وهي عبارة عن الجزء من السعر الذي ينسب إلى المنتج المحلي . وهو عبارة عن النصيب الذي يحصل الصانع المحلي ومن يعمل لديه . وبشكل أكثر تحديدا ، فإن

معدل الحماية الفعلي هو الزيادة النسبية في القيمة المضافة في اقتصاد يتم حمايته بالجمارك منسوبة إلى القيمة المضافة مقومة بأسعار التجارة الحرة ، أي بأسعارها عند حدود الدولة .

وهذا التعريف (أو المفهوم) تم إيضاحه بالمثال الموجود بالقسم الثالث من هذا التقرير ، عند الإعداد لما يلي :-

- ١- الحسابات التطبيقية على بيانات الإنتاج المصري في القسم الرابع من التقرير .
- ٢- مناقشة شاملة لأثر التعريفات الجمركية على أسعار السوق ، وعلى حجم القيمة المضافة .

ومعدلات الحماية الفعلية التي تولدت عن المعدلات التصاعدية للتعريفات الجمركية ، لا يؤدي فقط إلى تدعيم سياسات الإحلال محل الواردات ، ولكنها تؤدي أيضا إلى محاباة أقل أنواع الإنتاج ربحية . وكلما ارتفعت نسبة الواردات الخاضعة لمعدلات تعريفية منخفضة والمستخدم في الإنتاج ، كلما كان معدل الحماية الفعلية أعلى ، ومن ثم يصبح القطاع الفرعي الذي تنتمي إليه السلعة المعنية أكثر جاذبية للاستثمار . وبالمثل ، ترتفع قيمة معدل الحماية الفعلية بشدة ، مع انخفاض المكونات المحلية في القيمة المضافة بالنسبة للمدخلات المستوردة . إن الإنتاج الذي يقوم به الصانع البسيط من خلال خلط المواد المستوردة ، والتعبئة ، والتجميع عن طريق تركيب الأجزاء - وعلى وجه الخصوص باستخدام المفكات - هي خير مثال على الصناعات ذات القيمة المضافة المنخفضة ومعدلات الحماية الفعلية المرتفعة .

### طريقة قياس معدل الحماية الفعلي:

من أجل قاعدة كافية للمناقشات الجادة حول آثار الحماية ، والعلامات الإرشادية للقرارات المتعلقة بالسياسات ، يتطلب الأمر وجود طرق وأدوات تحليلية ، لقياس آثار التعريفات الجمركية ، والعوائق غير الجمركية ، أو سعر الصرف الخاص بالصناعات التابعة للقطاعات الفرعية ، والقطاعات الاقتصادية العريضة ، أو الطلب الاجمالي . ويعتبر تحليل معدل الحماية الفعلي أداة ملائمة ، بالرغم من وجود محددات له . وإذا تم حساب معدلات الحماية الفعلية لكافة القطاعات الإنتاجية ، فإن ذلك يمثل خريطة حيوية عن كيفية تأثير هيكل التعريفات الجمركية الحالي ، على الإنتاج ، وتوزيع المنافع والنفقات فيما بين أصحاب العمل والعاملين في الصناعات المصرية ، وبين المستهلكين .

وقد تم اختيار صناعة الأحذية لتطبيق أدوات التحليل على البيانات التطبيقية المصرية ، في الجزء الرابع من التقرير . وهي بمثابة مثال عملي عن المنهج الذي تم قبوله لحساب معامل معدل الحماية الفعلي ، وتفسير النتائج . ويوضح العرض كيفية إدارة البيانات وخطوات الحساب ، وكيف لهذا الإجراء أن يكون أداة مفيدة لوضع معدلات التعريفات الجمركية ، وصياغة سياسة للتجارة والاستثمار تتسم بالاتساق .

ومن الصعوبة بمكان ، أن يتم تفسير معدل الحماية الفعلي في قطاع سلعي بمفرده . وعندما يتم حساب العديد من معدلات الحماية الفعلية من نفس قاعدة البيانات ، فإن عمل مقارنة لدرجة الحماية تصبح أمرا مثيرا ومفيدا . وتزداد الفائدة عندما يقوم التحليل بعمل تغييرات في الأحجام النسبية لمعدل الحماية الفعلي ، والتي ترجع إلى

تغييرات في معدلات التعريفية الجمركية المختلفة ، وعلى الرغم من القيد المتعلق بوجود معدل واحد للحماية الفعلية ، فهناك بضعة نقاط بارزة يمكن ذكرها .

إن معدل الحماية الفعلي في صناعة الأحذية ، يكون إما سالباً بشكل مرتفع ، أو موجباً ، وهو أعلى كثيراً من معدل التعريفية الجمركية ، ويعتمد ذلك على أي جزء من قطاع الأحذية ، وأية سنة ، يتم التعامل معهما . وتظهر الإحصاءات المنشورة أن منتجي القطاع العام - وبشكل يدعو إلى الحيرة - يحققون قيمة مضافة سالبة ، سواء بالأسعار المحلية أو العالمية . كما تبين المطبوعات أيضاً ، قيمة مضافة سالبة ، الأمر الذي يعني أنه حتى بالأسعار المحلية ، فإن عوامل الإنتاج ذاتها ، تبدو مدعمة لمن يشتري الأحذية ، عن طريق البيع بأقل من تكلفة المواد . ومن المحتمل أن أصحاب المصانع ، والمدراء ، والعمال ، يستطيعون القيام بذلك لأنهم يحصلون على دعم من تحويلات الأموال التي لا تظهر في إحصاءات الإنتاج ، ولكن ذلك غير قابل للتفسير . علاوة على ذلك ، نجد أن معامل معدل الحماية الفعلي يتأرجح - على غير المتوقع - بين قيم سالبة مرتفعة ، وقيم موجبة من عام لآخر بالشكل الذي تحدده البيانات ، كما يلاحظ أيضاً وجود تغيير في النسب الهامة المختلفة .

وترفع هذه التقلبات الغريبة بعض التساؤلات بشأن مدى كفاءة عمليات جمع البيانات ، وخطوات تشغيلها من جانب المصدر الرسمي للبيانات القومية . ومن المحتمل ألا تكون النتائج صحيحة ، وأن أخطاء البيانات يمكن أن تقود إلى قيم غير صحيحة ، أن تتواجد المشكلة لأن البيانات لم يتم تجميعها وعرضها من منظور استخدامها في حسابات معدل الحماية الفعلي . ونحن لا نعرف إلا القليل عن البيانات . إن العقبة الرئيسية أمام تحليل معدل الحماية الفعلي هي نقص البيانات - وهي المشكلة التي تمت مناقشتها في الجزء الأخير من التقرير ( الجزء الخامس) . وفي الوقت الراهن ، من المستحيل الحصول على قاعدة بيانات تكون كافية لحساب معدلات الحماية الفعلية لقطاعات سلعية أخرى ، مقارنتها ، أو تحليل حساسية التغييرات في معدلات الحماية الفعلية للمعدلات المختلفة للتعريفية الجمركية .

### القيمة العملية لقياس معدل الحماية الفعلي في مصر :

إن الحجة الأساسية لهذا التقرير هي أن قياس معدل الحماية الفعلية يعتبر أداة مفيدة جداً لسياسة التعريفية الجمركية ، والتي يكون لها تأثيرات رئيسية ومتنوعة ، على الاقتصاد . وعلى الرغم من أن معدل الحماية الفعلي بمفرده ، ليس له أهمية خاصة بالنسبة للإيرادات الحكومية ، فإن الحجم النسبي لكل معامل من معدلات الحماية الفعلية له أهمية في تقدير أثر التعريفات الجمركية وغيرها من العوائق التجارية على هيكل الاقتصاد القومي . وتقدم هذه المقاييس معلومات يمكن أن تكون ذات أهمية في تقدير الفعالية المحتملة للسياسات التي تصاغ للتأثير على تطوير الإنتاج ، وتوزيع الدخل ، وكفاءة الأسواق والاقتصاد ، وعلاقات التجارة الدولية .

إن النظام الشامل للتعريفات استمر كأداة رئيسية تستخدم لتحرير التجارة ، والتطابق مع معاهدات التجارة الدولية ، بينما تكون المعدلات المتوسطة للتعريفية هي المؤشرات المتاحة لتحرير التجارة . وعلى الجانب الآخر ، فإن وجود معدلات للحماية الفعلية محسوبة لقطاعات سلعية على درجة عالية من التجزئة ، تظهر المضامين الاقتصادية لتغييرات محددة في معدل التعريفية الجمركية على الاستثمار والإنتاج . إن

طريقة حساب معدل الحماية الفعلية تعتبر أداة مفيدة لتحليل النمط المحتمل لتأثير إصلاح جمركي معين ، على الاقتصاد المحلي ، ولذلك فهي أداة عملية لصنع القرارات المتعلقة بتتابع وحجم التغييرات في التعريفات الجمركية . إن استخدام تحليل معدل الحماية الفعلي المبني على قاعدة بيانات جيدة ، يمكن أن يقدم الأسس اللازمة لتحديد أفضل سبيل لتحويل التحيز الناتج عن التعريفات الجمركية بعيدا عن صناعات إحلال الواردات ، نحو التوسع في التصدير ، وبصفة خاصة ، للاستثمار في إنتاج السلع غير القابلة للتبادل ، والتي تعتبر عادة من قبيل العناصر الحاسمة التي يبني عليها معظم الانتاج .

وتعتبر البيانات الجيدة أساس حاسم للاستخدام المفيد لتحليل معدل الحماية الفعلية تعتمد على وجود وحدة مؤسسية تقوم بالآتي :

- ١- الحفاظ على ، وإدارة قاعدة بيانات جيدة .
- ٢- تحليل نتائج حسابات معدل الحماية الفعلية ، وصياغة عبارات النتائج والتوصيات الخاصة بالسياسة .
- ٣- التحاور مع صانعي السياسة الذين لديهم التساؤلات الأساسية المطلوب تحليلها ، ومن سوف يتم استخدام النتائج من أجل إدارة الاقتصاد القومي .

إن الصعوبات المصاحبة لتنفيذ الدراسة تكون مرتبطة بالأفاق المحدودة للتنفيذ الفعلي للتقدير المستمر للآثار التي تستخدمها مصر لتقييد أو تيسير التجارة . كما أن الافتقار إلى القدرة على وضع النتائج وحسن استخدامها ، تعوق الجهود المستقبلية في هذا المجال . ومن ناحية أخرى ، فمن الأرجح أن تواجه هذه الجهود مشاكل مرتبطة بتجميع وإدارة البيانات . وهناك العديد من العقبات في هذا الطريق ، تعوق تكوين قوة عمل ، وخطوات للقياس المنتظم ، وتقييم معدلات الحماية الفعلية لكافة القطاعات السلعية الهامة ، واستخدام النتائج التحليلية في صياغة سياسة التعريفات الجمركية .

إن التدخل الحكومي في قرارات الاستثمار والإنتاج ، عن طريق المعاملة التفضيلية للمنتجين ، من خلال التعريفات الجمركية وغيرها من السياسات التجارية ، يكون غير كفاء من الناحية الاقتصادية . وعندما تقوم الحكومة بتحديد التصاعد في التعريفات الجمركية بحسب مراحل الإنتاج ، فإن الأثر يحابي إنتاج السلع النهائية على حساب السلع الوسيطة ، والمواد المصنعة ، والسلع غير القابلة للتجارة ويطابق هذا الأمر الآن ، سياسة عدم محاباة الإحلال محل الواردات ، كما تفرض تكلفة ثقيلة على المستهلكين وبعض المنتجين من أجل المصالح المحدودة لمنتجين آخرين .

إن الهدف النهائي لسياسة التجارة والاستثمار ، ينبغي أن يكون هو الوصول إلى اقتصاد سوقي متوازن ، أي التحديد السوقي للأسعار . فالأسعار التي تتحدد في السوق تتسم بالكفاءة - وهي تقلل نفقات الإنتاج إلى أدنى قدر ، وتعظم الرفاهة الاقتصادية إلى أقصى حد لأنها تحددت من خلال توازن القرارات والاتفاقات النهائية التي توصل إليها المشترون والبائعون دون تدخل الحكومة . والشكل النهائي لذلك ، هو اقتصاد التجارة الحرة ، وثاني أحسن البدائل هو اتباع تعريفات جمركية منخفضة وموحدة .