Beyond Border Barriers:
The Liberalization of Services Trade in Tunisia and Egypt

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Abstract
Tunisia and Egypt have both recently undertaken significant steps toward trade reform. They have committed to a partnership agreement with the European Union. Both countries have also joined the WTO and are participating in Doha Round discussions on the liberalization of non-tariff barriers on both goods and services trade. These development provide an interesting context within which to investigate not only the changes in welfare associated with reforms affecting the trade in goods, but also the impacts of services liberalization. Using open-economy computable general equilibrium models for both Tunisia and Egypt, this paper explores the reasons why structural differences in these two economies imply different opportunities and challenges with trade reform and services liberalization. The gains from eliminating barriers at the border for goods trade are significantly greater for Tunisia than Egypt. Both countries, however, gain substantially from liberalization of foreign direct investment in services. Furthermore, economic growth is more evenly distributed across sectors than with liberalization of trade in goods alone. In addition to reporting on the impact of alternative policies on income, output, employment, and trade, sector-level effects are also considered.

I. INTRODUCTION

While the welfare implications of the liberalization of goods trade are widely understood, the benefits associated with reform of trade in services have not been adequately assessed.   This is due, in part, to the more complex character of services trade and the more recent attempts to negotiate multilaterally through GATS (General Agreement on Trade in Services) and other agreements to development appropriate policies and mechanisms for trade in services. Although services account for an ever increasing share of production and employment in countries across the world and the share of services in global trade and investment has increased significantly, efforts to liberalize trade in services have been limited by several factors.

There are some important differences between goods and services trade. While much of trade theory has developed around the trading of goods, less theoretical and empirical work has focused on trade in services. Much of the work on trading of goods has involved tinkering with tariffs, the traditional approach to regulating goods trade. While some services, (e.g. software, architectural drawings, consultant reports, etc.) are tangible, visible, and storable and are thus like many other goods, many services require direct interaction between producers and consumers (Mattoo 2000). This proximity requirement means that for many services, factors of production (labor and capital) must be mobile for international transactions to occur. For this reason, the real barriers to increased trade in services are not simply tariffs, but rather, beyond those at the border. Domestic regulations, NTBs, and factors and conditions within various countries related to market entry, ownership, and operations of foreign firms are crucial to understanding reform of trade in services.

Trade in services also differs from trade in goods in another fundamental way. Deardorff (2001) has demonstrated how liberalization in services trade can stimulate trade in goods. Clearly removing barriers to trade in fundamental services such as transportation, communications, banking, accounting, information processing, etc. will help to facilitate economy-wide gains. It should be noted, moreover, that unlike the trade in goods, many services can be fragmented in terms of production. Whether referred to as outsourcing, subcontracting, or multi-stage production the point here is that different parts of the service production process can be located in different places allowing for overall efficiency gains. This "brave new world" of trade, according to Feenstra (1998) would result in the "integration of trade and the disintegration of production" on a global scale. There are also opportunities with services reform to link up with strategies that focus on urban development and growth triangles (Kim and Wu 1998).

The research reported in this paper is focused both on the specific impacts of alternative trade reform policies on the welfare of individual economies as well as also attempting to understand some of the broader implications and consequences of shifting from goods to services trade. At one level the research is about two very different countries (Tunisia and Egypt) within the MENA (Middle East North Africa) region. At another level, the analysis contributes to the debates and deliberations arising out of the Uruguay Rounds which have generated many different questions as to the implementation of trade policies related to services. The analysis of prospects for Tunisia and Egypt of services liberalization builds on earlier studies by Konan and Maskus (2003) and Tohamy (2001).

GATS has defined trade in terms of four different modes: Mode 1) cross-border – in which the services (e.g. software, consultant report, accounting or bookkeeping, etc.) from one country are supplied to another by mail, delivery, or electronic means (many of these services are quite similar to traditional goods); Mode 2) consumption abroad – in which the consumer (e.g. tourism, educational services, health care, etc.) travels from one country to another to receive the service; Mode 3) commercial presence – typically involves foreign direct investment such that a business or enterprise (e.g. bank, insurance, engineering firm, etc.) is established in another country as a way to provide services to consumers; and Mode 4) presence of natural persons – services are provided by nationals of one country who move into another country.

Clearly, the movement of factors of production raises questions and challenges for traditional trade theory which has focused more on the movement of goods across borders. For this reason, cross-border (Mode 1) services may be easiest in terms of implementation to start with, while the presence of natural persons (Mode 4) may be the most challenging, if not analytically or theoretically, then certainly from a political perspective. Mode 2 (consumption abroad) which has always existed represents a special case in that consumers do not permanently relocate to the country providing service. Perhaps the most important service delivery mode to examine is Mode 3 (commercial presence) is not just it is growing in terms of investment flows, but also because the service providers must interact closely with local authorities and are subject to various local regulations and rules as well as international policies.

It against this background that the impact various trade policies in the MENA region will be examined. The need to examine trade policy in this part of the world arises

from the fact that this region relative to others in world has experienced weak economic performance. While world trade has increased by approximately 8 percent a year, trade in this region has grown by less than 3 percent annually. In addition, the region is losing export market share and experienced only a trickling volume of foreign direct investment. Indeed, if oil exports are not considered, the total volume of international trade activity for the MENA region would be very small. As has been noted earlier transaction costs, structural impediments, non-tariff barriers, and other frictional costs of doing business in the region appear to play a bigger impediment to trade and investment than border barriers (Zarrouk 2003, Hoekman and Konan 2001a).

While most of the MENA nations have initiated trade reforms, the experiences across the region are markedly different. Some countries have established bilateral trading agreements. Others have joined regional trading blocks, such as the Greater Arab Free Trade Agreement. Several have signed the Euro-Med agreement. Countries in the region have also implemented policies to reduce specific tariffs as well as on an MFN (Most Favored Nation) basis. Several countries, including both Tunisia and Egypt, have joined the WTO. Others have launched privatization initiatives as well as programs to stimulate greater FDI. Still, after all is said and done, the MENA region still trades much less than expected (Nugent, 2002).

In this paper the impact of different trade policies on Tunisia and Egypt are examined using a Computable General Equilibrium (CGE model). Using country-level input-output data, the behavioral relationships between producers and consumers are captured and the various barriers to trade in both goods and services are simulated. As trade liberalization may entail the removal of tariffs on imports, domestic tax policy

instruments are adjusted to maintain government neutral reform packages. After formulating a baseline model of economic conditions, alternative scenarios based on the following different trade policies are developed: 1) the elimination of tariffs on goods imported from the European Union (Euro-Med Agreement); 2) the elimination of all tariffs on a Most Favored Nation (MFN) or non-discriminatory basis with all trading partners; 3) the elimination of border barriers on services trade; 4) elimination of services investment barriers; 5) joint impact of border and investment services liberalization; and 6) the elimination of all goods and services barriers. Country-wide impacts on welfare, output, income distribution, and sector effects are examined in both Tunisia and Egypt. While there has been speculation as to the consequences of these developments, there has been much less formal analysis of the impact of these reforms on both trade patterns and on the macroeconomic conditions within the region. There is clearly a need to analyze the effects of alternative policies on the trading of both goods and services. There is also need for research on the effect of these policies on specific countries within the region.

II. A TALE OF TWO COUNTRIES

The approach taken in this paper is to focus closely on two countries within the MENA region – Tunisia and Egypt. In some ways they are typical of countries in the region. In other ways they are not. Data on conditions for the two countries are presented in Table 1, "Socio-Economic Indicators, Tunisia and Egypt, 2001." Tunisia is smaller than Egypt both in land area and population size. With more than a million square kilometers of land area and a population of 65.2 million persons, Egypt is one of

the largest in the region. Of the two countries, Tunisia is more urbanized, with 66% of the population living in urban areas, compared to only 43% in Egypt. While Egypt's poverty rate (23%) is much greater than in Tunisia (8%), relative to others in the MENA region neither country is extremely wealthy nor extremely poor. The fertility rate in Tunisia (2.1 births per woman) is much lower than in Egypt (3.2 births per woman). Life expectancies are higher in Tunisia (72.4 years) than in Egypt (68.3 years).   The illiteracy rate is much higher in Egypt than in Tunisia.   While the GDP in Egypt (US $99 billion) is much larger than in Tunisia (US $20 billion), the annual growth rate in GDP is higher in Tunisia (4.9%) than in Egypt (2.9%). Another major difference between these two countries is the share of the GDP that involves trade in goods (80% for Tunisia versus 17.1% for Egypt).

The statistical data doesn't adequately describe some other important differences between these two countries.   In 1995, Tunisia became the first country in the region to sign a partnership agreement with the EU (European Union). It has maintained close trading relations with Europe, particularly with France. Since independence from France, Tunisia has experienced steady improvement in social and economic conditions. Egypt, on the other hand, has experienced less progress and has remained more detached from the world economy.   While Tunisia has been more open to trade as measured by the ratio of imports and exports to GDP, the Egyptian index of openness has actually declined from 14 percent in 1990 to 10 percent in 1999 (World Bank, 2001).

Table 2 provides the composition of production, exports, and imports in the economies of Tunisia (1995) and Egypt (1997). It is evident that Egypt's economy is far more dependent on agriculture as almost 17 percent of output is in agriculture in Egypt,

compared to 8.38 percent in Tunisia. This is reflected in the fact that more of Egypt's

population lives in rural areas. It also serves to highlight some of the challenges facing

Egypt which has a much larger, younger, poorer and more unskilled workforce than

Tunisia. Interestingly, while agriculture is an important component of output it is not a

major export activity, with the possible exception of cotton. Both countries are

significant importers of manufactured goods.

It is important to note that manufacturing comprises 44 percent of Tunisia's

output compared to 36 percent of output in Egypt. Tunisia also exports and imports a

significant volume of clothing. More than 20 percent of Tunisia's imports are for

clothing, principally as intermediate goods for the robust clothing and textile industry. In

Tunisia, 75 percent of exports are for manufactured goods, with 42 percent of this in

clothing. While Egypt has a much less developed manufacturing sector, it has certain

natural resource advantages evident in output and export. Petroleum, transportation

services related to the Suez Canal, and touristic antiquities are all significant components

of Egypt's economy. The trade, finance, and insurance sectors are significant in terms of

output (15 percent), exports (17 percent), and imports (16%) in Egypt. A total of 57

percent of the exports in Egypt are services-related compared to 15 percent in Tunisia

(Tohamy 2001). Tunisia, however, maintains a large social services sector which

includes education, health care, and other public services comprising more than 14

percent of output.

These two different countries, therefore, each face unique conditions and

opportunities in the international trade arena. In the next section, the various scenarios

involving different levels of trade reform applied to both goods and services at the border

and beyond are deregulated and applied to Tunisia and Egypt.

III. EVALUATION OF ALTERNATIVE POLICIES

a. Model Description

In order to assess the effects of the alternative trade policies, numerical applied general equilibrium models are developed for Tunisia and Egypt. A full description of the data as well as the technical features of the models is described in detail in Konan and Kim (2003). The formal structure of the two models is presented in an appendix. To summarize, a social accounting matrix is assembled which describes the flow of goods, services, and factors through each economy in a baseline year. For each production sector, the purchases of intermediate inputs and primary factors (labor and capital) are provided. Demand in each sector is a combination of intermediate demand and final expenditures by households, government, exporters, and investors. Table 2 summarizes the composition of production and trade in the baseline year, which for Tunisia is 1995 and for Egypt is 1997.

Models of economic behavior are then developed for both Tunisia and Egypt. Producers maximize profits in their decisions regarding the purchase of inputs and the level output. Households make optimal purchasing decisions based on the prices of good and services and the income that is received from a variety of sources, including returns to labor and capital as well as transfers from the public sector. The demand for imports and the supply of exports are assumed to respond to fixed international prices, following an assumption that each economy is too small to influence their terms of trade with world trading partners. The public sector collects a variety of trade and domestic taxes and also purchases goods and services. An important assumption is that any policy change will be

revenue-neutral in terms of government expenditures. Domestic taxes are automatically adjusted to offset any changes in the collections of tariffs.

Within this framework, a tariff drives a wedge between the international price and the internal (domestic) price of an import good. While a tariff will generate tax revenue for the government, it also imposes real economic costs. Production will inefficiently expand in import-substituting sectors, while export-oriented production contracts. Consumers are also harmed in that they pay higher prices for both imports and the domestic import substitute. Complicating matters further, tariffs generally vary widely across sectors, creating additional distortionary effects (Konan and Maskus 2000).

It is also important to note that piecemeal tariff liberalization is second-best and the overall impacts on welfare are less certain. Removing or lowering a subset of tariff barriers, while maintaining others, can distort trade and production patterns in complicated ways and even lower social welfare in some cases. Some industries remain under protection while others do not. The Euro Med Association Agreements are examples of preferential trade reforms whereby Tunisia and Egypt have, independently, agreed to eliminate tariff barriers more rapidly with the EU than with other trading partners. Such an agreement may expand trade, but will also alter the pattern of trade in a manner that discriminates against non-member countries. That piecemeal tariff reform of this type can be detrimental to social welfare is well understood, and is illustrated below.

These models provide a special treatment of international trade and investment in services sectors using a methodology developed by Konan and Maskus (2003a). See Dee, Holmes and Hardin (2000) for a review of the use of computable general equilibrium models on services liberalization. In terms of cross-border services trade the

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primary policy instruments are regulatory in nature. Thus cross-border services barriers involve the creation of 'dead-weight costs' in that they do not generate tax revenues or economic rents but rather simply increase the cost of the international transaction. Multilateral negotiations are also ongoing to provide a more liberal environment for foreign investment or the establishment of a foreign presence in services sectors. Here it is important to recognize that the existing regulatory policies have two effects on services markets. These policies tend to regulate both domestic and foreign firm entry into the market creating two important distortionary effects. The first is an inefficiency effect, as firms are not generally selected on a competitive basis. This is particularly important in developing countries where foreign firms are excluded from markets. Local services producers may not be employing best practices by world standards and may be limited in the range and variety of the products they provide. The second effect involves the creation of imperfectly competitive markets, in which domestic firms earn real economic rents by limiting production and setting prices above marginal costs. The services reform scenarios in this study involve the elimination of cross-border and investment barriers.

The impacts of six trade reform scenarios are presented in Table 3, Trade Liberalization in Tunisia, and Table 4, Trade Liberalization in Egypt. Goods liberalization is represented by two reform scenarios. The Euro Med Agreement scenario is represented as the elimination of tariff barriers on European imports coupled with an improvement in the terms of trade on exports of goods to the EU. The MFN scenario involves the elimination of tariffs on a most-favored nation or nondiscriminatory basis. Tariff rate data for both countries are obtained from customs collections data and are reported in Konan and Kim (2003).

Services liberalization is represented in three scenarios. The border scenario eliminates barriers on cross-border services trade. As noted above, these barriers are generally regulatory in nature and have the effect of imposing resource-using transactions costs. The second scenario, services liberalization – investment, eliminates the regulatory investment measures placed on foreign investment in the domestic provision of services. This involves removing a price wedge that is due to a combination of producer markups and cost inefficiencies. There is considerable uncertainty surrounding the magnitude and composition of these price wedges. The analysis of Tunisian services liberalization by Konan and Maskus (2003a) illustrates how important it is to distinguish between investment barriers due to imperfect competition, rent-generating, and those due to the use of inefficient technologies and are thus resource-using. In these present scenarios, it is assumed that investment barriers are evenly split. As there is sparse evidence on the actual level of services barriers, those assumed in the present analysis are conservative estimates of those expected in Tunisia and Egypt, see Konan and Kim (2003).

 b. *Goods Trade Liberalization*

In this section, the effects of goods trade liberalization simulations are discussed. Consider first the impact of goods trade liberalization in Tunisia, Table 3. The first column, Goods Liberalization – EU, indicates the percentage change in various macroeconomic indicators under the Euro Med Agreement. It is estimated that household welfare, measured as Hicksian equivalent variation, would improve by 3.80 percent while real output or gross domestic product would increase by 6.12 percent. The benefits accrue disproportionately to labor with the price of labor increasing by 10.77

percent in real terms. In contrast, real returns to capital increase by a modest 1.29 percent. This export-led growth involves the movement of resources into manufacturing. The share of the economy in manufacturing increases from 32.8 percent in the benchmark to 44.4 percent. Economic activity in agriculture, petroleum and mining, and services decline accordingly.

The next column, Goods Liberalization – MFN, describes the outcome of tariff liberalization on a nondiscriminatory basis. Household welfare increases by 4.27 percent and real output by 6.91 percent. Returns to labor improve by 10.77 percent and returns to capital improve by 1.8 percent. Following Tunisia's comparative advantage, production increases in manufacturing, largely clothing, and declines in all other sectors.

In comparison, the impacts of goods liberalization in Egypt are given in Table 4. As shown in the first column, Goods Liberalization – EU, the Euro Med Agreement imposes trade diversionary effects which lowers household welfare by 0.16 percent and increases output by only 0.35 percent. MFN tariff reduction (column 2 of Table 4) implies rather small gains for Egypt. This non-discriminatory elimination of goods tariffs would increase Hicksian household welfare by 0.46 percent and real output by 0.82 percent. Real returns to labor increase more significantly by 2.81 percent and real returns to capital improve by 0.76 percent. In either liberalization scenario, the composition of production changes very little.

It is apparent that Tunisia and Egypt differ in their ability to gain from goods trade liberalization, either through the Euro Med Agreement or through broader MFN tariff liberalization. The reasons are informative.

Under the Euro Med Agreement, consumers expand their purchase of EU products at the expense of imports from the rest of the world which remain subject to tariffs. The subsequent fall in tariff revenues is not completely compensated for by improved consumer surplus. As discussed in Konan and Maskus (2003b), Egypt trading patterns are rather diversified on a regional basis. While the EU is an important trading partner, MENA and the US also maintain significant trade shares in key sectors.

The EU Partnership Agreement represents a preferential, or discriminatory, liberalization of manufacturing goods trade. Trade with the EU will expand, but potentially at the expense of trade with non-member nations with whom tariffs are held constant. A positive 'volume of trade' effect competes with a negative 'terms of trade' effect, and the overall welfare implications are uncertain. The simulations for Tunisia and Egypt illustrate this classic ambiguity.

In the case of Tunisia, an EU Partnership Agreement offers nearly the same benefits as a complete liberalization of manufacturing goods trade, Table 3. Economic impacts in terms of GDP growth, household income, and returns to factors are slightly lower when tariffs on manufacturing goods are eliminated with the EU (Table 4, Column 1) rather than with all trading partners (Column 2). In large part, this is due to the strong trading relationship that Tunisia presently has with the EU. Tunisia's exports are strongly concentrated in the clothing sector, 95 percent of which are destined to Europe. About 76 percent of Tunisia's chemical exports are to the EU. Imports to Tunisia are also primarily from the EU. Tunisia imports from Europe 92 percent of clothing, 76 percent of chemicals, and 77 percent of machinery. Even Tunisia's petroleum imports are routed through Europe, 63 percent. The only significant import that is not dominated

by the EU is the agricultural sector. Given this high benchmark trade share with the EU, a comprehensive regional agreement approximates a move to free trade.

In contrast, Egypt's economy would experience a slight decline in welfare (Table 4) upon entry into the Euro Med Agreement. While the EU is an important trading partner, Egypt also exports a significant share of manufacturing goods to MENA. The US is an important supplier of agricultural goods. The majority of Egyptian imports of transportation equipment, clothing, and appliances are from Asia. A preferential trade agreement with Europe would divert imports from other trading partners in favor of more highly priced (but untaxed) European products. The impact is realized in a loss of tariff revenues, not only from Europe but elsewhere, Konan and Maskus (2003b). Depending on the mechanism by which the government recovers these lost revenues, the social welfare effects may be higher or lower than indicated in Table 4, Konan and Maskus 2000.

Konan (2003) considers the implications for Tunisia and Egypt of various trade liberalization scenarios including integration in the context of the Greater Arab Free Trade Agreement (GAFTA). Not surprisingly, welfare in Tunisia would decline in response to a shallow trade liberalization agreement that involves only the MENA region. For Egypt, the GAFTA implies an estimated increase in welfare of 0.2 percent, with a 2.1 percent increase in GDP. It is shown that Egypt would gain more from closer integration with MENA than with the EU.[1] Tunisia, in contrast, benefits greatly from EU integration but loses in terms of both GDP and welfare from a MENA agreement. A cointegration

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[1] Note that Konan (2003) assumes that government revenue neutrality is maintained through an endogenous and proportional adjustment in the goods and services tax for Egypt and the value added tax for Tunisia, while the present paper relies on adjustments in a non-distortionary lump-sum tax. The Egypt data in Konan (2003) are for the 1990 baseline year. Thus, simulation results differ somewhat with those of the present paper.

study of the Arab Maghreb region indicates that these nations do share robust ties in their macroeconomics, financial markets, and monetary policies (Darrat and Pennathur 2002). Thus, there may be inherent benefits if Arab economic integration were to be staged in concert with efforts toward global integration.

Next, consider the impact of MFN or non-discriminatory goods trade reform, Tables 3 and 4, Columns 2. Tunisia gains nearly seven percent in GDP growth from a multilateral elimination of manufacturing tariffs, with household income increasing by 4.3 percent. An equivalent reform in Egypt is estimated to yield modest growth rates of less than one percent in either household welfare or output.

Why are Tunisia's gains so high, and Egypt's so low? Sensitivity analysis helps to identify possible explanations and rule out others, Konan (2003). Weighted average tariffs are quite similar between Tunisia and Egypt over the baseline period. Differences in the effective rate of protection at the sector level, or the distribution of tariffs across industries, also appear not to explain this effect. There is no evidence that Tunisia is initially more protectionist than Egypt. It is the case that Egypt's domestic tax structure is highly distorted through the goods and services tax, (Konan and Maskus 2000). However, reform scenarios simulations that involve joint domestic and international tax liberalizations do not improve economic growth for Egypt substantially. It is thus reasonable to conclude that the tax policy structures of the two countries do not explain why Tunisia is more able to gain from goods trade reform than Egypt.

A clearer explanation appears to lie in the structure of production and trade. In many respects Tunisia is a classic small open economy. Tunisia is heavily reliant on a wide variety of manufactured imports, while exports are highly concentrated in clothing.

As shown in Table One, goods trade accounts for 80.8 percent of GDP in Tunisia. The reduction of tariffs accelerates trading patterns that are already deeply embedded in the economy.

In contrast, Egypt is relatively more self-sufficient for reasons that appear to go beyond simple tariff protections. Indeed, goods trade comprises only 17.1 percent of GDP, Table One. The volume of trade in Egypt is quite low in most manufactured goods. Exports also appear to be relatively low overall, and not highly concentrated in any set of industries. This may be due to the traditional availability of remittances from foreign aid, tourism, and repatriation of income from guest Egypt workers overseas, which provide alternative sources of foreign exchange. It may be due to inadequate infrastructure, regulation, or informal barriers that suppress trade in Egypt. Survey evidence and industry studies appear to verify the existence of structural impediments to trade in Egypt (Cassing, et al, 2000, Fawzy 1999, Kheir-El-Din 2000, Tohamy 1999). The strongly closed context of Egypt's trading environment appears to offer a realistic explanation for why the gains from traditional trade liberalization in Egypt are so low.

One explanation for the unusually low volume of trade in Egypt is the pervasiveness of a variety of regulatory and administrative barriers to trade. Extensive firm-level survey analysis by Jamel Zarrouk (2003) indicates that non-tariff barriers (NTBs) in the MENA region range from eight to twenty percent of the value of imports across industries, with a trade-weighted average barrier of eleven percent. Ranked in the order of importance by MENA firms, these barriers include customs duties, domestic taxes, customs clearance, public sector corruption, inspection and conformity certification costs, transshipment regulatory barriers, and entry visa restrictions. In Konan (2003) and

Hoekman and Konan (2001a, b), it is shown that 'deep' liberalization of these goods NTBs would imply substantial improvements in household income, GDP, and employment conditions.

c. Services Trade Liberalization

Trade reform in services sectors are decomposed into scenarios involving border liberalization and investment liberalization. Consider the role of services liberalization in Tunisia, Table 3. The impact of cross-border reform in services comprises less than a quarter of overall services gains, with household welfare increasing by 1.05 percent and real output by less than one percent. More significant are the gains attributed to the liberalization of foreign investment in services sectors, amounting to increases in household welfare by 3.60 percent and real output by 4.80 percent. Investment and border trade reform in services sectors together increase household welfare by 4.85 percent and real output by 5.84 percent.

Table 4 provides macroeconomic estimations of services liberalization for Egypt. The elimination of border barriers improves household welfare by 0.78 percent and real output by 1.07 percent. Investment liberalization leads to welfare gains of 6.90 percent and real output gains of 11.85 percent. Thus, the overall gains from services liberalization are primarily due to foreign investment in the services sector. Taken jointly, border and investment liberalization improves real output by 12.9 percent.

In comparing the results for these two countries, several interesting observations can be made. First, for both Tunisia and Egypt, the gains from services liberalization are substantial. Services liberalization provides improvements in welfare of 3.6 percent in

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Tunisia and 6.9 percent in Egypt. The growth rate of real output in Tunisia is 4.85 percent and in Egypt is 12.91 percent on an annual basis.

Second, the gains to the economy are rather evenly distributed across factor owners. In Tunisia, services liberalization translates into factor return increases of 8.06 percent for capital and 4.48 percent for labor. Egypt experiences increases in real returns to capital of 11.45 percent and to labor of 10.11 percent.

Third, while services liberalization increases overall output productivity, both in level terms and in value, the composition of production changes very little under services liberalization. In Tunisia, the output share of services expands from 40.7 percent to 44.9 percent of the economy. Growth is most notable in communications, trade and financial services, insurance, and the visitor industry. While most manufacturing sectors decline with services liberalization, agriculture and clothing production actually increases. Clothing is heavily traded and liberalization of services helps to reduce transactions costs in this sector. In Egypt, services output increases from 43 percent of the economy to 45.4 percent. Declines in the GDP share of non-services sectors are moderate.

That services liberalization provides for balanced growth is strikingly different to the experience of goods liberalization, in which production becomes more specialized following a country's comparative advantage. This is due to several factors. First, services play important intermediate functions in production. Improvements in services sectors tend to enhance productivity throughout the economy. Second, services are an important component of the transactions cost of international trade, and thus goods that are exported benefit from improvements in the provision of services. Third, foreign investment and ownership essentially transfers an improved technology for services

provision, and these services are produced using domestic labor and capital. Rather than expanding production primarily to service external market, as is the case with goods liberalization, investment in services sectors tends to be oriented to domestic or regional markets.

V. ALTERNATIVE PATHS TO PROSPERITY

To summarize, the combined effect of goods and services liberalization are substantial for both countries. In Tunisia, household welfare increases by 8.32 percent and in Egypt by 8.35 percent. However, Egypt and Tunisia differ in terms of their predispositions to gain from trade liberalization. The simulation results presented here imply distinct pathways to prosperity for these two MENA countries.

For Tunisia, traditional trade liberalization (the reduction of tariff barriers on manufacturing goods) has the potential to generate significant improvement in economic growth and the standard of living. In particular, wages increase dramatically as the demand for workers rises in export-oriented sectors such as clothing. Moreover, the lion's share of the gains from goods trade liberalization is achievable through an EU partnership agreement. Extending the liberalization reform package to include trade and investment in services sectors leads to further economic growth and improvement in household living standards.

In the case of Egypt, the reduction of manufacturing tariffs offers modest economic gains when reformed in isolation. Egypt's economy is rather closed and tariff liberalization does not sufficiently expand the volume of trade. Interestingly, initial tariff barriers are roughly comparable between Egypt and Tunisia in both their nominal and

effective rates of protection. Yet Egypt appears to suffer from significant structural

impediments that limit goods trade expansion. Moreover, tariff reduction in the context

of the EU partnership agreement would actually erode the standard of living of a typical

Egyptian household as the preferential nature of the reform would discriminate against

other trading partners in the MENA region, the US, and elsewhere. The clear alternative

for Egypt is to focus liberalization efforts on beyond border reforms, particularly of

services sectors. The issue of services liberalization has become increasingly prominent

in recent years. It is not just that the value of global services production has been

growing but, perhaps more relevant to Tunisia and Egypt, services reform may provide

an important new pathway to overall prosperity. Future research should focus more on

identifying and modeling the obstacles to liberalizing trade in services as well as

estimating the effects of technological change on economic growth.

Table 1: Socio-Economic Indicators, Tunisia and Egypt, 2001

	Tunisia	**Egypt**
Land Area (square km)	163,000	1 million
Population	9.7 million	65.2 million
Percent Urban Population	66%	43%
Poverty Rate (1995)	8%	23%
Fertility Rate (births per woman)	2.1	3.2
Life Expectancy (years	72.4	68.3
Illiteracy Rate (% 15 and above)	27.9	43.9
GDP	$20 billion	$99 billion
GDP Annual Growth	4.9%	2.9%
Trade in Goods (share of GDP)	80.8%	17.1%

Table 2: Composition of the Economy, Tunisia (1995) and Egypt (1997)

	Output		Exports		Imports	
	Tunisia	Egypt	Tunisia	Egypt	Tunisia	Egypt
Agriculture	8.38	16.80	1.89	2.58	6.98	6.84
Petroleum	4.91	4.36	8.41	14.47	6.17	1.10
Processed Food	11.09	10.11	6.32	3.00	5.70	7.57
Clothing	12.32	9.06	41.65	8.48	20.07	3.07
Other Manufacturing	20.44	17.59	26.66	15.40	52.44	44.90
Utilities	2.12	1.87	0.00	0.00	0.02	0.06
Construction	6.93	7.80	0.00	0.00	0.00	0.96
Transport, Communication	5.79	7.81	11.19	25.26	3.79	5.23
Trade, Finance, Insurance	8.78	15.02	3.88	17.06	4.72	16.31
Hotel and Restaurant	5.13	2.00	0.00	11.64	0.00	0.00
Other Services	14.09	7.58	0.00	2.11	0.11	13.97
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00

Table 3: Trade Liberalization in Tunisia

	Goods Liberalization		Services Liberalization			Combined
	EU	MFN	Border	Investment	Joint	G&S
Macroeconomic Indicators						
Household welfare (EV)	3.80	4.27	1.05	3.60	4.85	8.32
Output, real	6.12	6.91	0.86	4.80	5.84	13.17
Returns to capital, real	1.29	1.80	1.24	6.89	8.06	12.94
Returns to labor, real	10.77	11.73	0.60	3.46	4.48	14.29
Output Share						
Agriculture (Base = 19.5)	15.0	15.2	20.1	21.9	22.1	21.0
Manufacturing (Base = 32.8)	44.4	43.4	31.4	27.1	26.5	30.4
Petroleum (Base = 7.0)	5.2	5.2	7.0	6.5	6.5	5.4
Services (Base = 40.7)	35.4	36.2	41.4	44.4	44.9	43.3

Table 4: Trade Liberalization in Egypt

	Goods Liberalization		Services Liberalization			Combined
	EU	MFN	Border	Investment	Joint	G&S
Macroeconomic Indicators						
Household welfare (EV)	-0.16	0.46	0.78	6.90	7.66	8.35
Output, real	0.35	0.82	1.07	11.85	12.91	14.79
Returns to capital, real	0.18	0.76	0.76	10.73	11.45	12.77
Returns to labor, real	1.66	2.81	0.66	9.48	10.11	14.41
Output Share						
Agriculture (Base = 16.5)	16.6	16.8	16.6	15.9	15.9	16.0
Manufacturing (Base = 17.3)	16.7	16.1	17.3	16.5	16.5	15.5
Mining (Base = 4.3)	4.5	4.4	4.4	3.3	3.3	3.4
Services (Base = 43.0)	43.2	43.4	42.9	45.5	45.4	45.8

NOTES:

Goods Liberalization – EU: involves preferential goods trade liberalization under the Euro Med Agreement. Tariffs on imports of goods from the EU are eliminated, and the terms of trade on exports to the EU improve.

Goods Liberalization – MFN: involves the removal of all goods tariffs on a non-discriminatory, or most-favored nation (MFN) basis.

Services Liberalization – Border: involves the removal of cross-border barriers in services trade.

Services Liberalization – Investment: involves the elimination of internal barriers to foreign investment in services sectors.

Services Liberalization – Joint: considers the combined effects of border and investment liberalization.

Combined – G&S: involves the joint liberalization of goods and services barriers.

Appendix: The CGE Models

The CGE models for Tunisia and Egypt are extended, with updated data, from that used in the study by Konan (2003), which considers alternative goods and services trade liberalization scenarios for Egypt and Tunisia including the possibility of enhanced cooperation among Arab League countries. The present paper examines sector-level impacts, which are not otherwise available, and extends the comparative analysis. The Egyptian Input-Output and trade data have also been updated. This paper builds upon a growing literature on trade liberalization among MENA countries including Konan and Maskus (2003a, 2003b, 2000, 1997), Hoekman and Konan (2001a, 2001b, 2000), Hoekman, Konan, and Maskus (1998), and Maskus and Konan (1997), Rutherford, Ruström, and Tarr (1997) . Previous research concerns regional integration, domestic and international taxation, bilateral trade patterns, services liberalization, and the role of regulatory and other non-tariff barriers.

In the present study, the economies of Tunisia and Egypt are independently modeled as a system of nonlinear equations which explain industry-level production, factor employment, and intermediate and final demand. The countries assumed to be small price-taking economies, engaged in trade with the EU and the rest of the world (ROW). That is, domestic policy changes are deemed not to significantly alter their terms of trade with various trading partners. Among the special features of the model are the specific treatment of barriers to trade and investment in services sectors and the endogenous treatment of instruments of taxation with revenue-neutral government budgeting. The model is implemented in GAMS (Brooke et all 1988).

Final output in sector i, Y_i, is produced according to a nested Leontief – CES (constant elasticity of substitution) production function of intermediate inputs, z_{ji} for sectors $j = 1, \ldots, n$, and real value added V_i.

(1) $$Y_i = \min [z_{1i}/a_{1i}, \ldots, z_{ni}/a_{ni}, V_i/a_{VA}]$$

Value added, V_i, is comprised of labor, L_i, and other primary factors, K_i. In the case of Egypt, labor is further decomposed into a CES nest of production and non-production labor, not shown.

(2) $$V_i = [a_{Li}L_i^{(\sigma i-1)/\sigma i} + a_{Ki}K_i^{(\sigma i-1)/\sigma i}]^{\sigma i/(\sigma i-1)}$$

In export sectors, the production for the domestic market D_i is distinguished between that for export X_i according to a two-tier nested constant elasticity of transformation (CET) frontier.

(4) $$Y_i = [\alpha_{Di}D_i^{(\varepsilon i-1)/\varepsilon i} + \alpha_{Xi}X_i^{(\varepsilon i-1)/\varepsilon i}]^{\varepsilon i/(\varepsilon i-1)}$$

The second-tier CET-nest aggregates total exports, X_i, from exports by destination, x_{ri}, indexed by r (EU, MENA, US, and ROW).

(5)
$$X_i = [\Sigma_r \beta_{ri} x_{ri}^{(ei-1)/ei}]^{ei/(ei-1)}$$

Intermediate, z_{ji}, and final demand, c_j, in sector j is differentiated by country of origin. Domestic output, d_{ji}, D_{jC}, region r imports, m_{rj}, and total imports M_j are aggregated in the following nested Armington CES functions:

(3)
$$z_{ji} = [\gamma_{dj} d_{ji}^{(\eta j-1)/\eta j} + \gamma_{mj} M_j^{(\eta j-1)/\eta j}]^{\eta j/(\eta j-1)}$$

$$c_j = [\phi_{Dj} D_{jC}^{(\psi i-1)/\psi i} + \phi_{Mj} M_j^{(\psi i-1)/\psi i}]^{\psi i/\psi i-i}$$

where composite intermediate and final imports, respectively, M_j^i and M_j^C, are given by the following:

(4)
$$M_j = [\Sigma_r \delta_{rj} m_{rji}^{(\eta i-1)/\eta i}]^{\eta i/(\eta i-1)}$$

$$M_j^C = [\Sigma_r \delta_{rj} m_{rj}^{C\,(\eta i-1)/\eta i}]^{\eta i/(\eta i-1)}$$

With constant returns to scale production firms behave competitively in goods markets, implying that price, p_i, equals marginal cost, c_i, for output within sector i. The domestic policy environment is reflected by taxes and barriers which influence firm decisions including: government revenue producing tariffs on sector j imports from region r, t_{rj}; resource-using barrier on imports in sector j, u_j, ($u_j = 0$ for non-service sectors); a resource-using barrier on services output due to inefficiencies λ_i ($\lambda_i = 0$ for non-service sectors); an economic rent, v_j, or markup generated from imperfectly competitive services markets ($v_j = 0$ for non-services sectors); and a tax on primary input value added, τ_{Vi}.

(5) $(1 + \lambda_i)c_i Y_i = \Sigma_j(1 + v_j)p_j d_{ji} + \Sigma_j\Sigma_r(1 + u_j + t_{rj})p_{rj}^m m_{rji} + (1 + \tau_{Vi})(w_K K_i + w_L L_i)$

In the models, private household expenditures are determined by a representative agent with a multi-nested CES utility function. This allows the agent to make separable multi-staged budget decsions. In the top-tier budgeting decision the income elasticity is assumed to be unity with a Cobb-Douglas nested utility function (U = $\Pi_i C_i^{bi}$; $\Sigma_i b_i = 1$) and a constant share of income is spent on the composite commodity. The second budgeting stage involves the consumer deciding how much to spend on domestic versus imported commodities, equation 3. Finally, the share of imports from each region is determined by equation 4.

Private households receive income generated by returns to endowments of labor, E_L, and other value added, E_K. Households receive rent transfers from their ownership of imperfectly competitive services sectors, $v_i Y_i$. Households support a government budget deficit, D, and engage in savings through exogenously fixed investment instruments, I_i.

(6) $\Sigma_i \tilde{p}_i^C C_i = w_K E_K + w_L E_L + - \Sigma_i p_i I_i - D + \Sigma_i v_i Y_i$

The model simplifies the treatment of government and intertemporal decisions. The government is assumed to spend based on a fixed real income, with preferences reflecting those of households. A lump-sum tax adjusts endogenously in response to policy shocks

to maintain a revenue-neutral government budget. Similarly, real private investment in each sector, I_i, is exogenously fixed at the benchmark level.

As noted above, import and export prices are exogenous following the small-economy assumption. The real current account balance, B, is exogenously given at international prices are assumed to be exogenous. That is, the volume of trade adjusts endogenously to ensure a constant real current account.

(7) $$B = \Sigma_i \Sigma_r \, p_{ri}^{\,x} \, x_{ri} - \Sigma_i \Sigma_j \, \Sigma_r \, p_{ri}^{\,m} \, m_{ri}^{\,j} - \Sigma_i \, \Sigma_r \, p_{ri}^{\,m} \, m_{ri}^{\,C}$$

It is important to note that key identities hold as the optimizing behavior of agents assures that income will equal expenditures. Markets clearance is achieved for all commodities and factors. Household and government budgets are balanced given exogenous real benchmark transfers. The value of imports equals the value of exports, net of real capital flows. In this Arrow-Debreu type model, Walras law is satisfied and, given a numeraire, a unique set of real prices is determined in each scenario. These identities are fully documented in Konan (2003).

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