

AN EGYPT-UNITED STATES FREE TRADE AGREEMENT: ECONOMIC INCENTIVES AND EFFECTS

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ABSTRACT

An Egypt-United States Free Trade Agreement: Economic Incentives and Effects*

This paper explores the economic impact of a free trade agreement (FTA) between Egypt and the United States, assuming that Egypt implements both the recently agreed Arab League FTA and a Partnership Agreement with the European Union. An Egypt-United States agreement would improve Egypt's economic welfare. Gains would be maximized if the agreement were to greatly reduce the prevalence of non-tariff barriers and 'red tape' costs, something that does not appear to be likely under the Arab and EU FTAs. If so, the modelling exercise suggests that both welfare and US exports to Egypt would rise significantly. Arab countries should not be concerned with an Egypt-United States agreement, as there are no major implications for exports to Egypt. The share of Egypt's imports originating in the rest of the world declines significantly under the FTA scenarios, however. This is costly to both Egypt and to these trading partners. Such costs can be avoided if external trade barriers are lowered in conjunction with the implementation of the various FTAs.

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NON-TECHNICAL SUMMARY

Preferential trade liberalization – under which trade barriers are reduced for only a subset of trading partners – has always been important in Egypt's trade policy. In the context of the Arab League, Egypt accords preferential treatment to imports of Arab countries. In 1997, this was augmented by the decision of the Arab League to establish an Arab free trade agreement (FTA) over a ten year period, with implementation starting in 1998. Egypt is also far advanced in negotiations with the European Union (EU) to establish a bilateral FTA, which will lead to the elimination of import duties and other barriers to trade on goods of EU origin over a twelve year period. These developments imply that by 2010 a large proportion of Egypt's imports of manufactures will enter the country without encountering tariffs or quantitative restrictions.

The potential economic implications of a Euro-Mediterranean Partnership Agreement (EMA) for the Egyptian economy has been the subject of a number of analyses in the literature. This paper builds on previous studies by exploring the potential economic impact of a FTA between Egypt and the United States, taking the EMA and Arab League agreements as the base case. Although only the Arab League agreement has been formally incorporated into Egyptian law (the Euro-Med is still under negotiation at the time of writing), we consider their joint implementation an appropriate base case, because they presumably will be an important factor motivating discussions on a FTA with the United States.

Three preferential trade-liberalization scenarios for Egypt are analysed with the computable general equilibrium model of the Egyptian economy. The first of these assumes that Egypt implements a free trade policy with the European Union and Arab countries, but does nothing to reduce the prevalence of administrative and other non-tariff barriers to Egyptian trade. The second scenario adds to this an Egypt-United States FTA, which is limited to elimination of tariffs and quotas. The third scenario attempts to evaluate the effects of implementing a 'WTO Plus' agreement with the United States. This goes beyond the 'shallow' FTA scenarios by eliminating not only tariffs but also all non-tariff barriers (NTBs), applying to both goods and service sectors in Egypt. The motivation for this assumption is that a WTO Plus agreement must extend to investment and trade in services – 'opting out' would be allowed in these areas, in contrast to the EMA and Arab FTAs.

The simulation results suggest that the welfare implications of the EMA and Arab FTA for Egypt are positive. The gains are much smaller, however, than what could be achieved if these agreements were used to eliminate not just

tariffs but real NTB-related trade costs as well. The United States experiences a significant decline in exports to Egypt as a result of these two FTAs and therefore has an incentive to pursue a FTA with Egypt in turn. An Egypt-United States FTA is likely to be similar to the NAFTA, and the United States may well seek to conclude an agreement that goes further than NAFTA. The 'opportunity cost' of not pursuing such a 'WTO Plus' agreement for US exporters is some \$1.7 billion. While this is not particularly large relative to total US exports, industries such as transportation equipment, machine tools, pharmaceuticals and textile fabrics will be confronted with a significant decline in their exports to Egypt once the EMA and Arab League agreements are implemented.

A WTO Plus agreement would not only help to reduce the trade diversion costs for the United States that are associated with the EMA and Arab League FTAs, but more importantly from an economic perspective, it would generate a significant increase in Egypt's welfare by helping to reduce the prevalence of non-tariff barriers and 'red tape' costs. The modelling exercise suggests that Egypt's welfare may be greater under a WTO Plus by some 50%, assuming that the reduction in NTBs applies not only to US imports but to all goods and services.

Arab countries should not be concerned with the pursuit of a 'deep' FTA with the United States, as it does not have major implications for exports to Egypt. The rest of the world (non-preferential trading partners), however, is likely to be adversely affected by the implementation of the various FTAs. The share of total imports originating in the rest of the world declines significantly under all the FTA scenarios. This is also costly to Egypt. The government should therefore continue to pursue liberalization of its external trade barriers in conjunction with the implementation of the various FTAs. Assuming the EMA and Arab League agreements are fully implemented and access to these markets is assured, Egypt stands to benefit most from a strategy of complementing a WTO Plus agreement with a process of unilateral liberalization.

1. Introduction

Trade liberalization figures prominently on the policy reform agenda of the Government of Egypt. Tariffs and other barriers to trade have been reduced significantly since the late 1980s. Egypt has also participated in multilateral agreements to liberalize the trade regime--e.g., through binding its tariffs in the GATT and agreeing to eliminate quotas on textile imports. Preferential trade liberalization--under which trade barriers are reduced for only a subset of trading partners--has always been important in Egypt's trade policy. In the context of the Arab League, Egypt accords preferential treatment to imports of Arab countries. Most recently, agreement was reached in the Arab League to establish a free trade agreement (FTA) over a 10 year period starting in 1998.¹ Egypt is also far advanced in negotiations with the European Union (EU) to establish a bilateral FTA, which will lead to the elimination of import duties and other barriers to trade on goods of EU origin over a twelve year period. These developments imply that by 2010 a large proportion of Egypt's imports will enter the country without encountering tariffs.

Over forty years ago, Viner (1950) argued that the tariff discrimination implied by an FTA would have two effects. First, members would import some products from firms located in a more expensive partner country, rather than from cheaper suppliers located in non-member countries. Second, inefficient domestic production would be replaced with purchases from lower cost producers located in other member countries. Viner argued that if the first effect (trade diversion) was greater than the second one (trade creation) an FTA might result in lower

¹ This agreement was ratified by the Egyptian Parliament in late 1997.

welfare for a member country. Although the concepts of trade diversion and creation are inadequate measures of the welfare effects of regional integration efforts, the standard policy prescription for reducing the opportunity costs associated with a FTA is to lower average trade barriers on rest-of-the-world imports. Similar incentives arise if large countries negotiate many bilateral FTAs with trading partners. The resulting “hub-and-spoke” nature of the FTAs may give rise to “investment diversion” to the hub country because firms located in the hub have duty free access to all “spoke” countries. The potential for investment diversion can only be reduced if all trading partners cooperate and remove barriers on each others’ trade--cooperation is required. The recent Arab League FTA may to some extent have been motivated by a desire to avoid the negative implications of the emerging “hub and spoke” network of bilateral Euro-Med agreements.²

Non-member countries that are “left out” of an FTA will also have an incentive to seek reductions in the external barriers imposed by FTA members. This may be reflected in pressure to engage in multilateral trade negotiations in the context of the WTO. Alternatively, non-members may seek to negotiate a FTA in turn or to accede to the initial FTA. Interest in the negotiation of a FTA between the United States and Egypt is quite likely to be motivated in part by the Euro-Med and Arab League initiatives.

The potential economic implications of a Euro-Mediterranean Partnership Agreement (EMA) for the Egyptian economy has been the subject of a number of analyses in the literature (see e.g., Galal and Hoekman, 1997). This paper explores the economic impact of an Egypt-US

² Such FTAs have already been concluded between the EU and Israel, Jordan, Morocco, the Palestinian Authority, and Tunisia. Discussions are ongoing with Egypt, Algeria, and Lebanon. See Hoekman and Galal (1997) for the Egyptian case and Rutherford, Rutstrom and Tarr (1993, 1995) for assessments of the Tunisian and Moroccan agreements.

FTA, taking the EMA and Arab League agreements as the base case. We do this in large part because we are interested in determining what incentives are created for both Egypt and the US to conclude a FTA, *given* the realization of free trade between Egypt and Europe and the Arab League. The plan of the paper is as follows. Section 2 reviews a number of conceptual issues and the status quo trade policies that characterize the benchmark for simulation analysis. Section 3 describes the model, datasets, and the main scenarios that are evaluated. Section 4 reports the results of the simulation analyses and Section 5 concludes.

2. Trade Policy and the Structure of Trade

For purposes of this paper, bilateral Egyptian trade flows are separated into four regions: the EU (including Turkey),³ the United States, the Arab League, and the rest of the world (ROW). The EU is Egypt's largest trading partner, accounting for roughly 40 percent (\$4.5 billion) of merchandise imports in 1995 and absorbing 45 percent (\$1.6 billion) of Egypt's exports. The US comes second in terms of imports, accounting for \$2.2 billion in 1995 (19 percent of the total).⁴ Although the United States is a significant supplier to Egyptian markets, it absorbs considerably less in exports. In 1995 total exports to the US were \$520 million, much of which comprised textiles and clothing. The Arab League is the second most important export market for Egyptian exports, absorbing \$550 million (16 percent of all exports of goods) in 1995. As shown in Table 1, in many product categories, including processed foodstuffs, wood products, paper and printing, glass and mineral products, transport equipment, more than 50 percent of total Egyptian exports go to Arab markets.

³ Turkey is included in the EU grouping because Turkey has recently concluded an agreement to form a customs union with the European Union, implying that any FTA with the EU will automatically be extended to Turkey.

⁴ Total imports from the US in 1996 were \$3.1 billion, of which \$400 million comprised exports of arms and ammunition. The latter are excluded from the simulation analyses that follow.

In contrast, Egypt imports relatively little from the Arab League region. The most important in terms of import shares are petroleum products, beverages, and textiles and clothing. Despite their relatively large presence in production, vegetable foodstuffs and food processing are major import goods, as are machinery and chemicals. On the export side, Egypt's trade flows are dominated by transport services (largely because of the Suez Canal), oil, tourism and textiles and clothing.

We draw two conclusions from these statistics. First, although the EU is by far the largest trading partner of Egypt, trade flows are rather diversified. The non-Arab, non-EU, non US "rest of the world" provides 34% of imports and takes 25% of exports. These numbers suggest that the potential for trade diversion from a preferential trade agreement with just one of Egypt's major trading partners is significant. Second, services play an important role in Egypt's current account. As there are no disaggregated data available on services trade or its breakdown by region, for purposes of the modeling exercise that follows it is assumed that the Arab League region has a 40 percent export share; the EU 25 percent; and the US 7 percent (see Table 1). The Arab share is assumed to be higher than for merchandise reflecting the similarity in language, the importance of proximity for service delivery, and the prevailing policy of favoring Arab services-related investment.⁵

Although tariffs have been declining in recent years--the maximum tariff was recently reduced to 50 percent--at around 20 to 25 percent the import weighted average tariff is still relatively high. Tariffs on inputs are often lower than those applied to final goods, leading to effective rates of protection that are often a multiple of nominal rates (Kheir el Din and El

⁵ In earlier work, (Konan and Maskus 1997a; Maskus and Konan 1997) it is assumed that services trade is closely complementary to merchandise trade in terms of its sources so that regional shares of services trade equal each region's share in total imports or exports of merchandise. In this paper this assumption is only maintained for export shares of the Suez canal.

Sayed, 1997; Hoekman and Djankov, 1997).⁶ With the exception of those on imports of textile products, all quantitative restrictions have been abolished, and the textile bans are scheduled to be eliminated in the coming years as part of Egypt's commitments under the Uruguay Round.⁷

As tariffs and quotas have declined in importance, administrative control of the import process has become more prominent and important. Such controls and "red tape" are reflected in customs clearance procedures, in the enforcement of national health and safety standards, and in the logistics involved in moving shipments to, through, and from ports. These controls impose real trade costs on the private sector, both directly in terms of financial charges and indirectly through the opportunity costs of delays incurred in customs clearance. For example, the General Organization for Export and Import Control (GOEIC) inspects all consignments of goods entering Egypt that are subject to quality control standards. As of 1994 some 1,550 tariff lines or 25 percent of the tariff schedule were subject to such controls.⁸ As is the case for tariff rates, many of which escalate sharply, fees for goods that are intended

⁶ However, if account is taken of the fact that services are heavily protected, average effective rates of protection for manufacturing are much smaller. See Hoekman and Djankov (1997) and Galal and Tohamy (1997). It is also the case that total tariff revenue collections are less than what should be collected if all tariffs were fully applied, reflecting a variety of exemptions, including Arab League preferences, as well as circumvention. Exemptions and circumvention comes at a cost, however.

⁷ See Hoekman and Subramanian (1997). What follows draws in part on that study, as well as the contributions in Galal and Hoekman (1997).

⁸ Consignments that were rejected in 1993 included bolts and nuts; spare parts for cars; transformers; pressure cookers; filters; brakeshoes; ceramic tiles, light bulbs; ballpoint pens; washing machines; wheat; fresh fruit; dried fruit; sesame; frozen meat; and frozen fish. Estimates of the economic impact of the testing system do not exist. However, anecdotal evidence suggests the effect can be significant (World Bank, 1995). For example, in 1993 hundreds of tons of frozen beef were rejected on the basis that the relevant Egyptian standard (no. 1522 of 1991) was violated. It has been claimed that this standard is excessively strict. It requires that frozen beef have a fat content of 7 percent or less if for retail sale, and once defrosted, have a drip content of no more than 1 percent by weight.

for retail sale were generally at least twice as large as those that applied if further processing occurred in Egypt.

Customs clearance practices also increase expected costs for businesses. Practices for valuing goods are problematic. Assessed values are frequently reported to exceed invoice values, and applied tariffs may be a multiple of the statutory rate.⁹ Fees charged by the public companies providing port services for handling and storage of goods are much higher than in neighboring countries or nations with which Egypt competes, while these companies do not provide quality service in return. Maritime shipping is also a monopoly of the state-owned Egyptian Maritime Navigation Company, which is reflected in maritime transport costs for shippers that are 25 percent higher than those confronting competitors in neighboring countries for equivalent routes.

A number of initiatives have been taken in recent years to study and reduce red tape costs. Documentary requirements have been simplified, the incidence of stamp duties reduced, and fees for port and related services lowered. The shipping monopoly is in the process of being abolished.¹⁰ While these initiatives have improved the situation, much more remains to be done. In principle, implementation of FTAs could help to achieve a reduction in red tape costs through a process of simplification and abolition of administrative controls and harmonization and mutual recognition of standards. If extended to include liberalization of trade and investment in services as well as merchandise trade, input costs for export-oriented producers would fall even further. Our analysis explores the relative importance of reducing tariffs, removing red tape

⁹ The variance in valuation and applied rates can be significant. Data provided by importers in 1995 suggest that assessed values for capital equipment may exceed invoice values by 25 percent or more, while applied tariffs may exceed the applicable statutory rates by an even wider margin. See World Bank, 1995.

¹⁰ *Financial Times*, September 25, 1997, p. 8.

costs, and improving the efficiency of the services sectors through raising quality and lowering costs.

3. Model Structure and Benchmark Data

The model that is used in this paper to analyze the effects of various trade liberalization scenarios is a standard single country, competitive computable general equilibrium model. Many proponents of regional integration have argued that such models may be inappropriate in that dynamic effects arising from economic integration are ignored.¹¹ Dynamic gains may be generated through the realization of economies of scale and competitive gains under imperfectly competitive market structures, as well as through increased investment (including inflows of FDI) in member countries because of larger market size and a reduction in uncertainty due to a “locking-in” or “anchoring” of policy reforms. There may also be permanent effects on the rate of economic growth through higher rates of transfer of technology and greater investment in research and development. Despite appeals to the dynamic effects of regional integration, the various arguments and claims have so far not been demonstrated conclusively either theoretically or empirically. The existence of such gains depends heavily on the specific models used, and is very sensitive to the characteristics of the member countries, the policies that are in place before formation of the PTA, and the counterfactual or anti-monde being postulated. Given the absence of compelling methodologies to assess the possible dynamic effect of preferential trade liberalization that are firmly grounded in theory and consistent with the empirical evidence, we have chosen to pursue a well understood, conservative modeling strategy in this paper.

It is assumed that Egypt is a price taker on world markets. Thus, policy changes are assumed not to alter prices significantly in other regions of the world.¹² To take into account the impact of the different FTAs noted earlier, Egypt's trade flows are broken down across the three major country groups of interest (EU, US, Arab League), with all other trade flows collected into a residual "rest of the world." Statutory MFN tariffs, scaled for consistency with reported tariff revenues, are assumed to apply to imports from each of these regions in the benchmark case. These tariffs are weighted across sub-sectors by global import shares. To take into account existing preferential trade within the Arab region, applied tariffs on intra-Arab trade are set at 40 percent of the MFN levels.¹³

Following standard practice in the literature, final outputs are produced according to a Leontief function using intermediate inputs and real value added. A constant elasticity of substitution (CES) production function describes the substitutability between labor and capital inputs in producing real value-added. Intermediate inputs and final goods are differentiated by country of origin according to the Armington assumption, so that export and import prices differ across regions.¹⁴ In each sector, demand for domestically produced and imported goods is represented by a CES function, and intermediate imports are also differentiated by region of supply in a CES structure. Similarly, Egyptian industries supply regionally differentiated goods to both

¹¹ The following paragraph draws on World Bank (1997).

¹² See Maskus and Konan (1997) for a fuller description of the model.

¹³ As discussed further below there is very little information available regarding the preference margins that actually apply.

¹⁴ This assumption may seem inconsistent with the small open economy notion that Egypt is a price taker on world markets. However, this approach is quite standard in the literature, and there is no obvious way to address this issue given the data at hand. De Melo and Robinson (1989) show that models that allow product differentiation are well behaved under a small open economy assumption; in effect the economy is a price taker at the level of aggregate trade flows and each region's aggregation is sufficiently distinctive to support the Armington assumption.

domestic and foreign markets (exports). Production follows a nested two-stage constant elasticity of transformation (CET) function. Total output is first calculated as the sum of domestic supply and total exports, with the latter then being allocated across regions (EU, US, Arab League, and ROW) according to a sub-CET function.

A representative consumer maximizes a nested CES utility function with a corresponding multi-staged budget constraint. She receives income from primary factors (labor and capital), net transfers from the government, the current-account deficit, as well as any net economic rents from the operation of nontariff barriers to trade. The cost of living index associated with the utility function is chosen as numeraire. Changes in aggregate consumption are a direct measure of welfare impacts ("equivalent variation"). Capital is assumed to be partially mobile in the sense that there are a number of resource constrained sectors, which we take to be agriculture (VG1, VG2, ANI), mining (OIL, MIN), utilities (ELE), and transport (TRN). In all other sectors capital is freely mobile. The intention underlying this assumption is to capture the strong possibility in Egypt of resource constraints that limit intersectoral factor flows and output changes. In particular, Egyptian experts seem concerned about the ability to expand agricultural production in the face of significant water scarcities. There are also constraints on output in crude petroleum and the Suez Canal, with the latter problem justifying our inclusion of the transport sector.

Intermediate inputs are disaggregated into domestic sources and imports to incorporate importing costs and tariffs in purchases for the production sector. Sector-specific proportionate import costs and export costs capture the impact of administrative NTBs, or "red tape". As mentioned previously, significant NTBs in Egypt include licensing fees, inspection delays, monopoly port charges, difficulties due to inadequate transport facilities, excessive and arbitrary

enforcement of product standards, and restrictive licensing schemes and qualification requirements for professional service providers. These NTBs drive wedges between home and foreign prices. Conservatively, it is assumed that there are no resource-using rent-seeking costs in the economy, so that NTB “taxes” represent a pure transfer among domestic agents. The “revenues” are allocated to the representative agent, so that a reduction in import NTBs simply increases her purchasing power.¹⁵

As any FTA will have a direct impact on government finances in Egypt--import duties constitute over 15 percent of tax revenues and over 10 percent of total current revenues (including transfers from public firms)¹⁶--account is taken of the fiscal consequences of tariff reform. In this connection it is assumed that the government operates under a fixed deficit constraint so that changes in tariff collections are compensated by an endogenous domestic tax change to ensure that liberalization is revenue neutral. Required changes in domestic tax collections are achieved by varying the Goods and Service tax (GST), a sales tax that applies to final consumption and capital investment of domestic goods and imports, but does not apply to exports.¹⁷ As shown in Table 2, the GST is applied on sales of goods and services at rates ranging from zero to 25; the standard rate is 10 percent.¹⁸

¹⁵ Rent-seeking could well be significant in Egypt, imposing additional efficiency losses in the economy. In the absence of information about this possibility, it is ignored in order to be conservative about welfare gains from reducing NTBs. Elimination of NTBs could improve income distribution if recipients of rents are concentrated in higher income classes than those who pay them. This complication is also ignored.

¹⁶ International Monetary Fund (1994).

¹⁷ The numerous sectoral deviations from the average GST rate and exemptions and evasion of this tax are taken into account by calibrating tax rates to measures of government revenue from indirect taxes in the benchmark year. The corporate tax, or tax on operating surplus, is held constant in the analyses.

¹⁸ Taxes paid by firms on their intermediate inputs purchases are recoverable through a tax credit, with the exception of purchases of investment goods and some service inputs. Given insufficient information on these tax credits, it is assumed that the tax is a levy on final goods purchases, with taxes on all inputs credited back to purchasing firms.

Two standard closure rules are imposed: the savings-investment balance and a fixed current account balance. The first is based on the assumption that the capital stock is exogenously fixed at the benchmark level and is financed through forced consumer savings that acts as a direct (lump-sum) tax. A capital good is modeled as composite goods of fixed composition. Firms buy composite capital according to their preferences. The interest rate (an index price of the composite capital stock) is endogenous and determined by factor demand conditions.¹⁹ Foreign currencies are scaled so that the appropriate GDP deflator ("world" price index) is unity. Keeping the current account fixed while international prices are constant is accomplished by means of a change in the home "real exchange rate," which refers implicitly to a change in the home price index (generated by changes in price of home-produced goods) sufficient to sustain a constant current-account deficit measured at world prices.²⁰ Because the current account is in deficit, it represents an addition to the representative agent's income through exogenous capital inflows.

The data for the model consist of a Social Accounting Matrix (SAM) and other parameters, such as elasticities of substitution and transformation,²¹ import and export trade flows by region, and tax and tariff rates. These data are assembled into a consistent set of relationships between

¹⁹ No distinction is made between domestic capital and capital inflows from foreign direct investment (FDI). The impact of trade liberalization on the volume of FDI is generally ambiguous. Tariff reduction will lower the incentive of foreign firms to service Egyptian markets with "tariff jumping" FDI. In contrast, lower tariffs on intermediate imports may encourage export-oriented FDI. These issues are beyond the scope of the present analysis. See Brown, Deardorff and Stern (1997) for an exploration of the issue in the context of the EU-Tunisia agreement

²⁰ A rise in the "real exchange rate" is consistent with a depreciation of home currency, in that the per-unit price of foreign exchange rises.

²¹ As there is also little empirical evidence on Egyptian elasticities, labor-capital substitution is allowed to vary across industries, using estimates from Harrison, Jones, Kimbell and Wigle (1992). Labor-labor substitution is set at a conservative 0.50 (see Table 2). Benchmark trade elasticities are drawn from Rutherford, Rutstrom and Tarr (1993). The various trade elasticities are 2.0 for substitution between domestic and imported goods, 5.0 for substitution among regional imports and for transformation between domestic output and exports, and 8.0 for transformation among regional export destinations. These parameters are consistent with the ranges of elasticities reported in Lofgren (1994). Results of sensitivity analysis with respect to the various trade elasticities are reported in Maskus and Konan (1997).

intermediate demand, final demand, and value-added transactions using the 1989/1990 input-output table for Egypt, updated to incorporate trade and tax policies and trade shares as of 1994.²² Trade and tariff data by 8-digit HS line were aggregated to the input-output sectoral basis using import weights consistent with the concordance between the input-output table and the tariff classification. From these data, regional trade shares for 1994 were applied to 1990 trade volumes on the input-output basis.²³ As Egypt does not realize the full revenue that would obtain if statutory tariff rates were applied to all imports because of various exemptions for duty-drawback provisions and investment incentives, weighted legal tariff rates were scaled downward (by some 20 percent) to ensure consistency with total import duty collections in 1994. To take into account the existence of the quantitative restrictions on imports of textiles and clothing, the statutory MFN rates for this sector have been doubled. It is assumed further that the cost impacts of “red tape” on merchandise imports and exports are 10 and 5 percent respectively. Egyptian import and export NTBs with Arab countries are assumed to be half those facing other trading partners (5 and 2.5 percent, respectively, on imports and exports of goods) reflecting past integration efforts within the region. As reliable quantitative measures of the price impacts on restrictions on services trade are not available, for purposes of analysis a uniform 15 percent tax equivalent is imposed on prices of both

²² See Maskus and Konan (1997) for a detailed discussion of the updating procedure, which involved re-calibrating the model on the basis of the 1994 policy parameters.

²³ The fact that the model is based on Egypt’s trade in 1990 is not much of a problem if attention is restricted to changes in welfare and trade shares, as Egypt’s structure of production and trade is unlikely to have changed much since 1990. Note also that the benchmark trade *shares* in the model were updated to 1994.

exported and imported services.²⁴ Here again it is assumed that there is less discrimination against Arab service suppliers, reflected in a lower 7.5 percent wedge.

4. Preferential Trade Liberalization: Simulations and Results

Three preferential trade-liberalization scenarios for Egypt are analyzed with the model. The first two are "shallow integration" FTAs. The first of these assumes that Egypt implements a partnership agreement with the European Union as well as the Arab League FTA. Under the former, Egypt removes all tariffs on EU goods,²⁵ and the EU responds by providing somewhat improved access to its markets. This access is assumed to be equivalent to a one percent increase in export prices to the EU for all commodities except agriculture and clothing, where a two percent terms of trade improvement occurs (VG1, VG2, ANI, TX1, TX2, CLO). We posit these limited impacts because Egypt already enjoys duty-free access to EU markets for manufactures, and is not likely to obtain significantly better market access terms for agricultural produce.²⁶ The Arab League FTA is a standard preferential trade agreement that involves the elimination of tariffs on intra-Arab trade in merchandise. As mentioned previously, little is known regarding the tariffs that are effectively applied on intra-Arab trade flows. As the Arab region is both a major destination of Egyptian exports and tariff levels in the Arab region are significantly higher than

²⁴ Comprehensive estimates of the cost-raising effects of regulatory regimes that restrict competition in service markets are lacking. However, many case studies of individual sectors suggest that excess costs are more than 15 percent. See World Bank (1996) and the contributions in Galal and Hoekman (1997) for a discussion.

²⁵ Throughout the counterfactual simulations the beverage tariff is not changed to reflect Egypt's social policy for maintaining rigorous barriers on imported alcoholic beverages. Similarly, tariffs on tobacco products are held fixed in order to reflect the fact that governments in the region will continue to impose high excises on these products for revenue and health purposes.

²⁶ This differs from the more optimistic assumption of an 8 percent export price gain in EU's agriculture and textile sectors used in Konan and Maskus (1997a).

those that are applied in the EU and US markets, liberalization of Arab trade barriers could have a major impact on Egyptian welfare. In the scenarios it is assumed that applied Arab tariffs on intra-Arab trade are 60% of the statutory MFN rates.²⁷

Although only the Arab League agreement has been formally incorporated into Egyptian law (the Euro-Med is still under negotiation at the time of writing) we consider their joint implementation an appropriate base case because they presumably will be an important factor motivating discussions on a FTA with the United States.

A potentially important aspect of any FTA is an associated reduction of administrative and other non-tariff barriers to Egyptian trade. Although the draft EMA devotes considerable attention to these issues insofar as there are Articles dealing with technical and financial assistance to ensure greater harmonization and upgrading of customs, standards-related institutions, and infrastructure, there are no explicit commitments on the part of Egypt to undertake action in these areas. Nor does the agreement commit Egypt to any actions to liberalize access to its service markets or to grant a general right of establishment for foreign investors. We therefore assume that the EMA and Arab League agreements will do nothing to remove the various NTBs that were discussed earlier.

The second scenario adds a shallow Egypt-US FTA to this mix. This involves Egypt eliminating all tariffs on imports from the US, and the US granting Egypt duty-free and quota-free access to its markets. As is the case with the EU, given that US trade policy towards Egypt is already quite liberal, Egypt has little to gain in terms of improved access to the US. We

²⁷ Data for Jordan's and Lebanon's tariffs were compiled from Hoekman and Djankov (1997); Morocco's and Tunisia's tariffs were obtained from Rutherford, Rutstrom and Tarr (1993, 1995). A concordance consistent with the Egyptian IO table was developed to map tariffs into the 38 sectors of the model. Tariffs were weighted by 1996 import shares, using the UN COMTRADE data base.

assume therefore that Egypt's export prices in US markets increase by only one percent. However, for agricultural products and clothing, two commodities where the US does not currently allow free access, we assume that export prices increase by 8 percent.

The third scenario attempts to evaluate the effects of implementing a "WTO Plus" agreement with the US. This goes beyond the "shallow" FTA scenarios by eliminating not only tariffs but also all the NTBs applying to both goods and service sectors in Egypt. The motivation for this assumption is that a WTO Plus agreement must extend to investment and trade in services--no "opting out" would be allowed in these areas, in contrast to the EMA and Arab League agreements. It is assumed further that the elimination of NTBs is applied on a nondiscriminatory basis. That is, all traders benefit from the associated cost reductions.²⁸

Two final scenarios analyze the implications of nondiscriminatory, unilateral elimination of all tariffs and NTBs. The first assumes that Egypt does this on its own. As a result it does not benefit from preferential access to EU, US and Arab markets, but also is not subjected to the trade diversion costs that are associated with FTAs. The second assumes that Egypt unilaterally liberalizes its trade regime on a nondiscriminatory basis, and that this is also pursued by the EU, the Arab League and the United States. Given the fact that the EMA and Arab League FTAs should be implemented by 2010, this is a more realistic appraisal of nondiscriminatory liberalization by Egypt. The various scenarios are summarized below:²⁹

²⁸ This is a strong assumption, as in practice it can be expected that some cost reductions will only benefit trade with FTA partners. In the absence of information on the distribution of such benefits, we simply assume they apply across the board.

²⁹ In this paper we focus only on variables that are most relevant to the issue at hand: the incentives for concluding a FTA with the US. The model is capable of generating results on a number of other variables of interest, including factor returns. These are not reported here to conserve space. In all simulations real returns to all factors increase, reflecting enhanced efficiency in the economy.

Scenarios:

Shallow EMA and Arab League FTAs	Egypt eliminates all tariffs with EU and Arab League (except BEV and TOB). EU grants improved market access, increasing agriculture and textile prices by 2% and all other goods by 1%, and Arab League countries eliminate their tariffs (except BEV and TOB) with Egypt.
Shallow EMA, Arab, and US FTAs	Same as above, plus Egypt eliminates tariffs with US. The US grants improved market access in agriculture and clothing, with export prices rising by 8%. All other export prices increase by 1%.
EMA -Arab FTAs with a WTO Plus with US	Combines first scenario with a deep integration agreement with the US. The latter results in the removal of all NTBs on a nondiscriminatory basis.
Unilateral Liberalization	Egypt unilaterally eliminates all tariffs and all NTBs on a MFN basis. No preferential market access in US, EU, or Arab League.
Concerted Unilateral Liberalization	Egypt unilaterally eliminates all tariffs and all NTBs on a MFN basis. The US, EU, and Arab League grant duty-free access to Egypt.

Table 3 reports results for the first two shallow integration scenarios. The joint EMA and Arab League FTAs generate an estimated welfare gain of one percent over benchmark 1994 levels.³⁰ The trade-weighted average tariff rate falls to 4.1 percent. At \$252 million, estimated trade creation gains are only slightly higher than trade diversion losses (\$233 million).³¹ Trade creation is defined as the sum of import trade creation (consumer surplus net of tariff losses) plus export trade creation (change in producer surplus on trade with the partners).³² Trade diversion

³⁰ Welfare changes are calculated as the percentage change in GDP, measured as Hicksian equivalent variation.

³¹ All nominal values reported are in 1996 US dollars. As the base data set is for 1990 (although, as mentioned, variables were updated to 1994), 1996 US\$ figures are obtained by appropriately scaling the 1990 data to reflect the increase in aggregate trade volumes between 1990-96.

³² As preferences are homothetic, this measure is a monotonic transformation of the Hicksian equivalent variation (see Konan and Maskus, 1997c).

comprises the loss of tariff revenues on imports from non-FTA members resulting from a substitution to partner imports.

A particularly striking result is that the GST can be lowered slightly following the implementation of the FTAs. This arises because of a rise in domestic tax collection as economic activity increases in sectors that are relatively heavily taxed. Thus, despite a significant decrease in tariff collections following implementation of the FTAs, government budget neutrality implies a *reduction* in the GST. This reflects the fact that the tariff elimination induces resources and consumption are to move into sectors that are subject to relatively high GST rates (as well as other taxes). Of course, this will only occur if GST revenues are actually collected. It should also be kept in mind that this is result that obtains once the adjustment to the new set of incentives has been completed and resources have been reallocated across sectors. During the transition to the new equilibrium the government will most likely be confronted with a decline in revenues.³³

A shallow FTA between the US and Egypt that is limited to the abolition of tariffs would be beneficial to Egypt in that welfare would rise relative to the EMA-Arab FTAs by some 25 percent to 1.26 percent of GDP (Table 3, last column). In part this is due to the elimination of some of the trade diversion that would otherwise occur: trade creation now becomes significantly larger than trade diversion. The extension of duty-free treatment to imports from the US leads to a fall in the import-weighted average tariff rate to only 2.6 percent. It now becomes necessary to

³³ As the tariff -tax structure in Egypt is quite distortionary, in principle tariff reforms that move the structure of tariffs towards greater neutrality can have a large impact in terms of raising revenue. For example, if Egypt were to adopt a 10 percent uniform tariff, the GST could be lowered by 30 percent while maintaining fiscal neutrality. Similarly, substantial efficiency and revenue collection gains can be achieved through reform of domestic tax structures. See Konan and Maskus (1997b) for an in-depth discussion of the impact on government revenues of piecemeal tariff reform in the Egyptian context.

increase the GST by about 5 percent in order to maintain budget neutrality. The positive welfare impact suggests that Egypt has an incentive to negotiate a FTA with the US.

To obtain an idea of the incentives confronting the US, it is necessary to investigate the impact of the Arab and EMA agreements on US exports to Egypt.³⁴ These two FTAs will reduce imports from the US by \$412 million or 14 percent relative to the benchmark (Table 4). The US share of the Egyptian import market falls from 18 to 14 percent. These are not very large numbers, suggesting that there may not be much concern on the part of US industries that suffer from the trade diversion that is associated with the Arab and EU FTAs. The value of EU exports to Egypt increases by 38 percent or \$2 billion under the Arab-EU FTA scenario. The opportunity costs for US exporters may therefore be perceived by them to be higher than the "pure" trade diversion if they believe that over time total trade will expand, leaving them with a smaller share of growing pie.

In percentage terms the greatest changes in trade flows occur with the Arab League. Total imports from Arab countries rise by 33 percent, while exports to the Arab League increase by 44 percent. Given that Egypt traditionally exports much more to the Arab region than it imports, the Arab League's share of total Egyptian exports rises to 40 percent (up from 31). This large increase is a reflection of the fact that the greatest improvement in market access for Egyptian exports resulting from the two FTAs is in the Arab markets. Tariffs within the Middle East are significant, even if account is taken of the assumed 40 percent preference margin. Trade with the EU is already duty-free, so that the effect of a EMA in this regard is much smaller. The

³⁴ Given the single country model that is used here it is not possible to determine the welfare impact of these various FTAs on the US. However, given the small size of the Egyptian economy, this will be negligible even if it is negative. What is of greater interest is to explore the extent to which particular US industries will find it in their interest to lobby in favor of a FTA with Egypt because they will otherwise suffer a loss in exports.

assumed exogenous rise in export prices in the EU is nonetheless quite important. Without this assumption, Egypt's exports to the EU fall by 2.5 percent (not reported) rather than rise by 2.8 percent as reported in Table 3. The rise in welfare also becomes significantly less, falling to 0.81 percent (not reported).

One might question the magnitude of the increase in exports to the Arab League, given that these are not large markets. However, it is often noted that intra-regional trade between Arab League countries is well below its potential, especially if the Persian Gulf states are excluded. Intra-regional trade represents less than 3 percent of the total trade of Middle East and North African countries. Given the potential for further specialization and intra-industry trade, intra-regional trade should be able to grow substantially (Havrylyshyn, 1997).

If a shallow FTA with the US were to be added to the other two FTAs, total Egyptian imports from the US would rise by \$629 million (or 22 percent) relative to the benchmark as compared to a loss of \$412 million otherwise (Table 4). This difference of some \$1 billion is a better measure of the incentive for US exporters to support an FTA with Egypt insofar as it includes what might be gained beyond offsetting the threatened trade diversion. In aggregate terms much of the export gains accruing to US exporters are offset by a decline in the growth of EU exports to Egypt. The rest of the world (ROW), not surprisingly, is likely to be a loser from the various FTA combinations. Under the EMA and Arab League FTAs the ROW share of total imports falls by 25 percent; and it drops by 30 percent if these are complemented by a shallow FTA with the US (not reported).

It is unlikely that a FTA with the United States would be limited to a shallow agreement of the type that has been agreed with the EU and the Arab League.³⁵ Instead, the US can be expected to insist on an agreement that includes liberalization of investment (national treatment, right of establishment, binding arbitration), service markets, and government procurement, as well as disciplines to ensure that domestic legislation and regulations are applied correctly and transparently. Such a WTO Plus agreement would imply that over time the service sector inefficiencies would be removed, and that the prevalence of import and export related NTBs would be attenuated. The effects of such an agreement are simulated in this paper as leading to the complete elimination of all NTBs on goods and services.³⁶ Moreover, it is assumed that this elimination benefits all trade, not just that with the United States, by virtue of affecting domestic regulatory procedures that tend to be applied identically to all traders and investors.

A WTO Plus accord would be significantly more beneficial to Egypt than the shallow FTAs (Table 5). The positive welfare impact of elimination of NTBs as well as tariffs rises to 1.8 percent of GDP (an increase of almost 50 percent relative to the EMA and Arab FTAs). Trade creation is almost three times larger than trade diversion, and the absolute magnitude of diversion is lower than under the shallow FTA options, suggesting that the ROW may be somewhat less damaged as well. The underlying trade volumes also increase significantly (not reported). Total imports rise by 25 percent in volume terms, while exports increase by over 30 percent. As reported in Table 6, US exports to Egypt rise by \$1.1 billion relative to the 1996 base. This suggests that the total "opportunity cost" of not pushing for a WTO Plus agreement,

³⁵ As mentioned earlier, the Euro-Med agreement has the potential to give rise to deeper integration, but few steps have been taken in the draft agreement in this direction.

given the implementation of the EU and Arab League agreements, is some \$1.5 billion (1.1 billion plus 400 million). Also noteworthy is that the WTO Plus leads to significant increases in exports to the EU and the US, as Egyptian industries benefit from the reduction in real costs associated with producing for export. Exports to the EU rise by one-third, while those to the US increase by over 50 percent. The total value of exports rises by over 40 percent, as compared to only 15 percent under a set of shallow FTAs (not reported).

For comparison purposes, Tables 5 and 6 also report the results of simulating the economic effects of two unilateral liberalization programs. It is well known that preferential trade liberalization is an exercise in the second best--as long as barriers to foreign competition can be removed on a nondiscriminatory (MFN) basis, associated welfare gains will be higher than if they are limited to only a subset of trading partners. This is confirmed by the simulations. Welfare under MFN liberalization (tariffs and NTBs) rises by 25 percent relative to what would obtain under a WTO Plus agreement as long as it is assumed that the Arab League, the EU and the US also liberalize access to their markets. This is not the case if the Arab League maintains trade barriers against Egypt (second column of Table 5), in which case the predicted increases in exports to Arab countries are also much smaller (Table 6). One can also see from Table 6 that there is significant trade diversion associated with a WTO Plus. Increases in imports from the US, EU and Arab countries are about \$1.7 billion less under a unilateral liberalization scenario that is not associated with a reduction in Arab League trade barriers. As total trade increases by the roughly the same order of magnitude under both the WTO Plus and unilateral liberalization options, this is trade that is diverted from the rest of the world.

³⁶ In the absence of detailed data on the impact of the current investment regime or policies such as government procurement practices, no attempt is made to calculate the effect of policy changes that might be induced under a

From a political economy perspective it is of some interest to identify in which specific sectors US exporters would be most negatively affected by the EMA-Arab FTAs, and which sectors would most benefit from a WTO Plus agreement between Egypt and the United States. As indicated in Table 7, the various simulations suggest that most of the increase in Egyptian imports that would emerge from the FTAs will be concentrated in labor-intensive light manufacturing, especially textiles and clothing, leather, footwear, and furniture. These are not sectors where the United States has a comparative advantage. Instead, US exports to Egypt are concentrated in agricultural produce, machinery and equipment, and pharmaceuticals. Under the shallow integration FTAs, little change is expected in imports of products where the US has a revealed comparative advantage in the Egyptian market. However, under a WTO Plus, imports of most products increase between 20-50 percent, including in services, sectors in which imports do not expand much under the shallow FTAs.

The sectoral implications for the US of not reacting to the EMA and Arab agreements and the "opportunity" costs of not concluding a WTO Plus agreement to complement these FTAs are reported in Table 8. It can be seen that although the primary US export sector--agricultural produce--is not very sensitive to the FTAs, other important export items such as paper, chemicals, machinery and transport equipment are significantly affected. The EMA-Arab FTAs would cause US machinery exports to fall by 37 percent; while transport equipment and textile fabric exports would drop by almost 50 percent. However, if the US concluded a WTO Plus, exports of fabrics would rise by a factor of four, transport equipment exports are predicted to double, while machinery exports expand by 35 percent. Other sectors where exports expand significantly include foodstuffs and rubber and plastics (up 45 percent) and iron and steel (up 80

WTO Plus framework.

percent). If trade levels simulated under the EMA-Arab FTA scenario are used instead of the basic calibration as the benchmark for comparison, the associated increase in US exports is of course even higher. Exports of transportation equipment and cotton fabrics increase by a factor of four or more and cotton fabrics by a factor of seven, while exports in sectors such as machinery, iron and steel, rubber and plastics, and paper double. Note also that as a result of the liberalization of access to service markets under a WTO Plus agreement, US exports of financial and business services are expected to increase substantially, rising by some 40 percent.

5. Conclusions

The welfare implications of the EMA and Arab FTAs for Egypt are positive. However, the gains are much smaller than what could be achieved if these agreements were used to eliminate not just tariffs but real NTB-related trade costs as well. It appears that neither of these two agreements will do much to achieve a significant reduction in NTBs in the short to medium run, although the EMA has the potential to do so. A Egypt-US FTA is likely to be similar to the NAFTA, and the US may well seek to conclude an agreement that goes further than NAFTA. Such an agreement would consequently not only help to reduce the trade diversion costs for the US that are associated with the EMA and Arab League FTAs, but more importantly from an economic perspective, it would generate a significant increase in Egypt's welfare by helping to reduce the prevalence of non-tariff barriers and "red tape" costs. The modeling exercise suggests that welfare may be greater under a WTO Plus by some 50 percent, assuming that the reduction in NTBs applies not only to US imports but to all goods and services.

The US also has positive incentives to pursue a WTO Plus agreement with Egypt. The "opportunity cost" of not pursuing a WTO Plus for US exporters is some \$1.7 billion. While this

is not particularly large relative to total US exports. Industries such as transportation equipment, machine tools, pharmaceuticals and textile fabrics will be confronted with a significant decline in their exports to Egypt once the EMA and Arab League agreements are implemented. The potential export gains that can be expected from a WTO Plus are substantial and may be sufficient to induce these industries to support an Egypt-US FTA. Quite apart from the foreign policy considerations, discussed by Galal and Tohamy (1997) and Lawrence (1997), there would appear to be a mutual economic incentive for the US and Egypt to negotiate a "deep" FTA.

Arab countries should not be concerned with such a development as it does not have major implications for exports to Egypt. However, the rest of the world (non-preferential trading partners) is likely to be adversely affected by the implementation of the FTAs. The share of total imports originating in the rest of the world declines significantly under the FTA scenarios. This is costly to Egypt as well. The government should therefore continue to pursue liberalization of its external trade barriers in conjunction with the implementation of the various FTAs.

Assuming the EMA and Arab League agreements are fully implemented and access to these markets is assured, Egypt stands to benefit most from a strategy of complementing a WTO plus agreement with a process of unilateral liberalization.

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TABLE 1: BENCHMARK OUTPUT AND TRADE SHARES

SECTOR	Output*			Import*					Export*					
	Total	EU	US	EU	US	Arab League	Total	EU	US	Arab League	Total	EU	US	Arab League
AGRICULTURE														
1. Vegetable products, foodstuffs (VG1)	12.4	11.7	47.9	2.2	27.0	2.6	27.0	1.5	63.5					
2. Vegetable products, non-foodstuffs (VG2)	1.7	36.9	16.5	1.2	49.3	0.1	49.3	13.4	14.1					
3. Animal products (ANI)	8.0	82.7	0.0	9.6	35.2	0.3	35.2	2.3	53.0					
MINING AND QUARRYING														
4. Crude petroleum and natural gas (OIL)	2.7	52.0	7.0	24.4	18.5	18.5	30.6	4.6	1.0					
5. Other extractive industries (MIN)	.09	17.7	14.8	3.5	56.8	0.2	56.8	9.2	21.4					
MANUFACTURING														
6. Food processing (FOO)	7.7	40.3	10.6	2.3	20.1	1.3	20.1	4.5	49.3					
7. Beverages (BEV)	0.6	41.7	16.3	28.5	0.0	0.0	1.2	0.0	87.6					
8. Tobacco products (TOB)	1.9	27.0	27.4	2.5	0.4	0.0	0.4	0.7	45.3					
9. Cotton ginning and pressing (TX1)	1.2	36.9	0.3	0.9	4.2	0.2	33.7	0.2	1.4					
10. Cotton spinning and weaving (TX2)	5.2	33.4	7.1	3.7	72.4	10.3	72.4	10.9	6.1					
11. Clothing: assembled and pieces (CLO)	1.4	12.4	0.9	19.1	1.2	1.2	34.7	49.1	8.6					
12. Leather products, excl. shoes (LEA)	0.2	25.7	0.9	13.8	0.1	0.1	48.8	1.5	30.9					
13. Shoes (SHO)	0.4	16.0	2.9	12.0	0.0	0.0	20.5	1.9	60.5					
14. Wood products, excl. furniture (WOO)	1.1	39.8	1.4	0.4	1.5	0.1	1.5	0.1	86.1					
15. Furniture (FUR)	1.4	57.0	34.7	1.4	14.9	0.5	14.9	10.6	58.5					
16. Paper and printing (PAP)	1.5	46.8	17.1	2.9	1.6	0.9	1.6	0.8	91.7					
17. Chemicals, excl petro. (CHE)	3.1	10.8	12.2	7.9	1.8	1.8	31.3	3.5	39.4					
18. Petroleum refining (PET)	2.7	48.4	6.2	28.9	3.3	3.3	58.5	0.6	7.2					
19. Rubber, plastics and products (RPL)	0.8	42.8	20.4	9.8	0.3	0.3	41.3	0.7	45.3					
20. Porcelain, china, pottery (POR)	0.3	47.4	7.8	11.5	0.1	0.1	42.2	1.5	32.4					
21. Glass and products (GLA)	0.3	63.3	5.3	3.6	0.1	0.1	9.3	5.5	62.1					
22. Mineral products, n.c.i. (MPD)	1.7	61.6	3.8	2.2	0.0	0.0	4.8	2.0	80.9					
23. Iron, steel, other base metals (MET)	2.8	35.5	11.8	9.0	0.8	0.8	68.3	1.9	24.3					
24. Machinery and appliances (MAC)	3.5	23.1	17.4	2.4	4.6	4.6	9.5	3.9	58.0					
25. Transportation equipment (TRA)	1.0	33.8	12.1	0.7	3.6	0.4	3.6	0.3	89.8					
26. Other manufacturing (OMF)	0.1	47.6	11.2	3.5	0.1	0.1	25.4	3.2	62.5					

TABLE 1: BENCHMARK OUTPUT AND TRADE SHARES (Continued)

SECTOR	Output*		Import*			Export*			
	Total	EU	EU	US	Arab League	Total	EU	US	Arab League
SERVICES AND OTHER									
27. Electricity, gas, and water (ELE)	1.7	44.6		16.8	4.3	0.7	25.0	7.0	40.0
28. Construction (CON)	5.5	44.6		16.8	4.3	0.8	25.0	7.0	40.0
29. Trade (TRD)	7.1	44.6		16.8	4.3	5.6	25.0	7.0	40.0
30. Restaurants, hotels, coffeehouses (RES)	2.3	44.6		16.8	4.3	5.0	25.0	7.0	40.0
31. Transport and storage (TRN)	6.0	44.6	1.3	16.8	4.3	31.9	44.7	6.7	20.2
32. Communications (COM)	0.8	44.6	0.1	16.8	4.3	0.4	25.0	7.0	40.0
33. Financial establishments (FIN)	1.5	44.6	1.1	16.8	4.3	0.0	25.0	7.0	40.0
34. Insurance (INS)	0.3	44.6	0.0	16.8	4.3	0.5	25.0	7.0	40.0
35. Real estate and business services (HSG)	2.8	44.6	3.9	16.8	4.3	0.0	25.0	7.0	40.0
36. Social and community services (SER)	6.0	44.6	0.1	16.8	4.3	0.2	25.0	7.0	40.0
37. Recreational and cultural services (REC)	0.5	44.6	0.2	16.8	4.3	3.2	25.0	7.0	40.0
38. Personal services (PER)	0.9	44.6	0.0	16.8	4.3	0.0	25.0	7.0	40.0

Source: Modified from Konan and Maskus 1997.

TABLE 2: Government Policy and Elasticity Parameters (%)

SECTOR	GST 1994 (%)	Egypt's Tariff-94	Arab MFN Tariffs (import weighted)**	Capital-labor elasticity of substitution
AGRICULTURE, MINING				
1. Vegetable products, foodstuffs (VG1)	0.0	2.5	6.3	0.95
2. Vegetable products, non-foodstuffs (VG2)	10.0	6.7	28.9	0.95
3. Animal products (ANI)	0.0	4.4	6.7	0.95
4. Crude petroleum and natural gas (OIL)	0.0	8.2	2.9	0.43
5. Other extractive industries (MIN)	10.0	7.0	15.6	0.43
MANUFACTURING				
6. Food processing (FOO)	0.0	6.8	18.3	0.95
7. Beverages (BEV)	10.0	953.2	14.8	0.95
8. Tobacco products (TOB)	10.0	65.5	83.1	0.95
9. Cotton ginning and pressing (TX1)	10.0	17.3	24.9	0.93
10. Cotton spinning and weaving (TX2)	10.0	23.3	17.4	0.93
11. Clothing: assembled and pieces (CLO)	10.0	53.7	32.5	1.19
12. Leather products, excl. shoes (LEA)	10.0	34.8	44.6	0.75
13. Shoes (SHO)	10.0	51.8	36.9	0.75
14. Wood, excl. furniture (WOO)	5.0	8.1	28.1	0.93
15. Furniture (FUR)	10.0	46.9	34.9	0.93
16. Paper and printing (PAP)	0.0	13.3	18.6	1.00
17. Chemical, excl petroleum (CHE)	5.0	8.9	17.6	1.01
18. Petroleum refining (PET)	0.0	7.1	20.0	0.43
19. Rubber, plastics and products (RPL)	10.0	15.6	24.7	0.97
20. Porcelain, china, pottery (POR)	10.0	43.5	21.3	0.93
21. Glass and products (GLA)	10.0	29.6	17.2	0.97
22. Mineral products, n.e.i. (MPD)	5.0	18.1	12.7	0.43
23. Iron, steel, other base metals (MET)	10.0	17.2	32.6	0.43
24. Machinery and appliances (MAC)	25.0	17.9	19.9	1.20
25. Transportation equipment (TRA)	25.0	41.2	56.6	1.88
26. Other manufacturing (OMF)	10.0	19.3	24.9	1.19
SERVICES AND OTHER				
27. Electricity, gas, and water (ELE)	2.5	0.0	0.0	1.88
28. Construction (CON)	10.0	0.0	0.0	1.99
29. Trade (TRD)	8.0	0.0	0.0	1.28
30. Restaurants, hotels, coffeehouses (RES)	8.0	0.0	0.0	1.99
31. Transport and storage (TRN)	0.0	0.0	0.0	1.88
32. Communications (COM)	5.0	0.0	0.0	1.99
33. Financial establishments (FIN)	8.0	0.0	0.0	1.99
34. Insurance (INS)	0.0	0.0	0.0	1.99
35. Real estate and business services (HSG)	8.0	0.0	0.0	1.99
36. Social and community services (SER)	10.0	0.0	0.0	1.99
37. Recreational and cultural services (REC)	8.0	0.0	0.0	1.99
38. Personal services (PER)	10.0	0.0	0.0	1.99

* Adjusted to be consistent with the real value of the 1990 government deficit. ** In simulations it is assumed that applied rates are 60% of these MFN rates.

Source: Based on Maskus and Konan (1997) and author's calculations.

TABLE 3: Shallow Integration: Welfare and Fiscal Impact of a US-Egypt FTA

	EMA-Arab FTAs	EMA, Arab and US FTAs
Change in Welfare (%)	0.99	1.26
Change in GST (%)	-2.88	5.26
Average tariff (%)	4.11	2.65
Trade Creation (\$mn)	252	342
Trade Diversion (\$mn)	233	197

TABLE 4: Shallow Integration: Impact on Trade Flows, (percent and \$ million)

	EMA-Arab FTAs	EMA-Arab-US FTA
Share of EU in total exports	31.0	30.5
Share of EU in total imports	54.7	50.5
Share of US in total exports	4.2	5.2
Share of US in total imports	14.1	20.1
Share of Arab League in total exports	40.3	40.2
Share of Arab League in total imports	5.0	4.7
Exports to EU (\$mil)	49	43
Imports from EU (\$mil)	1,990	1,530
Exports to US (\$mil)	-16	40
Imports from US (\$mil)	-412	629
Exports to Arab League (\$mil)	586	600
Imports from Arab League (\$mil)	170	138
Exports to EU (% growth)	3.2	2.8
Imports from EU (%growth)	38.2	29.3
Exports to US (%growth)	-7.0	17.5
Imports from US (%growth)	-14.3	21.9
Exports to Arab League (%growth)	44.4	45.8
Imports from Arab League (%growth)	33.3	26.7

TABLE 5: Deep Integration – Impact of a WTO Plus Agreement

	EMA-Arab FTA with a WTO Plus	Unilateral Liberalization of Tariffs and NTBs	EMA-Arab FTA with Unilateral Liberalization of Tariffs and NTBs
Change in Welfare (%)	1.84	1.51	2.31
Change in Indirect Taxes (%)	6.1	26.0	22.8
Average tariff (%)	2.6	0	0
Trade Creation (\$mn)	450	-	-
Trade Diversion (\$mn)	170	-	-

TABLE 6: Deep Integration: Impact on Trade Flows, (percent and \$ million)

	EMA-Arab FTA with a WTO plus	Unilateral Liberalization of Tariffs and NTBs	EMA-Arab FTA with Concerted Unilateral Liberalization of Tariffs and NTBs
Share of EU in total exports	34.2	37.0	34.0
Share of EU in total imports	50.8	43.1	43.0
Share of US in total exports	5.9	5.7	4.6
Share of US in total imports	20.2	17.7	17.7
Share of Arab League in total exports	34.1	26.5	35.9
Share of Arab League in total imports	4.3	3.7	3.7
Exports to EU (\$mil)	478	628	540
Imports from EU (\$mil)	2,467	1,315	1,490
Exports to US (\$mil)	115	105	52
Imports from US (\$mil)	1,119	627	717
Exports to Arab League (\$mil)	546	123	720
Imports from Arab League (\$mil)	150	70	83
Exports to EU (% growth)	31.8	41.8	36.0
Imports from EU (% growth)	47.3	25.3	28.6
Exports to US (% growth)	51.3	46.5	22.9
Imports from US (% growth)	38.8	21.7	25.0
Exports to Arab League (% growth)	41.4	9.4	54.5
Imports from Arab League (% growth)	29.4	13.7	16.2

TABLE 7: Changes in Imports By Sector

	Change in Total Import Volume (%)		
	Shallow EMA +Arab FTA	Shallow EMA, Arab & US FTAs	EMA, Arab FTA & WTO Plus
Edible Vegetable	1.0	3.1	15.9
Non-edible vegetable	5.3	8.4	50.1
Animal prod.	8.8	9.3	28.7
Crude oil, gas	8.3	9.3	41.1
Other mining	-0.2	-0.3	11.0
Food processing	6.7	8.1	22.4
Beverages	0.3	-0.3	8.9
Tobacco	87.1	120.1	162.1
Cotton yarns, fabric	55.8	61.8	93.6
Clothing	204.7	203.6	258.5
Leather	44.3	44.3	69.3
Footwear	61.6	64.7	94.2
Wood prod.	5.0	4.9	10.7
Furniture	82.4	105.2	144.9
Paper, printing	8.4	10.1	19.8
Chemicals	7.3	7.9	18.4
Oil refining	11.5	12.2	29.2
Rubber, plastics	12.8	15.8	28.6
Ceramics	57.6	60.0	79.9
Glass	36.4	37.5	56.9
Mineral prod. n.i.e.	27.4	28.0	52.4
Iron, steel	18.0	19.9	36.0
Machinery	10.2	11.1	18.9
Transport equip.	24.4	26.7	37.0
Other manuf. ind.	16.0	18.4	35.0
Elec. gas, water	1.0	1.1	47.7
Construction	-1.0	-1.6	41.3
Distribution	3.9	3.9	54.2
Hotels, restaurants	1.7	1.3	43.8
Transport	0.6	0.7	44.4
Communications	2.9	2.9	52.6
Finance	2.8	2.8	42.2
Business services	2.8	2.8	40.1
Recreation	-0.4	-0.5	46.5

TABLE 8: Imports From the US By Sector Under Alternative FTAs (1996 US \$ million)*

	"1996" base*	Shallow EMA- Arab FTA	Shallow EMA, Arab, US FTA	EMA, Arab FTAs & WTO Plus
Agricultural goods	1,150	1,140	1,240	1,300
Crude oil, gas	14	12	16	21
Other mining	47	44	57	65
Food processing	211	188	267	306
Beverages	0	0	0	0
Tobacco	9	4	32	38
Cotton yarns, fabric	15	8	47	58
Clothing	0	0	1	2
Leather	0	0	1	2
Footwear	0	0	0	0
Wood prod.	8	7	10	11
Furniture	0	0	1	1
Paper, printing	76	59	100	109
Chemicals	165	131	189	210
Oil refining	8	7	9	11
Rubber, plastics	55	41	73	83
Ceramics	3	1	6	7
Glass	3	2	5	6
Mineral prod. n.i.e.	2	1	3	3
Iron, steel	37	29	58	67
Machinery	665	420	830	890
Transport equip.	280	140	356	540
Other manuf. ind.	5	3	8	9
Elec. gas, water	4	4	4	6
Construction	5	5	5	7
Distribution	9	9	9	14
Hotels, restaurants	0	0	0	0
Transport	29	29	29	42
Communications	2	2	2	3
Finance	30	31	31	44
Business services	85	87	87	121
Recreation	5	5	5	7
TOTAL	2,920	2,410	3,390	3,980

* Imports are valued at original baseyear domestic prices, were converted to US \$, and adjusted to take into account the growth in Egypt's total imports between 1990 and 1996. US exports of arms and ammunition are excluded (equal to some \$400 million in 1996).



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