The Elasticities Approach to Egypt's Balance of Payments and Equilibrium Exchange Rate

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Acronyms

CBE	Central Bank of Egypt
CES	Constant elasticity of substitution
DEPRA	Development Economic Policy Reform Analysis Project
DW	Durbin-Watson (test)
ECM	Error-correction mechanism
ERP	Effective rate of protection
EU	European Union
FDI	Foreign direct investment
FEER	Fundamental equilibrium exchange rate
GDP	Gross domestic product
GOE	Government of Egypt
GRG	Generalized Reduced Gradient
HS	Harmonized System
NRP	Nominal rate of protection
REER	Real effective exchange rate
SITC	Standard International Trade Classification (system)
USAID	United States Agency for International Development

Executive Summary

The present study aims to calculate Egypt's real effective exchange rate at both the bilateral and multilateral levels, estimate the effect of real cross-rate movements on trade in goods and services and on foreign direct investment, and determine the fundamental equilibrium exchange rate for Egypt's balance of payments. As part of this process, the study specifies and estimates a balance of payments model with considerable disaggregation in its trade components. The model provides a theory-consistent representation of the behavioral relationships in the balance of payments, and it offers forecasting and policy simulation capabilities targeted to the needs of the Government of Egypt. As such, the model serves a dual purpose. First, it provides a framework for making rational and consistent predictions about the standard components of the balance of payments. Secondly, it offers a means of quantitatively evaluating the impact of exchange rate policies on the balance of payments.

The use of theory-consistent structural models, particularly those based on dynamic time-series systems, offer effective forecasting capabilities for long horizons, especially when the equations take the form of the error-correction mechanism (ECM). This specification offers a means by which the short-run observed behavior of components in Egypt's balance of payments is associated with the long-run equilibrium growth paths of these components. The resulting model provides details on the overall structure and operation of the balance of payments, which can be modified and expanded to a macroeconomic model that incorporates feedback effects between domestic absorption and the trade and capital accounts.

In the present study the empirical analysis of Egypt's trade and investment differs from the existing literature in three ways. First, contrary to the general practice of postulating an ad hoc equation, we derive a set of estimation equations from an explicit, utility-maximization model. We estimate these equations and use the estimated parameters of the utility function to obtain the Marshallian own-price elasticity, as well as the income elasticity of demand. Second, we take explicit account of Egypt's competing suppliers to foreign markets, rather than adopting the traditional approach that proxies competitors' prices by the prices prevailing in the world market. Finally, we use highly disaggregated data that make the unit value of exports and imports a far better proxy for price than is the case with the aggregate trade data that are commonly used in the literature.

The modeling procedure has sought to account for the structure of the Egyptian economy, the availability of data, and the degree of stability of time-series estimates of parameters during the country's transition process. The nature of the transition process of the Egyptian economy has motivated the design of a model that can grow and evolve with the economy. The present model therefore aims to provide a mechanism to link policies and targets while, at the same time, offering an easy and adaptable means of both forecasting key balance of payments variables and simulating the interrelationships between exchange rate policy initiatives and the balance of payments.

The model is specified and estimated in its structural form, rather than in reduced form, for individual product exports and imports. The motivation for this approach lies not only in measuring price and income elasticities, including those associated with exchange rate changes,

but in the capacity of the model to assess the effects of changes in economic policies, including those related to the exchange rate. The approach to the analysis of Egypt's international trade and investment adopted in this study is one that builds from theory and dynamic specification to estimation and validation, and finally to policy analysis. As such, it develops a theory-based econometric model with which to analyze trade and balance of payments policies, specifically in terms of the so-called fundamental equilibrium exchange rate (FEER) that will produce a sustainable balance of payments and move the Egyptian economy closer to equilibrium.

Real Exchange Rate Movements and the Balance of Payments

The international competitiveness of Egypt is generally reflected in the real effective exchange rate (REER), which takes into account both general price movements in Egypt relative to that of each of its trading partners, and the cross exchange rate between Egypt and each of its trading partners. Overall, Egypt's international competitiveness has been declining in all its regional markets since 1991. Nevertheless, our calculations show that the decline has been more significant in the European Union (EU) market than in North America and the Middle East. As a result, Egyptian exporters face a relatively more favorable position in the North American and Middle Eastern markets than they do in the EU market.

At the same time, the interrelationship between the current account and the capital account in Egypt has changed dramatically since the beginning of the rapid globalization of capital markets in the late 1980s. Before globalization, domestic macroeconomic and external sector policies generally focused on the stabilization of the current account. Capital movements were regarded as a means of financing current account deficits and therefore reflected the country's current account position. Since the early 1990s, however, capital movements have increasingly become the cause of current account instability, and stabilization of the balance of payments has come to include both the current and capital accounts.

The feedback between the current and capital accounts depends on the composition of capital inflows. In the case of Egypt, capital inflows are about evenly divided between portfolio investment and foreign direct investment (FDI). For portfolio investment and other short-term inflows, the equilibrium real exchange rate will probably depreciate if these capital flows are used to finance consumption or unproductive activities, whereas it will probably appreciate if these capital inflows are channeled into productive capital formation. With FDI the effects on the current account are less clear. If cross-border production activities are directed towards exports and they rely on domestic inputs, then increased FDI inflows will improve the current account. In contrast, if cross-border production activities are oriented to the domestic market and they use foreign inputs, then the current account balance will be negatively related to FDI inflows.

Trade Data and Structure

Trade data have been obtained from the United Nations' COMTRADE database. The data used in the model are based on detailed information at the product level to permit both volume and unit value information to be obtained for all of Egypt's major exports and imports. Data based on the 4 and 5-digit level of the Standard International Trade Classification (SITC), Revision 1 nomenclature were extracted for all of Egypt's reporting trading partners in 1970-97. The results provided information on Egypt's exports by country of destination and Egypt's imports from all countries of origin.

Selection of the import products to be modeled has been based on the contribution of the most major products imported to the total value of imports in 1997. There is a high degree of concentration in the top ten imports, which together account for one-fourth of Egypt's total expenditures on imports. The products consist of unmilled wheat, products of polymerizing, sawn lumber, unmilled maize, iron and steel, raw beet and cane sugar, sunflower seed oil, excavating and leveling machines, other non-electric machines, and passenger motor vehicles. The next ten products contribute another 13 percentage points, and the top 30 imports account for a total of 45 percent of the total value of imports. In an effort to obtain over 50 percent import coverage, we selected the top 40 products, which together account for 52 percent of the total value of imports.

Selection of the export products to be modeled has also been based on the contribution of the most important products exported in 1997. The top two products, residual fuel oils and crude oil, together account for 40 percent of export earnings. Cotton and textile related products account for another 20 percentage points, and fruits and vegetables contribute little over 3 percentage points. These export data are disaggregated by country of destination to measure the effect of bilateral real effective exchange rate changes on Egypt's balance of payments.

Import Demand Estimates

The import demand functions of the principal products have been derived from estimates of the dynamic specification of the ECM relationship. As was to be expected, income has always been found to be statistically significant in explaining the demand for imports. In most cases, estimates of the income coefficients have 99 percent confidence intervals. The real effective exchange rate coefficients are statistically different from zero in the short run in 29 of the 41 product imports, and they are statistically different from zero in the long run in 21 of the 41 product imports. Prices are statistically significant in explaining import demand in about one-half of the products in both the short run and the long run.

For income, the unweighted average elasticity is 0.95 in the short run and 2.2 in the long run. The 1997 average trade-weighted elasticities are substantial: 1.1 in the short run and 2.5 in the long run. These elasticities conform to other estimates of import demand functions for developing and transition economies. As expected, import demand is income inelastic for most products in the short run, but income elastic for most products in the long run. Only 2 products have a long-run income elasticity of less than unity.

The average real effective exchange rate elasticities are relatively high. For those product imports whose coefficients were statistically significant, the unweighted elasticity is 1.2 in the short run and 1.7 in the long run. For all products, including those whose coefficients were not statistically significant and therefore have elasticities equal to zero, the 1997 trade-weighted average elasticity is 0.7 in the short run and 0.9 in the long run. These exchange rate elasticities are high but are below those for US dollar import prices. The unweighted average price elasticity is –1.4 in the short run and –3.2 in the long run, while the 1997 trade-weighted price elasticity is –0.7 in the short run and –0.8 in the long run. Overall, the absolute values of the price and exchange rate elasticities of Egypt's import demand are similar to one another, though there are considerable differences in the individual products.

Export Demand Estimates

The export demand functions of the principal products have been derived from estimates of the dynamic specification of the ECM relationship. As was to be expected, foreign income is always statistically significant in explaining the demand for exports. As with import demand, the estimates of the income coefficients have 99 percent confidence intervals. The real effective exchange rate coefficients are statistically different from zero in the short run in 32 of the 38 product and export markets, and they are statistically different from zero in the long run in 28 of the 38 product and export markets. Changes in the real effective exchange rate therefore have a greater impact on export demand than on import demand. Prices are statistically significant in explaining export demand in about two-thirds of the product and export markets in both the short run and the long run, compared with only about one-half of the import products.

The average real effective exchange rate elasticities are relatively high. For those product exports whose coefficients were statistically significant, the unweighted elasticity is -1.9 in the short run and -3.1 in the long run. For all products and markets, including those whose coefficients were not statistically significant and therefore have elasticities equal to zero, the 1997 trade-weighted average elasticity is -0.89 in the short run and -0.81 in the long run. These exchange rate elasticities are high but are below those for domestic export prices. The unweighted average price elasticity is –0.95 in the short run and –2.7 in the long run, while the 1997 trade-weighted price elasticity is –0.6 in the short run and –1.3 in the long run. Overall, the absolute values of the price and exchange rate elasticities of Egypt's export demand differ considerably from one another, so care should be taken about generalizations concerning the effects of price and exchange rate changes on Egypt's exports.

For foreign income, the 1997 trade-weighted average elasticity is 1.9 in the short run and 3.6 in the long run. These elasticities conform to other estimates of export demand functions for developing and transition economies.

Import Expenditures and Export Earnings on Service

Egypt's import expenditures on services are dominated by transportation-related activities such as freight, insurance and other distributive services. These activities are, in turn, related to merchandise imports and exports. It is common practice to model these types of service transactions with current value data. While real value data are preferred, the difficulty of obtaining price indices for services that would allow us to express the time series in real terms makes it preferable to use the current value variable and avoid possible error introduced from a crude price variable. Moreover, it has been argued that the ultimate objective of modeling import expenses from services is the determination of the current account in the balance of payments. A single equation estimate for the value of these import expenses is likely to provide a better estimate than two separate estimates for the real value of these imports and for the corresponding price index.

The income elasticity is relatively high in the short run (3.3) but it becomes unity in the long run. The real effective exchange rate is high in the short run (0.4), but it is not statistically significant in the long run. The lack of significance of this variable may be due to the concentration of Egypt's expenditures on shipping services, which are related to merchandise exports and imports. As a result, while shipping services have a short-term response to changes in the real effective exchange rate, in the long run those effects are neutralized by offsetting movements in merchandise exports and imports caused by exchange rate variations.

Egypt's export earnings from services are dominated by tourism. The short-term income elasticity is 1.0, which occurs after a one-period lag, and the long-term income elasticity is 3.4. For the real effective exchange rate, the short-term (one-period lag) elasticity is –0.2 and the long-term elasticity is –0.4. A 10 percent devaluation in the REER, for example, would lead to a 1.8 percent increase in export earnings from services after one year, and it could generate 4.2 percent greater export earnings from services after a few years had transpired.

Foreign Direct Investment

The empirical results for the FDI relationship point to a number of interesting observations. First, FDI tends to have a very strong short-term response to changes in global economic growth. In the long run, however, cross-border investment conforms to the expectations, insofar as it has been declining over time in Egypt relative to its worldwide response to global income changes. This non-proportional growth in Egypt is reflected in an estimated income elasticity that is less than unity. Third, with respect to its relationship to exchange rate changes, FDI growth is positively related to REER movements. This response reflects the domestic market orientation of FDI in Egypt, and its reliance on foreign inputs. An appreciation of the real effective exchange rate, for example, reduces the cost of inputs to transnationals in Egypt and has a positive effect on cross-border production. The effect is relatively strong. A five percent appreciation of the real effective exchange rate leads to a 4 percent expansion in FDI inflows in Egypt. It is important to note, however, that the present elasticities approach to the balance of payments is based on existing levels of protection on production and trade in Egypt. It does not take into account new production activities from an efficient import substitution and export expansion that would be expected under a concurrent exchange rate depreciation and trade liberalization.

The Elasticities Approach to the Balance of Payments

The present study relies on the elasticities approach to the balance of payments insofar as it develops a partial equilibrium model that focuses on the effects of changes in the exchange rate on the current and capital accounts. It disregards the macroeconomic effects on domestic economic activity, wages and prices, and interest rates, and the feedback effects of these changes on the balance of payments. By focusing on the direct linkages between exchange rates and the balance of payments, the elasticities approach disregards the analysis of the exchange rate adjustment process on the simultaneous pursuit of policy objectives for the balance of external payments and internal economic activity.

Two sets of simulations are performed with the model. The first consists of multiplier analysis to measure the effects of either one-time or sustained changes in the real exchange rate on Egypt's balance of payments. The second inverts the model to solve for the exchange rate that will ensure equilibrium for any or all accounts of the balance of payments.

Balance of Payments Transmission of Exchange Rate Changes

Multiplier analysis indicates how exchange rate changes influence the current and capital accounts, as well as the overall balance of payments. Multiplier analysis also provides us with an opportunity to evaluate the dynamic properties of the system of equations for trade in goods and services and foreign direct investment in relation to the process of adjustment of the system from one steady-state equilibrium solution to another.

We illustrate the effect of a one-time 10 percent devaluation in Egypt's real effective exchange rate. The devaluation is based on an across-the-board devaluation of the Egyptian pound relative to each of its major trading partners. As such, it considers the effect of a real cross-rate devaluation of the Egyptian pound in each of its major export products and geographic markets. For imports and foreign direct investment, the devaluation is at the world market level, since a devaluation of the Egyptian pound would not influence the source of Egypt's imports. Although the effect of exchange rate changes on foreign direct investment does not consider cross rates, it is likely that Egypt's exchange rate changes relative to the home country of the foreign investors would significantly impact on the level of foreign direct investment. However, data on investment inflows by country of origin were not available for this study.

The results show that a 10 percent real effective exchange rate devaluation would significantly impact on the current and, to a lesser extent, the capital account of Egypt. The effect also demonstrates the lagged response of exports and imports of goods and services to the devaluation. Initially the current account improves by over US$1 billion, but then it deteriorates somewhat as imports of both goods and services recover some of the earlier losses since some of the exchange rate effects on these items are transitory. After the year 2000 the current account gradually stabilizes, with the deficit being reduced by US$1.2 billion and the overall balance falling to US$231 million, despite a contraction in FDI (the effect of a real effective exchange rate devaluation on FDI is to increase the cost of imported material inputs and thereby to lower the incentive to expand cross-border production facilities in Egypt).

Fundamental Equilibrium Exchange Rate Determination

Since the balance of payments model has been estimated in its structural form, we can invert the model to derive optimal policies for any given target. If the desired target is the achievement of overall equilibrium in the balance of payments, the structural form of the model can be solved for the optimal real effective exchange rate (and associated nominal exchange rate that will yield the desired solution). Calculation of the optimal exchange rate for Egypt has been based on the Excel spreadsheet containing information about the balance of payments and incorporating detailed equation estimates for imports and exports of goods and services and foreign direct investment. That spreadsheet containing the balance of payments model for Egypt accompanies this report.

As an illustration, we simulate the real effective exchange rate that will yield an overall balance in the balance of payments with 1998 data. The results indicate that the real effective exchange rate that prevailed in 1998 would need to have been devalued by 14 percent to eliminate the US$1.4 billion deficit. That devaluation would have lowered the current account deficit by US$1.5 billion but the capital account surplus would have contracted by US$100 as a result of lower foreign direct investment inflows.

As would be expected, imports adjust quickly to the devaluation while exports take several years to fully adjust. Initially, imports contract sharply and export rise by a modest amount. However, over the subsequent years exports continue to respond to the one-time devaluation, albeit with a decaying response, while imports have a much smaller response. Despite the much larger initial response of imports to the exchange rate change, the cumulative response to the 14 percent devaluation is more than twice as high for exports (8.3 percent expansion) than for imports (3.5 percent contraction).

There are a number of other instrument-target combinations that can be examined with the model, all of which focus on the sensitivity of trade and investment to real exchange rate changes. These can be easily examined in the accompanying Excel worksheet-based model.

The Integrated Elasticities-Absorption Approach to Exchange Rate Dynamics

Egypt's trade and investment sensitivity to real exchange rate changes are linked to the country's national income and output. Within this framework, we need to consider how intertemporal aspects of aggregate savings and investment decisions are affected by a FEER that produces a sustainable balance of payments and moves the Egyptian economy closer to equilibrium. The feedback effects between changes in international trade and investment and changes in domestic production and consumption are central to Egypt's concerns about the possible impact of exchange rate variations on the economy.

From an analytical perspective the Mundell-Fleming model remains the central tool for examining the open macro-economy, exchange rate dynamics, and their relationship to the international transmission of trade and international capital movements. This model is of an open economy in the familiar IS-LM framework and modified to include the determination of the trade and capital accounts of the balance of payments. Capital movements and the extent of their mobility play a critical role in the analysis of economic policies. In the application of the model to exchange rate dynamics, the FEER approach rests on the belief that the current account balance has an important long-run effect on exchange rate dynamics. Large and persistent current account imbalances are unsustainable and adjustments in the current account can be achieved through real exchange rate variations. Since developments in the domestic and international economies can redefine the equilibrium level of the exchange rate, the FEER is conditional on the equilibrium time path of economic activity. The FEER is therefore defined as the real effective exchange rate at which an economy such as that of Egypt is in both internal and external macroeconomic balance in the medium term.

In the present analysis of Egypt's exchange rate effect on the balance of payments, we have not attempted to deal with the important issue of how to define sustainable current and capital accounts in the context of the Egypt's economy as a whole. It should be realized that the present analysis is therefore at a preliminary stage. Extensions of the present research to include the open macro-economy will permit us to move from a partial equilibrium perspective to one that examines the equilibrium exchange rate in the context of Egypt's economic fundamentals.

1.0 Introduction

1.1 Transformation of the Economy

Egypt is undergoing a comprehensive reform program aimed at transforming the economy from a centrally planned system to a market-oriented economy, while at the same time adjusting to the economic crisis that has swept Asia since the end of 1997. Reforms were introduced between 1988 and 1992 to facilitate the transition from a centrally planned to a market oriented economy, which helped to secure a strong macroeconomic performance.

Developments in the foreign sector have been particularly important for the economy since the combined value of exports and imports of goods and nonfactor services is nearly as large as all of Egypt's GDP. As a result, foreign exchange earnings impact strongly on the country's ability to import much-needed raw material and industrial products, as well as consumer goods. The Egypt government has sought economic partnerships both within and outside the Asian region, encouraged foreign investment, and initiating efforts to join the World Trade Organization (WTO). These efforts could provide a means by which the country can achieve higher growth and stability in its external sector if they are combined with reform policies that reduced regulatory and administrative constraints on trade and investment. While commercial policy has focused on the replacement of quantitative import measures with tariffs the elimination of export bans, quotas and taxes, and the gradual opening of trading activities to the private sector, there still remain high levels of import restrictions and export controls and domestic industries continue to benefit from substantial protection. Once Egypt becomes a member of the WTO, there are likely to be substantial changes in the responsiveness of importers and exporters to income and price changes in the economy.

1.2 Modeling the Transition Process

The major characteristics that need to be considered in the design and implementation of a macroeconomic model for Egypt concern the transformation of the economic and statistical systems in the country. The transition process accompanying such a transformation refers to the introduction of fundamental reforms in the socio-economic system which are changing the role of prices in the economy, altering institutional structures, developing the private sector, restructuring industries, creating an autonomous banking system, and establishing other financial markets.

Modeling these processes requires the explicit recognition of how the transmission mechanism affects development on the real and financial sides of the economy. One approach is to incorporate uncertainty in the model and measure its effects on consumption and investment patterns. Another way is to include the propagation mechanism for the adjustment process on the cost side of the model, and use it to determine possible effects of incomes policies on price level increases and the rate of inflation. The inclusion of these transmission mechanisms is particularly important since there is general consensus that macroeconomic stabilization needs to be addressed early on in the reform process of economies in transition towards a market-oriented system (see, for example, Commander (1992), Corbo (1991), Fischer and Gelf (1990, 1991), and Roe (1991, 1992)).

Egypt's adoption of a fixed exchange rate system, while at the same time retaining controls over capital movements, has important implications for the policy instruments that are available to the government and the

State Bank of Egypt (SBV). Capital controls are common to developing and transition economies, and they are usually combined with fixed exchange rate systems. In contrast, the industrial countries are more likely to have adopted a floating exchange rate system without restrictions on capital movements. While macroeconomic systems often avoid modeling capital controls, the explicit introduction of those controls in the present model changes the mechanism through which interest rate variations affect the economy. Modeling the mechanism through which monetary and fiscal policies affect consumption, investment, and the trade balance can help to ensure that policy instruments are correctly combined to achieve stability and growth targets for the Egyptian economy.

The movement towards more flexible market-determined prices has also brought about fundamental changes in the way businesses and households respond to economic conditions. In modeling economic behavior, these changes imply a greater responsiveness of economic agents to changes in relative prices, and therefore possible parameter changes in the system of equations.[1] If parameter changes occur, then the use of time-invariant parameters can make the system of equations unstable. The alternative approach consists of the introduction of time-varying parameters that capture the transition process in the structure of the economic system. These types of parameters can introduce an element of subjectivity in the operation of the model, and a decision to adopt time-varying parameters therefore should be approached with caution.

Another manifestation of the transition process that needs to be considered in the model for Egypt concerns household and business adjustments to fundamental changes in operating procedures. The introduction of a value-added tax in early 1999, for example, can create assimilation difficulties for many enterprises, particularly in terms of product and service pricing. As Corbo, Coricelli and Bossak (1991) point out, these adjustment difficulties reflect the decades of operation under institutions and incentives systems that were different from those found in market economies. It is therefore important that the analytical framework be developed in such a way as to reflect changes in fiscal measures associated with adjustment programs.

In addition to the development of basic fiscal institutions such as tax and budgetary systems, the introduction of new taxes, including value-added taxes and personal income taxes, are impacting the dynamic underlying the adjustment process of different components in the economy. The consequence of such adjustment difficulties, and their associated short-term costs, can be modeled through both the introduction of appropriate lag structures, and the inclusion of possible transient disturbance terms in particular sectors of the economy that account for obstructions to business activities resulting from the economic reform process.

The opening up of the economy and the ability to attract capital inflows, especially in the form of foreign direct investment, has been critical to Egypt's economy. Modeling the reform process in Egypt therefore requires that explicit consideration be given to ongoing changes in foreign markets and domestic institutions affecting trade. Consequently, the balance of payments component of the model needs be sufficiently disaggregated to permit the consideration of trade and exchange rate policies at a fairly detailed level. Moreover, as economic reforms take hold, cost and price competitiveness are becoming more strongly related to trade and investment flows, and the ability to measure the transmission effects of relative price changes on the domestic and external sectors is becoming increasingly important.

Initial developments of macroeconomic modeling of transition economies were often based on the use of a vector autoregressive (VAR) system. More recently, the use of theory-consistent structural models, particularly those based on dynamic time-series equations systems, has been found to forecast better for long horizons,

[1] A parallel issue is that put forward under the Lucas (1976) critique of large-scale model that do not take into account changing expectations as policy rules change. Considerable progress has been made in addressing expectations variables that address Lucas' concerns, and the use of structural forward-looking models that take into account information updates by agents in their expectations generating equations. For an application of Hendry's (1988) distinction between forward-looking and backward-looking models, see Lord (1991).

expecially when the equations take the form of the error-correction mechanism (ECM).[2] As a result, a decision was made to develop a medium-size model for Egypt that would provide details as to the overall structure and operation of the economy, and which could be modified and expanded according to the needs of the SBV.

The present macroeconomic model aims to provide a theory-consistent representation of the general structure of the Egypt economy and, as such, it offers real and financial sector forecasting and policy simulation capabilities targeted to the needs of the SBV. The model serves a dual purpose. First, it provides a framework for making rational and consistent predictions about Egypt's overall economic activity, the standard components of the balance of payments, and the production and expenditure concepts of the national accounts. Secondly, it offers a means of quantitatively evaluating the impact of exchange rate policies and other policy changes on the Egyptian economy, and assessing the feedback effects that changes in key macroeconomic variables of the economy produce in other sectors. These two objectives are, of course, closely related since the capacity to make successful predictions depends on the model's ability to capture the interrelationships between the real and financial sectors of the economy.

The modeling procedure has sought to account for the structure of the Egypt economy, the availability of data, and the degree of stability of time-series estimates of parameters during the country's transition process.[3] The nature of the transition process of the Egypt economy has motivated the design of a model that can grow and evolve with the economy. The present model therefore aims to provide a mechanism to link policies and targets while, at the same time, providing an easy and adaptable means of both forecasting key macroeconomic variables and simulating the interrelationships between economic policy initiatives. As such, the model provides a relatively parsimonious representation of the Egyptian economy that allows for considerable flexibility in its usage for forecasting, selection of the policy mix and instruments for the targets of a program, and determination of the appropriate sequencing of policy changes.

1.3 Scope of the Study

This report is organized as follows:

- Chapter 1 provides a general introduction to the transition process in Egypt, monetary and fiscal management policies, and the motivation for the construction of the model.
- Chapter 2 expands on the data issues and the characterization of the Egyptian economy.
- Chapter 3 describes the modeling framework for the real sectors of the economy.
- Chapter 4 describes the modeling framework for the financial sector of the economy.
- Chapter 5 describes the modeling framework for the balance of payments and the foreign exchange market.
- Chapter 6 examines the effectiveness, or lack thereof, of macroeconomic policy instruments.
- Chapter 7 describes the major blocks of the model and explains the system of equations as a whole.

[2] See, for example, Banerjee, Dolado, Galbraith, and Hendry (1993), Chapter 11, and references therein.

[3] For a recent application of this type of model to Eastern European and Central Asian economies, see Lord (1994) and Lord et al. (1995).

- Chapter 8 describes the dynamic specification of the behavioral equations and shows how their long-run, or steady-state, solutions replicate the system of equations described in the earlier chapters.

- Chapter 9 presents the empirical estimates of the behavioral equations in the model.

- Chapter 10 describes the solution of the system of equations as a whole, and charts the effects of changes in some key policy variables on the economy.

- Chapter 11 provides a summary and sets forth some of the major conclusions.

- Annex lists the model specification in the EView program used to estimate and simulate the macroeconomic model.

- Statistical Appendix contains the data used in the construction of the model.

- References lists the citations in the study.

2.0 International Competitiveness and the Balance of Payments

This chapter presents an overview of the factors determining Egypt's international competitiveness in its balance of payments. It then sets forth the modeling methodology used to measure the effects of changes in international competitiveness on the country's balance of payments. The modeling procedure has sought to account for the structure of the Egyptian economy as it relates to the balance of payments, the availability of data, and the degree of stability of time-series estimates of parameters during the country's transition process. The nature of the transition process has motivated the design of a model that can grow and evolve with the economy. The present form of the model therefore provides a relatively parsimonious representation of the key relationships underlying Egypt's balance of payments.

2.1 Determinants of the Current Account

The modern theory of international trade explains trade by the factor endowments of different countries in the Heckscher-Ohlin model. However, the key assumptions of the factor proportions theory appear to be implausible. In a series of papers in Feenstra (1988), assumptions regarding identical and homothetic preferences, linearly homogeneous production functions, factor mobility within countries, and perfect competition were tested and rejected in a number of cases. With respect to preferences, Hunter and Markusen (1988) have provided evidence against the homotheticity assumption, which implies unitary income elasticities for traded goods. According to Deardorff (1984), research on international trade has been due less to the questionable assumptions of the factor proportions theory than to the need to explain observed trade patterns that are inconsistent with that theory, including the growth of intra-industry trade. As a result, while much of international trade has been linked to differences between countries in the relative abundance of factors under less stringent assumptions than those suggested by the factor proportions theory, a number of other factors help to explain trade: product heterogeneity by the country of origin, importers' diversification of supply sources, historical and political ties between trading partners, and switching costs to importers.

The seminal work of Armington (1969), which hypothesizes that importers have different demands for the same good originating from different foreign suppliers, offers a way of deriving well-defined import and export demand functions. Armington's assumption has offered a theoretical basis for computations of import demand functions, and estimates of these functions have demonstrated that preferences are neither identical nor homothetic across countries (for a review of the findings, see Goldstein and Khan, 1985; and Stern *et* al*.,* 1976). More importantly, the Armington assumption provides an explanation of the observed trade flows between countries that would not have been predicted by spatial equilibrium models. As a consequence, that assumption has often been adopted in empirical studies on international trade.

The application of this approach to Egypt implies a departure from a perfectly competitive market structure of international trade. The fact that the elasticity of substitution between Egypt and other foreign suppliers to a market is less than infinity when the importer differentiates supply sources means that each exporting country can exert some, albeit small, influence on the demand for its exports through relative-price variations. For instance, exchange rate intervention policies that lower the relative price of the exporting country would increase the quantity of exports demanded. Product differentiation therefore gives rise to some degree of market

power. When that market power is negligible, so that the actions taken by one exporting country do not give rise to reactions by competitors, the market structure is described as monopolistic competition.

The specific characteristics of international trade under monopolistic competition can be summarized as follows: (1) there are many countries exporting different goods; (2) the actions of exporters in each country have a negligible impact on a market in the sense that exporters in other countries do not react to decisions taken by their competitors about the quantity to be exported (the Cournot assumption); (3) the ability of exporting countries to influence the price at which they sell their products gives rise to a downward-sloping demand curve, so that the equilibrium price is greater than the marginal cost; and (4) free entry drives any pure profit, of at least the marginal exporter, to zero.

The first of these characteristics, namely many exporting countries in the market, is distinguished in the recent literature on monopolistic competition by the 'large-group' case and the 'small-group' case. The large-group case, which characterizes Egypt's trade, refers to situations in which all the exporting countries are small relative to the aggregate market. The small-group case refers to markets with a relatively small number of exporters. As the number of exporting countries increases, the equilibrium price can approach the competitive equilibrium solution. However, the competitive equilibrium solution is not ensured in the large-group case. Small exporters can still influence their export price when importers discriminate between exporters of a product. Moreover, importers often have imperfect information about the conditions under which a product is traded, and this lack of information can reduce the effective substitution of small suppliers that have very similar export characteristics. The range of solutions in monopolistic competition is therefore useful for the development of a theoretical framework with which to characterize Egypt's trade. Monopolistic competition encompasses most product markets that contain a large number of exporters, without precluding those markets in which an exporter is sufficiently large that its actions have a perceptible effect on market prices.

Empirical applications of these types of trade models have been divided along methodological lines, which have been dictated largely by the purposes for which the models have been constructed (for a review see Leamer and Stern, 1970, and more recently, Lord, 1991 and 1992). For purposes of measuring the export competitiveness of a country such as Egypt, econometric models have been the preferred empirical approach. Halliwell and Padmore (1985: App.) provide a comparison of the different methods used in these models for accounting for changes in export market shares through variations in relative export prices. The present study uses this approach for Egypt and enhances its rationale by developing a theory-based econometric modeling framework for that country's international trade. Its usefulness to ongoing work in modeling the effect of exchange rate changes lies in the representation of dynamic adjustments of behavioral relationships to their long-run equilibrium relationships suggested by economic trade theory.

The model is specified and estimated in its structural form, rather than in reduced form, for individual product exports and imports. The motivation for this approach lies not only in measuring price and income elasticities, including those associated with exchange rate changes, but in the capacity of the model to assess the effects of changes in economic policies, including those related to the exchange rate. The approach to the analysis of Egypt's international trade adopted in this study is one that builds from theory and dynamic specification to estimation and validation, and finally to policy analysis. As such, it develops a theory-based econometric model with which to analyze trade and balance of payments policies, specifically in terms of the so-called fundamental equilibrium exchange rate (FEER) that will produce a sustainable balance of payments and move the Egyptian economy closer to equilibrium.

2.2 International Capital Movements

The interrelations between the current account and the capital account in developing and emerging market economies such as Egypt have changed dramatically since the beginning of the rapid globalization of capital markets in the late 1980s. Wong and Carranza (1998) have provided a concise analysis of these changes. According to the authors, domestic macroeconomic and external sector policies before globalization generally focused on the stabilization of the current account. Capital movements were regarded as a means of financing current account deficits and therefore reflected the country's current account position. Since the early 1990s, however, capital movements have increasingly become the cause of current account instability, so that stabilization of the balance of payments has come to include both the current and capital accounts.

In Egypt foreign capital flows have shifted from an annual average of $1.3 billion in the 1980s to –$1.7 billion in 1991-96. These decreased inflows have not only prevented the financing of the recent current account deficits, but also effected significant decreases in the level of international reserves (see Table 2.1). As a result, Egypt's ability to channel external resources to supplement domestic savings in the financing of investment and to reduce or eliminate the external gap has been severely limited. If residents anticipate a devaluation in view of the worsening reserve position, they could start to have an increasingly positive financial position with the rest of the world, in which case deficits in the current account could create future deficits in the capital account. Eventually, if net capital outflows were not reversed, then overall equilibrium would need to be established through a reduction in domestic absorption.

Table 2.3
Egypt's Real Effective Exchange Rate (REER) and International Competitiveness (1991 = 100), 1980-98

		I. Index of International Competitiveness				
			All Major Markets	North European Markets		
	Nominal Exch. Rate (LE/US$)	REER II.				Middle East
1980	0.70	129	78	75	77	86
1981	0.70	151	66	74	63	71
1982	0.70	175	57	68	52	66
1983	0.70	202	50	62	44	59
1984	0.70	252	40	55	35	47
1985	0.70	295	34	51	32	40
1986	0.70	283	35	42	34	38
1987	0.70	303	33	35	33	32
1988	0.70	326	31	32	30	32
1989	1.10	253	40	44	39	42
1990	2.00	144	69	69	70	68

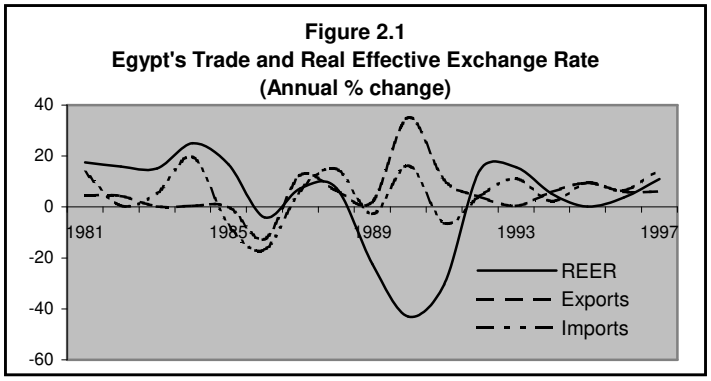
In recent years large capital inflows to Egypt and other developing and emerging countries have generally helped economic growth, but they have also caused serious problems in macroeconomic management. Sterilization efforts to offset the monetary effects of balance of payments surpluses or deficits on the domestic money supply have often resulted in a combination of real exchange rates and real interest rates that are inconsistent with the external environment. In this situation, countries have often opted for nominal appreciation to reduce the pressure of capital inflows on the monetary base, despite high current account deficits.

Table 2.2
Capital Inflows by Type, 1990-97 (millions of US dollars)

	Foreign Direct Investment	Portfolio Investment	Other Investment Liabilities
1990	734	n.a.	-9,855
1991	253	n.a.	-2,620
1992	459	n.a.	-1,812
1993	493	4	-1,578
1994	1256	3	-1,761
1995	598	20	-1,974
1996	636	545	-2,070
1997	890	815	551

Source: IMF, *International Financial Statistics* (June 1999).

Feedback between the current and capital accounts depend on the composition of capital inflows. In the case of Egypt, recent capital inflows have been about evenly divided between portfolio investment and foreign direct investment (FDI) (see Table 2.2). For portfolio investment or other short-term inflows, the equilibrium real exchange rate will probably depreciate if these capital flows are used to finance consumption or unproductive activities, and it will probably appreciate if these capital inflows are channeled into productive capital formation. With FDI the effects on the current account are less clear. If cross-border production activities are directed towards exports and they rely on domestic inputs, then increased FDI inflows will improve the current



account. In contrast, if cross-border production activities are oriented to the domestic market and they use foreign inputs, then the current account balance will be negatively related to FDI inflows.

2.3 International Competitiveness

The international competitiveness of Egypt is generally reflected in the real effective exchange rate (REER), which takes into account both general price movements in Egypt relative to that of each of its trading partners, and the cross exchange rate between Egypt and each of its trading partners. Table 2.3 presents the real effective exchange rate of Egypt and its international competitiveness, measured in terms of the currencies of its major export markets in North America, the European Union (EU), and the Middle East. In recent years, there has been an increasing convergence of the real cross-rates for the United States and the Middle East. The real cross-rate for the EU, however, has increasingly diverged from the other two regions.

Since 1991 the international competitiveness of Egypt has been declining in all its regional markets. Nevertheless, the decline has been more significant in the EU market than in North America and the Middle East. As a result, Egyptian exporters face a relatively more favorable position in North America and Middle East markets than they do in the EU market. The demand for exports of Egypt would be more favorable in the US market than in those of the European Union and Middle East if importers in those markets were responsive to relative price differences between Egypt and competing suppliers to those markets. We will examine the degree of price responsiveness in those markets in Chapter 5.

Figure 2.1 plots Egypt's REER against its merchandise imports and exports. The sluggish growth of exports during the early 1980s paralleled the appreciation of the Egyptian pound, while the sharp expansion in 1989-91 occurred at the time of large devaluations in the REER. More recently, the contraction of exports in 1992-93 paralleled the appreciation of the Egyptian pound during that period, while the recovery of exports in 1994-95 occurred when the rate of appreciation of the Egyptian pound sharply decelerated. These patterns, however, obscure movements in products, export markets, foreign incomes and bilateral REERs. In Chapter 7 we examine these effects in detail.

3. A Theory-Consistent Framework for Modeling Trade

The theory and empirical model formulated in this study offers a unified treatment for the analysis of Egypt's international trade and balance of payments. It embodies important recent advances in consumer preferences that give rise to product heterogeneity in international trade, and it incorporates recent progress in the use of time-series analysis to represent the dynamics underlying adjustment processes in international trade.[4] The present chapter lays out the general theoretical framework used to analyze Egypt's trade. This framework builds on recent theories of trade in the presence of imperfectly competitive markets and is used in Chapters 4 and 5 to specify the dynamics underlying the adjustment processes of Egypt's trade. The specification strategy adopts the findings of recent studies on dynamic time-series models that explain observed disequilibria in the light of steady-state solutions of behavioral relationships. The error correction mechanism (ECM), which is based on the theory of cointegral processes, is shown to provide a particularly appropriate specification for Egypt's import and export demand relationships, insofar as it ensures that the long-run, or steady-state, solutions of the system of equations used to represent Egypt's trade are theory-consistent.

3.2 Importer Preferences

In general we can view the preferences of all importers as being described by the utility tree. On the first level, a decision is made about how much to consume of a product, denoted *M*, and all other goods whose composite forms the numeraire *N*; the decision is based on total expenditures and prices of the goods. At the next level, a choice is made about how much to consume of the product from *n* different product sources $M_{1, \ldots,} M_n$; the choice is based on the expenditures allocated to the commodity *M* and the relative prices of the products from different country sources. The importer's preference ordering at each level must be independent of that at other levels.

We can specify the indifference schedules of the importer in conventional expressions for the imported product and alternative export products to that market. The assumption of separability in the preference ordering means that the amount to spend on the imported product *M* and all other goods, whose composite forms the numeraire *N*, is independent of how the amount spent on *M* is allocated among the different export products $X_1, \ldots, X_n$. For application to the estimation of a system of demand equations, it will be assumed that both intersectoral substitution of *M* and *N* and intra-sectoral substitution of alternative export products $X_1, \ldots, X_n$ take place in a constant elasticity form. The importer's overall utility schedule is thus given by

$$U(M_j, N_j) = [\pi M_j{}^{\alpha} + (1 - \pi)N^{\alpha}]^{1/\alpha} \qquad (3.1)$$

where $\alpha < 1$ and $0 < \pi < 1$.

Let subscript *i* refer to a particular supplying country of interest, which in this case is Egypt, and let *k* refer to each of the n-1 other foreign supplying countries. Then the importer's sub-utility schedule for intrasectoral substitution in the imported product M is given by

[4] This section is based on Lord (1991: Chap. 3).

$$U(X_1, \ldots, X_n) = (\pi_{ij} X_{ij}^{\beta} + \sum_k \pi_{kj} X_{kj}^{\beta})^{1/\beta} \qquad (3.2)$$

where $\beta < 1$ and $0 < \pi < 0.5$ such that $\pi_{ij} + \pi_{kj} = 1$. Although the value of the distribution parameter π usually lies between zero and one, it is restricted here because, since the market is one of monopolistic competition, the relative market share of each exporter is small. This restriction can be shown to have practical advantages, namely that the export market share of Egypt and other suppliers to a geographic market lies between zero and one.

Intersectoral and intrasectoral substitutions in (3.1) and (3.2) take place in terms of generalized constant elasticity of substitution (CES) preference functions. The CES function was introduced by Brown and Heien (1972) to overcome two restrictions of the linear expenditure system, which was first used by Klein and Rubin (1948). The restrictions in the linear expenditure system are, first, that the own-price elasticities of demand cannot exceed (minus) unity and, second, that cross-price elasticities are zero. In (3.1) and (3.2), both complementary and substitution effects are represented. The exponents α and β are interpreted to mean that, when the goods or products exports are perfect substitutes, their value approach unity; when the goods or product exports are non-substitutable, their values approach $-\infty$. Since product exports must be more closely substitutable for one another than for the numeraire good, the restriction $\alpha < \beta$ must be imposed. It will next be shown that the own-price elasticity can lie between 0 and $-\infty$.

3.2 Import Demand

Given the importer's preference ordering, it is now possible to derive the importer's demand schedule, as well as the export demand schedules of Egypt and other foreign suppliers. Separability of preferences in the utility tree allows the decision at each level to be considered as an independent utility maximization problem. The first level of decision maximizes the overall utility function subject to the budget constraint; the next level maximizes the utility function for alternative supply sources of the product, subject to the allocation of expenditures for imports of that product determined at the first decision-making level.

The utility maximization problem for the first level of decision by one of Egypt's geographic markets *j,* given a product import price *P* and a level of nominal dollar income Y^n, is

$$\max[\pi M_j^{\alpha} + (1 - \pi) N^{\alpha}]^{1/\alpha}$$

$$\text{subject to } P_j M_j + N_j = Y^n_j \qquad (3.3)$$

where $\alpha < 1$ and $0 < \pi < 1$. The solution to the foregoing problem yields the overall demand schedules for product imports *M* and the numeraire *N* of importer *j*:

$$M_j^d = k_1 Y_j (P_j/D_j)^{\varepsilon m,p} \qquad (3.4)$$

and

$$N_{0,j} = (1-k_1) Y_j (P_j/D_j)^{\varepsilon n,p} \qquad (3.5)$$

were $\varepsilon_{m,p} = 1/(\alpha-1)$ and $\varepsilon_{n,p} = \alpha/(\alpha-1)$; $k_1 = [(1- \pi_j)/ \pi_j]^{1/(1-\alpha)}$, with expected sign $k_1 > 0$; $D = (1 + k_1 P^{\alpha/(\alpha- 1)})^{(\alpha-1)/\alpha}$ is the deflator; and $Y = Y^n/D$ is real income.

The demand schedules have two important properties: (1) the income elasticities are equal to unity, a hypothesis that will later be tested; and (2) the price elasticity of demand for imports ($\varepsilon_{m,p}$) can take on any value between $-\infty$ and 0.[5]

3.3 Export Demand

Once the level of expenditures Y^n_m for the imported commodity M has been determined, the utility maximization problem of how much of the commodity to purchase for Egypt, denoted *i*, and other sources, denoted *k*, whose corresponding export prices are P_i and P_k can be expressed as

$$\max[\pi_{ij} X_{ij}^{\beta} + (1 - \pi_{ij})X_{kj}^{\beta}]^{1/\beta}$$

$$\text{subject to } P_{ij}X_{ij} + P_{kj}X_{kj} = Y^n_{m,j} \qquad (3.6)$$

where $\beta < 1$ and $0 < \pi < 0.5$. Then the export demand schedule for Egypt, the country of interest *i,* and that of its competitor *k* are

$$X^d_{ij} = k_2 M_j (P_{ij}/P_j)^{\varepsilon x,p} \qquad (3.7)$$

and

$$X^d_{kj} = (1-k_2) Mj (P_{kj}/P_j)^{\varepsilon x,p} \qquad (3.8)$$

where

$\varepsilon_{x,p} = 1/(\beta-1)$
$k_2 = [(1-\pi)/\pi]^{1/(1-\beta)}$
$P_j = (P_{ij}^{\beta/(\beta-1)} + P_{kj}^{\beta/(\beta-1)})^{(\beta-1)/\beta}$ is the import price of the commodity, and
$M_j = Y^n_{m,j}/P_j$.

The export demand schedule for Egypt has the following desired properties:

(1) Export demand has a unitary elasticity with respect to the level of import demand in the geographic market, which is theoretically consistent: a change in the level of import demand in the foreign market will, *ceteris paribus*, cause a proportionate change in the demand for the exports of all supplying countries to that market.
(2) The price elasticity of export demand ($\varepsilon_{x,p}$) has a value that lies between $-\infty$ and 0.
(3) The constant k_2, which has the value $0 < k_2 < 1$, measures the exporter's market share.

The foregoing system of intersectoral and intrasectoral demand schedules in (3.4) and (3.7) lend themselves to empirical application since the exponential form of the equations can be converted into double-logarithmic equations whose estimated coefficients are directly interpreted to be elasticities. Moreover, the use of CES preference functions for both intersectoral and intrasectoral substitution does not impose undue restrictions on the own-price and cross-price elasticities. Their values are consistent with those that would be expected for normal goods and product exports.

[5] Recall that $\varepsilon_{m,p} = 1/(\alpha-1)$ and $\alpha < 1$, so that $-\infty < \varepsilon_{m,p} < 0$.

4.0 Modeling Imports

4.1 Dynamic Specification

The approach followed in this study to formulate the dynamic relationships for Egypt's trade follows the modeling strategy developed in a series of papers by Davidson *et al.* (1978), Hendry (1986), and others that owe a great deal to Sargan's (1964) seminal paper on dynamic specification. More generally, it reflects the traditional approach to econometric analysis as set forth in Harvey (1994) and used by Lord (1991) to model international commodity trade.

The demand for imports of Egypt is postulated to have a steady-state response to domestic economic activity, and a transient response to the constant local currency price of imports. The life-cycle approach to consumption emphasizes income as a determinant of intertemporal consumption planning and provides theoretical justification for the existence of the dynamic effect on import demand of changes in the rate of growth of domestic income (see Deaton and Muellbauer, 1980: Chap. 12). In contrast, there is no logical explanation for any dynamic effects of the price of imports. Were the import price of a product to change continually relative to the general price deflator, consumers would soon cease to purchase the product as the spread between the product price and the general price level widened.

An important characteristic of the import demand for any one product is that its long-term response to the growth of domestic income is not necessarily proportional. While the theoretical relationship for import demand in equation (3.4) had a unitary elasticity with respect to income, in general the share of income spent on foreign goods has historically exceeded unity. Moreover, among individual countries the marginal propensity to import has varied greatly (see Houthakker and Magee, 1969). This characterization suggests that the dynamic specification of the import demand equation should not introduce any restrictions that would impose long-run unitary elasticity with respect to income. Nevertheless, the model should encompass long-term proportionality responses when they exist.

A second feature of the present modeling approach is that the dynamics for import demand relationships can be restricted to one period since the adjustment of imports to price and income changes tends to decline exponentially over time. Accordingly, in terms of the general stochastic difference specification, the expression for imports, M, in terms of income, Y, the price of the product, P, in foreign currency terms, and the real effective exchange rate, R, can be expressed as:

$$m_t = \alpha_{10} + \alpha_{11}m_{t-1} + \alpha_{12}y_t + \alpha_{13}y_{t-1} + \alpha_{14}p_t + \alpha_{15}p_{t-1} + \alpha_{16}r_t + \alpha_{17}r_{t-1} + u_{1t} \quad ...(4.1)$$

where lower case letters denote logarithms of corresponding capital letters, and the expected signs of the coefficients are $0 < \alpha_{11} < 1$; α_{12} and $\alpha_{13} > 0$; α_{14} and $\alpha_{15} < 0$; α_{16} and $\alpha_{17} > 0$. Income is treated as (weakly) exogenous for the parameters of interest. The use of the logarithmic specification in equation (4.1) provides a means by which the elasticity can be calculated directly from the estimated equation; the results are consistent when the elasticities remain constant over time. Tests of parameter constancy provide a means of validating that hypothesis.

The third important characteristic is that the demand for imports is determined by the local currency price (in Egyptian pounds) of imports. As such, we can decompose the price variable into the US dollar prices and the real effective exchange rate in equation (4.1) as follows:

$$P^e = P/R \qquad (4.2)$$

where P^e is the Egyptian pound price of the imported product, P is the US dollar price of the imported product, and R is the real effective exchange rate.

The real effective exchange rate takes into account changes in the price of domestic goods, P^e, relative to foreign goods, P^f, and the nominal exchange rate, R^n. It is defined as follows:[6]

$$R = P^e/(R^nP^f) \qquad (4.3)$$

II. The demand for imports by Egypt is therefore directly affected by the real exchange rate.

The final characteristic is that if the import supply elasticity is less than infinite, then the pass-through of exchange rate changes from import price changes in foreign currency terms to import prices in local currency terms will be less than complete (see Branson, 1972, and the summary by Goldstein and Khan, 1985). Consequently, the estimated price and exchange rate coefficients in equation (4.1) may differ from one another.[7]

4.2 Cointegrated Processes and Their ECM Representation

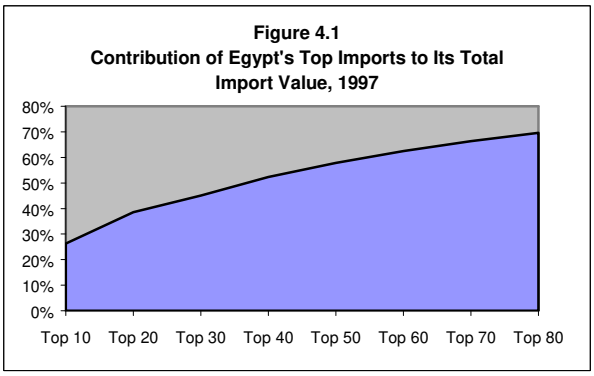
International trade series have a long-term relationship with one or more other series after transient effects from other series have disappeared. That part of the response of a trade variable that never decays to zero is the steady-state response, while that part that decays to zero in the long run is the transient response. Economic series that are related to the long-run adjustment processes of other variables have been designated to be cointegrated series by Granger and Weiss (1983) and Engle and Granger (1987). The theory of cointegration states that if two series, x and y, grow over time in such a way that the linear combination of these two variables, given by $d_t = x_t - \alpha y_t$, is stationary, and if α is unique, then x and y are said to be cointegrated. The series d_t measures the disequilibrium at period t when the long-run relationship between the two variables is $x_t = \alpha y_t$. The theory of cointegration states that movements in variables are related in a predictable way to the discrepancy between observed and equilibrium states. The sequence of this discrepancy tends to decay to its mean of zero.

Engle and Granger (1987) have demonstrated that a data-generating process of the form known as the "error-correction mechanism**"** (ECM) adjusts for any disequilibrium between variables that are cointegrated. The ECM specification thus provides the means by which the short-run observed behavior of variables is associated with their long-run equilibrium growth paths. Davidson *et al.* (1978) established a closely related specification know as the "equilibrium-correcting mechanism" (also having the acronym ECM) that models both the short and long-run relationships between variables. Since the growth rate of Egypt's imports in equation (4.1) depends on the expansion path of economic activity, it is appropriate to apply the error-correction-model (ECM) to the relationship between imports and domestic economic activity. The disequilibrium adjustment term in the ECM will then rectify any previous disequilibrium between the two variables. Rearranging the terms of the first-order stochastic difference equation (4.1) yields the following ECM:[8]

[6] This definition is the one used by the International Monetary Fund (IMF), while the more traditional definition is $R = R^nP^f/P^e$. To facilitate the interpretation of the results for readers, we have adopted the IMF definition. See Edwards (1988: Appendix) for alternative definitions of the real exchange rate.

[7] For a derivation of the import supply schedule, see Lord (1991: Annex D).

[8] For the derivation of the equation, see Lord (1991: Annex D).



$$\Delta m_t = \alpha_{20} + \alpha_{21}(m - y)_{t-1} + \alpha_{22}\Delta y_t + \alpha_{23}y_{t-1} + \alpha_{24}\Delta p_t + \alpha_{25}p_{t-1} + \alpha_{26}\Delta r_t + \alpha_{27}r_{t-1} + u_{2t}$$

where $-1 < \alpha_{21} < 0$; $\alpha_{22} > 0$; $\alpha_{23} > \alpha_{21}$; α_{24} and $\alpha_{25} < 0$; α_{26} and $\alpha_{27} > 0$; and where all variables are measured in logarithmic terms.

The import price and exchange rate terms in the foregoing specification have been so transformed as to nest the 'differences' formulation of the variables in the levels form of the equation. This transformation reduces the possibility of the occurrence of the spurious correlation typically associated with time-series data when the relationship between import demand and import prices is estimated.

On a steady-state growth path, the long-run dynamic equilibrium relationship implicit in equation (4.4) is:

$$M = kY^{\varepsilon y}P^{\varepsilon p}R^{\varepsilon r} \qquad (4.5)$$

The income elasticity of import demand is expressed as

$$\varepsilon_y = 1 - (\alpha_{23}/\alpha_{21}) \qquad (4.6)$$

Its value is positive since the expected sign of α_{21} is negative and $\alpha_{23} > \alpha_{21.}$ When $\alpha_{21} < \alpha_{23} < 0$, import demand is inelastic with respect to income; when $\alpha_{23} = 0$, it has a unitary elasticity; and when $\alpha_{23} > 0$.

The price elasticity of import demand is expressed as

$$\varepsilon_p = - \alpha_{25}/\alpha_{21} \qquad (4.7)$$

It has a negative value since the expected signs of both α_{25} and α_{21} are negative.

The real effective exchange rate elasticity of import demand is expressed as

$$\varepsilon_r = - \alpha_{27}/\alpha_{21} \qquad (4.8)$$

It has a positive value since the expected signs of α_{21} is negative and that of α_{27} is positive.

4.3 Import Data and Structure

Trade data have been derived from the United Nations' COMTRADE database for all of Egypt's reporting trading partners. The data used in the model are based on detailed information at the product level to permit both volume and value information to be obtained for all of Egypt's major exports and imports. Data based on 4 and 5-digit level of the Standard International Trade Classification (SITC), Revision 1 nomenclature were extracted for all of Egypt's reporting trading partners in 1970-97. The results provided information on Egypt's exports by country of destination and Egypt's imports from all countries of origin.

Selection of the products to be modeled has been based on the contribution of the most important products imported to the total value of imports in 1997. Figure 4.1 shows the contribution of the top 10 to 80 imports to total imports. There is a high degree of concentration in the top ten imports, which together account for one-fourth of Egypt's total expenditures on imports. The products consist of unmilled wheat, products of polymerizing, sawn lumber, unmilled maize, iron and steel, raw beet and cane sugar, sunflower seed oil, excavating and leveling machines, other non-electric machines, and passenger motor vehicles. The next ten products contribute another 13 percentage points, and the top 30 imports account for a total of 45 percent of the total value of imports. In an effort to obtain over 50 percent import coverage, we selected the top 40 products, which together account for 52 percent of the total value of imports.

4.4 Characterization of the Data

An economic relationship generally refers to a state where there is no inherent tendency to change. Such a relationship is, for example, described by the export demand relationship of the log linear form $x_i = \beta y_j$, where export changes in Egypt, denoted *i*, are related to changes in the economic activity of a foreign market *j*. In practice, however, an equilibrium relationship is seldom observed, so that measures of the observed relationship between x_i and y_j include both the equilibrium state and the discrepancy between the outcome and the postulated equilibrium. The discrepancy, denoted *d*, cannot have a tendency to grow systematically over time, nor is there any systematic tendency for the discrepancy to diminish in a real economic system since short-term disturbances are a continuous occurrence. The discrepancy is therefore said to be stationary insofar as over a finite period of time it has a mean of zero.

Individual time series that are themselves stationary are statistically related to each other, regardless of whether there exists a true equilibrium relationship. Thus, before estimating Egypt's export demand, it is useful to determine whether the data generating process of each of the series is itself stationary. Since economic activity variables have a tendency to grow (positively or negatively) over time, the variables themselves cannot be stationary, but changes in those series might be stationary. Series that are integrated of the same order, however, are said to be cointegrated and to have a long-run equilibrium relationship.[9] For trending variables that are themselves non-stationary, but can be made stationary by being differenced exactly *k* times, then the linear combination of any two of those series will itself be stationary. It is therefore important to test the order of integration of the key series in the model.

Tests for stationarity are derived from the regression of the changes in a variable against the lagged level of that variable. Consider the following simple levels regression:

$$y_t = a + by_{t-1} + d \qquad (4.9)$$

where *a* and *b* are constants and *d* is an error term. y is a stationary series if $-1 < b < 1$. If =1, y is a non-stationary series and is instead a random walk with drift; if the absolute value of *b* is greater than one, the series is explosive.

By subtracting y_{t-1} from both sides, we obtain

$$\Delta y_t = a + (b-1)y_{t-1} + d \qquad (4.10)$$

[9]A series is said to be integrated of order *k*, denoted I(*k*), if the series needs to be differenced *k* times to form a stationary series. Thus, for example, a trending series that is I(1) needs to be differenced one time to achieve stationarity.

The disturbance term *d* now has a constant distribution and the t-statistic on y_{t-1} provides a means for testing non-stationarity. If the coefficient on y_{t-1} is zero, then *b* must be equal to 1, and *y* is therefore stationary. The Augmented Dickey-Fuller test is a test on the t-statistic of the coefficient on y_{t-1}. The hypothesis $H_0 = b-1 = 0$ is called the unit-root hypothesis and it implies that y_t is non-stationary.

The second test for non-stationarity is the Durbin-Watson (DW) test on the levels regression specified above. Since the DW statistically is given by

$$DW = 2(1-r) \qquad (4.11)$$

where *r* is the correlation coefficient between y_t and y_{t-1}, then *y* is white noise when *r* is zero. The DW is therefore 2 when *y* is stationary.

4.5 Import Demand Estimates

The import demand functions of the principal products have been derived from estimates of the dynamic specification of the relationship in equation (4.4) (see Table 4.1). As was to be expected, income has always been found to be statistically significant in explaining the demand for imports. In most cases, estimates of the income coefficients have 99 percent confidence intervals. The real effective exchange rate coefficients are statistically different from zero in the short run in 29 of the 41 product imports, and they are statistically different from zero in the long run in 21 of the 41 product imports. Prices are statistically significant in explaining import demand in about one-half of the products in both the short run and the long run.

Table 4.1
Regression Results of Import Demand Equation
$\Delta m_t = a_{20} + a_{21}(m - y)_{t-1} + a_{22}\Delta y_t + a_{23}y_{t-1} + a_{24}\Delta p_t + a_{25}p_{t-1} + a_{26}\Delta r_t + a_{27}r_{t-1}$

									Summary Statistics			
Description	**SITC**	**ln(M)–ln(Y)t-1**	**Dln(Y)t**	**ln(Y)t-1**	**Dln(P)t**	**ln(P)t-1**	**Dln(R)t**	**ln(R)t-1**	**Const**	**R2**	**dw**	**Yrs**
Wheat etc unmilled	0410	-0.95							10.63	0.74	1.80	1972-97
		(5.6)										
Prod of polymerizing etc	5812	-0.82	1.80	1.41			0.64	0.31	-0.51	0.78	2.16	1980-97
		(2.7)	(0.8)	(2.3)			(1.6)	(1.6)				
Lumber sawn etc conifer	24321	-0.48		0.34				0.12	2.51	0.90	2.33	1986-97
		(3.4)		(1.0)				(1.7)				
Maize unmilled	0440	-0.72	5.90	0.82			0.37		3.78	0.94	2.50	1985-97
		(6.1)	(4.7)	(3.8)			(3.1)					
Iron,simple stl blooms,etc	67251	-0.68		1.39	-2.61	-2.15			-3.16	0.97	2.32	1972-97
		(7.3)		(3.7)	(17.1)	(7.3)						
Raw beet and cane sugar	0611	-0.33		5.18			1.28	1.63	-27.34	0.68	2.77	1984-97
		(0.8)		(1.5)			(1.1)	(2.2)				
Sunflower seed oil	4216	-0.17			-4.28				1.49	0.78	2.28	1985-97
		(1.2)			(4.8)							
Oth machines nonelectric	7198	-0.85			-1.21	-1.37	0.96		7.73	0.81	2.43	1981-97
		(4.5)			(4.0)	(3.6)	(3.3)					
Excavtng,levling etc mac	71842	-0.86			-1.12	-1.94	0.52		7.83	0.91	1.43	1985-97
		(6.0)			(7.3)	(6.5)	(2.3)					
Pass motor veh exc buses	7321	-0.40			-1.17		1.11	0.75	-1.35	0.98	2.69	1990-97
		(6.0)			(10.1)		(3.9)	(3.4)				
Palm oil	4222	-0.93		5.42			6.24		-16.24	0.74	2.47	1980-97
		(3.5)		(2.4)			(2.8)					
Paper etc in bulk nes	6415	-0.28				-1.01	1.37	2.11	-8.57	1.00	2.41	1990-97
		(7.9)				(7.2)	(16.9)	(15.9)				
Electric power machinery	7221	-0.85		2.43			0.30	0.55	-8.18	0.96	2.83	1988-97
		(5.3)		(6.0)			(2.1)	(4.8)				
Bovine meat fresh,frozen	0111	-0.21		0.89	-3.85	-1.11	2.16	1.19	-7.77	0.95	2.30	1971-97
		(2.1)		(1.8)	(11.9)	(2.6)	(3.2)	(2.7)				
Other motor vehcl parts	73289	-0.67					1.48	1.32	-2.24	0.64	1.57	1990-97
		(2.3)					(2.3)	(2.1)				
Vegetable oil residues	0813	-0.79		1.46			3.04	0.47	-1.78	0.91	2.67	1978-97
		(6.2)		(3.5)			(9.1)	(2.3)				
Switchgear etc	7222	-0.89			-1.01	-1.01	0.48	0.17	6.28	0.96	2.19	1981-97
		(6.0)			(9.9)	(7.8)	(2.5)	(1.7)				
Tobacco unmfd	1210	-0.93	3.09	-0.49					8.06	0.83	2.46	1981-97
		(6.9)	(4.3)	(5.4)								
Line telephone,etc equip	72491	-0.81	4.50		-0.90	-0.60			4.93	0.75	2.15	1976-97
		(3.1)	(1.4)		(4.7)	(1.6)						
Rubber tyres,tubes	6291	-0.81	2.33	0.54			0.71	0.25	1.43	0.79	2.31	1971-97
		(5.8)	(1.4)	(3.2)			(2.4)	(1.5)				
Irn,simple stl bars etc	67321	-0.39						0.66	-0.25	0.96	2.21	1987-97
		(3.1)						(2.8)				
Pumps for liquids	71921	-0.84	1.41				0.44	0.33	2.44	0.96	2.22	1986-97
		(6.8)	(1.3)				(3.5)	(2.9)				
Prod of condensation etc	5811	-0.70	1.18	1.83					-3.07	0.86	2.25	1987-97
		(3.5)	(1.3)	(3.3)								
Tea	0741	-0.85							5.89	0.61	1.90	1982-97

Table 4.1
Regression Results of Import Demand Equation
$\Delta m_t = a_{20} + a_{21}(m - y)_{t-1} + a_{22}\Delta y_t + a_{23}y_{t-1} + a_{24}\Delta p_t + a_{25}p_{t-1} + a_{26}\Delta r_t + a_{27}r_{t-1}$

										Summary Statistics		
Description	**SITC**	**ln(M)–ln(Y)t-1**	**Dln(Y)t**	**ln(Y)t-1**	**Dln(P)t**	**ln(P)t-1**	**Dln(R)t**	**ln(R)t-1**	**Const**	**R2**	**dw**	**Yrs**
		(3.8)										
Refined sugar etc	0612	-0.58						0.61	1.83	0.78	2.68	1983-97
		(4.6)						(2.5)				
Pesticides,disinfectants	5992	-0.19					0.65	0.32	-0.68	0.64	1.90	1982-97
		(2.1)					(3.2)	(2.5)				
Cement	6612	-0.17			-2.47	-0.88			-0.89	0.72	1.51	1981-97
		(1.2)			(5.3)	(1.2)						
Buses	7322	-0.88		1.16	-0.87				-0.79	0.95	2.77	1985-97
		(8.6)		(3.2)	(6.4)							
Piston engines non-air	7115	-0.40			-0.30				2.20	0.62	2.06	1976-97
		(2.9)			(2.7)							
Lorries,trucks	7323	-0.98			-0.91		2.23	1.64	-3.73	0.78	2.62	1985-97
		(4.1)			(2.1)		(2.5)	(2.3)				
Discn synth fibre uncmbd	26621	-0.10			-1.51	-1.46		0.43	-0.46	0.75	2.40	1986-97
		(1.3)			(3.0)	(2.1)		(2.3)				
Cont synth fibre yarn	65161	-0.29		0.56					-0.48	0.82	2.73	1973-97
		(3.2)		(1.7)								
Special purpose vessels	73592	-0.86		5.72	-1.18	-1.58	1.56	0.65	-22.89	1.00	2.04	1986-97
		(14.1)		(3.9)	(9.6)	(7.5)	(2.2)	(1.8)				
Coated etc paper nes blk	64195	-0.61		0.35	-0.68		1.44	0.21	1.92	0.84	2.25	1977-98
		(4.2)		(1.5)	(4.4)		(4.3)	(1.3)				
Insulated wire,cable	7231	-0.83			-1.42	-0.86	0.76		5.83	0.97	2.40	1986-97
		(6.6)			(10.6)	(5.8)	(4.5)					
Mach parts nonelec nes	71999	-0.19			-1.28	-0.22			1.44	0.95	1.43	1982-97
		(1.01)			(10.6)	(1.5)						
Fish fresh,chilled,frozn	0311	-0.95	4.07	0.80			0.43		3.69	0.89	2.57	1973-97
		(9.5)	(2.2)	(3.9)			(1.9)					
Pumps for gases etc	71922	-0.67		0.42	-0.35	-0.29	0.49	0.20	1.26	0.90	1.58	1975-97
		(6.3)		(3.0)	(4.2)	(2.6)	(3.7)	(1.9)				
Plywood,veneers inlaid	63121	-0.86		0.31			0.50	0.26	3.92	0.74	2.55	1975-97
		(6.1)		(1.6)			(2.3)	(1.7)				
Grey cotton yarn in bulk	6513	-0.24			-0.81		1.64		1.46	0.89	3.13	1988-97
		(3.9)			(2.8)		(3.4)					
Lifting,loading mach nes	71931	-0.41					0.78	0.31	0.72	0.58	1.54	1975-97
		(3.6)					(3.1)	(1.7)				

The coefficients of the error-correcting term in the import demand relationships measure the speed of response of imports to changes in income, exchange rates and prices. About one-half of the import demand equations have an error-correcting term that is near unity in absolute terms. This fact reflects the relatively quick response of importers to changes in the explanatory variables. Major disturbances in import demand occurred largely in the latter part of the 1980s. Binary variables were used to eliminate those observations from the estimates. These disturbances were transitory shifts. A test of parameter constancy based on the Chow test showed the coefficients to be stable at the 5 percent level of significance in all the estimated relationships.

Table 4.2 shows the income, price and exchange rate elasticities of Egypt's principal product imports. For income, the unweighted average elasticity is 0.95 in the short run and 2.24 in the long run. The 1997 trade-

weighted elasticities are substantial: 1.12 in the short run and 2.49 in the long run. These elasticities conform to other estimates of import demand functions for developing and transition economies (Lord, 1991: Chapter 13). As expected, import demand is income inelastic for most products in the short run, but income elastic for most products in the long run. Only two products have a long-run income elasticity of less than unity.

The average real effective exchange rate elasticities are relatively high. For those product imports whose coefficients were statistically significant, the unweighted elasticity is 1.15 in the short run and 1.7 in the long run. For all products, including those whose coefficients were not statistically significant and therefore have elasticities equal to zero, the 1997 trade-weighted average elasticity is 0.74 in the short run and 0.87 in the long run. These exchange rate elasticities are high but are below those for US dollar import prices. The unweighted average price elasticity is –1.4 in the short run and –3.2 in the long run, while the 1997 trade-weighted price elasticity is –0.65 in the short run and –0.8 in the long run. Overall, the absolute values of the price and exchange rate elasticities of Egypt's import demand are similar to one another, though there are differences in the individual products.

4.6 Import Expenditures on Services

Egypt's import expenditures on services are dominated by transportation-related activities such as freight, insurance and other distributive services. These activities are, in turn, related to merchandise imports and exports. It is common practice to model these types of service transactions with current value data. While real value data are preferred, the difficulty of obtaining price indices for services that would allow us to express the time series in real terms makes it preferable to use the current value variable and avoid possible error introduced from a crude price variable. Moreover, it has been argued that the ultimate objective of modeling import expenses from services is the determination of the current account in the balance of payments. A single equation estimate for the value of these import expenses is likely to provide a better estimate than two separate estimates for the real value of these imports and for the corresponding price index (Leamer and Stern, 1970).

Table 4.2
Price, Income and Exchange Rate Elasticities of Import Demand

Description	SITC	ST/LT	Income	Price	Exch. Rate
Wheat etc unmilled	0410	ST	0.16 a/	-	- a/
		LT	1.00	-	-
Prod of polymerizing etc	5812	ST	1.80	0.64	0.64
		LT	2.71	-	0.37
Lumber sawn etc conifer	24321	ST	0.34 a/	-	0.12 a/
		LT	1.71	-	0.25
Maize unmilled	0440	ST	5.90	-	0.37
		LT	2.14	-	-
Iron,smple stl blooms,etc	67251	ST	0.68	-2.61	-
		LT	3.05	-3.18	-
Raw beet and cane sugar	0611	ST	0.33	-	1.28
		LT	16.91	-	5.01
Sunflower seed oil	4216	ST	0.17	-4.28	-
		LT	1.00	-	-
Oth machines nonelectric	7198	ST	0.85	-1.21	0.96
		LT	1.00	-1.61	-
Excavtng,levling etc mac	71842	ST	0.86	-1.12	0.52
		LT	1.00	-2.25	-
Pass motor veh exc buses	7321	ST	0.40	-1.17	1.11
		LT	1.00	-	1.86
Palm oil	4222	ST	0.93	-	6.24
		LT	6.85	-	-
Paper etc in bulk nes	6415	ST	0.28	-1.01	1.37
		LT	1.00	-3.61	7.52
Electric power machinery	7221	ST	0.85	-	0.30
		LT	3.87	-	0.65
Bovine meat fresh,frozen	0111	ST	0.21	-3.85	2.16
		LT	5.22	-5.24	5.62
Other motor vehcl parts	73289	ST	0.67	-	1.48
		LT	1.00	-	1.99
Vegetable oil residues	0813	ST	0.79	-	3.04
		LT	2.84	-	0.59
Switchgear etc	7222	ST	0.89	-1.01	0.48
		LT	1.00	-1.13	0.19
Tobacco unmfd	1210	ST	3.09	-	-
		LT	0.47	-	-
Line telephone,etc equip	72491	ST	4.50	-0.90	-
		LT	1.00	-0.75	-
Rubber tyres,tubes	6291	ST	2.33	-	0.71
		LT	1.66	-	0.31
Irn,simple stl bars etc	67321	ST	0.39	-	0.66 a/
		LT	1.00	-	1.67
Pumps for liquids	71921	ST	1.41	-	0.44
		LT	1.00	-	0.39
Prod of condensation etc	5811	ST	1.18	-	-

Table 4.2
Price, Income and Exchange Rate Elasticities of Import Demand

Description	SITC	ST/LT	Income	Price	Exch. Rate
		LT	3.63	-	-
Tea	0741	ST	0.85	-	-
		LT	1.00	-	-
Refined sugar etc	0612	ST	0.58	-	0.61 a/
		LT	1.00	-	1.05
Pesticides,disinfectants	5992	ST	0.19	-	0.65
		LT	1.00	-	1.71
Cement	6612	ST	0.17	-2.47	-
		LT	1.00	-5.29	-
Buses	7322	ST	0.88	-0.87	-
		LT	2.33	-	-
Piston engines non-air	7115	ST	0.40	-0.30	-
		LT	1.00	-	-
Lorries,trucks	7323	ST	0.88	-0.91	2.23
		LT	1.00	-	1.67
Discn synth fibre uncmbd	26621	ST	0.10	-1.51	0.43 a/
		LT	1.00	-14.90	4.41
Cont synth fibre yarn	65161	ST	0.29	-	-
		LT	2.94	-	-
Special purpose vessels	73592	ST	0.86	-1.18	1.56
		LT	7.66	-1.84	0.76
Coated etc paper nes blk	64195	ST	-2.76	-0.68	1.44
		LT	1.57	-	0.35
Insulated wire,cable	7231	ST	0.83	-1.42	0.76
		LT	1.00	-1.03	-
Mach parts nonelec nes	71999	ST	0.19	-1.28	-
		LT	1.00	0.15	-
Fish fresh,chilled,frozn	0311	ST	4.07	-	0.43
		LT	1.85	-	-
Pumps for gases etc	71922	ST	0.19	-0.35	0.49
		LT	1.62	-0.43	0.29
Plywood,veneers inlaid	63121	ST	0.86	-	0.50
		LT	0.92	-	0.30
Grey cotton yarn in bulk	6513	ST	0.24	-0.81	1.64
		LT	1.00	-	-
Lifting,loading mach nes	71931	ST	0.41	-	0.78
		LT	1.00	-	0.76

a/ One-period lag.

Since year-to-year variations in the value of import expenses from services reflect price and volume changes, the own-price variable is not included in the explanatory variables of the estimated relationship. Import expenses from services are, nevertheless, affected by movements in Egypt's REER since the receipts are measures in US dollar terms and changes in the REER will affect the cost of transportation and other services to domestic residents. Accordingly, the specification for service expenditures, denoted S^m, with an ECM driven by

domestic real income, *Y*, and with a 'differences' formulation of the real effective exchange rate, *R,* term nested in the levels form of the equation is:

$$\Delta s^m_t = \beta_{30} + \beta_{31}(s^m - y)_{t-1} + \beta_{32}\Delta y_t + \beta_{33}y_{t-1} + \beta_{34}\Delta r_t + \beta_{35}r_{t-1} + u_{3t} \qquad (4.12)$$

where $-1 < \beta_{31} < 0$; $\beta_{32} > 0$; $\beta_{33} > \beta_{31;}$ and β_{34} and $\beta_{35} > 0$; and where all variables are measured in logarithmic terms.

The following are the results of the equation estimate:

$$\Delta s^m_t = \underset{(4.7)}{3.8} - \underset{(4.7)}{0.90}(s^m - y)_{t-1} + \underset{(2.3)}{3.3}\Delta y_t + \underset{(2.7)}{0.43}\Delta r_t \qquad (4.13)$$

$R^2 = 0.85$ dw = 2.24 Period: 1990-98

where figures in parenthesis are t-statistics.

Table 4.3
Income and Exchange Rate Elasticities of Demand for Service Imports

	Elasticity with respect to: Exch. Rate	
Short-term	0.43	3.3
Long-term	0.00	1.0

The income elasticity is relatively high in the short run (3.3) but it becomes unity in the long run. The real effective exchange rate is high in the short run (0.43), but it is not statistically significant in the long run (see Table 4.3). The lack of significance of this variable may be due to the concentration of Egypt's expenditures on shipping services, which are related to merchandise exports and imports. As a result, while shipping services has a short-term response to changes in the real effective exchange rate, in the long run those effects are neutralized by offsetting movements in merchandise exports and imports caused by exchange rate variations.

5.0 Modeling Exports

5.1 Dynamic Specification

The demand for exports of Egypt has a steady-state response to the import demand of its geographic markets, and a transient response to its relative export price. The justification for these long-run dynamic properties is similar to that for the import demand of Egypt discussed in the previous chapter. The demand for exports of a product from all foreign suppliers is equivalent to the import demand for the product from that market. Thus the life-cycle model of consumption provides the same theoretical justification for the existence of a long-run dynamic effect associated with import demand in foreign markets as it did for the import demand function of Egypt. In contrast, unless relative-price movements generate only transient responses, a continuous change in the price of exports from one country relative to that of exports from competing suppliers would eventually cause importers to purchase the product from the lower-priced supplier(s). Thus it is appropriate to constrain the long-run effect from relative prices to zero.

Consider the general first-order stochastic difference expression for export demand, *X*, of a geographic market *j* of Egypt's products as a function of real GDP of the geographic market, Y^f, and the price of Egypt's exports measured in US dollar terms that has been double deflated, *P*:

$$x_t = \beta_{40} + \beta_{41}x_{t-1} + \beta_{42}y^f_t + \beta_{43}y^f_{t-1} + \beta_{44}p_t + \beta_{45}\Delta p_{t-1} + v_{1t} \qquad (5.1)$$

where lower-case letters denote logarithms of corresponding capital letters, and the expected signs of the coefficients are $0 < \beta_{41} < 1$; β_{42} and $\beta_{43} > 0$; β_{44} and $\beta_{45} < 0$.

The price variable in equation (5.1) is defined in the previous chapter. Recall that $P_t = P^e_t/R_t$, where P is the US dollar price of the imported product, P^e is the Egyptian pound price of the imported product, and R is the real effective exchange rate (REER).

At the bilateral trade level, the real exchange rate is measured by the 'real cross-rate', which takes into account changes in the nominal exchange rate of Egypt with the foreign country and the relative price levels between Egypt and that country. It measures changes in the purchasing power between the domestic and the foreign economy, and it provides an indicator of changes in the international competitiveness of the domestic economy in its ability to purchase more (or less) goods and services per unit of foreign currency.[10]

Transformation of (5.1) as described in the previous chapter for import demand results in an export demand specification with an ECM driven by foreign income and with a 'differences' formulation of the current price and exchange rate terms nested in the levels form of the equation:[11]

$$\Delta x_t = \beta_{50} + \beta_{51}(x - y^f)_{t-1} + \beta_{52}\Delta y^f_t + \beta_{53}y^f_{t-1} + \beta_{54}\Delta p^e_t + \beta_{55}p^e_{t-1} + \beta_{56}\Delta r_t + \beta_{57}r_{t-1} + v_{2t} \qquad (5.2)$$

[10] As an extension, the REER measures the average relative strength of the local currency, and it is calculated as the weighted average of REERs, where the weights are the value of imports from and exports to a given partner country *i* divided by total imports and total exports of Egypt.

[11] For the derivation of the equation, see Lord (1991: Annex D).

where $-1 < \beta_{51} < 0$; $\beta_{52} > 0$; $\beta_{53} > \beta_{51}$; β_{54} and $\beta_{55} < 0$; and β_{56} and $\beta_{57} < 0$; and where all variables are measured in logarithmic terms.

The second term, $\beta_{51}(x-y^f)$, is the mechanism for adjusting any disequilibrium in the previous period. When the rate of growth of the dependent variable x falls below its steady-state path, the value of the ratio of variables in the second term decreases in the subsequent period. That decrease, combined with the negative coefficient of the term, has a positive influence on the growth rate of the dependent variable. Conversely, when the growth rate of the dependent variable increases above its steady-state path, the adjustment mechanism embodied in the second term generates downward pressure on the growth rate of the dependent variable until it reaches that of its steady-state path. The speed with which the system approaches its steady-state path depends on the proximity of the coefficient to minus one. If the coefficient is close to minus one, the system converges to its stead-state path quickly; if it is near to zero, the approach of the system to the steady-state path is slow.

The price effect in equation (5.2) is decomposed into the own-price variable measured in terms of the domestic currency and the real cross-rate of each of Egypt's export markets. The decomposition allows us to separate the own-price and cross-rate effects since our interest in this study is the measurement of the effects of changes in the exchange rate on the balance of trade.

The equilibrium solution of equation (5.2) is a constant value if there is convergence. Since the solution is unrelated to time, the rate of change over time of the dependent variable *X* (given by Δx_t) and the explanatory variables Y^f (given by Δy_t) and *P* (given by Δp_t) are equal to zero. However, in dynamic equilibrium, equation (5.2) generates a steady-state response in which growth occurs at a constant rate, say *g*. For the dynamic specification of the relationship in (5.2), if g_1 is defined as the steady-state growth rate of the dependent variable *X,* and g_2 corresponds to the steady-state growth rate of the explanatory variable Y^f, then, since lower-case letters denote the logarithms of variables, $g_1 = \Delta x$ and $g_2 = \Delta y^f$ in dynamic equilibrium. Note, however, that $\Delta p = \Delta r = 0$ since there is no long-term relationship between export growth and price or exchange rate changes.

In equilibrium the systematic dynamics of equation (5.2) are expressed as:

$$g_1 = \beta_5 + \beta_{51}(x - y^f) + \beta_{52}g_2 + \beta_{53}y^f + \beta_{55}p + \beta_{57}r \qquad (5.3)$$

or, in terms of the original (anti-logarithmic) values of the variables:

$$X = k_0 Y^{f\varphi y} P^{\varphi p} R^{\varphi r} \qquad (5.4)$$

where $k_0 = \exp\{(-\beta_{50}/\beta_{51}) + [(\beta_{51} - \beta_{52}\beta_{51} - \beta_{53})/\beta_{51}^2]g_2$. The dynamic solution of equation (5.4) therefore shows *X* to be influenced by changes in the rate of growth of Y^f, as well as the long-run elasticity of *X* with respect to Y^f. For example, where the rate of growth of the explanatory variable accelerate, say from g_2 to g'_2, the value of the variable *X* would increase. However, it is important to reiterate that the response to each explanatory variable can be either transient or steady-state. When theoretical considerations suggest that an explanatory variable generates a transient, rather than steady-state, response, it is appropriate to constrain its long-run effect to zero.

The income elasticity of export demand is expressed as

$$\varphi_y = 1 - (\beta_{53}/\beta_{51}) \qquad (5.5)$$

Its value is positive since the expected sign of β_{51} is negative and $\beta_{53} > \beta_{51}$. When $\beta_{51} < \beta_{53} < 0$, import demand is inelastic with respect to income; when $\beta_{53} = 0$, it has a unitary elasticity; and when $\beta_{53} > 0$.

The price elasticity of export demand is expressed as

$$\varphi_p = - \beta_{55}/\beta_{51} \qquad (5.6)$$

It has a negative value since the expected signs of both β_{55} and β_{51} are negative.

The real exchange rate elasticity of export demand is expressed as

$$\varphi_p = - \beta_{57}/\beta_{51} \qquad (5.7)$$

It has a negative value since the expected signs of both β_{57} and β_{51} are negative.

5.2 Structure of Export Data

Export data have been derived from the United Nations' COMTRADE database for all of Egypt's reporting trading partners. Data based on 4 and 5-digit level of the SITC, Revision 1 nomenclature were extracted for all of Egypt's exports and its trading partners in 1970-97. The results provide information on Egypt's exports by country of destination.

Selection of the products to be modeled has been based on the contribution of the most important products exported in 1997. Table 5.1 shows the contribution of the top 24 products to total exports. The top two products, residual fuel oils and crude oil, together account for 40 percent of export earnings. Cotton and textile related products account for another 20 percentage points, and fruits and vegetables contribute little over 3 percentage points.

Table 5.1
Percentage Contribution of Major Exports to Total Merchandise Exports, 1997

SITC Rev1	Description	Percent
3324	Residual fuel oils	22.7%
33101	Crude petroleum	17.1%
6513	Grey cotton yarn in bulk	7.2%
2631	Raw cotton	2.8%
65213	Grey woven cotton	2.5%
84143	Underwear knit	2.4%
5214	Coal, petrol distillates	2.1%
84113	Men's underwear	1.6%
84112	Women's outerwear	1.4%
5417	Medicaments	1.3%
84111	Men's outerwear	1.1%
541	Potatoes fresh	1.1%
3218	Coke of coal	1.0%
3323	Distillate fuels	0.6%
6576	Carpets, unknotted	0.6%
545	Other fresh vegetables	0.5%
2924	Veg used in pharmacy	0.5%
5461	Vegetables, frozen	0.5%
82109	Furniture parts	0.4%
511	Oranges, tangerines	0.4%
68421	Aluminum bars, wire	0.3%
551	Vegetables, dried	0.3%
84144	Outerwear knit	0.3%
5530	Perfume and cosmetics	0.3%
	Total	**68.8%**

Source: Derived from UN, COMTRADE database.

These export data are disaggregated by country of destination to measure the effect of bilateral real effective exchange rate changes on Egypt's balance of payments. Based on Egypt's dominant geographic distribution, exports are aggregated into the three major regional markets:

- North America (composed of Canada and United States)
- European Union (composed of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom)
- Middle East (composed of Israel, Kuwait, Lebanon, Qatar, Saudi Arabia, and the United Arab Emirates).

The Statistical Appendix contains details of the products by country of destination. In modeling these flows, only the most important export flows were estimated to limit the number of equations in the model. Despite efforts to limit the number of equations in the model, the total number of products and geographic markets covered yielded a total of 70 equations.

5.3 Export Demand Estimates

The export demand functions of the principal products have been derived from estimates of the dynamic specification of the relationship in equation (5.2) (see Table 5.2). As was to be expected, foreign income has always been found to be statistically significant in explaining the demand for exports. As with import demand, the estimates of the income coefficients have 99 percent confidence intervals. The real effective exchange rate coefficients are statistically different from zero in the short run in 32 of the 38 combinations of product and export markets, and they are statistically different from zero in the long run in 28 of the 38 combinations of product and export markets. The effective exchange rate therefore has a greater impact on product and export markets than it does on import products. Prices are statistically significant in explaining export demand in about two-thirds of the product and export markets in both the short run and the long run, compared with only about one-half of the import products.

Table 5.2
Regression Results of Export Demand Equation
$\Delta m_t = a_{20} + a_{21}(m - y)_{t-1} + a_{22}\Delta y_t + a_{23}y_{t-1} + a_{24}\Delta p_t + a_{25}p_{t-1} + a_{26}\Delta r_t + a_{27}r_{t-1}$

										Summary Statistics			
SITC	Description	Market	$\ln(X)-\ln(Y)_{t-1}$	$\Delta\ln(Y)_t$	$\ln(Y)_{t-1}$	$\Delta\ln(P)_t$	$\ln(P)_{t-1}$	$\Delta\ln(R)_t$	$\ln(R)_{t-1}$	Const	R^2	dw	Yrs
3324	Residual fuel oils	World	-0.36		1.18		-0.36			-1.31	0.66	2.4	1985-97
			(1.8)		(1.3)		(2.0)						
33101	Crude petroleum	Italy	-0.44					-1.71	-0.49	5.94	0.68	2.6	1978-97
			(2.3)					(2.6)	(1.4)				
33101	Crude petroleum	USA	-0.68						-1.01	8.52	0.75	2.8	1977-97
			(4.2)						(2.4)				
6513	Grey cotton yarn in bulk	Canada	-0.66	19.61	1.60		-1.52	-2.14	-3.19	7.06	0.85	1.7	1975-97
			(5.3)	(3.6)	(1.8)		(4.2)	(3.9)	(4.5)				
6513	Grey cotton yarn in bulk	France	-0.86				-0.25			1.13	0.72	2.2	1980-97
			(4.8)				(1.5)						
6513	Grey cotton yarn in bulk	U.Kingdom	-0.41		1.52	-0.44	-1.09	-0.60	-1.27	-3.07	0.82	2.1	1980-97
			(2.3)		(1.6)	(1.8)	(2.9)	(1.5)	(2.6)				
6513	Grey cotton yarn in bulk	World	-0.59			-0.78		-1.06		4.02	0.60	2.1	1988-97
			(1.3)			(1.3)		(1.7)					
2631	Raw cotton,excl linters	France	-0.18			-0.49	-0.69		-1.48	8.00	0.57	2.5	1977-97
			(1.7)			(1.7)	(157)		(2.3)				
2631	Raw cotton,excl linters	Greece	-0.42			-0.37	-0.45		-0.35	3.07	0.90	2.0	1971-97
			(4.8)			(4.7)	(3.7)		(4.3)				
65213	Grey woven cotton	Italy	-0.29	3.01		-0.51		-0.62	-0.26	1.64	0.72	2.4	1971-97
			(2.4)	(1.5)		(3.5)		(2.4)	(1.9)				
65213	Grey woven cotton	Netherlands	-0.74		1.97		-3.01		-2.36	3.50	0.92	2.2	1981-97
			(5.4)		(2.3)		(2.4)		(2.0)				
65213	Grey woven cotton	U.Kingdom	-0.91		3.12	-0.42	-0.65	-0.69	-0.61	-17.72	0.71	2.2	1971-97
			(4.6)		(3.7)	(1.8)	(2.2)	(1.8)	(1.5)				
65213	Grey woven cotton	USA	-0.64	6.62				-0.72		-0.44	0.84	2.2	1971-97
			(6.0)	(1.7)				(1.8)					
65213	Grey woven cotton	World	-0.93	7.26	0.90	-0.48	-0.32	-1.01		1.33	0.83	1.7	1971-97
			(6.4)	(1.7)	(3.3)	(3.8)	(2.3)	(3.5)					
84143	Underwear knit	World	-0.20		1.10	-0.75	-0.76			-2.73	0.90	1.6	1971-97
			(4.5)		(5.0)	(3.9)	(5.9)						
5214	Coal,petr distillates	World	-0.94		2.92		-0.76		-1.71	-1.58	0.94	1.9	1985-97
			(6.3)		(2.8)		(3.7)		(3.5)				
84113	Mens underwear not knit	France	-0.83		6.29	-0.81	-2.32	-1.84	-2.21	-31.51	0.75	2.2	1980-97
			(2.8)		(1.6)	(1.2)	(2.3)	(1.4)	(3.4)				
84113	Mens underwear not knit	USA	-0.52		6.89	-3.12	-6.06		-3.75	-32.58	0.91	2.0	1989-97
			(2.0)		(1.3)	(4.2)	(3.8)		(-4.0)				
84112	Womens outerwear	World	-0.20				-0.53			1.77	0.95	2.72	1987-97
			(3.4)				(2.6)						
84111	Mens outerwear not knit	Netherlands	-0.57		4.45	-2.55	-1.68	-5.14	-1.81	-14.10	0.89	2.46	1980-97
			(2.3)		(2.1)	(4.6)	(3.0)	(4.6)	(2.6)				
84111	Mens outerwear not knit	USA	-0.95		3.29			-1.30	-1.18	-24.48	0.82	2.49	1987-97
			-3.96		1.14			-1.72	-1.82				
84111	Mens outerwear not knit	World	-0.85		4.32	-2.81	-10.87	-8.63	###	59.10	0.87	2.71	1988-97
			(2.7)		(1.4)	(1.2)	(2.1)	(2.3)	(2.5)				

Table 5.2
Regression Results of Export Demand Equation
$\Delta m_t = a_{20} + a_{21}(m - y)_{t-1} + a_{22}\Delta y_t + a_{23}y_{t-1} + a_{24}\Delta p_t + a_{25}p_{t-1} + a_{26}\Delta r_t + a_{27}r_{t-1}$

										Summary Statistics			
SITC	**Description**	**Market**	**$\ln(X)-\ln(Y)_{t-1}$**	**$\Delta\ln(Y)_t$**	**$\ln(Y)_{t-1}$**	**$\Delta\ln(P)_t$**	**$\ln(P)_{t-1}$**	**$\Delta\ln(R)_t$**	**$\ln(R)_{t-1}$**	**Const**	**R^2**	**dw**	**Yrs**
0541	Potatoes frsh excl sweet	World	-0.91						-0.17	7.93	0.81	2.24	1977-97
			(5.1)						(1.3)				
6576	Carpets etc unknotted	USA	-0.58		8.75			-1.96	-2.16	-68.19	0.56	0.56	1982-97
			(2.6)		(2.6)			(1.5)	(1.9)				
0545	Other fresh vegetables	France	-0.41			-0.84	-0.63	-1.25	-0.87	4.11	0.79	2.35	1972-97
			(3.14)			(3.7)	(1.5)	(2.8)	(1.4)				
0545	Other fresh vegetables	Italy	-0.52							0.65	0.69	1.94	1981-97
			(3.8)										
0545	Other fresh vegetables	U.Kingdom	-0.56			-0.72	-0.98	-1.04	-1.69	7.65	0.63	2.09	1971-97
			(4.2)			(2.2)	(2.5)	(1.6)	(2.6)				
2924	Veg used in pharmacy	France	-0.89			-0.33	-0.58			-0.93	0.58	1.86	1980-97
			(4.2)			(2.4)	(2.8)						
2924	Veg used in pharmacy	U.Kingdom	-0.81		2.77	-0.39	-0.77		-0.85	-16.17	0.84	2.39	1979-97
			(6.2)		(6.5)	(5.1)	(4.7)		(4.9)				
05461	Vegetables frozen	Kuwait	-0.20	0.95		-0.49		-1.18	-0.75	4.58	0.74	2.17	1971-97
			(2.5)	(2.4)		(2.5)		(2.7)	(2.5)				
05461	Vegetables frozen	Qatar	-0.49	2.62	4.14		-1.12		-1.68	0.54	0.83	1.63	1975-97
			(6.4)	(2.0)	(2.2)		(2.5)		(2.9)				
82109	Furniture parts	Kuwait	-0.39			-0.93	-1.84	-4.28	-2.34	13.06	0.76	3.10	1983-97
			(2.0)			(1.4)	(1.9)	(2.8)	(1.6)				
82109	Furniture parts	Saudi Arabia	-0.98		8.83			-2.21	-0.47	-37.43	0.80	2.22	1979-97
			(6.3)		(6.4)			(4.6)	(1.9)				
82109	Furniture parts	USA	-0.80		4.15		-0.80		-1.86	-28.97	0.97	2.09	1987-97
			(8.9)		(3.1)		(4.3)		(-7.4)				
0511	Oranges, tangerines	Netherlands	-0.73	15.56			-0.28	-0.61		0.66	0.96	2.02	1977-97
			(10.1)	(4.0)			(1.4)	(1.4)					
0511	Oranges, tangerines	Saudi Arabia	-0.09						-0.27	1.81	0.80	2.73	1977-97
			(1.2)						(2.0)				
05551	Veg fruit in vinegar	World	-0.90		3.02	-1.15	-1.25	-2.17	-1.47	-4.59	0.81	2.34	1977-97
			(4.0)		(3.8)	(4.4)	(2.8)	(4.8)	(2.7)				
5530	Perfume, cosmetics,	World	-0.81			-0.57	-1.41	-1.73	-0.96	9.42	0.95	1.67	1978-97
			(9.3)			(2.1)	(5.2)	(2.7)	(2.1)				

The coefficients of the error-correcting term in the export demand relationships measure the speed of response of exports to changes in foreign income, exchange rates and prices. About one-half of the export demand equations have an error-correcting term that is near unity in absolute terms. As with imports, it reflects the relatively quick response of foreign markets to changes in the explanatory variables. Major disturbances in export demand occurred largely in the latter part of the 1970s and early 1980s. Binary variables were used to eliminate those observations from the estimates. These disturbances represented transitory influences on exports. A test of parameter constancy based on the Chow test showed the coefficients to be stable at the 5 percent level of significance in all the estimated relationships.

Table 5.3 shows the income, price and exchange rate elasticities of Egypt's principal products and export markets. For foreign income, the unweighted average elasticity is 3.7 in the short run and 3.8 in the long run. The 1997 trade-weighted elasticities are also substantial: 1.9 in the short run and 3.6 in the long run. These elasticities conform to other estimates of export demand functions for developing and transition economies (Lord, 1991: Chapter 14).

The average real effective exchange rate elasticities are relatively high. For those product exports whose coefficients were statistically significant, the unweighted elasticity is -1.9 in the short run and -3.1 in the long run. For all products and markets, including those whose coefficients were not statistically significant and therefore have elasticities equal to zero, the 1997 trade-weighted average elasticity is -0.89 in the short run and -0.81 in the long run. These exchange rate elasticities are high but are below those for domestic export prices. The unweighted average price elasticity is –0.95 in the short run and –2.7 in the long run, while the 1997 trade-weighted price elasticity is –0.6 in the short run and –1.3 in the long run. Overall, the absolute values of the price and exchange rate elasticities of Egypt's export demand differ considerably from one another, so care should be taken about generalizations concerning the effects of price and exchange rate changes on Egypt's exports.

5.4 Export Earnings from Services

Egypt's export earnings from services are dominated by tourism, and it is common practice to model these types of service transactions with current value data. While real value data are preferred, the difficulty of obtaining price indices for services that would allow us to express the time series in real terms makes it preferable to use the current value variable and avoid possible error introduced from a crude price variable. Moreover, it has been argued that the ultimate objective of modeling export earnings from services is the determination of the current account in the balance of payments. A single equation estimate for the value of these export earnings is likely to provide a better estimate than two separate estimates for the real value of these exports and for the corresponding price index (Leamer and Stern, 1970).

Since year-to-year variations in the value of export earnings from service reflect price and volume changes, the own-price variable is not included in the explanatory variables of the estimated relationship. Export earnings from services are, nevertheless, affected by movements in Egypt's REER since the receipts are measures in US dollar terms and changes in the REER will affect the cost of tourism and other services to foreigners. Accordingly, the specification for

Table 5.3
Price, Income and Exchange Rate Elasticities of Export Demand

SITC	Description		ST/LT	Income		Price		Exch.Rate	
3324	Residual fuel oils	World	ST	1.18	a/	-0.36	a/	0.00	
			LT	4.26		-0.98		0.00	
33101	Crude petroleum	Italy	ST	0.44	a/	0.00		-1.71	
			LT	1.00		0.00		-1.12	
33101	Crude petroleum	USA	ST	0.68	a/	0.00		-1.01	a/
			LT	1.00		0.00		-1.50	
6513	Grey cotton yarn in bulk	Canada	ST	19.61		-1.52	a/	-2.14	
			LT	3.43		-2.31		-4.86	
6513	Grey cotton yarn in bulk	France	ST	0.86	a/	-0.25	a/	0.00	
			LT	1.00		-0.29		0.00	
6513	Grey cotton yarn in bulk	U.Kingdom	ST	2.52	a/	-0.44		-0.60	
			LT	4.73		-2.69		-3.12	
6513	Grey cotton yarn in bulk	World	ST	0.59	a/	-0.78		-1.06	
			LT	1.00		0.00		0.00	
2631	Raw cotton,excl linters	France	ST	0.18	a/	-0.49		-1.48	a/
			LT	1.00		-3.90		-8.36	
2631	Raw cotton,excl linters	Greece	ST	0.47	a/	-0.37		-0.35	a/
			LT	1.00		-1.05		-0.82	
65213	Grey woven cotton	Italy	ST	3.01		-0.51		-0.62	
			LT	1.00		0.00		-0.92	
65213	Grey woven cotton	Netherlands	ST	2.97	a/	-3.01	a/	-2.36	a/
			LT	3.68		-4.09		-3.21	
65213	Grey woven cotton	U.Kingdom	ST	4.12	a/	-0.42		-0.69	
			LT	4.43		-0.71		-0.68	
65213	Grey woven cotton	USA	ST	6.62		0.00		-0.72	
			LT	1.00		0.00		0.00	
65213	Grey woven cotton	World	ST	7.26		-0.48		-1.01	
			LT	1.97		-0.34		0.00	
84143	Underwear knit nonelastc	World	ST	2.20	a/	-0.75		0.00	
			LT	6.49		-3.79		0.00	
5214	Coal,petr distilates	World	ST	3.92	a/	-0.76	a/	-1.72	a/
			LT	4.10		-0.81		-1.82	
84113	Mens underwear not knit	France	ST	7.29	a/	-0.81		-1.84	
			LT	8.55		-2.79		-2.65	
84113	Mens underwear not knit	USA	ST	7.89	a/	-3.12		-6.06	a/
			LT	14.27		-11.67		-7.21	
84112	Womens outerwear nonknit	World	ST	0.20	a/	-0.53	a/	0.00	
			LT	1.00		-2.62		0.00	
84111	Mens outerwear not knit	Netherlands	ST	5.45	a/	-2.55		-5.14	
			LT	8.82		-2.95		-3.18	

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J. Market

SITC	Description		ST/LT	Income		Price		Exch.Rate	
84111	Mens outerwear not knit	USA	ST	4.29	a/	0.00		-1.30	

Table 5.3
Price, Income and Exchange Rate Elasticities of Export Demand

			LT	4.45		0.00		-1.23	
84111	Mens outerwear not knit	World	ST	4.45	a/	-2.81		-8.63	
			LT	6.10		-12.84		-12.94	
0541	Potatoes frsh excl sweet	World	ST	0.91	a/	0.00		-0.17	a/
			LT	1.00		0.00		-0.18	
6576	Carpets unknotted	USA	ST	9.75	a/	0.00		-1.96	
			LT	15.97		0.00		-3.70	
0545	Other fresh vegetables	France	ST	0.41	a/	-0.84		-1.25	
			LT	1.00		-1.54		-2.15	
0545	Other fresh vegetables	Italy	ST	0.52	a/	0.00		0.00	
			LT	1.00		0.00		0.00	
0545	Other fresh vegetables	U. Kingdom	ST	0.56	a/	-0.72		-1.04	
			LT	1.00		-1.75		-3.01	
2924	Veg used in pharmacy	France	ST	0.89	a/	-0.33		0.00	
			LT	1.00		-0.65		0.00	
2924	Veg used in pharmacy	U. Kingdom	ST	3.77	a/	-0.39		-0.85	a/
			LT	4.41		-0.95		-1.05	
05461	Vegetables frozen	Kuwait	ST	0.95		-0.49		-1.18	
			LT	1.00		0.00		-3.73	
05461	Vegetables frozen	Qatar	ST	2.62		-1.12	a/	-1.68	a/
			LT	9.48		-2.29		-3.43	
82109	Furniture,parts	Kuwait	ST	0.39	a/	-0.93		-4.28	
			LT	1.00		-4.71		-5.98	
82109	Furniture,parts	Saudi Arabia	ST	9.83	a/	0.00		-2.21	
			LT	10.03		0.00		-0.48	
82109	Furniture,parts	USA	ST	4.15	a/	-0.81	a/	-1.86	a/
			LT	6.19		-1.01		-2.32	
0511	Oranges,tangerines	Netherlands	ST	15.56		-0.28	a/	-0.61	
			LT	1.00		-0.38		0.00	
0511	Oranges,tangerines	Saudi Arabia	ST	0.09	a/	0.00		-0.27	a/
			LT	1.00		0.00		-3.03	
05551	Veg fruit in vinegar	World	ST	3.02	a/	-1.15		-2.17	
			LT	4.36		-1.39		-1.64	
5530	Perfume,cosmetics	World	ST	0.82	a/	-0.57		-1.73	
			LT	1.00		-1.74		-1.18	

a/ One-period lag.

export earnings from services, denoted S^x, with an ECM driven by foreign real income, Y^f, and with a 'differences' formulation of the real effective exchange rate, *R,* term nested in the levels form of the equation is:

$$\Delta s^x_t = \beta_{60} + \beta_{61}(s^x - y^f)_{t-1} + \beta_{62}\Delta y^f_t + \beta_{63}y^f_{t-1} + \beta_{64}\Delta r_t + \beta_{65}r_{t-1} + v_{3t} \qquad (5.9)$$

where $-1 < \beta_{61} < 0$; $\beta_{62} > 0$; $\beta_{63} > -1$; β_{64} and $\beta_{65} < 0$; and where all variables are measured in logarithmic terms.

The following are the results of the equation estimate:

$$\Delta s^x_t = \underset{(3.7)}{-9.1} - \underset{(3.7)}{0.43}(s^x - y^f)_{t-1} + \underset{(3.0)}{1.01}y^f_{t-1} - \underset{(4.3)}{0.18}\, r_{t-1} + v_{3t} \qquad (5.10)$$

$R^2 = 0.80$ dw = 1.95 Period: 1978-97

where figures in parenthesis are t-statistics.

Table 5.4
Income and Exchange Rate Elasticities of Demand for Service Exports

	Elasticity with respect to:	
	Price	Income
Short-term	-0.18(-1)	1.0(-1)
Long-term	-0.42	3.4

Note: (-1) refers to a one-period lag.

The coefficients have the expected sign and magnitude (see Table 5.4). The short-term income elasticity is 1.0, which occurs after a one-period lag, and the long-term income elasticity is 3.4. For the real effective exchange rate, the short-term (one-period lag) elasticity is –0.18 and the long-term elasticity is –0.42. A 10 percent devaluation in the REER, for example, would lead to a 1.8 percent increase in export earnings from services after one year, and it could generate 4.2 percent greater export earnings from services after a few years had transpired. Note that the long-run effect is achieved within a relatively few number of years since the error correction term is equal to 0.42.

6.0 International Capital Movements

6.1 Globalization and Foreign Direct Investment Determinants

The rapid expansion of global production and markets in the last two decades has given rise to systemic changes in the world economy that have fundamentally affected Egypt. These changes have generated large volumes of international capital flows and transactions in goods and services, as well as created a widespread diffusion of production, transportation, and communication technologies from corporate contracting arrangements. The introduction of new technologies through cross-border production networks and the dissemination of new skills in the workforce have now become as important to the specialization of production activities in the Egyptian economy as its capital, labor and natural resource endowments.[12] In such a context, globalization describes the operation of corporations and financial institutions in world markets that are not constrained by national boundaries and domestic economic or regulatory conditions.

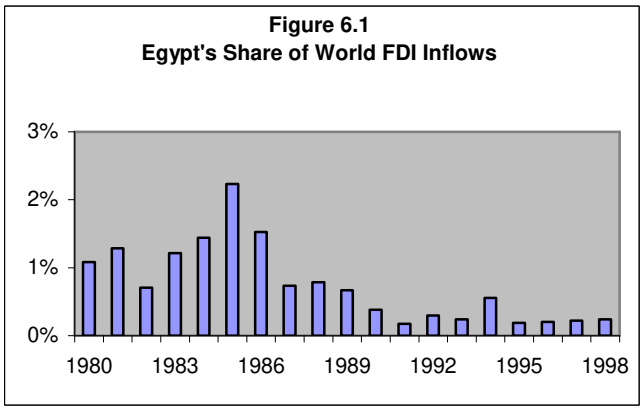
The internationally integrated production of transnational corporations has also supported the growth of world trade not only in global markets for products, but also in the development of differentiated products and their associated intra-industry trade. Moreover, the establishment of complex corporate systems of affiliation, association and sub-contracting across national frontiers has dramatically expanded intra-firm trade. Companies have been organizing their production through international networks of affiliates located wherever they can carry out discrete functions most effectively for production purposes and penetrate important markets. Such cross-national production networks have been motivated by efforts to exploit international factor cost differentials, minimize transactions costs, access clusters of specialized capabilities and contested growth markets, and reduce the response time to technological changes and market requirements. The resulting exchange of parts and components with parent companies and affiliates has given rise to horizontally and vertically integrated global production systems by transnationals, as well as subcontracting and other arrangements with entities that can supply components to affiliates and parent companies.[13]

Equally important have been the strategic interactions that occur between firms and governments to control entry and operation of multinationals. New investment opportunities in infrastructure have arisen from the liberalization and deregulation of foreign business activities as governments have increasingly sought to attract capital and technology from abroad. It is the liberalization of this regulatory environment that has helped to

[12] The existence of cross-border production is explained by modern trade theory on the basis of consumer preferences for variety, which give firms a degree of market power that is often in the form of a monopolistic market structure. When entry barriers are high because of complex R&D requirements, costly overhead investments and the need for cross-national supplier networks designed to guarantee timely access to factor inputs or product components, then an oligopolistic market structure is likely to exist. However, the market structures of many global industries are changing as the original monopolistic or oligopolistic nature of their competition becomes eroded by increasingly complex global production systems made up of strategic alliances among firms (Ernst, 1997). According to UNCTAD (1996), the value of all cross-border merger and acquisition transactions doubled between 1988 and 1995. However, these activities have been concentrated in US and EU based firms, particularly in the energy distribution, telecommunications, pharmaceuticals and financial services industries. Consumer preferences for variety also explains the large share of intra-industry trade in total trade, as does multinational activities with sub-contractors, affiliates and joint ventures. Transnational corporations are motivated to establish these cross-border production facilities because they give rise to economies of scale from the spreading of fixed costs over a larger scale of output or from the economies they can derive from specialization in the production of goods. These economies of scale are usually internal to the firms since unit costs decrease as output increases either because of decreasing marginal costs, the spreading of large fixed costs over greater amounts of output, or learning effects that lower average costs as cumulative output increases. For details, see Junius (1997).

[13] Firms a detailed analysis of factors motivating firms to move from local production to international production, see Ernst (1997).

determine the location and effectiveness of the cross-national production networks, and that has made the multilateral regulatory system a key facilitating mechanism for globalization of international production systems and markets.



Despite rapid advances in all aspects of globalization, however, the process has been uneven among countries. For Egypt, the expansion of long-term capital inflows from foreign direct investment by multinational firms has not kept up with the worldwide growth of international production. As a result, Egypt's share of FDI inflows relative to that of the world total has fallen over the last two decades: while Egypt's share of worldwide FDI inflows average 1.2 percent in the 1980s, the share only averaged 0.2 percent in 1995-98 (see Figure 6.1). Our interest in modeling these FDI inflows is therefore to identify the factors that have caused the large growth differentials in cross-border production activities of Egypt and the rest of the world.

The effects of real exchange rate movements on FDI depend on the sourcing of inputs and market distribution. If cross-border production activities are directed towards exports and they rely on domestic inputs, then increased FDI inflows will improve the current account. In contrast, if cross-border production activities are oriented to the domestic market and they use foreign inputs, then the current account balance will be negatively related to FDI inflows.

The specification for FDI inflows, denoted *F,* with an ECM driven by foreign real income, Y^f, and with a 'differences' formulation of the real effective exchange rate, *R,* term nested in the levels form of the equation is:

$$\Delta f_t = \beta_{70} + \beta_{71}(f - y^f)_{t-1} + \beta_{72}\Delta y^f_t + \beta_{73}y^f_{t-1} + \beta_{74}\Delta r_t + \beta_{75}r_{t-1} + v_{3t} \qquad (6.1)$$

where $-1 < \beta_{71} < 0$; $\beta_{72} > 0$; $\beta_{73} > \beta_{71}$; β_{74} and $\beta_{75} < 0$; and where all variables are measured in logarithmic terms.

The following are the results of the equation estimate:

$$\Delta f_t = \underset{}{-1.5} \underset{(3.8)}{- 0.85(f - y^f)_{t-1}} + \underset{(1.3)}{14.6\Delta y^f_t} \underset{(1.2)}{- 0.13y^f_{t-1}} + \underset{(1.2)}{0.71\Delta r_t} + + \underset{(1.8)}{0.69r_{t-1}} \qquad (6.2)$$

$$R^2 = 0.72 \qquad dw = 2.34 \qquad \text{Period: } 1980\text{-}98$$

where figures in parenthesis are t-statistics.

Table 6.1
Income and Exchange Rate Elasticities of FDI Inflows

	Elasticity with respect to:	
	Exch. Rate	Income
Short-term	0.71	14.6
Long-term	0.80	0.8

There are a number of interesting observations that emerge from these results. First, FDI tends to have a very strong short-term response to changes in global economic growth. In the long run, however, cross-border investment conforms to the expectations, insofar as it has been declining over time in Egypt relative to its worldwide response to global income changes. This non-proportional growth in Egypt is reflected in an estimated income elasticity that is less than unity (see Table 6.1). Third, FDI growth is positively related to changes in the real effective exchange rate. This response reflects the

domestic orientation of FDI in Egypt, and its reliance on foreign inputs. An appreciation of the real effective exchange rate, for example, reduces the cost of inputs to transnationals in Egypt and has a positive effect on cross-border production. That effect is relatively strong. A five percent appreciation of the real effective exchange rate leads to a 4 percent expansion in FDI inflows in Egypt. It is important to note, however, that the present elasticities approach to the balance of payments is based on existing levels of protection on production and trade in Egypt. It does not take into account new production activities from an efficient import substitution and export expansion that would be expected under a concurrent exchange rate depreciation and trade liberalization.

6.2 Measurement of Other Capital Movements

Chuhan, Perez-Quiros, and Popper (1996) have offered empirical support for the conventional notion that short-term investment is "hot money" and direct investment is not. As a result, short-term investment appears to respond more dramatically to disturbances in other capital flows and in other countries than does direct investment. They examined the behavior of four major components of international capital flows in 15 developing and industrial countries and found that large differences in the behavior of the component flows arise in general specifications that allow the flows to interact. For example, in each country, the behavior of international short-term investment appears to be sensitive to changes in all the other types of international capital flows, including direct investment, but direct investment appears to be insensitive to such changes. Among the links across countries, there is further evidence that short-term investment is more sensitive than direct investment.

7.0 Exchange Rates and the Balance of Payments

7.1 The Elasticities Approach to the Balance of Payments

The elasticities approach to the balance of payments is a partial equilibrium model that focuses on the effects of changes in the exchange rate on the current and capital accounts. It disregards the macroeconomic effects on domestic economic activity, wages and prices, and interest rates, and the feedback effects of these changes on the balance of payments. By focusing on the direct linkages between exchange rates and the balance of payments, the elasticities approach disregards the analysis of the exchange rate adjustment process on the simultaneous pursuit of policy objectives for the balance of external payments and internal economic activity. This chapter summarizes our findings on the exchange rate effects on Egypt's balance of payments within the limited confines of the elasticities approach to the balance of payments. It is envisioned that the macroeconomic effect will be examined as an extension to the present study.

The model can be summarized as follows:

$$B = XP_e^x - MP^mR \quad (7.1)$$

$$X^d = k_1 Y_f^{\varphi 1} P_e^{x\varphi 2} / R^{\varphi 3} \quad (7.2)$$

$$M^d = k_2 Y^{\varepsilon 1} P^{m\varepsilon 2} R^{\varepsilon 3} \quad (7.3)$$

$$X^s = k_3 P_e^{x\lambda 1} \quad (7.4)$$

$$M^s = k_4 P^{m\lambda 2} \quad (7.5)$$

$$X^d = X^s \quad (7.6)$$

$$M^d = M^s \quad (7.7)$$

where

X^d	Export demand volume
M^d	Import demand volume
X^s	Export supply volume
M^s	Import supply volume
P^m	Price of imports in foreign currency
P_e^x	Price of exports in domestic currency
R	Exchange rate, i.e., units of domestic currency per unit of foreign currency
Y	Domestic income
Y_f	Foreign income

The Marshall-Lerner sufficient condition for a devaluation to improve the trade balance can be derived directly from the above set of equations. Differentiating equation (7.1) for the balance of trade with respect to the

nominal exchange rate, R, yields the well-know condition that a devaluation of the domestic currency improves the trade balance when the sum of the two demand elasticities is greater than unity.[14]

We can examine the Marshall-Lerner condition, as well as extensions that incorporate the effects of exchange rate movements on the capital account using our set of equation estimates for imports and exports of goods and services and foreign direct investment. Each of the estimated equations for Egypt's balance of payments has been incorporated into the Excel spreadsheet that accompanies this study. The set of equations can solve for the effects of changes in the real effective exchange rate, import and export prices, and domestic and foreign incomes. Our concern in this chapter is the linkage between exchange rate changes and Egypt's balance of payments.

Two sets of simulations are performed with the model. The first consists of multiplier analysis to measure the effects of either one-time or sustained changes in the exchange rate on Egypt's balance of payments. The second inverts the model to solve for the exchange rate that will ensure equilibrium for any or all accounts of the balance of payments.

7.2 Balance of Payments Transmission of Exchange Rate Changes

The link between the balance of payments and exchange rate changes has been one of the central themes of international economics and one that has concerned both the public and private sectors of the Egyptian economy. The overall results of the estimated import and export demand functions, as well as foreign direct investment, support generalizations to the effect that the exchange rate significantly impacts on Egypt's balance of payments.

The magnitude of the effects of exchange rate changes on the balance of payments can be readily calculated through multiplier analysis. The results indicate how exchange rate changes influence the current and capital accounts, as well as the overall balance of payments. Multiplier analysis also provides us with an opportunity to evaluate the dynamic properties of the system of equations for trade in goods and services and foreign direct investment in relation to the process of adjustment of the system from one steady-state equilibrium solution to another.

Table 7.1 illustrates the effect of a one-time 10 percent devaluation in Egypt's real effective exchange rate. The devaluation is based on an across-the-board devaluation of the Egyptian pound relative to each of the country's major trading partners. As such, it considers the effect of a real cross-rate devaluation of the Egyptian pound in each of its major export products and geographic markets. For imports and foreign direct investment, the devaluation is at the world market level, since a devaluation of the Egyptian pound would not influence the source of Egypt's imports. Although the effect of exchange rate changes on foreign direct investment does not consider cross rates, it is likely that Egypt's exchange rate changes relative to the home country of the foreign investors would significantly impact on the level of foreign direct investment. However, data on investment inflows by country of origin were not available for that type of analysis in this study.

[14] For the derivation of the Marshall-Lerner condition, see Argy (1994), Kenen (1985), Bowen, Hollander, and Viaene (1998), and Isard (1995).

Table 7.1
Effects of 10% Devaluation on Egypt's Balance of Payments
(millions of US dollars and percentages)

	Actual	Impact						
	1998	1999	2000	2001	2002	2003	2004	2005
Current Account	**-2,566**	**-1,506**	**-1,703**	**-1,574**	**-1,471**	**-1,404**	**-1,360**	**-1,332**
Goods: Exports f.o.b.	4,403	4,447	4,556	4,587	4,596	4,599	4,599	4,600
Goods: Imports f.o.b.	-14,617	-13,840	-14,106	-14,110	-14,094	-14,081	-14,073	-14,067
Trade Balance	**-10,214**	**-9,393**	**-9,550**	**-9,522**	**-9,498**	**-9,483**	**-9,473**	**-9,468**
Services: Credit	8,141	8,141	8,320	8,440	8,520	8,572	8,607	8,629
Services: Debit	-6,492	-6,253	-6,473	-6,491	-6,492	-6,493	-6,493	-6,493
Balance on Goods & Services	**-8,565**	**-7,505**	**-7,702**	**-7,573**	**-7,470**	**-7,403**	**-7,359**	**-7,331**
Income: Credit	2,030	2,030	2,030	2,030	2,030	2,030	2,030	2,030
Income: Debit	-1,075	-1,075	-1,075	-1,075	-1,075	-1,075	-1,075	-1,075
Balance on Gds, Serv. & Inc.	**-7,610**	**-6,550**	**-6,747**	**-6,618**	**-6,515**	**-6,448**	**-6,404**	**-6,376**
Current Transfers: Credit	5,166	5,166	5,166	5,166	5,166	5,166	5,166	5,166
Current Transfers: Debit	-122	-122	-122	-122	-122	-122	-122	-122
Capital Account	**1,901**	**1,831**	**1,824**	**1,823**	**1,823**	**1,822**	**1,822**	**1,822**
Direct Investment Abroad	-45	-45	-45	-45	-45	-45	-45	-45
Dir. Invest. in Rep. Econ.	1,076	1,006	999	998	998	997	997	997
Portfolio Investment Assets	-63	-63	-63	-63	-63	-63	-63	-63
Portfolio Investment Liab.	-537	-537	-537	-537	-537	-537	-537	-537
Other Investment Assets	39	39	39	39	39	39	39	39
Other Investment Liab.	1,431	1,431	1,431	1,431	1,431	1,431	1,431	1,431
Net Errors and Omissions	-722	-722	-722	-722	-722	-722	-722	-722
Overall Balance	**-1,387**	**-397**	**-601**	**-473**	**-371**	**-303**	**-260**	**-231**

Note: Minus sign indicates debit.

The results show that a 10 percent real effective exchange rate devaluation would significantly impact on Egypt's current account and, to a lesser extent, on the capital account. The effect also demonstrates the lagged response of exports and imports of goods and services to the devaluation. Initially the current account improves by over US$1 billion, but then it deteriorates somewhat as imports of both goods and services recover some of the earlier losses since some of the exchange rate effects on these items are transitory. After the year 2000 the current account gradually stabilizes, with the deficit having been reduced by US$1.2 billion and the overall balance having fallen to US$231 million, despite a contraction in foreign direct investment. (Recall that that effect of a real effective exchange rate devaluation on foreign direct investment is to increase the cost of imported material inputs and thereby to lower the incentive to expand cross-border production facilities in Egypt.)

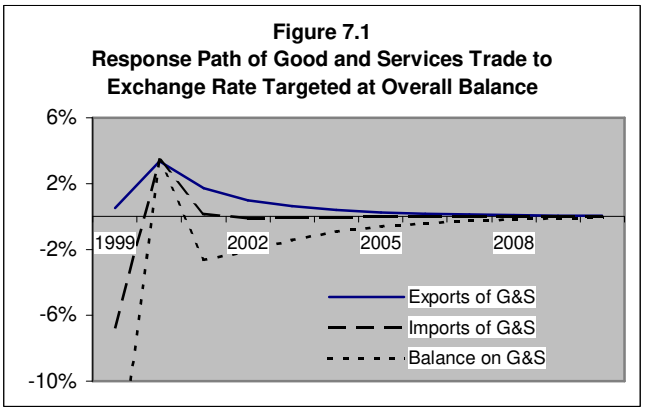
7.3 Fundamental Equilibrium Exchange Rate Determination

Since the balance of payments model has been estimated in its structural form, we can invert the model to derive optimal policies for any given target. If the desired target is the achievement of overall equilibrium in the balance of payments, the structural form of the model can be solved for the optimal real effective exchange rate (and associated nominal exchange rate that will yield the desired solution). Calculation of the optimal exchange rate for Egypt has been based on the Excel spreadsheet containing detailed information on the balance of payments and incorporating detail equation estimates for imports and exports of goods and services and foreign

direct investment. That spreadsheet containing the balance of payments model for Egypt accompanies this report.

The 'Solver' command in Excel provides a tool for obtaining target solutions using any of the parameters or variables in the model using a Generalized Reduced Gradient (GRG2) nonlinear optimization algorithm. As an illustration, we simulate the real effective exchange rate that will yield an overall equilibrium in the balance of payments. The results indicate that the real effective exchange rate that prevailed in 1998 would need to have been devalued by 14 percent to eliminate the US$1.4 billion deficit. That devaluation would have lowered the current account deficit by US$1.5 billion but the capital account surplus would have contracted by US$100 as a result of lower foreign direct investment inflows.

Figure 7.1 shows the time path of the trade components of the balance of payments in response to the real effective exchange rate devaluation. As would be expected, imports adjust quickly to the devaluation while exports take several years to fully adjust. Initially, imports contract sharply and exports rise by a modest amount. However, over the subsequent years exports continue to respond to the one-time devaluation, albeit with a decaying response, while imports have a much smaller response. Despite the much larger initial response of imports to the exchange rate change, the cumulative response to the 14 percent devaluation is more than twice as high for exports (8.3 percent expansion) than for imports 3.5 percent contraction).



There are a number of other instrument-target combinations that can be examined with the model, all of which focus on the sensitivity of trade and investment to real exchange rate changes. These can be examined in the accompanying Excel worksheet-based model.

7.4 The Integrated Elasticities-Absorption Approach to Exchange Rate Dynamics

Egypt's trade and investment sensitivity to real exchange rate changes are linked to the country's national income and output. Within this framework, we need to consider how intertemporal aspects of aggregate savings and investment decisions are affected by a 'fundamental equilibrium exchange rate' (FEER) that produces a sustainable balance of payments and moves the Egyptian economy closer to equilibrium. The feedback effects between changes in international trade and investment and changes in domestic production and consumption are central to Egypt's concerns over the possible impact of exchange rate variations. From an analytical perspective the Mundell-Fleming model remains the central tool for examining the open macro-economy, exchange rate dynamics, and their relationship to the international transmission of trade and international capital movements.

The Mundell-Fleming model is of an open economy in the familiar IS-LM framework and modified to include the determination of the trade and capital accounts of the balance of payments. Capital movements and the extent of their mobility play a critical role in the analysis of economic policies. In the application of the model to exchange rate dynamics, the FEER approach rests on the belief that the current account balance has an important long-run effect on exchange rate dynamics. Large and persistent current account imbalances are unsustainable and adjustments in the current account can be achieved through real exchange rate variations. Since developments in the domestic and international economies can redefine the equilibrium level of the exchange rate, the FEER is conditional on the equilibrium time path of economic activity. As such, the FEER is defined as the real effective exchange rate at which an economy such as that of Egypt is in both internal and external macroeconomic balance in the medium term.

The present analysis of Egypt's exchange rate effect on the balance of payments has been limited to using the targets-instruments approach to determining an exchange rate at which the economy is in external balance. We have not attempted to deal with the important issue of how to define sustainable current and capital accounts in the context of the Egypt's economy as a whole. It should be realized that the present analysis is therefore at a preliminary stage. Extensions of the present research to include the open macro-economy will permit us to move from a partial equilibrium perspective to one that allows us to examine the equilibrium exchange rate in the context of Egypt's economic fundamentals.

8.0 Summary and Conclusions

The approach to the analysis of Egypt's international trade and investment adopted in this study has been one that builds from theory and dynamic specification to estimation and validation, and finally to policy analysis. As such, it develops a theory-based econometric model with which to analyze trade and balance of payments policies, specifically in terms of the so-called fundamental equilibrium exchange rate (FEER) that will produce a sustainable balance of payments and move the Egyptian economy closer to equilibrium. The study has relied on the elasticities approach to the balance of payments insofar as it has developed a partial equilibrium model that focuses on the effects of changes in the exchange rate on the current and capital accounts. It has disregarded the macroeconomic effects on domestic economic activity, wages and prices, and interest rates, and the feedback effects of these changes on the balance of payments. By focusing on the direct linkages between exchange rates and the balance of payments, the present elasticities approach has disregarded the analysis of the exchange rate adjustment process on the simultaneous pursuit of policy objectives for the balance of external payments and internal economic activity. Nevertheless, the focus of the study on trade and investment sensitivity to real exchange rate movements is central to the interests of Egypt's economic policies.

For both imports and exports the average real effective exchange rate elasticities have been found to be relatively high. For those imports whose coefficients were statistically significant, the unweighted elasticity is 1.2 in the short run and 1.7 in the long run. For all products, including those whose coefficients were not statistically significant and therefore have elasticities equal to zero, the 1997 trade-weighted average elasticity is 0.7 in the short run and 0.9 in the long run. For exports, the unweighted elasticity is -1.9 in the short run and -3.1 in the long run. For all products and markets, including those whose coefficients were not statistically significant and therefore have elasticities equal to zero, the 1997 trade-weighted average elasticity is -0.89 in the short run and -0.81 in the long run.

Trade in services is dominated by transportation-related activities such as freight, insurance and other distributive services on the import side, and by tourism on the export side. The real effective exchange rate elasticity of imports is high in the short run (0.4), but it is not statistically significant in the long run. The lack of significance of this variable may be due to the concentration of Egypt's expenditures on shipping services, which are related to merchandise exports and imports. As a result, while shipping services has a short-term response to changes in the real effective exchange rate, in the long run those effects are neutralized by offsetting movements in merchandise exports and imports caused by exchange rate variations. For exports the real effective exchange rate elasticity is –0.2 in the short-term (one-period lag) and –0.4 in the long-term. A 10 percent devaluation in the REER, for example, would lead to a 2 percent increase in export earnings from services after one year, and it could generate 4 percent greater export earnings from services after a few years had transpired.

The effects of real exchange rate movements on FDI depend on the sourcing of inputs and market distribution. If cross-border production activities are directed towards exports and they rely on domestic inputs, then increased FDI inflows will improve the current account. In contrast, if cross-border production activities are oriented to the domestic market and they use foreign inputs, then the current account balance will be negatively related to FDI inflows. The empirical results indicate that FDI tends to have a very strong short-term response to changes in global economic growth. In the long run, however, cross-border investment conforms to the expectations, insofar as it has been declining over time in Egypt relative to its worldwide response to global income changes. FDI growth is also positively related to changes in the real effective exchange rate. This response reflects the domestic orientation of FDI in Egypt, and its reliance on foreign inputs. An appreciation of the real effective exchange rate, for example, reduces the cost of inputs to transnationals in Egypt and has a

positive effect on cross-border production. It is important to note, however, that the present elasticities approach to the balance of payments is based on existing levels of protection on production and trade in Egypt. It does not take into account new production activities from an efficient import substitution and export expansion that would be expected under a concurrent exchange rate depreciation and trade liberalization.

The overall magnitude of these exchange rate effects on the balance of payments can be readily calculated through multiplier analysis. The results indicate how exchange rate changes influence the current and capital accounts, as well as the overall balance of payments. Multiplier analysis also provides us with an opportunity to evaluate the dynamic properties of the system of equations for trade in goods and services and foreign direct investment in relation to the process of adjustment of the system from one steady-state equilibrium solution to another. We have illustrated the effect of a one-time 10 percent devaluation in Egypt's real effective exchange rate, based on an across-the-board devaluation of the Egyptian pound relative to each of the country's major trading partners. The results show that a 10 percent real effective exchange rate devaluation would significantly impact on the current account and, to a lesser extent, the capital account of Egypt. The effect also demonstrates the lagged response of exports and imports of goods and services to the devaluation.

Since the balance of payments model has been estimated in its structural form, we have inverted the model to derive optimal policies for a given target. Specifically, we have defined the desired target as the achievement of overall equilibrium in the balance of payments. The structural form of the model was then solved for the optimal real effective exchange rate (and associated nominal exchange rate that yielded the desired solution). Calculation of the optimal exchange rate for Egypt were based on the use of an Excel spreadsheet containing information on the balance of payments and incorporating detail equation estimates for imports and exports of goods and services and foreign direct investment. The Excel spreadsheet containing the balance of payments model for Egypt accompanies this report.

The present analysis Egypt's exchange rate effect on the balance of payments has been limited to using the targets-instruments approach to determining an exchange rate at which the economy is in external balance. We have not attempted to deal with the important issue of how to define sustainable current and capital accounts in the context of the Egypt's economy as a whole. It should be realized that the present analysis is therefore at a preliminary stage. Extensions of the present research to include the open macro-economy will permit us to move from a partial equilibrium perspective to one that examines the equilibrium exchange rate in the context of Egypt's economic fundamentals.

Statistical Appendix

Appendix Table 1
Balance of Payments of Egypt
(millions of US dollars)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Current Account	**-1200**	**-1220**	**-1542**	**-438**	**-2136**	**-1851**	**-330**	**-1988**	**-2166**	**-1811**	**-246**	**-1048**	**-1299**	**199**	**1903**	**2812**	**2299**	**31**	**-254**	**-192**	-711	**-2566**
Goods: Exports f.o.b.	1974	1939	2424	3854	3999	4018	3693	3864	3836	2632	3115	2770	3119	3924	4164	3670	3545	4044	4670	4779	5525	4403
Goods: Imports f.o.b.	-4038	-4743	-6002	-6814	-7918	-7733	-8251	-10080	-9050	-7170	-8095	-9378	-8841	-10303	-9831	-8901	-9923	-9997	-12267	-13169	-14157	-14617
Trade Balance	-2064	-2804	-3578	-2960	-3919	-3715	-4558	-6216	-5215	-4538	-4980	-6608	-5722	-6379	-5667	-5231	-6378	-5953	-7597	-8390	-8632	-10214
Services: Credit	1601	1633	1788	2393	2537	2800	3133	2990	3024	3358	3627	4408	4203	5971	6783	7716	7895	8070	8590	9271	9380	8141
Services: Debit	-1448	-1548	-1773	-2343	-2487	-2727	-2767	-3096	-3190	-3012	-2742	-3082	-3283	-3788	-3364	-4867	-5367	-5645	-4873	-5084	-6770	-6492
Balance on Goods & Services	-1912	-2719	-3563	-2911	-3869	-3642	-4192	-6323	-5381	-4192	-4095	-5283	-4802	-4196	-2248	-2382	-3850	-3528	-3880	-4203	-6021	-8565
Income: Credit	39	86	172	270	401	402	437	522	418	406	503	575	709	857	860	915	1110	1330	1578	1901	2122	2030
Income: Debit	-315	-412	-420	-589	-897	-1092	-1080	-1092	-1211	-1126	-983	-776	-1389	-1879	-2143	-2797	-1967	-2114	-1983	-1556	-1185	-1075
Balance on Gds, Serv. & Inc.	-2188	-3044	-3811	-3230	-4366	-4332	-4835	-6892	-6174	-4912	-4575	-5484	-5482	-5218	-3531	-4264	-4707	-4312	-4285	-3858	-5085	-7610
Current Transfers: Credit 1/	988	1824	2269	2791	2230	2481	4505	4904	4007	3101	4329	4436	4183	5417	5434	7076	7006	4622	4284	3888	4738	5166
Current Transfers: Debit	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	-10	-14	n.a.	n.a.	n.a.	-279	-253	-222	-363	-122
Capital Account	**-773**	**143**	**1488**	**956**	**2046**	**1458**	**285**	**1718**	**1381**	**1936**	**-332**	**1308**	**361**	**-11039**	**-4706**	**-168**	**-762**	**-1450**	**-1845**	**-1459**	1958	**1901**
Direct Investment Abroad	-7	-20	-5	-7	-6	-8	-19	-16	-3	-6	-19	-12	-23	-12	-62	-4	n.a.	-43	-93	-5	-129	-45
Dir. Invest. in Rep. Econ.	105	318	1216	548	753	294	490	729	1178	1217	948	1190	1250	734	253	459	493	1256	598	636	891	1076
Portfolio Investment Assets	6	4	3	5	7	0	6	1	20	0	2	0	0	15	21	6	0	0	0	0	n.a.	-63
Equity Securities	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	n.a.	-63
Debt Securities	6	4	3	5	7	0	6	1	20	n.a.	2	n.a.	n.a.	15	21	6	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Portfolio Investment Liab.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4	3	20	545	816	-537
Equity Securities	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	515	-160
Debt Securities	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4	3	20	545	301	-377
Other Investment Assets	-136	-194	-407	-249	379	250	-389	488	-369	479	-909	546	-1299	-1921	-2298	1183	319	-905	-396	-565	-170	39
Monetary Authorities	-6	-16	-9	-16	-6	-11	-11	-10	-15	-4	-10	-7	-25	-16	-46	-13	-21	-25	65	65	37	24
General Government	-56	-25	-18	-10	-14	-3	-2	-2	-2	0	-1	-17	-26	-2	-18	-104	-4	n.a.	n.a.	n.a.	n.a.	n.a.
Banks	-74	-153	-380	-223	399	265	-376	500	-352	483	-898	571	-1249	-1904	-2234	1300	523	-634	371	338	1599	1357
Other Sectors	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	-179	-246	-832	-968	-1806	-1342
Other Investment Liab.	-741	34	680	658	914	922	196	516	555	245	-354	-416	432	-9855	-2620	-1812	-1578	-1761	-1974	-2070	551	1431
Monetary Authorities	-239	-265	-253	-326	-499	-351	-373	-288	-585	-438	-832	-250	-372	-29	-113	-42	629	-5	-21	-4	-19	-204
General Government	569	843	734	729	1853	1559	1143	838	890	1105	754	387	688	-10032	-2204	-1175	-1761	-1536	-1783	-2578	-1506	-946
Banks	-930	-341	279	340	-343	-166	-1	-40	16	-316	-537	-749	-138	237	-333	-383	-202	-256	-148	324	1715	1393
Other Sectors	-141	-204	-80	-85	-97	-121	-573	6	233	-106	261	196	254	-31	30	-212	-244	36	-22	188	361	1188
Net Errors and Omissions	**66**	**13**	**39**	**92**	**143**	**148**	**131**	**24**	**585**	**-156**	**892**	**-362**	**414**	**630**	**730**	**716**	**-1519**	**255**	**272**	**-74**	-1882	**-722**
Overall Balance	**-1906**	**-1064**	**-16**	**610**	**53**	**-245**	**87**	**-247**	**-200**	**-31**	**315**	**-102**	**-524**	**-10210**	**-2073**	**3360**	**18**	**-1164**	**-1827**	**-1725**	-635	**-1387**
Reserves and Related Items	**1906**	**1064**	**16**	**-610**	**-53**	**245**	**-87**	**247**	**200**	**31**	**-315**	**102**	**533**	**10224**	**2073**	**-3360**	**-18**	**1164**	**1827**	**1725**	635	**1387**
Reserve Assets	-130	22	-52	-559	-105	-178	-152	55	-107	-282	-669	153	435	-2508	-2775	-6330	-2809	-1193	-409	-1010	-1185	535
Use of Fund Credit and Loans	114	125	10	-77	-63	-36	-9	-18	-43	-57	89	-59	-24	-48	0	81	n.a.	-22	-95	-85	-15	n.a.
Exceptional Financing	1922	917	58	26	115	460	74	210	350	370	266	7	122	12781	4849	2889	2791	2379	2331	2820	1836	852

1/ Suez Canal income.
Note: Minus sign indicates debit.
Source: IMF, *International Financial Statistics* (June 1999).

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ue of Major Imports of Egypt-97

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C, Description	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
WHEAT ETC UNMILLED	47337	134674	96153	139530	594705	544359	392492	328657	424131	249056	441270	758859	703198	496635	536950	269932	499862	382528	438011	585865	789088	506800	704657	335521	766214	875680	1E+06	821048
PROD OF POLYMERIZING ETC	6482	3272	3371	5047	18557	27200	36223	57135	66452	37978	51815	66167	89297	108960	140705	87503	155931	215995	238169	170846	228356	264528	232783	241695	289422	382925	429103	470462
LUMBER SAWN ETC CONIFER	20918	19329	40632	20789	64996	94800						305026	263764	304872	342079	248085	315664	268860	319537	350416	397957	324017	301414	275000	255952	445583	346667	410177
MAIZE UNMILLED	4442	2587	5562	6335	68305	69322	78613	76692	97044	44780	102485	314091	300147	202910	248837	114400	146447	155068	140812	189810	190424	134489	177788	239490	263663	349271	435404	385391
IRN,SMPLE STL BLOOMS,ETC	309	150	7552	10094	5532	9348	3179	1143	7952	2633	5674	56	2402	464	46	9257	24163	10016	13517	20926	47090	56386	54217	55640	71226	67887	143556	288479
RAW BEET AND CANE SUGAR					21470	23468			1			3630	8578	2589	1469	1739	2809	10470	11857	39543	109944	12901	15312	6828	109699	143926	208625	263195
SUNFLOWER SEED OIL												1796	10402	23763	41181	49329	128790	2021	26	23	41	50381	58925	51108	36196	120011	145352	211039
OTH MACHINES NONELECTRIC							44502	53885	55802	33885	41263	86696	109440	162114	145338	96767	159923	129625	131029	92005	89907	79770	105812	196285	112240	150627	176937	209182
EXCAVTNG,LEVLING ETC MAC	6286	3852	7657	13812	17348	38422	120440	107073	183195	112231	130494	135870	189534	156405	116899	81668	148276	74025	61732	58478	66231	55989	62390	66514	86935	92580	113447	197785
PASS MOTOR VEH EXC BUSES	2592	3195	3095	2547	8149	34490						191332	258255	310010	285672	58263	67543	72454	109043	72704	101838	105547	116469	164683	213426	216696	201235	181846
PALM OIL								72	95	157	1814	8857	2127	19596	4904	5326	7696	4849	906	1250	1574	25350	70288	69000	68418	163776	164361	178875
PAPER ETC IN BULK NES	1782	1588	1781	1515	3546	10246	8589	8772	12547	5291	7354	18120	15939	20459	22708	14871	19742	22995	41959	23696	35202	81234	57067	62571	99311	222452	156116	166938
ELECTRIC POWER MACHINERY	7454	4756	5726	6777	11449	20167	21194	34430	71065	48167	52619	84056	95224	122466	82932	54589	85299	96080	92260	64475	87153	89403	89104	114361	89795	111804	137512	166386
BOVINE MEAT FRESH,FROZEN	1795	2129	3572	6030	4070	7184	88	7971	88	61		166905	167570	109802	207746	94217	175849	171572	194263	174629	205388	135688	118934	135000	155468	175776	145678	161553
OTHER MOTOR VEHCL PARTS	15137	22655	20720	13998	31028	45330	83469	101253	213406	120697	63686	230199	236104	284843	265770	122052	186739	179712	191400	124680	171612	114273	141467	153670	225063	223752	198546	158815
VEGETABLE OIL RESIDUES		504	168	761	1142	866	14464	12488	24791	2259	10423	29936	34537	43126	77011	42344	68481	55852	84447	61129	73148	58164	63840	91514	112627	65031	134460	154362
SWITCHGEAR ETC	5356	6300	5810	4536	9880	13070	18554	25932	59703	28671	38455	83773	78201	113840	136361	79124	116881	132676	147414	87746	107766	114932	145767	134560	139434	133333	146511	147766
TOBACCO UNMFD	16951	18475	22592	27940	28977	52311	63178	86280	117438	86441	70603	92892	114113	162523	165748	92909	140861	101285	93392	80601	100830	119055	134016	128024	142226	134174	146305	128467
LINE TELEPHONE,ETC EQUIP	3656	4961	2674	3899	2703	20055	22451	29994	73255	31997	40199	38860	47990	78252	76391	29104	59760	50604	61251	53910	88188	48738	70571	128871	107563	92744	103050	121919
RUBBER TYRES,TUBES	2262	6551	8922	7606	7536	23201	25091	25079	54923	13714	23035	65533	41432	66556	65168	36223	92665	72692	83403	80598	91952	79658	66749	70639	81469	98881	115506	120575
IRN,SIMPLE STL BARS ETC	9955	10295	18978	13488	57363	67722	67377	47612	76462	142760	260705	224755	251369	266786	329613	285749	426974	172769	175325	181469	157095	84437	47527	79804	39632	34627	116193	106959
PUMPS FOR LIQUIDS	8074	5790	4421	3359	5855	9334	13736	20628	40937	21196	26353	53618	62040	53516	67102	29380	52094	45182	66826	59618	60997	53517	53906	55717	61927	76566	93762	106527
PROD OF CONDENSATION ETC	2349	2710	3075	1829	6493	8303	9811	17240	27582	20278	31240	49023	48229	48057	49186	23011	28290	33911	47776	47278	64943	71547	75714	68558	62192	106811	111014	105068
TEA	23980	10199	12005	9623	16537	32217	37606	67137	123986	66140	47166	58509	87702	90945	105211	73381	111056	116066	151561	104095	153983	155296	168459	106977	89903	118567	86707	104039
REFINED SUGAR ETC	1011		12		45839	82056	63561	42851	106382	53695	121062	244314	141050	78691	78579	34504	125731	123186	188440	143600	243611	165758	115691	60549	16628	71077	47833	91818
PESTICIDES,DISINFECTANTS	14664	16805	23551	31344	55210	85168	35771	49540	73624	58289	43446	78211	86073	58639	80602	31286	63911	67479	97991	77145	56252	56455	61783	67637	48238	60189	77837	91356
CEMENT	40	12	94	126	94	5537	24232	66416	113600	141819	147278	236225	357792	459278	446249	258977	366839	189546	118972	22369	13102	4514	982	1124	15282	48616	91083	89630
BUSES	12292	19009	7617	15673	73581	70171	31940	63833	96209	22901	22237	62969	47859	44159	76119	22710	15679	29445	36224	44949	55772	23877	43741	54547	96462	99323	78165	89491
PISTON ENGINES NON-AIR	7502	8661	6308	4210	6470	17204	22709	38652	50701	33778	33744	49710	51974	53034	54243	26601	43763	41600	53237	69793	81596	61479	61036	72101	65979	85822	92241	88689
LORRIES,TRUCKS	13886	23271	21443	8730	8939	111705	187762	278370	481225	269206	295499	317084	240997	272474	362661	82439	49772	98545	53637	28000	29984	10588	20867	18317	83761	29802	63978	87405
DISCN SYNTH FIBRE UNCMBD	1897	1235	1114	1581	4074	5162	3023	6133	3414	2693	957	5055	3213	5138	3006	1587	3682	5717	9448	16395	25767	25345	26937	33166	50693	77532	68094	85638
CONT SYNTH FIBRE YARN	423	458	513	997	1868	2307	4552	8226	7587	8672	5732	28677	41227	40931	41328	15091	25436	36448	41472	31640	69817	66923	72212	74690	81379	100802	91864	83780
SPECIAL PURPOSE VESSELS	76	50			5	387	480	10040	21974	1445	22535	31764	1987	5662	1369	12980	904	2181	1273	1433	13	377	987	1606	2950	3330	2003	80216
COATED ETC PAPER NES BLK							9491	11241	20329	10892	12767	27087	28089	32125	47559	36017	31551	46527	59824	46914	61780	52230	59130	49399	62506	80898	76464	77542
INSULATED WIRE,CABLE	3458	4678	5475	3686	13151	31335	28640	47460	92951	29910	25822	38921	78330	74812	70901	36179	98210	74564	70756	46382	52359	48444	66295	79571	110090	91200	92259	76401
MACH PARTS NONELEC NES	1144	1217	1094	2843	14471	45292	44690	105795	60844	33387	10789	26956	29198	35442	32750	40086	33770	63114	58769	45789	55419	62886	76695	102837	110627	80205	91730	76196
FISH FRESH,CHILLED,FROZN	176		91	2767	5243	6074	7209	9017	24809	9304	12707	21587	24580	29803	39114	11905	29180	34833	44207	51152	62050	46379	58903	39123	56498	56855	89398	75014
PUMPS FOR GASES ETC	3502	3945	2610	3539	3361	8015	28771	18414	23345	14378	20726	41067	38028	41509	42119	26037	43073	48249	67635	58642	59045	50948	52626	57768	89673	70598	81331	73207
PLYWOOD,VENEERS INLAID	2091	2366	6076	3851	4129	13320	11506	31035	37932	18247	44904	42397	38763	58886	52575	39649	85704	53725	83239	59120	64334	78476	58403	59641	70137	57092	64760	72436
GREY COTTON YARN IN BULK	2486	2289	5588	4566	3564	171	1237		46	46	118	188	65	280	137	102	190	18	190	345	660	795	2477	9601	11682	35237	57291	70019
LIFTING,LOADING MACH NES	4969	4973	3830	3548	3846	8001	14447	27663	50163	35229	37097	59133	74653	79877	75413	40810	62268	44795	40318	34451	37084	35746	28581	40652	44059	63041	54105	69665
LEGUMINOUS VEGTBLES DRY	4384	1673	4875	1906	8052	37534	30687	13987	12749	7644	10335	32343	49361	31404	22787	1585	60044	43735	25214	12335	47076	68007	142043	54421	71896	67290	90011	69473
COCKS,VALVES ETC NES	2463	2676	2491	2423	3291	5808	8600	11031	20718	12207	12938	25841	20050	32560	29155	26974	55621	40424	54154	38759	43551	39467	41627	49705	47289	60307	59086	68687
TELEVISION RECEIVERS	1162	1959	1730	2209	2824	5384	36374	66963	81441	29301	16786	37072	30028	27915	25657	7788	8993	45051	34907	26898	6652	5922	3287	30907	41592	78759	70612	67058
OTH TELECOMM EQUIPMENT	5094	6717	6482	6821	11904	17148	13759	26334	32036	20370	23742	52254	104780	124957	164900	29916	61451	60054	23316	19718	21972	41531	78006	46247	36353	19386	44913	66954
HEATING,COOLING EQU NES	73	100	32	9	65	118	5311	5169	11036	4313	8427	11803	12831	7038	19941	4440	16910	17864	16961	26010	39180	17934	25495	23735	86733	176388	84216	64282
OTH CHEM PROD,PREP NES						94	17331	21936	32701	20832	11916	30978	39036	57634	73044	32772	67115	73810	95412	80268	71368	65019	79373	73717	61974	63474	63799	63599
ARTICLES OF PLASTIC NES	1595	2315	2547	1759	7442	10274	11414	17124	25499	16670	22101	29305	30565	37053	33475	15772	25072	17902	15152	51088	22710	17611	20857	21393	40749	56101	54183	63577
BUTTER	163		461	24	3947	2774	31937	26716	65901	31217	60000	96126	55859	78409	69482	50055	88902	94604	135612	62125	125772	48985	71878	79068	75405	77223	92117	58555
GAS NATURAL	3887	3916	5730	3661	6659	7536	9894	10337	15458	3888	4425	56245	70581	105313	44992	30530	35226	26327	14651	11366	14653	12009	4497	1376	688	6633	1430	58469
COPPER BARS,WIRE,ETC	524	139	387	1312	244	3697	4966	4724	6199	255	3596	8905	10670	15796	19814	9633	10073	15368	24714	16932	20183	26564	21402	32295	32597	62542	48148	57165
IRON,STL TUBE,PIPE NES	4189	5784	2412	3991	10942	61463	27975	21194	23909	41500	25920	36074	72429	46990	64164	31162	64309	28467	81154	41937	38351	54387	47534	60214	75741	44973	28845	56125
MINERAL CRUSHING ETC MAC	1039	2251	1887	3751	1658	8479	11834	26445	34838	29055	34984	55029	39804	42878	36696	32661	57490	40619	19350	15866	19548	14429	14138	9468	12931	20295	23254	55981
SHAFT,CRANK,PULLEY ETC	1593	1387	1365	884	1393	2278	3308	5828	29216	4007	4235	5962	6743	11017	11866	5369	8856	17069	31896	37215	42639	41022	44304	35477	45294	50145	58491	55656
IRN,SMPL STL HEAVY PLATE	3998	5203	2605	1626	4864	11055						17362	17445	36150	71304	24033	20937	1933	3576	1719	191	2211	799	7701	14603	43703	44886	51409
CENTRIFUGES ETC NONDAIRY	1382	2148	1573	1107	1066	1818	2156	11627	6339	5453	6583	10351	19458	10623	13130	8699	21200	21044	20630	19276	20152	23308	21306	25398	32276	40244	95047	51228
BOVINE CATTLE	1080	19	648	3756	1367		1	2511	1660	253	2539	39801	87230	90040	86206	27237	24056	19698	25613	6180	2356	2542	4268	52369	138136	140199	68025	48727

endix Table 2 (cont'd)
ue of Major Imports of Egypt-97
sands of US dollars)

C.	Description	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	
	OFFICE MACHINE PARTS NES	288	225	234	514	427	4175	2084	2576	7117	1794	730	8417	6609	6672	10050	7152	15525	12969	13891	17388	31170	39569	53585	33740	29553	36347	33291	4
	OIL SEEDS,NUTS,ETC NES	7608	2530	4014	3836	13087	6402	16465	15353	11387	7619	7094	14964	582	8549	31367	6614	14980	21257	11324	10288	23589	18803	14863	13050	10580	50669	51497	4
	IRN,SMP STL THIN CTD NES	332	481	819	95	1661	712	10819	22456	28677	25190	25195	26801	31612	30642	38928	27360	34192	64609	125954	72049	110930	113452	105013	118384	20646	63189	63936	4
	FODDER NES,INCL SWEETND	19	380	36	90	46	370	1755	760	2411	1382	2636	9437	20974	39145	46018	23428	40647	31958	43712	40811	42674	40579	40175	34049	41753	44265	43548	4
	OTH PHOTOGRAPHIC EQUIP	83	91	60	69	215	980	2607	2415	7424	3946	7403	12426	13276	17051	14662	7171	14441	18039	20748	13729	18449	19054	19785	25389	28927	33344	31788	4
	MACHINE TOOLS FOR METAL	3532	4741	3248	4017	2886	4900	9307	17181	28557	13660	12625	25225	21124	20347	18470	13893	32250	21603	27733	15017	30238	28212	26825	36045	40862	40341	55987	4
	COLOURING MATERIAL NES	1701	1700	1100	1784	3146	11590	6793	8116	11316	9729	15495	17274	14345	15607	24511	19301	29631	34957	20357	19755	41865	24474	38370	28972	31492	47908	46701	4
5	REFRIG EQUIP NONDOMESTIC	179	148	975	79	230	749						20022	23993	26284	25141	11241	27965	32116	19234	9436	14222	12893	13099	17776	23135	31276	36682	4
	CAST IRON TUBES,PIPES	123	80	59	23	675	8657	6569	5292	10001	5580	11761	6892	23318	19690	15414	5322	6648	2451	2436	2689	128	1406	1238	1845	4101	20409	30537	4
	PRINTING MACHINES NES	318	1069	746	668	739	5333	8773	16105	14020	9328	8384	20392	13474	39978	31007	8904	18773	13482	3594	7293	14730	13233	17726	27901	21052	16734	36210	4
	HETEROCYCLIC CMPDS ETC	627	689	1034	909	1044	2984	6559	3877	2930	2143	4723	9750	12942	17472	26522	10437	17502	26507	34371	29638	49080	40940	34258	33338	25092	32186	36890	4
	WEAVING,KNITTING,ETC MCH	5274	5483	4082	7203	4496	13710	17719	19127	31852	13366	14846	29453	41827	55353	26674	8800	20623	28616	40482	28419	33396	42812	52766	40960	40232	34283	45945	3
	SPRAYING MACHINERY	568	564	517	407	906	2040	4456	4587	7488	3803	4761	11337	11918	9772	11564	5987	12510	14322	14303	14403	13653	13280	11155	13432	7907	11608	22938	3
	TRANSISTORS,VALVES,ETC	235	332	250	455	966	827	885	1641	1621	1589	489	1572	683	3417	3691	1712	1685	3216	6817	10706	15934	14865	12676	11531	12333	23190	46146	3
	SPECIAL MOTOR VEHCLS NES	3673	1848	2085	2081	9931	7490	11891	17328	19461	15430	15415	25260	38929	26097	47457	12271	24644	12231	11371	8005	10195	15124	11136	8353	17913	14970	18906	3
	PREPRD PIGMENT,GLAZE ETC	650	380	910	716	1141	1622	3125	2744	4167	1800	2107	5020	3658	4224	5734	2676	5446	8672	12328	13614	16332	19460	14601	19947	20051	22262	33762	3
	CHEESE AND CURD	1416	1936	577	689	1685	4788	13257	15409	29863	19314	25182	32141	31835	70827	81799	39417	34170	46790	47904	59574	49168	44828	36804	33064	38275	36846	35180	3
	POTATOES FRSH EXCL SWEET	1806	2415	472	2024	5557	11303	12089	11880	6855	1572	2571	16624	15578	10905	11930	4534	8650	10896	5838	6115	10267	5388	9559	8694	18541	49946	30116	3
	SYNTH ORG DYE,NAT INDIGO	8855	7794	8031	5695	16222	29915	27717	28566	42177	14831	32051	23291	22851	25278	24245	12316	14566	26197	31448	25157	38063	39600	43173	36560	37095	37948	37248	3
	MEAT OR FISH MEAL FODDER	560	636	421	1737	1311	4822	5442	10569	10896	1411	5365	19039	15328	23507	25454	7648	21573	16457	20129	15616	13282	13452	14768	17637	26363	27271	30159	3
	MECHANICAL WOOD PULP	10688	9645	7396	9191	13145	28624																			26046	43921	44071	3
	OTHER MFD TOBACCO		11	1		15		85	193	804	406	233	28	44	162	87	59	217	615	1043	968	1371	2563	19040	15538	1833	7639	27320	3
	RESIDUAL FUEL OILS	8807	4980	10434	4905	4279	4673									7							898			1801	117	2073	3
	STRUCTURES,PARTS IRN,STL	1742	2603	2889	3185	9905	15235	68068	132409	161077	78624	43082	114494	202627	334791	269181	102710	114865	78069	82029	44190	65388	96514	33072	23390	33851	25567	30725	3
	COATED PRINTING PAPER	903	1036	1096	1430	2899	8563																19301	20396	16478	20204	29322	24085	3
	IRN,STL TUBE SEAMLES NES	2393	1618	552	385	1512	3134						271	3389	395	1918	224	7423	5979	13402	16147	14601	16963	18963		30727	22187	33744	3
	BLCHD COTTON FABRIC NES	11	10	10	304	1017	372	173	14	26		8											6715	13704	29572	32197	36175	28304	3
	ETHERS ETC	26	59	107	22	20	96	286	519	208	242	398	482	196	88	128	116	291	799	1490	1405	1671	2248	1457	2036	1862	2874	3224	3
	REFRACTORY BRICK NES	1062	1202	1397	1637	748	7450	7662	12606	9157	4585	5237	10036	4573	3175	3669	799	5346	24534	33291	20373	14924	17749	15314	10336	16358	16383	20595	3

rce COMTRADE database.

pendix Table 3
lume of Major Imports of Egypt, 1970-97
etric tons and other units)

C, Rev1	Description	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	19
0	WHEAT ETC UNMILLED	9E+05	2E+06	1E+06	1E+06	2E+06	3E+06	2E+06	2E+06	3E+06	2E+06	2E+06	3E+06	3E+06	3E+06	3E+06	2E+06	3E+06	4E+06	4E+06	3E+06	4E+06	4E+06	5E+06	2E+06	7E+06	5E+06	6E+06	5E+(
2	PROD OF POLYMERIZING ETC	15772	8413	8572	11667	15995	32959	38282	55289	43851	46779	45759	71490	97556	1E+05	2E+05	2E+05	2E+05	3E+05	2E+05	1E+05	2E+05	2E+05	2E+05	3E+05	3E+05	3E+05	4E+05	5E+(
21	LUMBER SAWN ETC CONIFER	2E+05	2E+05	4E+05	2E+05	3E+05	3E+05	#N/A	#N/A	#N/A	#N/A	#N/A	8E+05	9E+05	1E+06	1E+06	1E+06	1E+06	9E+05	9E+05	9E+05	9E+05	8E+05	8E+05	8E+05	8E+05	1E+06	1E+06	1E+(
0	MAIZE UNMILLED	73293	38561	87721	67025	4E+05	4E+05	5E+05	6E+05	7E+05	5E+05	6E+05	1E+06	1E+06	1E+06	1E+06	1E+06	1E+06	2E+06	1E+06	1E+06	1E+06	1E+06	1E+06	2E+06	2E+06	2E+06	2E+06	3E+(
51	IRN,SMPLE STL BLOOMS,ETC	2989	1499	86244	1E+05	37708	38068	8878	2488	20289	6352	20006	117	10283	517	7	62092	93912	73147	52381	63902	2E+05	2E+05	2E+05	2E+05	3E+05	3E+05	6E+05	1E+(
1	RAW BEET AND CANE SUGAR	#N/A	#N/A	#N/A	#N/A	46608	27692	#N/A	#N/A	#N/A	#N/A	#N/A	6109	25432	10250	5763	23012	17000	44555	49835	1E+05	2E+05	60201	58932	26000	4E+05	4E+05	6E+05	1E+(
6	SUNFLOWER SEED OIL	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2681	15064	49984	55246	1E+05	3E+05	8411	23	24	37	97304	1E+05	1E+05	73805	2E+05	2E+05	4E+(
8	OTH MACHINES NONELECTRIC	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	6846	6695	3782	5251	4068	11419	14271	17948	29641	22766	32056	15398	11809	9606	9391	8224	11334	20304	11848	14785	18733	221
42	EXCAVTNG,LEVLING ETC MAC	9538	3289	4687	5779	8342	15938	47101	43922	57369	34572	33757	47699	69520	66036	29210	42015	32933	12928	11127	16426	10511	10222	10356	15575	21638	24144	33213	540
1	PASS MOTOR VEH EXC BUSES	1475	1743	1718	1104	2349	7198	#N/A	#N/A	#N/A	#N/A	#N/A	50529	66737	80100	70504	22839	9826	9897	12193	6020	9305	11095	11299	16097	27813	32067	40887	234
2	PALM OIL	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	39	55	88	1823	9312	2201	22121	5271	10853	11342	9620	2369	2100	1816	69537	2E+05	2E+05	1E+05	2E+05	3E+05	3E+(
5	PAPER ETC IN BULK NES	10948	8677	8546	6061	7421	21286	18063	14926	20129	10846	11478	22324	15626	28685	41584	58653	32855	31323	45086	25030	50557	1E+05	1E+05	1E+05	2E+05	3E+05	2E+05	2E+(
1	ELECTRIC POWER MACHINERY	3147	2429	3228	2905	4096	9080	8312	9070	13112	13060	11528	23724	24745	27086	17209	27287	21716	22744	17799	12494	17791	15394	13996	15341	16015	20700	22129	286
1	BOVINE MEAT FRESH,FROZEN	3140	3109	4031	5933	4116	7205	16	5990	47	38		1E+05	97047	77583	2E+05	1E+05	2E+05	1E+05	1E+05	1E+05	2E+05	1E+05	1E+05	1E+05	1E+05	1E+05	90728	1E+(
89	OTHER MOTOR VEHCL PARTS	7721	9345	8717	4139	10374	14432	14801	18192	28286	36391	14799	63733	65920	69806	59308	54690	39044	37021	42255	26620	33261	21980	25765	30976	48072	54555	58364	484
3	VEGETABLE OIL RESIDUES	#N/A	3853	1010	2473	3991	3450	26928	23553	53218	7470	34227	73987	1E+05	1E+05	2E+05	3E+05	3E+05	2E+05	3E+05	2E+05	3E+05	3E+05	3E+05	4E+05	5E+05	3E+05	5E+05	5E+(
2	SWITCHGEAR ETC	1449	2251	1664	1204	3046	3976	5189	4251	6369	4314	6147	14325	14875	17939	17041	19852	13889	13999	12155	7347	7655	15987	12874	9076	8456	10014	10090	99
0	TOBACCO UNMFD	13941	15234	18201	20840	20203	25888	22966	29038	29453	30259	24694	32471	42638	49028	48940	43552	46272	42258	53752	43019	48488	42000	46849	44129	47693	48286	53084	537
91	LINE TELEPHONE,ETC EQUIP	898	669	290	366	294	1334	1300	2107	4308	2045	2612	1937	2409	7399	4818	4266	3714	2768	1692	1372	2257	1120	1315	4391	12118	2841	3087	41
1	RUBBER TYRES,TUBES	2092	5204	7573	5904	4839	9335	9496	8425	15047	5873	8734	25136	20910	25326	24962	24434	34176	28185	29888	30348	39060	29201	25639	25480	30707	40538	38752	425
21	IRN,SIMPLE STL BARS ETC	61523	68166	1E+05	81266	2E+05	2E+05	3E+05	2E+05	2E+05	4E+05	7E+05	7E+05	8E+05	1E+06	1E+06	2E+06	2E+06	7E+05	7E+05	6E+05	5E+05	3E+05	2E+05	3E+05	1E+05	1E+05	4E+05	4E+(
21	PUMPS FOR LIQUIDS	3191	1894	1445	1261	2071	2472	3146	3802	5560	4748	4475	9340	13183	10144	13547	13618	9981	10611	11041	10205	8315	6872	5723	8178	8538	8407	10260	111
1	PROD OF CONDENSATION ETC	4468	5995	5463	2329	5371	7794	6324	8860	16233	16879	23049	40056	38479	40594	45512	37235	21875	24341	30209	32960	42975	43799	47507	49074	38879	56384	64537	692
1	TEA	29844	11002	13786	9802	14411	23651	24917	26243	1E+05	35590	23547	30131	37142	42280	39499	40678	54790	50003	76524	55816	70197	88527	88798	65130	57230	79964	65041	778
2	REFINED SUGAR ETC	9917	#N/A	84		70389	1E+05	2E+05	2E+05	4E+05	2E+05	2E+05	4E+05	5E+05	3E+05	3E+05	3E+05	5E+05	6E+05	6E+05	4E+05	5E+05	4E+05	3E+05	2E+05	53690	2E+05	1E+05	3E+(
2	PESTICIDES,DISINFECTANTS	11693	8498	17445	16747	31279	23961	13440	13133	10712	12691	10490	20763	19285	17750	20227	13277	12675	12402	16751	18669	13151	9468	9131	9128	6952	7535	10811	111
2	CEMENT	717	67	1830	1667	1111	1E+05	6E+05	1E+06	1E+06	3E+06	3E+06	4E+06	6E+06	7E+06	8E+06	9E+06	7E+06	4E+06	2E+06	4E+05	2E+05	44821	4790	5472	4E+05	1E+06	2E+06	2E+(
2	BUSES	10295	17230	3934	7417	18914	24596	6685	10849	14469	5098	4150	11721	8417	8517	11887	5993	2039	4466	4397	8394	7758	3666	3953	4401	8814	8487	7987	83
5	PISTON ENGINES NON-AIR	2711	3664	2269	1297	1890	4795	4901	6021	6975	8787	7466	13668	12351	7776	10388	9146	8292	8313	10792	11778	15125	17422	12756	18794	18780	18991	23545	246
3	LORRIES,TRUCKS	9754	15462	13134	6195	3871	33631	49642	56841	89946	69614	70607	72317	55640	62506	77522	33089	9924	32123	10343	6613	5342	2094	3141	2364	12770	3840	10912	117
21	DISCN SYNTH FIBRE UNCMBD	1354	1005	943	972	1727	2645	2453	6977	1541	1292	425	2004	1390	2010	1264	1114	1466	2882	4145	7515	13306	11498	15114	19313	30403	36417	38703	526
61	CONT SYNTH FIBRE YARN	111	130	124	276	502	731	1053	1645	1642	2919	1711	12673	14336	15674	14911	11817	10376	18816	21695	14933	31305	29069	32034	38209	46989	41727	48052	467
92	SPECIAL PURPOSE VESSELS	112	24	#N/A	#N/A	1	769	1429	1933	2399	168	3041	5080	779	1833	314	1703	590	353	222	106	1	51	80	326	1058	151	185	100
95	COATED ETC PAPER NES BLK	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	15482	15549	17801	16458	17119	38953	40400	45196	79982	82687	40682	51796	73354	53781	70064	62317	74198	66101	96708	90134	91048	957
1	INSULATED WIRE,CABLE	1475	1743	1718	1104	2349	7198	#N/A	#N/A	#N/A	#N/A	#N/A	50529	66737	80100	70504	22839	9826	9897	12193	6020	9305	11095	11299	16097	27813	32067	40887	234
99	MACH PARTS NONELEC NES	569	382	648	1141	4560	31342	16263	41350	34302	68439	1432	11406	7506	6672	4341	11895	4966	6310	5430	3507	4570	3527	5533	14132	12101	4229	6135	54
1	FISH FRESH,CHILLED,FROZN	1069		1095	12448	18118	24739	39269	27884	52974	23070	36144	55469	65975	81293	1E+05	71179	94428	1E+05	1E+05	1E+05	1E+05	87091	1E+05	93597	1E+05	1E+05	2E+05	1E+(
22	PUMPS FOR GASES ETC	1472	1863	976	1494	1221	2636	2386	3108	3244	3160	3787	7432	7368	13893	9815	12187	8454	11523	12821	12683	10535	9294	8784	9956	12276	13963	15329	139
21	PLYWOOD,VENEERS INLAID	9742	9643	21181	23597	7318	25441	26138	55468	53520	39437	68477	55761	64407	96775	90125	1E+05	1E+05	94101	1E+05	1E+05	95772	1E+05	1E+05	1E+05	1E+05	1E+05	1E+05	1E+(
3	GREY COTTON YARN IN BULK	2488	2341	4131	2633	1327	81	719	#N/A	54	7	23	58	18	72	35	25	47	3	38	256	288	382	701	5883	3526	8946	14983	194
31	LIFTING,LOADING MACH NES	3419	3878	2538	2480	1731	3322	5574	6910	9562	8429	8514	14309	19634	17792	18186	18631	13177	9938	8238	14729	8964	7819	10376	8583	9985	12157	13195	217
2	LEGUMINOUS VEGTBLES DRY	19931	10010	32834	8219	17040	2E+05	1E+05	68593	67674	68671	87489	1E+05	1E+05	56852	57174	4088	67239	80132	66755	25670	72714	1E+05	3E+05	1E+05	2E+05	2E+05	2E+05	1E+(
92	COCKS,VALVES ETC NES	1089	1348	1156	1194	1124	2305	2007	2560	4241	2675	2779	7300	4880	8741	8267	10772	11270	7921	8781	6784	6025	5602	6036	6824	7516	8615	8875	110
1	TELEVISION RECEIVERS	306	482	413	463	617	1048	2758	4859	5593	3797	2821	4303	3569	2588	1611	1044	995	3513	3013	1710	699	469	202	2733	4098	7948	7358	75
99	OTH TELECOMM EQUIPMENT	1686	1817	1130	952	1913	2821	2274	2479	3043	2246	2467	5445	12164	13844	13777	5695	4652	7289	1449	2678	2293	1709	5023	1991	1421	1967	2324	38
19	HEATING,COOLING EQU NES	71	54	8	2	14	18	1394	1331	1596	646	1194	2143	2173	767	3392	1146	2411	2221	2225	2725	3372	1415	2425	2690	5720	9241	8006	68
99	OTH CHEM PROD,PREP NES	#N/A	#N/A	#N/A	#N/A	#N/A	28	8787	10105	16880	15568	7799	25615	28044	40601	60679	44526	42475	45677	49843	59765	70182	36853	24346	27428	25097	24295	30494	259

pendix Table 3 (cont'd)
lume of Major Imports of Egypt, 1970-97
etric tons and other units)

0	ARTICLES OF PLASTIC NES	2641	3987	4044	1233	6237	4899	5276	4640	5034	4261	7325	12427	11784	20969	12911	14608	15626	4787	3676	22572	2775	3293	3946	4392	13992	24941	16444	2365
0	BUTTER	318	#N/A	346	13	4088	2097	23564	14224	27174	22008	35207	43732	18738	31231	27315	46335	62828	69920	1E+05	42002	61009	27893	44198	49130	52649	48816	50225	3775
1	GAS NATURAL	93087	98877	1E+05	75124	85884	1E+05	2E+05	2E+05	2E+05	1E+05	1E+05	2E+05	2E+05	3E+05	1E+05	2E+05	2E+05	2E+05	75984	77017	61885	43841	18544	6090	2493	25797	6992	2E+0
21	COPPER BARS,WIRE,ETC	272	95	376	938	106	2688	3448	2451	2387	106	1394	4568	6282	10104	11187	10257	6569	8632	10553	6018	7313	10659	8702	13054	10949	18260	14881	2054
3	IRON,STL TUBE,PIPE NES	15820	23386	6632	12139	13954	79843	51659	24324	26667	70749	45800	58561	96118	74063	83654	62576	85694	33613	73755	38300	35243	51103	39724	55999	75970	41871	24964	5645
51	MINERAL CRUSHING ETC MAC	720	1072	1034	1806	742	4237	5455	13787	7114	7596	14265	12193	11662	11861	16373	18688	18798	10033	3291	4363	5810	2114	2083	2017	2692	4553	5714	966
93	SHAFT,CRANK,PULLEY ETC	556	887	908	421	543	544	775	1113	955	989	698	795	1033	1587	1633	1441	1094	2251	4040	8167	7120	6451	3924	6775	6511	6080	7331	566
11	IRN,SMPL STL HEAVY PLATE	20737	32345	15438	6829	7807	23375	#N/A	#N/A	#N/A	#N/A	#N/A	47013	38155	1E+05	2E+05	1E+05	78241	5156	6914	3083	381	6030	1205	14228	27250	89829	94617	1E+0
23	CENTRIFUGES ETC NONDAIRY	699	829	1012	693	385	402	481	820	818	1052	1007	1925	2194	2276	2645	4021	3224	4097	2733	2380	3487	3134	12156	2861	12392	5503	11031	905
1	BOVINE CATTLE	2580	145	2060	9175	2633	#N/A	1	419	326	241	1694	41258	58342	60316	47506	35237	25175	15453	15659	4545	1039	1054	5320	52822	1E+05	1E+05	47351	3219
92	OFFICE MACHINE PARTS NES	47	20	11	30	44	148	50	52	59	45	19	87	114	113	221	304	472	189	233	271	443	698	847	793	631	863	884	12
8	OIL SEEDS,NUTS,ETC NES	31009	8931	12873	10618	21150	9350	23346	16640	8488	13498	6980	15876	837	8472	31257	12322	15557	#N/A	17328	15412	15333	25905	19113	18277	17164	49491	60868	5049
81	IRN,SMP STL THIN CTD NES	964	1629	3933	192	1589	4528	26800	41789	39718	65894	52828	55039	53226	68677	86337	1E+05	66369	1E+05	2E+05	94390	2E+05	2E+05	2E+05	2E+05	44165	1E+05	1E+05	7055
99	FODDER NES,INCL SWEETND	71	1504	83	972	89	1637	2285	1092	2607	3529	3554	12262	45733	89199	79741	92516	93401	69342	74463	75222	76194	77585	86115	71447	1E+05	92989	90263	8965
69	OTH PHOTOGRAPHIC EQUIP	11	14	8	6	10	94	172	147	307	317	389	730	852	1154	768	708	871	651	746	531	725	773	917	1349	1494	2177	3187	337
1	MACHINE TOOLS FOR METAL	1999	2621	1945	1708	1300	1211	2287	3079	9338	2801	3617	5893	5127	5581	4405	4481	6045	4185	4201	3251	3731	4544	5916	11442	1E+05	11713	11948	111
1	COLOURING MATERIAL NES	9296	8074	5067	8164	6014	22593	10494	12690	12079	24914	26993	30144	24488	26150	38362	47216	39843	49858	27984	32993	61248	23134	37096	42466	38124	57820	50624	4707
15	REFRIG EQUIP NONDOMESTIC	48	48	374	21	49	130	#N/A	#N/A	#N/A	#N/A	#N/A	3916	5564	8025	7169	6440	6129	8138	3975	1321	1454	1258	1940	4461	2883	41540	5610	592
1	CAST IRON TUBES,PIPES	776	275	261	21	672	22025	20436	10980	22726	14546	26347	16631	30214	28634	35071	13195	11314	#N/A	1464	2766	20	1106	48	2274	2686	21149	34071	6444
29	PRINTING MACHINES NES	75	275	124	155	141	614	888	976	828	859	758	1375	1367	2408	1742	1248	930	900	278	840	823	800	1306	1786	2136	1532	3034	386
85	HETEROCYCLIC CMPDS ETC	124	133	128	196	246	325	1002	268	159	50	411	1544	1941	2565	2942	2447	2368	#N/A	3327	7143	6197	2008	2441	3323	2552	9081	2280	282
12	WEAVING,KNITTING,ETC MCH	3311	2640	1961	3860	880	2200	2512	2507	3659	2932	4378	8123	7399	7907	3490	2166	2268	7937	5353	3213	4018	5004	5310	5827	4741	4067	5980	521
64	SPRAYING MACHINERY	245	257	194	186	241	360	1321	1162	1262	630	1408	2661	3328	3981	2809	2741	2584	4022	2967	2995	2562	6280	1777	1669	1585	1679	4030	226
3	TRANSISTORS,VALVES,ETC	30	79	37	65	300	39	93	268	111	194	91	151	110	885	487	286	88	90	320	1272	999	730	687	569	593	2575	6380	429
4	SPECIAL MOTOR VEHCLS NES	2354	930	871	974	1729	2522	3631	3185	4681	2851	2769	5798	6197	4767	8214	2806	3197	1468	1566	1163	923	1351	1274	875	2293	1408	2461	531
31	PREPRD PIGMENT,GLAZE ETC	1308	804	1845	1513	1548	1882	2451	2859	2929	1361	1316	4212	2828	3764	6151	6509	4887	6911	11312	12541	13327	16242	13929	23544	24770	28418	43338	5574
0	CHEESE AND CURD	2565	3855	768	733	1481	3382	8857	6345	12207	15067	14146	16842	20758	41479	50153	39681	20480	34272	32254	40086	36943	27673	22006	19087	21877	16623	14626	1565
1	POTATOES FRSH EXCL SWEET	18575	24565	4642	12987	21869	34779	32255	32713	26725	7239	22247	49982	47340	26437	40418	30445	26685	31579	17374	19414	25497	12989	22452	25786	34903	74108	48643	7837
01	SYNTH ORG DYE,NAT INDIGO	2646	2766	2074	1328	3135	4536	4400	2682	3293	1572	3601	3068	4478	3789	5262	2718	1614	2436	4841	2680	5023	3123	4604	4008	7424	8351	6361	538
4	MEAT OR FISH MEAL FODDER	2360	2833	2200	3629	3502	8473	9279	12855	16402	3004	9581	23869	25838	47482	45494	33983	48560	29436	33847	28195	30210	32159	37321	43080	68187	70377	72975	8183
2	MECHANICAL WOOD PULP	55972	50165	35803	37811	27102	62672	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	49191	48543	69390	6441
3	OTHER MFD TOBACCO	#N/A	2	1	#N/A	5		3	5	12	44	16	4	3	10	5	4	22	65	96	107	125	190	1404	1130	124	493	1742	222
4	RESIDUAL FUEL OILS	1E+05	61793	1E+05	47177	40131	23758	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	18121	#N/A	#N/A	7851	530	11794	1E+0
1	STRUCTURES,PARTS IRN,STL	2903	5998	7334	3264	6715	16368	38627	1E+05	2E+05	47378	25677	68738	1E+05	1E+05	2E+05	1E+05	61930	40485	44425	13927	23547	27575	6803	6906	22936	11188	11837	2507
22	COATED PRINTING PAPER	2641	3072	3274	3588	6068	13770	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	15374	20856	19545	21955	24507	22119	3742
2	IRN,STL TUBE SEAMLES NES	10706	6362	1183	1193	3572	3659	#N/A	#N/A	#N/A	#N/A	#N/A	353	4507	275	2455	288	13875	9212	13121	16299	15184	16998	22015	#N/A	29990	25768	36417	3782
29	BLCHD COTTON FABRIC NES	2	2	1	107	196	511	138	3	94	#N/A	2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1627	2507	5621	6256	6199	4438	479
31	ETHERS ETC	12	44	137	10	18	72	222	419	53	188	184	71	16	41	37	66	264	306	901	530	1025	1250	641	1331	760	1508	1977	1E+0
32	REFRACTORY BRICK NES	5448	5712	5640	5988	1734	11140	16871	20145	20749	9831	9843	26061	8850	6875	4236	1527	6874	25733	36113	36061	18065	21006	16730	12720	17393	19735	19337	3028

urce: UN, COMTRADE database.

pendix Table 4
it Price of Major Imports of Egypt, 1970-97
ousands of US dollars per unit)

C,	Description	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
	WHEAT ETC UNMILLED	0.056	0.070	0.069	0.094	0.264	0.203	0.166	0.136	0.145	0.111	0.208	0.245	0.241	0.193	0.197	0.116	0.147	0.105	0.123	0.191	0.177	0.123	0.142	0.143	0.116	0.173	0.222	0.170
	PROD OF POLYMERIZING ETC	0.411	0.389	0.393	0.433	1.160	0.825	0.946	1.033	1.515	0.812	1.132	0.926	0.915	0.855	0.927	0.464	0.827	0.844	1.439	1.186	1.149	1.098	0.933	0.823	0.857	1.228	0.984	0.997
	LUMBER SAWN ETC CONIFER	0.099	0.109	0.110	0.122	0.245	0.322	#N/A	#N/A	#N/A	#N/A	#N/A	0.362	0.309	0.307	0.292	0.181	0.330	0.300	0.359	0.404	0.427	0.382	0.357	0.340	0.323	0.357	0.327	0.343
	MAIZE UNMILLED	0.061	0.067	0.063	0.095	0.176	0.166	0.171	0.130	0.133	0.091	0.172	0.244	0.231	0.145	0.205	0.084	0.131	0.100	0.125	0.147	0.147	0.134	0.123	0.141	0.130	0.144	0.190	0.146
	IRN,SMPLE STL BLOOMS,ETC	0.103	0.100	0.088	0.097	0.147	0.246	0.358	0.459	0.392	0.415	0.284	0.479	0.234	0.897	6.571	0.149	0.257	0.137	0.258	0.327	0.292	0.252	0.229	0.241	0.210	0.240	0.229	0.239
	RAW BEET AND CANE SUGAR	#N/A	#N/A	#N/A	#N/A	0.461	0.847	#N/A	#N/A	#N/A	#N/A	#N/A	0.594	0.337	0.253	0.255	0.076	0.165	0.235	0.238	0.348	0.466	0.214	0.260	0.263	0.288	0.367	0.323	0.206
	SUNFLOWER SEED OIL	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.670	0.691	0.475	0.745	0.441	0.492	0.240	1.130	0.958	1.108	0.518	0.465	0.451	0.490	0.699	0.625	0.593
	OTH MACHINES NONELECTRIC	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	6.500	8.049	####	6.453	####	7.592	7.669	9.032	4.903	4.251	4.989	8.418	####	9.578	9.574	9.700	9.336	9.667	9.473	####	9.445	9.433
	EXCAVTNG,LEVLING ETC MAC	0.659	1.171	1.634	2.390	2.080	2.411	2.557	2.438	3.193	3.246	3.866	2.848	2.726	2.368	4.002	1.944	4.502	5.726	5.548	3.560	6.301	5.477	6.025	4.271	4.018	3.834	3.416	3.658
	PASS MOTOR VEH EXC BUSES	1.757	1.833	1.802	2.307	3.469	4.792	#N/A	#N/A	#N/A	#N/A	#N/A	3.787	3.870	3.870	4.052	2.551	6.874	7.321	8.943	####	####	9.513	####	####	7.674	6.758	4.922	7.761
	PALM OIL	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1.846	1.727	1.784	0.995	0.951	0.966	0.886	0.930	0.491	0.679	0.504	0.382	0.595	0.867	0.365	0.432	0.445	0.459	0.659	0.604	0.580
	PAPER ETC IN BULK NES	0.163	0.183	0.208	0.250	0.478	0.481	0.476	0.588	0.623	0.488	0.641	0.812	1.020	0.713	0.546	0.254	0.601	0.734	0.931	0.947	0.696	0.589	0.555	0.499	0.534	0.873	0.771	0.721
	ELECTRIC POWER MACHINERY	2.369	1.958	1.774	2.333	2.795	2.221	2.550	3.796	5.420	3.688	4.564	3.543	3.848	4.521	4.819	2.001	3.928	4.224	5.183	5.160	4.899	5.808	6.366	7.455	5.607	5.401	6.214	5.804
	BOVINE MEAT FRESH,FROZEN	0.572	0.685	0.886	1.016	0.989	0.997	5.500	1.331	1.872	1.605	####	1.533	1.727	1.415	1.325	0.681	1.002	1.201	1.401	1.482	1.332	0.993	0.873	1.019	1.207	1.550	1.606	1.578
	OTHER MOTOR VEHCL PARTS	1.960	2.424	2.377	3.382	2.991	3.141	5.639	5.566	7.545	3.317	4.303	3.612	3.582	4.080	4.481	2.232	4.783	4.854	4.530	4.684	5.160	5.199	5.491	4.961	4.682	4.101	3.402	3.281
	VEGETABLE OIL RESIDUES	#N/A	0.131	0.166	0.308	0.286	0.251	0.537	0.530	0.466	0.302	0.305	0.405	0.309	0.358	0.319	0.152	0.244	0.256	0.328	0.340	0.271	0.230	0.191	0.258	0.226	0.210	0.258	0.323
	SWITCHGEAR ETC	3.696	2.799	3.492	3.767	3.244	3.287	3.576	6.100	9.374	6.646	6.256	5.848	5.257	6.346	8.002	3.986	8.415	9.478	####	####	####	7.189	####	####	####	####	####	####
	TOBACCO UNMFD	1.216	1.213	1.241	1.341	1.434	2.021	2.751	2.971	3.987	2.857	2.859	2.861	2.676	3.315	3.387	2.133	3.044	2.397	1.737	1.874	2.079	2.835	2.861	2.901	2.982	2.779	2.756	2.390
	LINE TELEPHONE,ETC EQUIP	4.071	7.416	9.221	####	9.194	####	####	####	####	####	####	####	####	####	####	6.822	####	####	####	####	####	####	####	####	8.876	####	####	####
	RUBBER TYRES,TUBES	1.081	1.259	1.178	1.288	1.557	2.485	2.642	2.977	3.650	2.335	2.637	2.607	1.981	2.628	2.611	1.482	2.711	2.579	2.791	2.656	2.354	2.728	2.603	2.772	2.653	2.439	2.981	2.836
	IRN,SIMPLE STL BARS ETC	0.162	0.151	0.133	0.166	0.373	0.403	0.244	0.292	0.346	0.322	0.359	0.324	0.304	0.270	0.263	0.144	0.267	0.233	0.242	0.306	0.307	0.303	0.282	0.250	0.320	0.311	0.259	0.283
	PUMPS FOR LIQUIDS	2.530	3.057	3.060	2.664	2.827	3.776	4.366	5.426	7.363	4.464	5.889	5.741	4.706	5.276	4.953	2.157	5.219	4.258	6.053	5.842	7.336	7.788	9.419	6.813	7.253	9.107	9.139	9.566
	PROD OF CONDENSATION ETC	0.526	0.452	0.563	0.785	1.209	1.065	1.551	1.946	1.699	1.201	1.355	1.224	1.253	1.184	1.081	0.618	1.293	1.393	1.582	1.434	1.511	1.634	1.594	1.397	1.600	1.894	1.720	1.518
	TEA	0.804	0.927	0.871	0.982	1.148	1.362	1.509	2.558	1.221	1.858	2.003	1.942	2.361	2.151	2.664	1.804	2.027	2.321	1.981	1.865	2.194	1.754	1.897	1.643	1.571	1.483	1.333	1.336
	REFINED SUGAR ETC	0.102	#N/A	0.143	####	0.651	0.616	0.373	0.272	0.286	0.265	0.520	0.670	0.311	0.253	0.255	0.116	0.238	0.213	0.322	0.381	0.460	0.415	0.343	0.299	0.310	0.418	0.396	0.358
	PESTICIDES,DISINFECTANTS	1.254	1.978	1.350	1.872	1.765	3.554	2.662	3.772	6.873	4.593	4.142	3.767	4.463	3.304	3.985	2.356	5.042	5.441	5.850	4.132	4.277	5.963	6.766	7.410	6.939	7.988	7.200	8.229
	CEMENT	0.056	0.179	0.051	0.076	0.085	0.053	0.040	0.054	0.080	0.055	0.052	0.056	0.062	0.066	0.057	0.029	0.055	0.050	0.050	0.055	0.066	0.101	0.205	0.205	0.041	0.039	0.040	0.040
	BUSES	1.194	1.103	1.936	2.113	3.890	2.853	4.778	5.884	6.649	4.492	5.358	5.372	5.686	5.185	6.404	3.789	7.690	6.593	8.238	5.355	7.189	6.513	####	####	####	####	9.787	####
	PISTON ENGINES NON-AIR	2.767	2.364	2.780	3.246	3.423	3.588	4.634	6.420	7.269	3.844	4.520	3.637	4.208	6.820	5.222	2.908	5.278	5.004	4.933	5.926	5.395	3.529	4.785	3.836	3.513	4.519	3.918	3.604
	LORRIES,TRUCKS	1.424	1.505	1.633	1.409	2.309	3.321	3.782	4.897	5.350	3.867	4.185	4.385	4.331	4.359	4.678	2.491	5.015	3.068	5.186	4.234	5.613	5.056	6.643	7.748	6.559	7.761	5.863	7.417
	DISCN SYNTH FIBRE UNCMBD	1.401	1.229	1.181	1.627	2.359	1.952	1.232	0.879	2.215	2.084	2.252	2.522	2.312	2.556	2.378	1.425	2.512	1.984	2.279	2.182	1.936	2.204	1.782	1.717	1.667	2.129	1.759	1.625
	CONT SYNTH FIBRE YARN	3.811	3.523	4.137	3.612	3.721	3.156	4.323	5.001	4.621	2.971	3.350	2.263	2.876	2.611	2.772	1.277	2.451	1.937	1.912	2.119	2.230	2.302	2.254	1.955	1.732	2.416	1.912	1.794
	SPECIAL PURPOSE VESSELS	0.679	2.083	#N/A	#N/A	5.000	0.503	0.336	5.194	9.160	8.601	7.410	6.253	2.551	3.089	4.360	7.622	1.532	6.178	5.734	####	####	7.392	####	4.926	2.788	####	####	8.004
	COATED ETC PAPER NES BLK	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.613	0.723	1.142	0.662	0.746	0.695	0.695	0.711	0.595	0.436	0.776	0.898	0.816	0.872	0.882	0.838	0.797	0.747	0.646	0.898	0.840	0.810
	INSULATED WIRE,CABLE	2.344	2.684	3.187	3.339	5.599	4.353	#N/A	#N/A	#N/A	#N/A	#N/A	0.770	1.174	0.934	1.006	1.584	9.995	7.534	5.803	7.705	5.627	4.366	5.867	4.943	3.958	2.844	2.256	3.261
	MACH PARTS NONELEC NES	2.011	3.186	1.688	2.492	3.173	1.445	2.748	2.559	1.774	0.488	7.534	2.363	3.890	5.312	7.544	3.370	6.800	####	####	####	####	####	####	7.277	9.142	####	####	####
	FISH FRESH,CHILLED,FROZN	0.165	####	0.083	0.222	0.289	0.246	0.184	0.323	0.468	0.403	0.352	0.389	0.373	0.367	0.367	0.167	0.309	0.347	0.442	0.457	0.505	0.533	0.469	0.418	0.417	0.501	0.516	0.519
	PUMPS FOR GASES ETC	2.379	2.118	2.674	2.369	2.753	3.041	####	5.925	7.196	4.550	5.473	5.526	5.161	2.988	4.291	2.136	5.095	4.187	5.275	4.624	5.605	5.482	5.991	5.802	7.305	5.056	5.306	5.243
	PLYWOOD,VENEERS INLAID	0.215	0.245	0.287	0.163	0.564	0.524	0.440	0.560	0.709	0.463	0.656	0.760	0.602	0.608	0.583	0.338	0.633	0.571	0.560	0.577	0.672	0.633	0.560	0.595	0.543	0.474	0.522	0.514
	GREY COTTON YARN IN BULK	0.999	0.978	1.353	1.734	2.686	2.111	1.720	#N/A	0.852	6.571	5.130	3.241	3.611	3.889	3.914	4.080	4.043	6.000	5.000	1.348	2.292	2.081	3.534	1.632	3.313	3.939	3.824	3.600
	LIFTING,LOADING MACH NES	1.453	1.282	1.509	1.431	2.222	2.408	2.592	4.003	5.246	4.179	4.357	4.133	3.802	4.489	4.147	2.190	4.726	4.507	4.894	2.339	4.137	4.572	2.755	4.736	4.413	5.186	4.100	3.206
	LEGUMINOUS VEGTBLES DRY	0.220	0.167	0.148	0.232	0.473	0.249	0.235	0.204	0.188	0.111	0.118	0.239	0.441	0.552	0.399	0.388	0.893	0.546	0.378	0.481	0.647	0.459	0.466	0.415	0.358	0.386	0.480	0.564
	COCKS,VALVES ETC NES	2.262	1.985	2.155	2.029	2.928	2.520	4.285	4.309	4.885	4.563	4.656	3.540	4.109	3.725	3.527	2.504	4.935	5.103	6.167	5.713	7.228	7.045	6.896	7.284	6.292	7.000	6.658	6.240
	TELEVISION RECEIVERS	3.797	4.064	4.189	4.771	4.577	5.137	####	####	####	7.717	5.950	8.615	8.414	####	####	7.460	9.038	####	####	####	9.516	####	####	####	####	9.909	9.597	8.918
	OTH TELECOMM EQUIPMENT	3.021	3.697	5.736	7.165	6.223	6.079	6.051	####	####	9.069	9.624	9.597	8.614	9.026	####	5.253	####	8.239	####	7.363	9.582	####	####	####	####	9.856	####	####
	HEATING,COOLING EQU NES	1.028	1.852	4.000	4.500	4.643	6.556	3.810	3.884	6.915	6.676	7.058	5.508	5.905	9.176	5.879	3.874	7.014	8.043	7.623	9.545	####	####	####	8.823	####	####	####	9.375
	OTH CHEM PROD,PREP NES	#N/A	#N/A	#N/A	#N/A	#N/A	3.357	1.972	2.171	1.937	1.338	1.528	1.209	1.392	1.420	1.204	0.736	1.580	1.616	1.914	1.343	1.017	1.764	3.260	2.688	2.469	2.613	2.092	2.453
	ARTICLES OF PLASTIC NES	0.604	0.581	0.630	1.427	1.193	2.097	2.163	3.691	5.065	3.912	3.017	2.358	2.594	1.767	2.593	1.080	1.605	3.740	4.122	2.263	8.184	5.348	5.286	4.871	2.912	2.249	3.295	2.687

pendix Table 4 (cont'd)
it Price of Major Imports of Egypt, 1970-97
ousand of US dollars a metric ton or unit)

	BUTTER	0.513	#N/A	1.332	1.846	0.966	1.323	1.355	1.878	2.425	1.418	1.704	2.198	2.981	2.511	2.544	1.080	1.415	1.353	1.338	1.479	2.062	1.756	1.626	1.609	1.432	1.582	1.834	1.551
	GAS NATURAL	0.042	0.040	0.040	0.049	0.078	0.063	0.062	0.053	0.063	0.035	0.035	0.374	0.382	0.379	0.341	0.199	0.230	0.172	0.193	0.148	0.237	0.274	0.243	0.226	0.276	0.257	0.205	0.295
	COPPER BARS,WIRE,ETC	1.926	1.463	1.029	1.399	2.302	1.375	1.440	1.927	2.597	2.406	2.580	1.949	1.699	1.563	1.771	0.939	1.533	1.780	2.342	2.814	2.760	2.492	2.459	2.474	2.977	3.425	3.236	2.783
	IRON,STL TUBE,PIPE NES	0.265	0.247	0.364	0.329	0.784	0.770	0.542	0.871	0.897	0.587	0.566	0.616	0.754	0.634	0.767	0.498	0.750	0.847	1.100	1.095	1.088	1.064	1.197	1.075	0.997	1.074	1.155	0.994
	MINERAL CRUSHING ETC MAC	1.443	2.100	1.825	2.077	2.235	2.001	2.169	1.918	4.897	3.825	2.452	4.513	3.413	3.615	2.241	1.748	3.058	4.049	5.880	3.636	3.365	6.825	6.787	4.694	4.803	4.458	4.070	5.792
	SHAFT,CRANK,PULLEY ETC	2.865	1.564	1.503	2.100	2.565	4.188	4.268	5.236	####	4.052	6.067	7.499	6.528	6.942	7.266	3.726	8.095	7.583	7.895	4.557	5.989	6.359	####	5.236	6.957	8.248	7.979	9.825
	IRN,SMPL STL HEAVY PLATE	0.193	0.161	0.169	0.238	0.623	0.473	#N/A	#N/A	#N/A	#N/A	#N/A	0.369	0.457	0.330	0.443	0.164	0.268	0.375	0.517	0.558	0.501	0.367	0.663	0.541	0.536	0.487	0.474	0.402
3	CENTRIFUGES ETC NONDAIRY	1.977	2.591	1.554	1.597	2.769	4.522	4.482	####	7.749	5.183	6.537	5.377	8.869	4.667	4.964	2.163	6.576	5.136	7.548	8.099	5.779	7.437	1.753	8.877	2.605	7.313	8.616	5.657
	BOVINE CATTLE	0.419	0.131	0.315	0.409	0.519	#N/A	1.000	5.993	5.092	1.050	1.499	0.965	1.495	1.493	1.815	0.773	0.956	1.275	1.636	1.360	2.268	2.412	0.802	0.991	1.249	1.388	1.437	1.513
	OFFICE MACHINE PARTS NES	6.128	####	####	####	9.705	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####
	OIL SEEDS,NUTS,ETC NES	0.245	0.283	0.312	0.361	0.619	0.685	0.705	0.923	1.342	0.564	1.016	0.943	0.695	1.009	1.004	0.537	0.963	#N/A	0.654	0.668	1.538	0.726	0.778	0.714	0.616	1.024	0.846	0.923
	IRN,SMP STL THIN CTD NES	0.344	0.295	0.208	0.495	1.045	0.157	0.404	0.537	0.722	0.382	0.477	0.487	0.594	0.446	0.451	0.231	0.515	0.508	0.622	0.763	0.561	0.504	0.492	0.503	0.467	0.611	0.569	0.657
	FODDER NES,INCL SWEETND	0.268	0.253	0.434	0.093	0.517	0.226	0.768	0.696	0.925	0.392	0.742	0.770	0.459	0.439	0.577	0.253	0.435	0.461	0.587	0.543	0.560	0.523	0.467	0.477	0.417	0.476	0.482	0.488
	OTH PHOTOGRAPHIC EQUIP	7.545	6.500	7.500	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####	####	9.974	####
	MACHINE TOOLS FOR METAL	1.767	1.809	1.670	2.352	2.220	4.046	4.070	5.580	3.058	4.877	3.490	4.281	4.120	3.646	4.193	3.100	5.335	5.162	6.602	4.619	8.105	6.209	4.534	3.150	0.406	3.444	4.686	3.752
	COLOURING MATERIAL NES	0.183	0.211	0.217	0.219	0.523	0.513	0.647	0.640	0.937	0.391	0.574	0.573	0.586	0.597	0.639	0.409	0.744	0.701	0.727	0.599	0.684	1.058	1.034	0.682	0.826	0.829	0.923	0.878
	REFRIG EQUIP NONDOMESTIC	3.729	3.083	2.607	3.762	4.694	5.762	#N/A	#N/A	#N/A	#N/A	#N/A	5.113	4.312	3.275	3.507	1.745	4.563	3.946	4.839	7.143	9.781	####	6.752	3.985	8.025	0.753	6.539	6.980
	CAST IRON TUBES,PIPES	0.159	0.291	0.226	1.095	1.004	0.393	0.321	0.482	0.440	0.384	0.446	0.414	0.772	0.688	0.440	0.403	0.588	#N/A	1.664	0.972	6.400	1.271	####	0.811	1.527	0.965	0.896	0.634
	PRINTING MACHINES NES	4.240	3.887	6.016	4.310	5.241	8.686	9.880	####	####	####	####	####	9.857	####	####	7.135	####	####	####	8.682	####	####	####	####	9.856	####	####	####
	HETEROCYCLIC CMPDS ETC	5.056	5.180	8.078	4.638	4.244	9.182	6.546	####	####	####	####	6.315	6.668	6.812	9.015	4.265	7.391	#N/A	####	4.149	7.920	####	####	####	9.832	3.544	####	####
	WEAVING,KNITTING,ETC MCH	1.593	2.077	2.082	1.866	5.109	6.232	7.054	7.629	8.705	4.559	3.391	3.626	5.653	7.001	7.643	4.063	9.093	3.605	7.562	8.845	8.312	8.556	9.937	7.029	8.486	8.430	7.683	7.637
	SPRAYING MACHINERY	2.318	2.195	2.665	2.188	3.759	5.667	3.373	3.948	5.933	6.037	3.381	4.260	3.581	2.455	4.117	2.184	4.841	3.561	4.821	4.809	5.329	2.115	6.277	8.048	4.989	6.914	5.692	####
	TRANSISTORS,VALVES,ETC	7.833	4.203	6.757	7.000	3.220	####	9.516	6.123	####	8.191	5.374	####	6.209	3.861	7.579	5.986	####	####	####	8.417	####	####	####	####	####	9.006	7.233	8.968
	SPECIAL MOTOR VEHCLS NES	1.560	1.987	2.394	2.137	5.744	2.970	3.275	5.441	4.157	5.412	5.567	4.357	6.282	5.475	5.778	4.373	7.708	8.332	7.261	6.883	####	####	8.741	9.546	7.812	####	7.682	7.098
	PREPRD PIGMENT,GLAZE ETC	0.497	0.473	0.493	0.473	0.737	0.862	1.275	0.960	1.423	1.323	1.601	1.192	1.293	1.122	0.932	0.411	1.114	1.255	1.090	1.086	1.225	1.198	1.048	0.847	0.809	0.783	0.779	0.661
	CHEESE AND CURD	0.552	0.502	0.751	0.940	1.138	1.416	1.497	2.429	2.446	1.282	1.780	1.908	1.534	1.708	1.631	0.993	1.668	1.365	1.485	1.486	1.331	1.620	1.672	1.732	1.750	2.217	2.405	2.330
	POTATOES FRSH EXCL SWEET	0.097	0.098	0.102	0.156	0.254	0.325	0.375	0.363	0.257	0.217	0.116	0.333	0.329	0.412	0.295	0.149	0.324	0.345	0.336	0.315	0.403	0.415	0.426	0.337	0.531	0.674	0.619	0.465
	SYNTH ORG DYE,NAT INDIGO	3.347	2.818	3.872	4.288	5.174	6.595	6.299	####	####	9.434	8.901	7.592	5.103	6.671	4.608	4.531	9.025	####	6.496	9.387	7.578	####	9.377	9.122	4.997	4.544	5.856	6.620
	MEAT OR FISH MEAL FODDER	0.237	0.224	0.191	0.479	0.374	0.569	0.586	0.822	0.664	0.470	0.560	0.798	0.593	0.495	0.560	0.225	0.444	0.559	0.595	0.554	0.440	0.418	0.396	0.409	0.387	0.387	0.413	0.433
	MECHANICAL WOOD PULP	0.191	0.192	0.207	0.243	0.485	0.457	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.529	0.905	0.635	0.547
	OTHER MFD TOBACCO	#N/A	5.500	1.000	#N/A	3.000	####	####	####	####	9.227	####	7.000	####	####	####	####	9.864	9.462	####	9.047	####	####	####	####	####	####	####	####
	RESIDUAL FUEL OILS	0.084	0.081	0.086	0.104	0.107	0.197	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	7.000	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.050	#N/A	#N/A	0.229	0.221	0.176	0.236
	STRUCTURES,PARTS IRN,STL	0.600	0.434	0.394	0.976	1.475	0.931	1.762	0.919	0.852	1.660	1.678	1.666	1.980	2.387	1.250	0.977	1.855	1.928	1.846	3.173	2.777	3.500	4.861	3.387	1.476	2.285	2.596	1.315
	COATED PRINTING PAPER	0.342	0.337	0.335	0.399	0.478	0.622	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1.255	0.978	0.843	0.920	1.196	1.089	0.873
	IRN,STL TUBE SEAMLES NES	0.224	0.254	0.467	0.323	0.423	0.857	#N/A	#N/A	#N/A	#N/A	#N/A	0.768	0.752	1.436	0.781	0.778	0.535	0.649	1.021	0.991	0.962	0.998	0.861	#N/A	1.025	0.861	0.927	0.856
	BLCHD COTTON FABRIC NES	5.500	5.000	####	2.841	5.189	0.728	1.254	4.667	0.277	#N/A	4.000	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	4.127	5.466	5.261	5.147	5.836	6.378	6.680
	ETHERS ETC	2.167	1.341	0.781	2.200	1.111	1.333	1.288	1.239	3.925	1.287	2.163	6.789	####	2.146	3.459	1.758	1.102	2.611	1.654	2.651	1.630	1.798	2.273	1.530	2.450	1.906	1.631	0.303
	REFRACTORY BRICK NES	0.195	0.210	0.248	0.273	0.431	0.669	0.454	0.626	0.441	0.466	0.532	0.385	0.517	0.462	0.866	0.523	0.778	0.953	0.922	0.565	0.826	0.845	0.915	0.813	0.940	0.830	1.065	1.022

urce: UN, COMTRADE database.

Appendix Table 5
Value of Selected Major Exports of Egypt, 1970-97
(thousands of US dollars)

SITC, Rev1	Description	Destination	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
3324	RESIDUAL FUEL OILS	FRANCE,MONAC	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	11995	30191	36375	3453	7278	7631	11586	12138	13503	16113	51844	10987	17216	22497	25786	67221	53759
3324	RESIDUAL FUEL OILS	WORLD	#N/A	#N/A	2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	139026	163256	241931	174784	142570	186540	105982	93419	72083	68678	128565	133669	180677	486330	461504	809277	886229
33101	CRUDE PETROLEUM	ISRAEL	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	182300	549194	442892	390544	367967	228243	227443	136888	141629	156291	159657	360797	274711	221832	170030	148277	315655	243678
33101	CRUDE PETROLEUM	ITALY	1968	229	1977	4365	1851	#N/A	42197	112176	112128	393127	711437	645407	564817	445588	394111	209265	160811	113967	31891	147841	45509	351477	231253	250876	167143	119570	60935	52254
33101	CRUDE PETROLEUM	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	94615	128486	162640	129812	6855	11324	76948	66596	26017	81773	159173	160473	280722	127338	256301	206545	184944
33101	CRUDE PETROLEUM	WORLD	35230	4481	46610	93041	61049	59078	280619	304428	359493	566413	2E+06	2E+06	2E+06	2E+06	1E+06	991241	860302	525818	460694	559984	478986	2E+06	1E+06	1E+06	792954	719185	816584	668163
6513	GREY COTTON YARN IN BULK	BELGIUM-LUX	52	#N/A	64	93	#N/A	105	9807	4973	2707	6177	6901	6396	7133	10635	20797	6148	16690	33629	27355	41053	35077	29836	28825	19914	35420	46768	22680	28384
6513	GREY COTTON YARN IN BULK	CANADA	246	133	400	287	368	276	671	1185	1844	5667	8677	1762	761	940	2253	948	3227	9844	1048	1241	1309	2575	1631	1501	3120	3161	731	867
6513	GREY COTTON YARN IN BULK	FRANCE,MONAC	2	#N/A	8	10	1025	13	2595	952	12092	8040	9215	7008	7947	10318	12976	5503	13573	22055	11420	25846	22303	17914	14925	16042	35791	12827	6216	10726
6513	GREY COTTON YARN IN BULK	UNTD.KINGDOM	401	600	458	426	481	128	341	334	1163	2480	2747	2770	2334	3095	3974	2242	6823	12082	9566	15611	13476	11489	15502	11005	18922	13102	10586	9970
6513	GREY COTTON YARN IN BULK	WORLD	26928	27638	30435	33172	46116	41705	147242	175342	229012	185351	194100	155147	123751	195920	220500	109270	240983	435554	374765	457201	388328	309636	246102	214100	377887	305726	193485	280603
2631	RAW COTTON,EXCL LINTERS	FRANCE,MONAC	9929	8925	12805	18078	25695	13880	15756	17728	21223	10015	16106	26433	37696	11319	15345	4955	3506	1528	3237	2920	5466	3071	2691	2705	4455	1904	4458	1692
2631	RAW COTTON,EXCL LINTERS	GREECE	6095	6379	5309	5343	11068	6115	6862	10945	7639	5094	3927	5650	4868	18854	7168	4405	7971	2934	4022	5073	3487	2978	1296	1645	2468	3462	5082	3513
2631	RAW COTTON,EXCL LINTERS	ITALY	15308	14108	11970	25398	28168	10749	14674	15215	21249	23642	35611	46837	42057	55575	82710	36241	53181	26680	28341	33451	10899	4874	4682	4268	16749	28181	12585	33231
2631	RAW COTTON,EXCL LINTERS	SPAIN	5040	4922	8852	16829	10585	7569	8698	11256	6566	11118	13881	10194	11125	11739	11041	3399	6530	3870	2809	4769	3512	393	519	587	3414	1254	1957	3084
2631	RAW COTTON,EXCL LINTERS	WORLD	340099	402468	372505	483564	713018	513665	395481	465799	336116	381824	423386	457091	408605	441115	485803	211381	332518	182003	169117	274335	208757	60687	52546	43519	233630	152217	91831	110223
65213	GREY WOVEN COTTON NES	ITALY	1432	1846	1970	2102	2655	2135	2872	2742	4459	6331	7147	3284	3153	5998	5586	3719	5889	10515	9240	7567	9342	10193	11491	11033	14956	17504	16608	19005
65213	GREY WOVEN COTTON NES	NETHERLANDS	396	547	1104	1350	974	479	799	1486	1568	2761	3193	992	381	703	1057	568	321	807	1484	1369	2216	1179	981	810	2937	4212	2372	6714
65213	GREY WOVEN COTTON NES	UNTD.KINGDOM	636	931	1000	1321	1582	616	1196	1686	4198	5253	2833	2408	1893	3504	4914	2191	4476	5763	5922	7653	9408	11271	6637	8738	13597	10014	13503	14319
65213	GREY WOVEN COTTON NES	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	7157	3596	8531	10293	3437	21370	28465	12959	20367	17958	24955	13148	14107	22500	16820	4179	10818
65213	GREY WOVEN COTTON NES	WORLD	12511	11916	12806	15627	16560	7359	34209	46920	50983	47090	43857	33606	22575	40445	53859	29834	70682	94559	93556	81193	80745	85449	63136	73555	111592	105862	83813	97630
84143	UNDERWEAR KNIT NONELASTC	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	25	75	40	1	6	1005	3119	3609	4811	2586	1598	729	758	36604	36520	35712	60293
84143	UNDERWEAR KNIT NONELASTC	WORLD	2645	3531	4942	5843	9688	8735	8570	8257	8752	4550	2895	3037	1726	2488	5399	2185	6912	9986	12969	18724	14470	10836	9380	9137	72933	75026	73800	94892
5214	COAL,PETR DISTILATES NES	GREECE	#N/A	#N/A	#N/A	35	32	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	22	21	234	34	208	201	289	83	96	110	176	320	125	34	23	10
5214	COAL,PETR DISTILATES NES	WORLD	#N/A	#N/A	30	41	83	74	80	193	317	357	505	286	148	85	683	157	474	276	289	149	2063	1080	1869	1529	4683	2837	722	81981
84113	MENS UNDERWEAR NOT KNIT	FRANCE,MONAC	#N/A	#N/A	1	3	#N/A	3	1	#N/A	3	28	376	376	206	350	632	115	811	283	250	366	351	403	740	522	1521	3387	1762	7795
84113	MENS UNDERWEAR NOT KNIT	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1562	633		129	81	1981	2806	2839	3259	3333	1753	4073	12278	30464	36937	25719	32909
84113	MENS UNDERWEAR NOT KNIT	WORLD	1918	3534	4831	4935	5317	8749	5821	5934	5366	4355	4749	3461	2017	3028	3070	2215	5797	6682	10571	11348	11177	10350	13144	19615	47227	59097	46404	61951
84112	WOMENS OUTERWEAR NONKNIT	WORLD	1099	1132	1803	3460	8081	14068	12020	5853	3057	1314	1714	988	196	317	1026	297	528	1702	5595	12030	18459	21962	21749	19628	66637	75024	64518	53811
84111	MENS OUTERWEAR NOT KNIT	NETHERLANDS	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	54	71	1261	304	205	147	53	354	246	368	791	1881	2767	2600	2553	1080	2107	1873	1785
84111	MENS OUTERWEAR NOT KNIT	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	36	140	26	#N/A	98	647	3287	4305	8506	15167	19076	27595	31245	10808	21412	31713	26935
84111	MENS OUTERWEAR NOT KNIT	WORLD	1018	512	435	548	1063	1143	1125	1709	3798	1077	469	1801	2738	2505	2780	643	2800	7313	10715	32991	43430	73122	70170	79794	25801	35581	46604	41507
0541	POTATOES FRSH EXCL SWEET	LEBANON	46	38	133	128	410	338	737	2665	2357	3540	6603	9569	11329	7368	6036	1538	2346	2110	1885	1246	331	659	959	2497	3113	10900	5704	5155
0541	POTATOES FRSH EXCL SWEET	SAUDI ARABIA	249	59	241	412	797	552	1007	1014	282	471	1171	599	2194	3606	4244	2950	2588	5360	5376	5550	3204	7077	9267	1529	1244	915	94	824
0541	POTATOES FRSH EXCL SWEET	UNTD.KINGDOM	3416	3142	5069	9170	8899	2615	23352	26141	10847	21096	24163	14889	25824	17498	21986	7035	10309	14853	19934	15104	17235	22242	15100	15258	11620	24121	18644	14236
0541	POTATOES FRSH EXCL SWEET	WORLD	8535	4633	7385	16738	15045	8218	43863	41923	14781	26875	32499	25653	41240	30637	36775	13345	16534	24280	31505	26884	25158	47818	42649	32135	26599	102115	79909	41249
3323	DISTILLATE FUELS	WORLD	309	257	3160	3793	435	14673	#N/A	#N/A	#N/A	#N/A	#N/A	58179	30226	52998	39292	21377	29517	17553	12368	8940	4336	11731	15791	16930	15590	12370	17500	23462
6576	CARPETS ETC UNKNOTTED	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	62	281	50	23	6	21	62	600	726	2429	3220	5914	6152	8497	10999	6553	11315
6576	CARPETS ETC UNKNOTTED	WORLD	1511	2208	2175	1525	2407	3595	4908	7994	6385	4480	2445	3482	6455	3705	2922	1095	848	2657	6758	12599	28449	23746	26032	28292	28056	30537	24543	22834
0545	OTHER FRESH VEGETABLES	FRANCE,MONAC	1835	1550	2221	3199	2748	2500	3125	2995	2656	2388	3556	1761	1972	1372	810	476	909	1697	1055	2150	2501	412	1091	750	1521	1928	754	1677
0545	OTHER FRESH VEGETABLES	ITALY	646	189	528	1163	377	703	1062	1567	1270	1138	2264	1321	2092	655	1151	446	961	985	867	1164	745	297	428	862	647	980	2176	1681
0545	OTHER FRESH VEGETABLES	NETHERLANDS	1822	779	688	2405	1642	2000	2587	4003	2912	1672	964	2726	4595	3140	2706	679	3270	2340	1743	2626	1442	993	1657	2055	1018	1438	1216	247
0545	OTHER FRESH VEGETABLES	UNTD.KINGDOM	1976	1293	706	2511	1182	1070	837	481	332	78	771	556	554	633	294	207	527	577	284	471	851	712	1975	2415	1315	1257	700	521
0545	OTHER FRESH VEGETABLES	WORLD	18439	14851	16529	32559	29023	25711	28062	34086	29876	9521	18228	16842	21264	27863	17120	7530	13718	17884	17877	16220	24257	20201	23062	33627	29832	25510	17876	18253

2924	VEG USED IN PHARMACY ETC	FRANCE,MONAC	17	3	2	12	6	39	61	319	609	806	432	886	364	652	876	545	1008	750	2927	363	346	328	398	506	511	508	634	542
2924	VEG USED IN PHARMACY ETC	ITALY	326	182	134	364	197	566	363	848	1401	1931	1528	1035	1148	1035	692	496	1292	1130	713	629	576	586	737	812	900	1218	1002	1109
2924	VEG USED IN PHARMACY ETC	UNTD.KINGDOM	#N/A	1	6	4	9	27	6	93	150	147	207	212	286	291	362	163	401	305	317	428	556	430	604	621	559	769	931	923
2924	VEG USED IN PHARMACY ETC	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1151	1970	1839	2207	827	2291	2022	2627	3288	3496	4128	4602	2789	3320	3664	4580	4003
2924	VEG USED IN PHARMACY ETC	WORLD	1731	1086	1117	1852	1262	3041	2170	7838	8103	8291	6554	6231	7736	9785	10203	4393	10469	10442	11385	9076	10458	12670	12592	9867	11366	13550	16091	18107
05461	VEGETABLES FROZEN	KUWAIT	72	152	138	98	229	207	328	339	290	449	574	753	820	1112	1275	508	1010	888	1327	1229	774	724	1529	1014	1187	1615	2236	2544
05461	VEGETABLES FROZEN	QATAR	#N/A	#N/A	#N/A	21	3	14	58	101	83	54	8	48	182	198	134	55	188	118	255	254	180	98	158	143	244	279	529	583
05461	VEGETABLES FROZEN	SAUDI ARABIA	#N/A	#N/A	#N/A	1	#N/A	#N/A	#N/A	#N/A	59	#N/A	#N/A	74	99	182	145	63	738	759	4061	2639	2171	4505	4800	5193	4884	5542	5166	8830
05461	VEGETABLES FROZEN	WORLD	75	160	147	153	267	266	568	821	998	905	777	1102	1529	2016	2106	807	2416	2166	6383	5308	4063	6664	7928	7800	8793	10731	11189	17826
82109	FURNITURE,PARTS NES	KUWAIT	96	39	40	37	28	32	48	60	126	88	5	24	141	49	56	18	67	28	212	571	653	1744	3406	951	785	224	329	464

Appendix Table 5 (cont'd)
Value of Selected Major Exports of Egypt, 1970-97
(thousands of US dollars)

82109	FURNITURE,PARTS NES	SAUDI ARABIA	19	11	39	37	95	71	208	366	302	123	101	482	1003	243	236	76	96	84	255	1104	605	1406	2890	4116	3805	2157	1496	3127
82109	FURNITURE,PARTS NES	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	33	14	31	47	15	69	219	305	618	571	824	1727	1772	1943	2794	2738	2809
82109	FURNITURE,PARTS NES	WORLD	5534	6514	5324	6417	9515	9707	7873	5750	3801	3709	2444	2512	2527	2097	4967	442	4562	5420	16351	20141	58280	40263	22913	18500	14792	12940	13430	15966
0511	ORANGES,TANGERINES ETC	KUWAIT	1	#N/A	#N/A	59	1	13	3	2	983	176	#N/A	49	12	7	2	3	2	27	497	548	86	31	291	348	316	50	121	97
0511	ORANGES,TANGERINES ETC	NETHERLANDS	441	448	446	572	516	489	1810	702	430	451	2012	305	197	309	516	265	40	1020	676	1264	853	2979	1096	181	750	1650	13	172
0511	ORANGES,TANGERINES ETC	SAUDI ARABIA	517	269	462	596	359	2273	4034	5091	6262	7739	8261	15025	13663	15409	15604	8538	11900	11833	11678	10228	4934	4506	6184	1566	1503	2121	1880	670
0511	ORANGES,TANGERINES ETC	WORLD	15799	20710	11054	39941	28475	47628	48756	54950	53327	22552	39085	47321	52800	73758	76401	42829	33330	105845	49283	72992	55083	44481	32543	16996	8360	13217	17358	14118
68421	ALUMINIUM BARS,WIRE,ETC	NETHERLANDS	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	7580	15652	5654	26381	13268	8234	39495	70999	87721	48312	65345	81551	120551	116459	98813	58396	91702	55849	40442	20000	1293	224
68421	ALUMINIUM BARS,WIRE,ETC	SAUDI ARABIA	#N/A	#N/A	#N/A	#N/A	5	#N/A	#N/A	#N/A	439	3567	5422	3712	5951	1872	1328	1571	7534	9175	8901	10514	3160	2490	3176	1726	339	86	272	260
68421	ALUMINIUM BARS,WIRE,ETC	WORLD	260	243	179	#N/A	5	#N/A	16798	32042	10022	44336	21812	20589	49583	87236	129652	72845	123151	158242	248689	236981	198359	135582	168825	120535	125519	20242	14591	13649
05551	VEG FRUIT IN VINEGAR	KUWAIT	19	12	10	9	7	18	3	22	6	12	31	9	19	70	12	10	142	76	105	166	153	114	167	153	148	194	238	310
05551	VEG FRUIT IN VINEGAR	SAUDI ARABIA	16	15	54	#N/A	10	2	16	24	84	150	141	61	113	67	67	79	112	113	131	218	407	344	338	627	435	411	342	305
05551	VEG FRUIT IN VINEGAR	WORLD	56	28	105	13	32	40	39	68	103	182	187	100	164	161	81	92	272	271	337	568	1100	899	666	966	785	849	1310	1380
84144	OUTERWEAR KNIT NONELASTC	UNTD.KINGDOM	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	409	444	415	189	156	155	108	389	370	1947	4411	7316	5403	4966	7213	912	484	719	920
84144	OUTERWEAR KNIT NONELASTC	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	139	110	25	209	202	1322	4034	7132	12302	14113	19391	18771	21417	8550	3011	4058	5099
84144	OUTERWEAR KNIT NONELASTC	WORLD	1794	2148	5577	11559	17881	30301	13877	9781	12062	6348	9188	10158	5561	5050	5235	4648	6714	12646	25678	48870	51740	50398	41910	48455	14601	6534	9736	12729
5530	PERFUME,COSMETICS,ETC	WORLD	2755	4729	5257	7339	9318	26625	20635	25224	20104	10142	4720	3858	5196	18194	4640	1403	20	5739	23476	14970	40339	34480	10422	9544	11879	9456	17284	11855

Source: UN, COMTRADE database.

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Description	Destination	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	199
RESIDUAL FUEL OILS	FRANCE,MONAC	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	97623	228801	284046	26184	118875	118001	243304	274108	201183	150261	761549	182336	261470	268604	287361	396000	32030
RESIDUAL FUEL OILS	WORLD	#N/A	#N/A	10	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	870616	979830	1E+06	963618	2E+06	2E+06	2E+06	2E+06	1E+06	1E+06	2E+06	2E+06	2E+06	6E+06	6E+06	6E+06	6E+0
CRUDE PETROLEUM	ISRAEL	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	744906	2E+06	2E+06	2E+06	2E+06	2E+06	2E+06	3E+06	2E+06	2E+06	1E+06	3E+06	3E+06	2E+06	2E+06	1E+06	3E+06	2E+0
CRUDE PETROLEUM	ITALY	160611	34639	192777	465084	30243	#N/A	594371	1E+06	1E+06	4E+06	4E+06	3E+06	3E+06	2E+06	2E+06	2E+06	1E+06	2E+06	493995	1E+06	388250	3E+06	2E+06	2E+06	2E+06	1E+06	501342	49400
CRUDE PETROLEUM	USA,PR,USVI	#N/A	#N/A	429178	726236	#N/A	#N/A	675920	272110	872204	358220	834787	361496	532038	799075	661226	74308	184141	2E+06	1E+06	266984	795453	1E+06	2E+06	3E+06	1E+06	3E+06	2E+06	2E+0
CRUDE PETROLEUM	WORLD	4E+06	528895	5E+06	1E+07	940072	922746	4E+06	4E+06	4E+06	5E+06	8E+06	7E+06	8E+06	8E+06	7E+06	1E+07	7E+06	1E+07	7E+06	5E+06	4E+06	1E+07	1E+07	1E+07	8E+06	7E+06	7E+06	6E+0
GREY COTTON YARN IN BULK	BELGIUM-LUX	45	#N/A	46	40	#N/A	40	4608	1889	873	2061	1813	1789	2588	3610	6782	4022	5123	9277	6863	11803	8829	8282	7342	6368	10470	10835	5625	656
GREY COTTON YARN IN BULK	CANADA	202	113	362	225	212	194	436	641	943	2429	3380	645	295	383	939	829	1219	3502	351	403	450	732	454	382	963	743	156	15
GREY COTTON YARN IN BULK	FRANCE,MONAC	1	#N/A	5	5	375	7	1142	331	537	2363	2170	1950	2267	3012	3881	3565	3632	6355	2806	6595	5103	4704	4018	4815	10101	2898	1309	241
GREY COTTON YARN IN BULK	UNTD.KINGDOM	227	333	220	172	151	58	116	82	310	663	585	694	707	965	1186	1393	2087	3403	2175	4034	3341	3243	4367	3442	5588	3015	2512	254
GREY COTTON YARN IN BULK	WORLD	19071	18970	19860	18111	14887	11767	36550	31837	35009	44451	46158	36182	32770	59953	64992	63813	61328	101305	66185	124881	79093	81474	67131	65906	112084	69390	44612	6494
RAW COTTON,EXCL LINTERS	FRANCE,MONAC	9091	8390	10804	10724	9006	5180	7611	5909	8753	3394	5332	8998	17028	4644	4961	2991	1271	1032	982	594	938	640	684	990	1843	801	1057	58
RAW COTTON,EXCL LINTERS	GREECE	6604	7278	5528	5736	3969	3062	3752	3977	3211	2356	2227	2667	2452	8585	2548	2882	2708	2230	1613	1111	641	655	461	591	1086	1543	1326	140
RAW COTTON,EXCL LINTERS	ITALY	14512	15067	11574	17529	10551	4588	7560	5311	9145	8546	12648	16600	18382	25139	29564	25817	23633	20845	13966	7033	2248	1051	1355	1987	8286	12616	3641	1346
RAW COTTON,EXCL LINTERS	SPAIN	5578	5970	8509	11828	3848	3115	4557	3940	2774	4042	4620	3310	4532	5210	3587	2139	2711	2776	1599	1022	699	107	146	216	1623	523	483	106
RAW COTTON,EXCL LINTERS	WORLD	285223	333391	294897	284780	232240	185127	165176	143881	132970	146584	164066	177563	200130	208892	174319	143833	145637	129915	79930	58412	39444	12987	15541	18395	113371	67417	23289	4179
GREY WOVEN COTTON NES	ITALY	1169	1471	1491	1181	1024	796	1234	951	1562	1833	1729	856	857	1598	1621	2246	1456	2859	2330	2478	2249	2467	2811	2893	4080	3870	3987	400
GREY WOVEN COTTON NES	NETHERLANDS	326	463	800	700	428	211	365	501	490	727	731	270	105	182	285	324	68	203	378	361	554	318	260	229	784	907	491	144
GREY WOVEN COTTON NES	UNTD.KINGDOM	588	836	783	817	673	321	619	623	1291	1333	665	724	680	1240	1719	1446	1311	1745	1438	2149	2319	2839	1754	2633	3382	2225	3154	324
GREY WOVEN COTTON NES	USA,PR,USVI	3797	3954	4516	3822	2340	163	1483	1058	2062	4363	3923	2500	1216	3330	3524	2323	6209	7609	4055	6561	5375	7281	3823	4516	6406	4208	1016	255
GREY WOVEN COTTON NES	WORLD	10683	10283	9963	9023	6334	2624	10533	11996	13308	14485	12419	8743	6276	11746	14677	15538	17794	22129	18960	64761	39962	23312	21428	22085	29205	23131	19492	2114
UNDERWEAR KNIT NONELASTC	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2	10	8	#N/A	#N/A	137	398	494	583	269	237	96	105	4118	3778	3516	537
UNDERWEAR KNIT NONELASTC	WORLD	747	1065	1264	1394	1157	1040	1021	933	850	574	307	336	155	212	427	312	636	844	1185	1768	1456	1343	1303	1133	8010	7833	7344	886
COAL,PETR DISTILATES NES	GREECE	#N/A	#N/A	#N/A	250	150	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	100	150	1500	437	904	800	1200	500	1000	800	1300	2370	923	270	170	10
COAL,PETR DISTILATES NES	WORLD	#N/A	#N/A	700	370	400	650	600	1696	2329	3185	3736	1670	910	455	3153	1737	2373	1300	1200	2547	8657	4999	9257	8953	28586	12334	4502	1396
MENS UNDERWEAR NOT KNIT	FRANCE,MONAC	#N/A	#N/A	#N/A	1	#N/A	#N/A	#N/A	#N/A	#N/A	5	50	54	33	52	50	15	72	27	13	12	32	40	63	42	160	254	184	74
MENS UNDERWEAR NOT KNIT	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	2	3	2	#N/A	351	347	300	91	#N/A	18	19	270	379	256	337	379	241	501	1654	3943	3866	2951	328
MENS UNDERWEAR NOT KNIT	WORLD	488	977	1264	1066	619	1133	775	785	796	842	807	569	235	426	281	507	706	747	1172	1151	1308	1150	1497	2506	6431	6340	5322	644
WOMENS OUTERWEAR NONKNIT	WORLD	159	132	183	275	437	724	714	353	151	127	143	81	23	49	104	58	60	194	509	1256	1747	2418	2221	1769	7530	7530	6493	516
MENS OUTERWEAR NOT KNIT	NETHERLANDS	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	10	15	1017	56	37	29	9	51	32	37	100	171	267	316	312	135	253	244	26
MENS OUTERWEAR NOT KNIT	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	11	#N/A	3	#N/A	11	25	3	#N/A	132	56	383	418	1183	1834	2293	2974	3689	1305	2318	3729	289
MENS OUTERWEAR NOT KNIT	WORLD	307	151	134	109	152	129	137	101	215	115	68	1107	344	240	194	304	316	790	1100	2652	3887	9046	8730	8675	2654	3630	5168	421
POTATOES FRSH EXCL SWEET	LEBANON	544	549	1526	1191	3832	2608	4187	15131	20515	16463	33183	38360	50891	36777	23070	16567	18101	13754	13992	12606	3279	3382	7852	17744	18359	50486	32901	3355
POTATOES FRSH EXCL SWEET	SAUDI ARABIA	2908	958	3407	3679	7228	3920	5416	5753	2439	2431	7948	2301	9554	18184	17399	28204	19277	33783	37422	41162	20706	28982	35617	9801	5714	4165	257	185
POTATOES FRSH EXCL SWEET	UNTD.KINGDOM	35035	39622	51240	57805	56974	16575	86732	112542	67897	85336	100031	53410	84599	76462	74722	64567	61470	64336	83900	70209	86612	95591	71080	68882	57955	101361	89877	6478
POTATOES FRSH EXCL SWEET	WORLD	90283	61432	76689	107921	99838	47565	157733	166124	97830	113072	143887	96328	152168	139823	133294	127923	107740	123327	166207	155510	135571	217837	209365	175245	131865	418744	411172	23296
DISTILLATE FUELS	WORLD	24958	19364	262308	169476	33066	243409	#N/A	#N/A	#N/A	#N/A	#N/A	152923	84816	158089	138868	145925	129403	123928	144307	73747	76938	48084	62219	69268	97369	74121	95000	12030
CARPETS ETC UNKNOTTED	USA,PR,USVI	#N/A	#N/A	1	2	2	3	1	3	6	2	2	6	29	4	3	3	3	8	54	107	124	521	1063	913	2272	1824	1187	204
CARPETS ETC UNKNOTTED	WORLD	440	571	547	329	347	466	484	861	542	705	396	522	656	475	332	324	127	318	1016	2138	3438	3705	4875	5750	7826	6854	5814	473
OTHER FRESH VEGETABLES	FRANCE,MONAC	11924	11658	21140	11159	17072	10724	10608	11937	12211	10123	11036	4563	3691	6242	2100	4795	3522	6547	4641	9932	8170	1262	3078	1866	3579	7904	1784	218
OTHER FRESH VEGETABLES	ITALY	3980	1274	4022	4052	1590	2738	3281	4413	4867	4907	6503	2952	3431	2574	3626	3472	4574	3346	3885	5496	2567	722	1589	1734	1762	3263	5372	602
OTHER FRESH VEGETABLES	NETHERLANDS	11692	6172	6528	9410	8922	7733	8075	12193	6942	5548	3981	5425	7173	6451	5900	3480	9370	7449	5894	6061	4256	2978	4121	4671	2431	4527	4511	112
OTHER FRESH VEGETABLES	UNTD.KINGDOM	13397	11181	7207	10056	7867	4983	3009	1349	1397	225	2538	1451	846	1861	631	882	1338	2311	1084	1574	2028	2111	3527	4312	2494	4308	2471	189
OTHER FRESH VEGETABLES	WORLD	109027	101418	123832	113905	129753	91349	82616	110880	82715	34275	52980	35253	36237	63641	46340	47636	43574	50639	67658	67647	85070	77577	79579	165093	153151	139622	124855	12090
VEG USED IN PHARMACY ETC	FRANCE,MONAC	7	2	2	16	4	23	51	396	909	904	347	564	370	638	1105	881	924	912	634	509	461	416	450	657	680	684	844	75
VEG USED IN PHARMACY ETC	ITALY	216	142	119	229	115	286	202	422	631	866	643	567	669	484	349	531	557	540	523	488	346	392	384	461	595	840	641	65
VEG USED IN PHARMACY ETC	UNTD.KINGDOM	#N/A	2	9	5	10	33	8	85	201	157	204	327	268	225	332	362	424	346	395	535	585	527	617	694	692	914	1026	97

VEG USED IN PHARMACY ETC	USA,PR,USVI	43	51	44	34	71	101	3127	672	745	759	668	953	1544	1395	1770	1844	1901	1766	2276	2647	2894	3233	3797	3141	3697	4213	4664	360
VEG USED IN PHARMACY ETC	WORLD	1207	927	996	1356	851	2014	4530	5385	5574	5745	3522	4483	5044	5708	7062	6864	6913	7431	7067	7958	7925	9469	9519	9301	10547	12086	13319	1384
VEGETABLES FROZEN	KUWAIT	143	315	328	190	456	384	454	258	293	541	609	690	672	881	1013	827	3905	817	1139	1347	900	787	1886	1601	1713	2170	2809	282
VEGETABLES FROZEN	QATAR	#N/A	#N/A	#N/A	38	4	25	66	75	53	47	7	47	163	159	99	88	154	105	291	346	236	134	199	167	317	312	607	65
VEGETABLES FROZEN	SAUDI ARABIA	#N/A	#N/A	#N/A	1	#N/A	#N/A	#N/A	#N/A	27	#N/A	#N/A	63	85	144	107	106	624	752	3366	3696	3132	6225	7040	7874	7105	7209	7729	837
VEGETABLES FROZEN	WORLD	150	330	341	291	512	461	729	607	752	999	739	981	1200	1569	1624	1306	5074	2018	5368	6399	5209	8839	10645	11296	11582	12768	14480	1709
FURNITURE,PARTS NES	KUWAIT	91	41	36	27	11	11	21	15	17	22	2	8	37	14	10	9	22	8	96	247	209	696	1433	398	484	127	251	23
FURNITURE,PARTS NES	SAUDI ARABIA	31	9	50	41	130	46	109	126	100	71	50	144	245	68	67	59	30	49	129	364	344	670	1535	1428	2089	1093	1153	147
FURNITURE,PARTS NES	USA,PR,USVI	5	#N/A	3	#N/A	#N/A	2	2	5	30	91	33	15	5	13	18	9	21	106	152	192	231	448	876	1160	1532	2061	2130	233
FURNITURE,PARTS NES	WORLD	5933	6673	5371	5659	6920	4494	3411	1949	1889	1991	1079	1129	907	747	1670	289	1380	1945	4026	4717	17905	15577	8830	7501	8966	7966	9039	1012
ORANGES,TANGERINES ETC	KUWAIT	6	#N/A	#N/A	367	1	61	18	2	2575	345		70	19	10	2	16	6	51	1333	1613	241	88	872	842	931	153	404	31

ppendix Table 6 (cont'd)

olume of Selected Major rts of Egypt, 1970-97

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ORANGES,TANGERINES ETC	NETHERLANDS	7767	7396	5810	6416	5778	3176	9294	3402	1850	2406	7047	1020	591	1120	1700	2764	301	2202	2394	4512	3287	7378	3991	1131	3000	4826	16	45
ORANGES,TANGERINES ETC	SAUDI ARABIA	4882	2685	4233	6320	3335	10311	14633	13967	15982	22947	20704	34119	32581	31599	34072	37659	38430	27996	29726	27646	14580	13245	18718	4792	4594	6620	6325	180
ORANGES,TANGERINES ETC	WORLD	103619	138747	82961	246959	162494	210317	170227	170690	133343	83504	110032	114030	101551	149754	161427	161121	75155	167061	97452	157790	144633	111154	102995	56872	28347	42641	53669	4440
ALUMINIUM BARS,WIRE,ETC	NETHERLANDS	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	10060	16060	5575	19974	8676	5618	25528	53095	63681	80852	56350	56552	49697	54327	54580	39608	68495	44090	28976	14000	787	15
ALUMINIUM BARS,WIRE,ETC	SAUDI ARABIA	#N/A	#N/A	#N/A	#N/A	6	#N/A	#N/A	#N/A	215	1544	1897	1913	3353	883	736	2797	5544	3463	3542	4200	1373	1636	2203	1302	196	40	94	10
ALUMINIUM BARS,WIRE,ETC	WORLD	387	331	244		6	#N/A	21902	32713	9331	31650	12042	12672	33181	64005	93375	123827	100992	106406	111725	108988	109824	87745	122554	92182	86788	10826	7675	589
VEG FRUIT IN VINEGAR	KUWAIT	74	64	43	49	29	72	9	28	22	34	70	24	16	77	15	24	181	142	208	251	246	239	318	321	311	439	659	80
VEG FRUIT IN VINEGAR	SAUDI ARABIA	90	91	256	#N/A	37	10	44	36	238	228	364	111	139	67	72	140	151	170	257	408	569	841	740	815	789	884	956	65
VEG FRUIT IN VINEGAR	WORLD	246	165	420	60	123	136	88	106	273	300	457	168	182	173	87	171	355	399	618	970	3169	1522	1304	1438	1494	1690	2766	261
OUTERWEAR KNIT NONELASTC	UNTD.KINGDOM	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	46	44	73	21	16	20	24	38	42	169	395	559	442	439	738	130	66	94	19
OUTERWEAR KNIT NONELASTC	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2	#N/A	1	35	13	10	2	28	52	160	399	616	1062	1420	1762	1831	2185	1379	703	1130	123
OUTERWEAR KNIT NONELASTC	WORLD	154	188	463	764	795	1328	784	508	575	461	571	829	464	399	360	909	663	1120	2114	5831	5208	4507	3884	5134	2448	1218	1902	240
PERFUME,COSMETICS,ETC	WORLD	792	1206	1058	1635	1261	3076	2413	2494	1347	845	242	265	424	1897	227	248	4	713	2577	3944	5866	5132	1973	2092	2361	1771	3430	260

ource: UN, COMTRADE data

ppendix T
nit Price of Selected Major Exports of Egypt-97
housands of US dollarsnit)

Description	Destination	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	199
RESIDUAL FUEL OILS	FRANCE,MONAC	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.123	0.132	0.128	0.132	0.061	0.065	0.048	0.044	0.067	0.107	0.068	0.060	0.066	0.084	0.090	0.170	0.16
RESIDUAL FUEL OILS	WORLD	#N/A	#N/A	0.200	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.160	0.167	0.167	0.181	0.080	0.103	0.064	0.047	0.055	0.058	0.066	0.082	0.074	0.081	0.080	0.136	0.14
CRUDE PETROLEUM	ISRAEL	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.245	0.249	0.215	0.206	0.202	0.095	0.104	0.053	0.065	0.096	0.115	0.132	0.102	0.097	0.110	0.103	0.120	0.10
CRUDE PETROLEUM	ITALY	0.012	0.007	0.010	0.009	0.061	#N/A	0.071	0.075	0.082	0.108	0.200	0.241	0.211	0.188	0.192	0.092	0.132	0.053	0.065	0.103	0.117	0.124	0.126	0.105	0.097	0.099	0.122	0.10
CRUDE PETROLEUM	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.262	0.241	0.204	0.196	0.092	0.061	0.051	0.055	0.097	0.103	0.139	0.103	0.086	0.095	0.093	0.120	0.10
CRUDE PETROLEUM	WORLD	0.010	0.008	0.009	0.010	0.065	0.064	0.072	0.076	0.084	0.108	0.220	0.245	0.220	0.196	0.198	0.094	0.119	0.052	0.065	0.104	0.114	0.125	0.116	0.101	0.101	0.099	0.122	0.10
GREY COTTON YARN IN BULK	BELGIUM-LUX	1.156	#N/A	1.391	2.325	#N/A	2.625	2.128	2.633	3.101	2.997	3.806	3.575	2.756	2.946	3.066	1.529	3.258	3.625	3.986	3.478	3.973	3.603	3.926	3.127	3.383	4.316	4.032	4.32
GREY COTTON YARN IN BULK	CANADA	1.218	1.177	1.105	1.276	1.736	1.423	1.539	1.849	1.955	2.333	2.567	2.732	2.580	2.454	2.399	1.144	2.647	2.811	2.986	3.079	2.909	3.518	3.593	3.929	3.240	4.254	4.686	5.48
GREY COTTON YARN IN BULK	FRANCE,MONAC	2.000	#N/A	1.600	2.000	2.733	1.857	2.272	2.876	22.518	3.402	4.247	3.594	3.506	3.426	3.343	1.544	3.737	3.470	4.070	3.919	4.371	3.808	3.715	3.332	3.543	4.426	4.749	4.45
GREY COTTON YARN IN BULK	UNTD.KINGDOM	1.767	1.802	2.082	2.477	3.185	2.207	2.940	4.073	3.752	3.741	4.696	3.991	3.301	3.207	3.351	1.609	3.269	3.550	4.398	3.870	4.034	3.543	3.550	3.197	3.386	4.346	4.214	3.91
GREY COTTON YARN IN BULK	WORLD	1.412	1.457	1.532	1.832	3.098	3.544	4.029	5.507	6.542	4.170	4.205	4.288	3.776	3.268	3.393	1.712	3.929	4.299	5.662	3.661	4.910	3.800	3.666	3.249	3.371	4.406	4.337	4.32
RAW COTTON,EXCL LINTERS	FRANCE,MONAC	1.092	1.064	1.185	1.686	2.853	2.680	2.070	3.000	2.425	2.951	3.021	2.938	2.214	2.437	3.093	1.657	2.758	1.481	3.296	4.916	5.827	4.798	3.934	2.732	2.417	2.377	4.218	2.87
RAW COTTON,EXCL LINTERS	GREECE	0.923	0.876	0.960	0.931	2.789	1.997	1.829	2.752	2.379	2.162	1.763	2.118	1.985	2.196	2.813	1.528	2.944	1.316	2.493	4.566	5.440	4.547	2.811	2.783	2.273	2.244	3.833	2.50
RAW COTTON,EXCL LINTERS	ITALY	1.055	0.936	1.034	1.449	2.670	2.343	1.941	2.865	2.324	2.766	2.816	2.822	2.288	2.211	2.798	1.404	2.250	1.280	2.029	4.756	4.848	4.637	3.455	2.148	2.021	2.234	3.456	2.46
RAW COTTON,EXCL LINTERS	SPAIN	0.904	0.824	1.040	1.423	2.751	2.430	1.909	2.857	2.367	2.751	3.005	3.080	2.455	2.253	3.078	1.589	2.409	1.394	1.757	4.666	5.024	3.673	3.555	2.718	2.104	2.398	4.052	2.90
RAW COTTON,EXCL LINTERS	WORLD	1.192	1.207	1.263	1.698	3.070	2.775	2.394	3.237	2.528	2.605	2.581	2.574	2.042	2.112	2.787	1.470	2.283	1.401	2.116	4.697	5.292	4.673	3.381	2.366	2.061	2.258	3.943	2.63
GREY WOVEN COTTON NES	ITALY	1.225	1.255	1.321	1.780	2.593	2.682	2.327	2.883	2.855	3.454	4.134	3.836	3.679	3.753	3.446	1.656	4.045	3.678	3.966	3.054	4.154	4.132	4.088	3.814	3.666	4.523	4.166	4.74
GREY WOVEN COTTON NES	NETHERLANDS	1.215	1.181	1.380	1.929	2.276	2.270	2.189	2.966	3.200	3.798	4.368	3.674	3.629	3.863	3.709	1.753	4.721	3.975	3.926	3.792	4.000	3.708	3.773	3.537	3.746	4.644	4.831	4.63
GREY WOVEN COTTON NES	UNTD.KINGDOM	1.082	1.114	1.277	1.617	2.351	1.919	1.932	2.706	3.252	3.941	4.260	3.326	2.784	2.826	2.859	1.515	3.414	3.303	4.118	3.561	4.057	3.970	3.784	3.319	4.020	4.501	4.281	4.41
GREY WOVEN COTTON NES	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2.863	2.957	2.562	2.921	1.480	3.442	3.741	3.196	3.104	3.341	3.427	3.439	3.124	3.512	3.997	4.113	4.23
GREY WOVEN COTTON NES	WORLD	1.171	1.159	1.285	1.732	2.614	2.804	3.248	3.911	3.831	3.251	3.531	3.844	3.597	3.443	3.670	1.920	3.972	4.273	4.934	1.254	2.021	3.665	2.946	3.331	3.821	4.577	4.300	4.61
UNDERWEAR KNIT NONELASTC	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	12.500	7.500	5.000	#N/A	#N/A	7.336	7.837	7.306	8.252	9.613	6.743	7.594	7.219	8.889	9.666	10.157	11.21
UNDERWEAR KNIT NONELASTC	WORLD	3.541	3.315	3.910	4.192	8.373	8.399	8.394	8.850	10.296	7.927	9.430	9.039	11.135	11.736	12.644	7.003	10.868	11.832	10.944	10.590	9.938	8.069	7.199	8.064	9.105	9.578	10.049	10.70
COAL,PETR DISTILATES NES	GREECE	#N/A	#N/A	#N/A	0.140	0.213	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.220	0.140	0.156	0.078	0.230	0.251	0.241	0.166	0.096	0.138	0.135	0.135	0.135	0.126	0.135	0.10
COAL,PETR DISTILATES NES	WORLD	#N/A	#N/A	0.043	0.111	0.208	0.114	0.133	0.114	0.136	0.112	0.135	0.171	0.163	0.187	0.217	0.090	0.200	0.212	0.241	0.059	0.238	0.216	0.202	0.171	0.164	0.230	0.160	5.86
MENS UNDERWEAR NOT KNIT	FRANCE,MONAC	#N/A	#N/A	#N/A	3.000	#N/A	#N/A	#N/A	#N/A	#N/A	5.600	7.520	6.963	6.242	6.731	12.640	7.667	11.264	10.481	19.231	30.500	10.969	10.075	11.746	12.429	9.506	13.335	9.576	10.53
MENS UNDERWEAR NOT KNIT	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	5.207	6.956	#N/A	7.167	4.263	7.337	7.404	11.090	9.671	8.794	7.274	8.130	7.423	7.726	9.554	8.715	10.00
MENS UNDERWEAR NOT KNIT	WORLD	3.930	3.617	3.822	4.629	8.590	7.722	7.511	7.559	6.741	5.172	5.885	6.083	8.583	7.108	10.925	4.369	8.211	8.945	9.020	9.859	8.545	9.000	8.780	7.827	7.344	9.321	8.719	9.61
WOMENS OUTERWEAR NONKNIT	WORLD	6.912	8.576	9.852	12.582	18.492	19.431	16.835	16.581	20.245	10.346	11.986	12.198	8.522	6.469	9.865	5.121	8.800	8.773	10.992	9.578	10.566	9.083	9.792	11.096	8.850	9.963	9.937	10.42
MENS OUTERWEAR NOT KNIT	NETHERLANDS	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	5.400	4.733	1.240	5.429	5.541	5.069	5.889	6.941	7.688	9.946	7.910	11.000	10.363	8.228	8.183	8.000	8.328	7.676	6.86
MENS OUTERWEAR NOT KNIT	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	3.273	5.600	8.667	#N/A	0.742	11.554	8.582	10.299	7.190	8.270	8.319	9.279	8.470	8.282	9.237	8.504	9.29
MENS OUTERWEAR NOT KNIT	WORLD	3.316	3.391	3.246	5.028	6.993	8.860	8.212	16.921	17.665	9.365	6.897	1.627	7.959	10.438	14.330	2.115	8.861	9.257	9.741	12.440	11.173	8.083	8.038	9.198	9.722	9.802	9.018	9.85
POTATOES FRSH EXCL SWEET	LEBANON	0.085	0.069	0.087	0.107	0.107	0.130	0.176	0.176	0.115	0.215	0.199	0.249	0.223	0.200	0.262	0.093	0.130	0.153	0.135	0.099	0.101	0.195	0.122	0.141	0.170	0.216	0.173	0.15
POTATOES FRSH EXCL SWEET	SAUDI ARABIA	0.086	0.062	0.071	0.112	0.110	0.141	0.186	0.176	0.116	0.194	0.147	0.260	0.230	0.198	0.244	0.105	0.134	0.159	0.144	0.135	0.155	0.244	0.260	0.156	0.218	0.220	0.366	0.44
POTATOES FRSH EXCL SWEET	UNTD.KINGDOM	0.098	0.079	0.099	0.159	0.156	0.158	0.269	0.232	0.160	0.247	0.242	0.279	0.305	0.229	0.294	0.109	0.168	0.231	0.238	0.215	0.199	0.233	0.212	0.222	0.201	0.238	0.207	0.22
POTATOES FRSH EXCL SWEET	WORLD	0.095	0.075	0.096	0.155	0.151	0.173	0.278	0.252	0.151	0.238	0.226	0.266	0.271	0.219	0.276	0.104	0.153	0.197	0.190	0.173	0.186	0.220	0.204	0.183	0.202	0.244	0.194	0.17
DISTILLATE FUELS	WORLD	0.012	0.013	0.012	0.022	0.013	0.060	#N/A	#N/A	#N/A	#N/A	#N/A	0.380	0.356	0.335	0.283	0.146	0.228	0.142	0.086	0.121	0.056	0.244	0.254	0.244	0.160	0.167	0.184	0.19
CARPETS ETC UNKNOTTED	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	10.333	9.690	12.500	7.667	2.000	7.000	7.750	11.111	6.785	19.589	6.180	5.563	6.738	3.740	6.030	5.521	5.53
CARPETS ETC UNKNOTTED	WORLD	3.434	3.867	3.976	4.635	6.937	7.715	10.140	9.285	11.780	6.355	6.174	6.670	9.840	7.800	8.801	3.380	6.677	8.355	6.652	5.893	8.275	6.409	5.340	4.920	3.585	4.455	4.221	4.82
OTHER FRESH VEGETABLES	FRANCE,MONAC	0.154	0.133	0.105	0.287	0.161	0.233	0.295	0.251	0.218	0.236	0.322	0.386	0.534	0.220	0.386	0.099	0.258	0.259	0.227	0.216	0.306	0.326	0.354	0.402	0.425	0.244	0.423	0.76
OTHER FRESH VEGETABLES	ITALY	0.162	0.148	0.131	0.287	0.237	0.257	0.324	0.355	0.261	0.232	0.348	0.447	0.610	0.254	0.317	0.128	0.210	0.294	0.223	0.212	0.290	0.411	0.269	0.497	0.367	0.300	0.405	0.27
OTHER FRESH VEGETABLES	NETHERLANDS	0.156	0.126	0.105	0.256	0.184	0.259	0.320	0.328	0.419	0.301	0.242	0.502	0.641	0.487	0.459	0.195	0.349	0.314	0.296	0.433	0.339	0.333	0.402	0.440	0.419	0.318	0.270	0.21
OTHER FRESH VEGETABLES	UNTD.KINGDOM	0.147	0.116	0.098	0.250	0.150	0.215	0.278	0.357	0.238	0.347	0.304	0.383	0.655	0.340	0.466	0.235	0.394	0.250	0.262	0.299	0.420	0.337	0.560	0.560	0.527	0.292	0.283	0.27
OTHER FRESH VEGETABLES	WORLD	0.169	0.146	0.133	0.286	0.224	0.281	0.340	0.307	0.361	0.278	0.344	0.478	0.587	0.438	0.369	0.158	0.315	0.353	0.264	0.240	0.285	0.260	0.290	0.204	0.195	0.183	0.143	0.15
VEG USED IN PHARMACY ETC	FRANCE,MONAC	2.429	1.500	1.000	0.750	1.500	1.696	1.196	0.806	0.670	0.892	1.245	1.571	0.984	1.022	0.793	0.619	1.091	0.822	4.617	0.713	0.751	0.788	0.884	0.770	0.751	0.743	0.751	0.71
VEG USED IN PHARMACY ETC	ITALY	1.509	1.282	1.126	1.590	1.713	1.979	1.797	2.009	2.220	2.230	2.376	1.825	1.716	2.138	1.983	0.934	2.320	2.093	1.363	1.289	1.665	1.495	1.919	1.761	1.513	1.450	1.563	1.69
VEG USED IN PHARMACY ETC	UNTD.KINGDOM	#N/A	0.500	0.667	0.800	0.900	0.818	0.750	1.094	0.746	0.936	1.015	0.648	1.067	1.293	1.090	0.450	0.946	0.882	0.803	0.800	0.950	0.816	0.979	0.895	0.808	0.841	0.907	0.94

VEG USED IN PHARMACY ETC	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	1.208	1.276	1.318	1.247	0.448	1.205	1.145	1.154	1.242	1.208	1.277	1.212	0.888	0.898	0.870	0.982	1.11
VEG USED IN PHARMACY ETC	WORLD	1.434	1.172	1.121	1.366	1.483	1.510	0.479	1.456	1.454	1.443	1.861	1.390	1.534	1.714	1.445	0.640	1.514	1.405	1.611	1.140	1.320	1.338	1.323	1.061	1.078	1.121	1.208	1.30
VEGETABLES FROZEN	KUWAIT	0.503	0.483	0.421	0.516	0.502	0.539	0.722	1.314	0.990	0.830	0.943	1.091	1.220	1.262	1.259	0.614	0.259	1.087	1.165	0.912	0.860	0.920	0.811	0.633	0.693	0.744	0.796	0.90
VEGETABLES FROZEN	QATAR	#N/A	#N/A	#N/A	0.553	0.750	0.560	0.879	1.347	1.566	1.149	1.143	1.021	1.117	1.245	1.354	0.625	1.221	1.124	0.876	0.734	0.763	0.731	0.794	0.856	0.770	0.894	0.871	0.89
VEGETABLES FROZEN	SAUDI ARABIA	#N/A	#N/A	#N/A	1.000	#N/A	#N/A	#N/A	#N/A	2.185	#N/A	#N/A	1.175	1.165	1.264	1.355	0.594	1.183	1.009	1.206	0.714	0.693	0.724	0.682	0.660	0.687	0.769	0.668	1.05
VEGETABLES FROZEN	WORLD	0.500	0.485	0.431	0.526	0.521	0.577	0.779	1.353	1.327	0.906	1.051	1.123	1.274	1.285	1.297	0.618	0.476	1.073	1.189	0.830	0.780	0.754	0.745	0.691	0.759	0.840	0.773	1.04
FURNITURE,PARTS NES	KUWAIT	1.055	0.951	1.111	1.370	2.545	2.909	2.286	4.000	7.412	4.000	2.500	3.000	3.811	3.500	5.600	2.000	3.045	3.500	2.208	2.312	3.124	2.506	2.377	2.389	1.622	1.764	1.311	1.98
FURNITURE,PARTS NES	SAUDI ARABIA	0.613	1.222	0.780	0.902	0.731	1.543	1.908	2.905	3.020	1.732	2.020	3.347	4.094	3.574	3.522	1.288	3.200	1.714	1.977	3.033	1.759	2.099	1.883	2.882	1.821	1.973	1.297	2.11
FURNITURE,PARTS NES	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	2.200	2.800	2.385	2.611	1.667	3.286	2.066	2.007	3.219	2.472	1.839	1.971	1.528	1.268	1.356	1.285	1.20
FURNITURE,PARTS NES	WORLD	0.933	0.976	0.991	1.134	1.375	2.160	2.308	2.950	2.012	1.863	2.265	2.225	2.786	2.807	2.974	1.529	3.306	2.787	4.061	4.270	3.255	2.585	2.595	2.466	1.650	1.624	1.486	1.57
ORANGES,TANGERINES ETC	KUWAIT	0.167	#N/A	#N/A	0.161	1.000	0.213	0.167	1.000	0.382	0.510	#N/A	0.700	0.632	0.700	1.000	0.188	0.333	0.529	0.373	0.340	0.357	0.352	0.334	0.413	0.339	0.327	0.300	0.31

ppendix Table 7 (cont'd)

nit Price of Selected Major Exports of Egypt-97

housands of US dollars pe

ORANGES,TANGERINES ETC	NETHERLANDS	0.057	0.061	0.077	0.089	0.089	0.154	0.195	0.206	0.232	0.187	0.286	0.299	0.333	0.276	0.304	0.096	0.133	0.463	0.282	0.280	0.260	0.404	0.275	0.160	0.250	0.342	0.813	0.38
ORANGES,TANGERINES ETC	SAUDI ARABIA	0.106	0.100	0.109	0.094	0.108	0.220	0.276	0.365	0.392	0.337	0.399	0.440	0.419	0.488	0.458	0.227	0.310	0.423	0.393	0.370	0.338	0.340	0.330	0.327	0.327	0.320	0.297	0.37
ORANGES,TANGERINES ETC	WORLD	0.152	0.149	0.133	0.162	0.175	0.226	0.286	0.322	0.400	0.270	0.355	0.415	0.520	0.493	0.473	0.266	0.443	0.634	0.506	0.463	0.381	0.400	0.316	0.299	0.295	0.310	0.323	0.31
ALUMINIUM BARS,WIRE,ETC	NETHERLANDS	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	0.753	0.975	1.014	1.321	1.529	1.466	1.547	1.337	1.378	0.598	1.160	1.442	2.426	2.144	1.810	1.474	1.339	1.267	1.396	1.429	1.643	1.48
ALUMINIUM BARS,WIRE,ETC	SAUDI ARABIA	#N/A	#N/A	#N/A	#N/A	0.833	#N/A	#N/A	#N/A	2.042	2.310	2.858	1.940	1.775	2.120	1.804	0.562	1.359	2.649	2.513	2.503	2.302	1.522	1.442	1.326	1.730	2.150	2.894	2.60
ALUMINIUM BARS,WIRE,ETC	WORLD	0.672	0.734	0.734	#N/A	0.833	#N/A	0.767	0.979	1.074	1.401	1.811	1.625	1.494	1.363	1.389	0.588	1.219	1.487	2.226	2.174	1.806	1.545	1.378	1.308	1.446	1.870	1.901	2.31
VEG FRUIT IN VINEGAR	KUWAIT	0.257	0.188	0.233	0.184	0.241	0.250	0.333	0.786	0.273	0.353	0.443	0.375	1.188	0.909	0.800	0.417	0.785	0.535	0.505	0.661	0.622	0.477	0.525	0.477	0.476	0.442	0.361	0.38
VEG FRUIT IN VINEGAR	SAUDI ARABIA	0.178	0.165	0.211	#N/A	0.270	0.200	0.364	0.667	0.353	0.658	0.387	0.550	0.813	1.000	0.931	0.564	0.742	0.665	0.510	0.534	0.715	0.409	0.457	0.769	0.551	0.465	0.358	0.46
VEG FRUIT IN VINEGAR	WORLD	0.228	0.170	0.250	0.217	0.260	0.294	0.443	0.642	0.377	0.607	0.409	0.595	0.901	0.931	0.931	0.538	0.766	0.679	0.545	0.586	0.347	0.591	0.511	0.672	0.525	0.502	0.474	0.52
OUTERWEAR KNIT NONELASTC	UNTD.KINGDOM	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	8.891	10.091	5.685	9.000	9.750	7.750	4.500	10.237	8.810	11.521	11.167	13.088	12.224	11.312	9.774	7.015	7.333	7.649	4.69
OUTERWEAR KNIT NONELASTC	USA,PR,USVI	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	10.692	11.000	12.500	7.464	3.885	8.263	10.110	11.578	11.584	9.939	11.005	10.252	9.802	6.200	4.283	3.591	4.12
OUTERWEAR KNIT NONELASTC	WORLD	11.649	11.426	12.045	15.130	22.492	22.817	17.700	19.254	20.977	13.770	16.091	12.253	11.985	12.657	14.542	5.113	10.127	11.291	12.147	8.381	9.935	11.182	10.790	9.438	5.964	5.365	5.119	5.28
PERFUME,COSMETICS,ETC	WORLD	3.479	3.921	4.969	4.489	7.389	8.656	8.552	10.114	14.925	12.002	19.504	14.558	12.255	9.591	20.441	5.657	5.000	8.049	9.110	3.796	6.877	6.719	5.282	4.562	5.031	5.339	5.039	4.54

ource: UN, COMTRADE data

Appendix Table 8
Overall and Bilateral Real Effective Exchange Rates of Egypt, 1980-98
(1991=100)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
North America	**186.6**	**184.5**	**182.1**	**198.5**	**198.1**	**199.4**	**207.5**	**218.0**	**225.9**	**125.1**	**132.9**	**135.7**	**146.3**	**160.9**	**180.8**	**198.2**	**240.6**	**290.6**	**315.2**	**229.9**	**145.3**	**100.0**	**117.7**	**125.7**	**133.5**	**141.5**	**147.0**	**152.8**	**157.7**
Canada	197.0	191.0	182.3	198.3	193.9	199.8	198.6	221.3	242.5	140.3	153.1	154.1	164.6	180.1	212.4	241.5	292.3	334.6	340.9	238.9	149.8	100.0	125.8	144.9	166.1	178.6	187.0	198.8	218.9
United States	186.2	184.2	182.1	198.5	198.3	199.4	207.9	217.9	225.3	124.5	132.1	132.2	145.9	160.8	180.3	195.3	237.4	286.7	314.6	229.6	145.2	100.0	117.5	125.4	132.6	140.9	146.6	152.1	155.5
European Uunion	**258.5**	**249.0**	**224.2**	**227.9**	**232.6**	**218.9**	**256.0**	**255.8**	**244.0**	**128.2**	**134.2**	**164.0**	**193.1**	**229.1**	**284.9**	**316.0**	**296.6**	**304.0**	**329.0**	**257.4**	**141.9**	**100.0**	**112.1**	**137.5**	**144.3**	**143.9**	**148.3**	**171.2**	**177.2**
Austria	311.8	295.2	262.3	239.2	231.2	218.1	230.8	225.0	212.3	115.9	127.0	161.7	188.7	222.9	275.1	309.1	277.8	284.0	310.8	252.7	140.2	100.0	109.6	123.0	127.2	120.0	132.5	160.1	166.6
Belgium-Luxem	252.8	245.5	214.5	205.7	202.3	185.9	197.1	190.7	178.4	97.8	110.1	143.5	186.5	224.8	279.7	307.2	282.7	291.3	323.8	257.5	140.7	100.0	111.3	128.1	131.2	124.6	137.2	165.7	172.3
Denmark	289.1	278.9	250.1	230.3	223.5	211.1	224.6	224.0	208.1	111.3	127.9	159.8	194.9	232.1	289.5	317.0	289.5	294.6	316.6	250.9	138.0	100.0	111.9	130.5	136.1	128.4	139.3	164.9	170.7
Finland	318.3	307.1	290.1	279.0	261.9	237.8	240.9	248.8	262.4	142.0	146.8	167.4	196.5	243.0	286.8	313.4	308.6	321.9	332.7	245.0	137.2	100.0	130.4	178.8	175.4	158.7	177.7	210.7	221.2
France	248.5	242.4	212.2	202.2	212.9	186.4	210.0	218.8	205.5	107.5	113.8	142.6	176.8	217.3	270.9	295.0	274.8	289.1	318.6	252.2	138.8	100.0	111.0	127.8	133.6	129.0	138.8	166.2	172.6
Germany	256.9	241.3	212.2	192.6	193.3	190.3	206.0	204.5	191.7	103.3	117.0	151.1	177.1	209.2	266.6	302.9	277.2	286.5	315.7	251.5	140.3	100.0	108.5	120.8	125.2	118.6	131.4	158.0	164.5
Greece	75.6	74.7	72.3	77.3	77.1	80.1	92.2	96.9	103.0	61.1	79.4	105.9	134.9	191.5	269.8	310.7	317.1	330.0	347.8	267.9	144.8	100.0	109.3	126.2	130.7	125.2	128.7	147.0	157.6
Ireland	278.4	259.8	237.6	252.1	250.5	239.4	275.3	279.7	263.3	133.9	135.7	158.6	176.7	211.5	261.6	283.7	269.0	294.4	321.0	253.7	140.0	100.0	111.2	140.1	145.4	144.8	152.9	168.7	181.6
Italy	267.0	260.5	236.5	247.1	256.6	241.5	291.0	290.6	277.6	145.5	149.0	182.8	214.5	243.7	297.6	332.5	303.8	315.7	344.6	261.5	143.0	100.0	114.3	153.2	163.7	171.7	167.6	193.1	200.2
Netherlands	272.7	254.3	219.8	205.3	199.7	187.1	197.8	192.4	181.4	99.2	111.2	144.2	167.4	201.7	256.7	291.2	266.2	278.3	308.6	250.5	139.9	100.0	110.4	124.8	129.2	122.1	134.5	161.7	166.9
Portugal	116.4	113.5	104.8	102.9	104.9	102.7	122.7	161.9	198.0	129.7	148.3	167.9	203.0	262.4	314.0	343.2	334.4	360.1	383.7	287.7	153.1	100.0	103.9	127.7	135.9	129.9	137.7	162.6	168.4
Spain	374.5	354.5	309.3	291.5	275.1	256.8	287.3	292.3	274.3	127.8	142.3	176.5	210.8	284.6	335.6	365.7	343.0	359.8	369.7	269.1	144.7	100.0	112.6	147.1	160.4	155.9	163.7	197.1	204.4
Sweden	249.1	237.0	212.1	211.1	216.5	202.4	212.3	218.7	223.2	121.4	126.9	149.7	196.5	255.3	298.5	324.2	319.1	341.2	355.9	269.1	149.1	100.0	114.0	160.0	168.3	165.9	166.2	199.9	216.4
United Kingdom	270.4	251.2	233.1	252.3	252.9	235.0	273.2	272.4	253.7	125.3	117.8	133.0	163.1	207.5	264.0	290.2	306.6	330.1	331.6	260.3	147.4	100.0	115.9	145.3	151.0	155.8	163.7	161.4	161.3
Middle East	**225.7**	**238.3**	**213.9**	**202.4**	**173.1**	**178.5**	**181.3**	**193.5**	**226.8**	**117.2**	**124.4**	**148.3**	**161.1**	**176.5**	**226.8**	**262.8**	**272.2**	**316.1**	**320.0**	**241.1**	**146.9**	**100.0**	**118.4**	**130.4**	**134.8**	**134.8**	**140.0**	**148.1**	**156.2**
Saudi Arabia	234.3	230.6	208.5	185.4	162.1	130.9	110.2	110.2	106.4	63.9	73.0	79.7	91.9	107.2	130.0	154.6	202.3	260.2	294.5	223.0	145.6	100.0	121.5	132.4	142.7	148.5	157.6	168.1	174.8
Untd Arab Em	607.5	512.1	395.9	342.6	308.5	277.7	250.5	226.3	221.0	120.7	128.4	130.0	139.5	159.7	182.4	197.6	232.1	275.4	299.6	221.8	146.9	100.0	113.3	118.6	123.8	129.6	133.9	136.2	137.2
Kuwait	217.0	206.1	179.5	171.8	164.3	168.2	179.2	180.9	180.3	104.0	114.6	121.6	133.3	154.2	178.2	197.0	241.7	300.5	338.2	250.3	151.9	100.0	121.8	132.8	141.4	149.8	155.3	166.6	170.2
Lebanon	317.8	318.7	293.1	274.1	241.3	218.1	232.9	233.4	227.2	123.9	127.7	148.3	158.0	163.1	233.5	389.7	577.5	720.7	588.1	317.1	156.6	100.0	111.8	100.2	97.1	92.6	88.2	84.6	80.1
Israel	205.5	227.2	204.5	198.0	166.8	187.0	196.3	214.5	264.7	133.0	139.8	158.9	175.8	192.3	247.8	276.0	291.4	326.3	321.4	245.0	146.6	100.0	116.7	133.0	136.7	135.8	138.4	145.8	158.1
Qatar	463.7	397.3	312.2	274.5	250.5	228.0	211.2	196.2	194.3	109.7	119.8	121.4	132.0	149.0	172.5	191.2	232.5	278.6	303.5	224.7	145.5	100.0	117.5	130.2	139.4	147.9	154.5	160.0	161.8
WORLD	**245.3**	**239.6**	**217.6**	**220.9**	**220.4**	**211.1**	**240.0**	**242.8**	**239.5**	**126.4**	**132.7**	**157.5**	**181.5**	**209.1**	**261.9**	**300.7**	**286.5**	**304.2**	**325.5**	**252.0**	**143.3**	**100.0**	**114.7**	**133.5**	**140.8**	**142.0**	**146.3**	**163.2**	**169.7**

Source: Derived from data in IMF, *International Financial Statistics* (June 1999) .

ppendix Table 9
eal GDP of Egypt and Major Trading Partners, 1970-98
billions of 1998 US$ and index, 1998=100))

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
gypt	21	22	23	23	24	27	29	32	35	36	37	38	40	44	48	51	54	57	62	64	66	64	66	67	69	71	74	77	82
orth America																													
anada	250	264	280	301	314	321	339	351	365	380	386	397	386	396	419	441	453	472	495	507	508	499	503	515	539	553	560	581	599
nited States	3829	3956	4173	4414	4386	4366	4602	4817	5076	5219	5202	5321	5207	5414	5793	6000	6185	6367	6610	6832	6916	6852	7038	7201	7450	7620	7883	8193	8511
uropean Union																													
ustria	101	106	113	118	123	123	128	134	134	141	145	144	146	149	151	154	156	159	165	172	179	186	188	189	194	197	201	206	212
elgium-Luxem	136	141	149	157	164	162	171	171	176	179	182	180	183	183	187	189	192	196	206	213	219	223	226	223	229	234	237	244	251
enmark	93	95	100	104	103	102	109	111	112	116	116	115	118	121	127	132	137	137	139	139	141	143	145	146	154	159	164	169	174
inland	58	59	63	68	70	70	71	71	73	78	82	84	87	89	92	95	97	101	106	112	112	104	100	99	104	109	113	119	125
rance	726	761	795	838	864	862	898	927	958	989	1005	1017	1043	1050	1064	1084	1111	1136	1187	1238	1269	1279	1294	1276	1313	1340	1361	1392	1435
ermany	1118	1152	1201	1258	1261	1245	1311	1348	1389	1448	1462	1463	1449	1475	1516	1547	1584	1607	1667	1727	1826	1918	1960	1937	1989	2014	2039	2084	2142
reece	56	60	65	70	67	71	76	78	83	87	88	88	88	88	91	94	95	95	100	104	104	107	108	106	108	110	113	116	121
reland	22	23	24	26	27	25	26	28	30	31	32	33	34	33	35	36	37	39	41	43	47	48	50	51	55	61	65	72	78
taly	593	602	618	662	698	680	725	749	777	823	858	863	865	873	896	920	947	976	1014	1043	1065	1078	1084	1071	1094	1127	1136	1153	1169
etherlands	167	174	179	188	195	195	205	210	215	220	248	247	244	248	256	264	271	275	282	295	308	315	321	323	334	341	352	365	378
ortugal	41	44	47	52	53	51	54	57	59	63	67	68	69	69	68	70	73	77	81	85	89	91	93	92	94	96	100	104	108
pain	245	257	278	300	317	321	330	341	347	348	352	351	356	364	369	379	391	413	434	455	472	482	486	480	490	504	516	535	555
weden	141	143	146	152	157	153	156	151	152	158	174	173	175	176	183	188	191	198	202	207	210	207	204	199	206	214	217	221	227
nited Kingdom	750	765	791	850	835	829	853	873	902	927	907	895	911	945	968	1005	1048	1094	1151	1175	1183	1165	1166	1193	1245	1280	1313	1358	1387
iddle East																													
audi Arabia	33	37	43	52	59	59	65	74	75	84	92	100	93	92	90	87	92	90	97	97	108	117	120	119	120	120	122	124	126
ntd Arab Em	16	18	21	24	27	29	33	39	37	38	38	41	38	36	37	36	29	31	30	34	40	40	41	41	42	45	49	50	47
uwait	20	21	22	22	20	20	22	23	24	26	21	17	15	16	17	16	18	19	17	22	16	9	17	23	25	25	25	26	26
ebanon	23	25	28	30	30	21	9	15	15	15	15	16	10	12	17	22	20	24	17	10	8	12	12	13	14	15	16	16	17
srael	28	31	34	36	38	39	39	40	41	43	45	47	47	48	49	52	53	57	59	60	63	66	71	73	78	84	88	90	91
atar	5	6	6	7	8	8	9	8	9	9	9	9	8	8	9	8	8	8	8	9	8	7	8	8	8	8	9	10	12
ub-Total Foreign Inc.	**8449**	**8740**	**9178**	**9728**	**9816**	**9753**	**10230**	**10617**	**11050**	**11424**	**11525**	**11668**	**11570**	**11887**	**12435**	**12818**	**13188**	**13571**	**14107**	**14579**	**14891**	**14947**	**15234**	**15379**	**15885**	**16256**	**16678**	**17229**	**17793**
ORLD (1998=100)	**37**	**39**	**41**	**44**	**45**	**46**	**48**	**50**	**52**	**54**	**56**	**57**	**57**	**59**	**62**	**64**	**67**	**70**	**73**	**76**	**78**	**79**	**81**	**83**	**87**	**90**	**94**	**98**	**100**

ource: Derived from data in IMF, *International Financial Statistics* (June 1999).

References

Al-Shawarby, S. (1999), "Forecasting the Impact of the Egyptian Exchange Rate on Exports". Center for Economic and Financial Research and Studies in association with the Development Policy Reform Analysis Project (DAPRA) Unit of the Ministry of Economy.

Argy, V. (1994), *International Macroeconomics: Theory and Policy*. London: Routledge.

Armington, P.S. (1969), "A Theory of Demand for Products Distinguished by Place of Production". *IMF Staff Papers* 16: 159-78.

Banerjee, A., O. Dolado, K. Galbraith and D. Hendry (1993), *Co-Integration, Error Correction, and the Econometric Analysis of Non-Stationary Data*. Advanced Texts in Econometrics. Oxford: Oxford University Press

Bowen, H.P., A. Hollander, and J-M Viaene (1998), *Applied International Trade Analysis*. London: Macmillan Press Ltd.

Branson, W.H. (1972), "The Trade Effects of the 1971 Currency Realignment". *Broings Papers on Economic Activity*.

Brown, M., and D. Heien (1972), "The S-Branch Utility Tree: A Generalization of the Linear Expenditure System". *Econometrica* 40(4): 737-47.

Chuhan, P., G. Perez-Quiros, and H. Popper (1996), "International Capital Flows: Do Short-Term Investment and Direct Investment Differ?". World Bank, Working Paper No. 1669.

Davidson, J., *et al.* (1978), "Cointegration in Recursive Systems: The Structure of Wage and Price Determination in the United Kingdom". London School of Economics Econometrics Programme Discussion Paper.

Deardorff, A.V. (1984), "Testing Trade Theories and Predicting Trade Flows". In R.W. Jones and P.B. Kenen (eds), *Handbook of International Economics*, 1. Amserdam: North-Holland.

Deaton, A. and J. Muellbauer (1980), "An Intertemporal System of Dynamic Consumer Demand Functions". CLE Discussion Paper.

Development Economic Policy Reform Analysis Project (DEPRA, 1997), *Egypt: A Comparative Study of Foreign Direct Investment Climates.* Report submitted to

US Agency for International Development, Office of Economic Analysis and Policy, Cairo, Egypt.

Development Economic Policy Reform Analysis Project (DEPRA, 1998), *Effective Rates of Protection in Egypt*. Report submitted to US Agency for International Development, Office of Economic Analysis and Policy, Cairo, Egypt.

Development Economic Policy Reform Analysis Project (DEPRA, 1999), *Enhancing Egypt's Exports: Annex. Economic Analyses of Five Industries.* Report submitted to US Agency for International Development, Economic Growth/Sector Policy, Cairo, Egypt.

Dunning, J.H. (1993), *Multinational Enterprises and the Global Economy*. Workingham: Addison-Wesley).

Edwards, S. (1988), *Exchange Rate Misalignment in Developing Countries*. Baltimore: Johns Hopkins University Press.

Engle, R. and C.W.J. Granger (1987), "Co-Integration and Error Correction: Representation, Estimation, and Testing", *Econometrica* 55(2): 251-76.

Ernst, D. (1997), "From Partial to Systemic Globalization: International Production Networks in the Electronics Industry". Data Storage Industry Globalization Project Report 97-02. Graduate School of International Relations and Pacific Studies, University of California at San Diego, and BRIE Working Paper #98, Berkeley Roundtable on the International Economy, University of California at Berkeley.

Feenstra, R.C. (ed.) (1988), *Empirical Methods for International Trade*. Cambridge, Mass.: MIT Press.

Goldstein, M. and M.S. Khan (1985), "Income and Price Effects in Foreign Trade". In R.W. Jones and P.B. Kenen (eds), *Handbook of International Economics*, 2. Amsterdam: North-Holland.

Granger and Weiss (1983), "Time Series Analysis of Error-Correcting Models", in S. Karlin, T. Amemiya, and L.A. Goodman (eds), *Studies in Econometrics, Time Series, and Multivariate Statistics*. New York: Academic Press.

Grossman, Gene, ed. (1992), *Imperfect Competition and International Trade*. MIT Press Readings in Economics, Cambridge and London: MIT Press.

Halliwell, J.F., and T. Padmore (1985), "Empirical Studies of Macroeconomic Interdependence". In R.W. Jones and P.B. Kenen (eds), *Handbook of International Economics*, 2. Amsterdam: North-Holland.

Helpman, E., and P. Krugman (1985), *Market Structure and Foreign Trade: Increasing Returns, Imperfect Competition and the International Economy*. Cambridge, MA: MIT Press.

Hendry, D.F., A.R. Pagan and J.D. Sargan (1984), 'Dynamic Specification' in Z. Griliches and M. Intriligator (eds.) (1984), *Handbook of Econometrics,* Vol. 2-3. Amsterdam: North Holland.

Hunter, L.C., and J.R. Markusen (1988), "Per-Capita Income as a Determinant of Trade". In R.C. Feenstra (ed.), *Empirical Methods for International Trade*. Cambridge, Mass.: MIT Press.

IMF (1998), *Egypt: Beyond Stabilization, Toward a Dynamic Market Economy*. May 1998.

Isard, P. (1995), *Exchange Rate Economics*. Cambridge: Cambridge University Press.

Junius, D.. (1997), "International Direct Investment: Strengthening the Policy Regime". In Peter B. Kenen, *Managing the World Economy: Fifty Years after Bretton Woods*. Washington, DC: Institute for International Economics.

Kenen, P.B. (1985), "Macroeconomic Theory and Policy: How the Closed Economy Was Opened". In R.W. Jones and P.B. Kenen, *Handbook of International Economics* Volume II. Amsterdam: North-Holland.

Klein, L.R., and H. Rubin (1948), "A Constant Utility Index of the Cost of Living". *Review of Economic Studies* 15: 84-7.

Laird, S. (1996), "Quantifying Commercial Policies". World Trade Organization, Trade Policies Review Division. Staff Working Paper TPRD-96-001.

Leamer, E. and R.M. Stern (1970), *Quantitative International Economics*. Boston: Allyn and Bacon.

Lord, M. (1988), "Imperfect Competition and Optimal Trade Policies". Paper presented at the North American Meeting of the Econometric Society. New York, 28-30 December.

Lord, M. (1989a), "Product Differentiation in International Commodity Trade". *Oxford Bulletin of Economics and Statistics*. Vol 51 (1).

Lord. M. (1989b), "Optimal Trade Policies in Developing Countries". Paper presented at the Conference on International Trade of the Applied Econometrics Association. Montreal, 27-29 September.

Lord, M. (1991), *Imperfect Competition and International Commodity Trade: Theory, Dynamics, and Policy Modelling*. Oxford: Clarendon Press.

Lord, M. (1992), "Imperfect Competition and Developing Countries' Trade". Paper presented at the American Economic Association Meetings, New Orleans, 3-5 January.

Lord, M. (ed.) (1998), *The Handbook of Latin American Trade in Manufactures.* Cheltenham: Edward Elgar Publishing.

Lord, M. (1999), "Modeling ASEAN Global Linkages". Paper presented to the ASEAN Secretariat conference on ASEAN Global Linkages, October 9, 1999, Jakarta, Indonesia.

Marks and Gianni (1998), *Egypt: Comparison of Cost Effectiveness of Investment Incentives.* Report submitted to US Agency for International Development, Office of Economic Analysis and Policy, Cairo, Egypt.

Panagariya, A., S. Shah, and D. Mishra (1996), "Demand Elasticities in International Trade: Are They Really Low?" World Bank, Country Operations Division, Country Department I, South Asia. Working Paper No. 1712.

Shiells, C.R, A. Subramanian and P. Uimonen (1996), "Effects of the Uruguay Round on Egypt and Morocco". Washington, DC: IMF Working Paper WP/96/7.

Stern *et al.* (1976), *Price Elasticities in International Trade: an Annotated Bibliography.* London: Macmillan for the Trade Policy Research Centre.

UNCTAD (1996), *World Investment Report 1995: Transnational Corporations and Competitiveness*. New York and Geneva.

UNCTAD (1998). *World Investment Report 1997: Transnational Corporations and Competitiveness*. New York and Geneva.

Wong, C.-H. and L. Carranza (1998), "Policy Responses to External Imbalances in Emerging Market Economies-Further Empirical Results". Washington, DC: IMF Working Paper WP/98/103.