Potential Macroeconomic effects of the Korean-Morocco Free Trade Agreement

VERY PRELIMINARY VERSION

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A. Introduction

Korea has recently concluded or planned to pursue free trade agreements or negotiations with a sheer number of countries in the world, for example, Chile, Singapore, Canada, and AEAN countries. With researches and discussions Korea is also exploring the possibility to launch similar FTA talks with the China, Japan, EU, the United States and Morocco. All of these Korea's FTA initiatives are under the strategy of multi-track basis with multilateral liberalizations. They are intended to secure foreign markets, achieve trade liberalization, lead to domestic reforms, increase Korea's competitiveness, and strengthen political and strategic alliance. Those bilateral and regional initiatives with possible FTA countries raise important questions concerning Morocco's interests and priorities in choosing a key FTA partner country. Based on the Morocco's economic and

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political interests in the MENA region and the world, what country should be considered the most to be the FTA partner country for Morocco? Morocco signed an agreement with the US and enjoyed preferential market access in the European Union. Recent simulations show that the various modalities of trade liberalization with the US may have different impacts on the welfare, the rate of growth and the sectoral trade balance in Morocco. More precisely, these findings justify the interest of a gradual and asymmetrical agreement. In addition, the FTA between the US and Morocco have a significant impact not only on trade between the two countries, but also on their trading relationships with other countries. The most important trade diversion will affect the EU and particularly France, which is Morocco's largest trading partner. It will also adversely affect the other North African countries. The FTA will thus offer the opportunity to Morocco to diversify its markets and its capabilities, which are currently focused on the EU, particularly on France and Spain. (Sadni Jallab and ali, 2007, JEI)

B. Objective and Methodology

The objective of this study is to provide an integrated and extensive analysis for a possible Korea-Morocco FTA. A possible Morocco-Korea FTA surely has various natures of economic and political implications in the East Asian and MENA regions.

This study begins with a motivation that both economic and non-economic effects should be considered in order to increase the feasibility of a Korea-Morocco. FTA from the Moroccan perspective.

Following on the motivations, this study includes Morocco. FTA strategy and trade policy, comparison with Korean FTA strategy, economic relations, competitiveness analysis, Korean macroeconomic and service industry effects, and political economy of a Korea-Morocco FTA. This study has a contribution of including economic and non-economic analysis in an integrated and extensive approach with a Moroccan perspective.

C. The Free trade Agreement between Morocco and Korea: General Equilibrium Analytical Methodology

This section discusses in detail the methodology applied for the empirical analysis. The discussion starts by outlining the GTAP modelling and data framework. The GTAP model analysis is complemented in the study with a partial equilibrium analysis model, or SMART model, developed jointly by the World Bank and UNCTAD. The SMART methodology is therefore also described in this section. The partial equilibrium model is aimed to provide some results at the tariff lines level (6-digit level).

Rationale for a General Equilibrium Methodology

Trade policy analysis involves examining implications of trade policy instruments on the production structure in economies at the national and global level. Trade policy instruments, such as tariffs and quotas, have direct and indirect effects on the relative prices of commodities produced in a given country. As the mix of goods and services produced changes, the demand for factors of production also changes. Consequently, it is difficult to conceive a situation in any economy where the change in trade policy affects only one sector. Due to the forward and backward linkages and their related strengths existing in a particular economy, the result is always one in which the relative mix of sectoral outputs change. This, by extension, affects the relative mix of the different factors of production in the different sectors.

The country-level effects on output mix and demands for factors of production can in the context of international trade be extended to the global economy. Changes in relative prices of outputs and inputs resulting in a given country's change in trade policy are transmitted to the industries and input markets of other economies that the country trades with. Therefore, for trade policy analysis to be meaningful and for robust results to be produced, the interactions that prevail among different sectors as a result of a change in a given group of countries trade policy instruments must be taken into account. The general equilibrium methodology provides an analytical framework that allows for inter- and

intra-sectoral changes in output mix, and by extension the demand for different factors of production to be captured.

Kehoe T. and Kehoe P. (1994) succinctly captured the essence of general equilibrium models. General equilibrium models are an abstraction that is complex enough to capture the essential features of the economy, yet simple enough to be tractable. These models are popular over their partial equilibrium counterparts because they stress the interactions among different sectors. However, they are not perfect, especially the static ones, since they fail to take into account the dynamic effects that accompany changes taking place in a given economy as a result of policy change. The GTAP model falls in this class of general equilibrium models. GTAP is a multi-region computable general equilibrium (CGE) model designed for comparative-static analysis of trade policy issues (Adams et al. 1997). It can be used to capture effects on output mix, factor usage, trade effects and resultant welfare distribution between countries as a result of changing trade policies at the country, bilateral, regional and multilateral levels. Since the GTAP model puts emphasis on resource reallocation across economic sectors, it is a good instrument for identifying the winning and losing countries and sectors under policy changes involving the trade aspects of FTAs.

The Free trade Agreement between Morocco and Korea: The Partial Equilibrium Modelling Framework – the WITS/SMART Model

Rationale for a Partial Equilibrium Model

It was argued that trade policy analysis is more robust when undertaken within a general equilibrium modelling framework. This can be seen as the best option as general equilibrium models not only measure the first-round effects of simulated change, but also the second-round effects which include inter-industry effects and macroeconomic adjustments. However, as was indicated in the discussions on the GTAP modelling and database frameworks, GTAP does not provide any information at the tariff lines levels. This data could give us important information concerning the economic impact of the

FTA between Morocco and the US. This section therefore describes the partial equilibrium modelling methodology that was used in the study to complement the GTAP results. The main distinction that should be noted at the outset is that as a partial equilibrium model, the inter-sectoral implications (second-round effects) of trade policy change are not taken into account, as is the case in the general equilibrium model. Similarly, the inter-regional implications, such as within a regional economic communities (REC) setting, are also ignored in a partial equilibrium framework. The only point of convergence between the partial and general equilibrium models is that it is still possible within a partial equilibrium model to analyze the trade policy effects on trade creation and diversion, welfare and tariff revenues while holding everything else constant.

Milner et al. (2002) provide a simple analytical framework explaining the theory behind partial equilibrium modelling and note that to adequately capture the interactions between sectors and elasticities of substitution between factors, and to simulate dynamic effects in their EPA study between the EU and the East African Community, a general equilibrium model would be desirable. However, partial equilibrium models would work as an alternative due to scarcity of individual and regional CGE models for developing countries. Milner et al. (2002) also observed that the database for general equilibrium models lacks the details on commodities needed to take into account specific sensitive and special products that are of interest to both the Sub-Saharan African countries and the EU. A partial equilibrium framework is in a better position, in spite of its shortcomings, to allow for the utilization of the now widely available trade data at the appropriate level of detail that would allow for the principle of special and differential treatment to be captured in the simulation analysis. It however remains true that although partial equilibrium models have drawbacks, as a modelling approach they have the advantage of working at very fine levels of detail such as the tariff line level.

D. Macroeconomic Effects of a Korea-Morocco FTA

Sectoral and geographical aggregations

For the present study, 87 regions have been aggregated into 9 subregions, and 18 sectors have been identified. A complete description of the sectoral and geographical aggregation is posted in Annex 1.

The simulations

To assess the effects of Morocco-South Korea free trade agreement (FTA), 3 kinds of simulations are achieved using GTAP model and its database. The objective of these 3 simulations is to give a rough estimation of the potential macroeconomic impacts of this potential agreement, by comparing its specific effects with two other liberalization contexts. Our 3 simulations are the following:

Simulation #1: Full trade liberalization between the two countries, this agreement being considered separately. All bilateral tariffs are completely and immediately eliminated.

Simulation #2: Full trade liberalization between the two countries, with all bilateral agreements concluded either by Morocco or South Korea being in force [2], except the Agadir agreement between Morocco, Tunisia, Jordan and Egypt.

Simulation #3: Conclusion of a multilateral agreement such as the Doha round, including the following modalities: reduction of NAMA tariffs (Non Agricultural Market Access) by 25%; tariffs in agriculture are lowered by 30%; a complete elimination of export subsidies in developed countries and a 50% reduction of domestic support in developed countries and the complete elimination of the multifiber agreement.

3. Simulation results

3.1. A small macroeconomic impact for the two countries

Taking into account the small importance of bilateral trade between Morocco and South Korea, not surprisingly, the FTA between these two countries should not have a significant macroeconomic impact.

[2] Morocco has signed FTA namely with the UE (1996), EFTA (1997), Jordan (1998), Egypt (1999), Tunisia (1999), United Arab Emirates (2001), Turkey (2004), the US (in force since 2006). Korea has similar agreements with the US, the so-called KORUS (in 2007), with EFTA (2005), Singapore (2005) and Chile (2002).

3.1.1 Impact on welfare and growth rate

As shown by table 1, the economic growth of the two countries would not be influenced by the implementation of a FTA. Similarly, the net welfare gain in South Korea would be very slight if not inexistent (the gain would be equal to US$ 70.43 millions), but it would turn into a net loss for Morocco (equal to US$ -43.18 millions).

Table 1. Impact of full liberalization on welfare (in millions of US dollars) and on growth rate (in %)

Countries/Regions	Welfare	Growth rate
Morocco	-43.18	-0.07
S. Korea	70.43	*
EU 27	-33.39	*
USA-Canada	-5.57	*
China	-14.37	*
Other emerging countries	-9.22	*
Other developing countries	-7.27	*

* negligible
Source: Authors' GTAP simulation

3.1.2. Effects on sectoral value added

The sectoral effect on agriculture and industrial output of full liberalization displays both winners and losers in the two countries, as shown in table 2.

Table 2. Impact of full liberalization on selected agricultural and industrial activities (% of variation of value added)

Sectors	Morocco	Korea
Agriculture	0.04	-0.01
Agro-industry	0.36	-0.03
Energy	-0.12	0
Textile	0.53	0.64
Wood	0.11	0
Paper products	-0.18	-0.02
Chemical	-0.15	0.01
Mineral products	0.2	-0.02
Metals	0.45	-0.08
Transport equipment	-0.47	-0.04
Manufactures	-0.27	-0.02
Construction	0.41	0.02

Source : Authors' GTAP simulation

In Morocco, the greatest winners are agro industry, textile and metals and construction. The activities, which will lose, are mostly transport equipment and manufactures. In Korea, the only perceptible impact is focused in textile. Once again, the TFA will stimulate poorly the productive activity of the two trading partners.

3.1.3. Effects on trade balances

According to our simulations, the implementation of a full trade liberalization agreement would contribute to deteriorate the Moroccan trade balance by US $ 53.4 millions, which is corresponding to a very modest increase in the current trade deficit (equal to US$ 18 billions in 2007). In counterpart, the Korean trade balance would improve by US $ 2.19 millions, which is quite insignificant (the Korean Trade surplus should amount to US$ 13 billions in 2008).

Beyond these global effects, the FTA would produce contrasting sectoral influences. In Morocco, under full liberalization, the trade balance would improve notably for agro-industry, while it would deteriorate for textile. While textile is one of the most dynamic manufacturing activities in Morocco, this surprising result is probably resulting from the fact that Korean textile and garment manufacturers are about to reach the top global position in terms of their competitiveness, creativity and quality. Trade liberalization would obviously exert an important competitive pressure on the Moroccan textile exporters? Indeed, our simulation tends to establish that textile would experience the highest rate of growth of import among all the Moroccan productive activities. The trade balance in transport equipment and chemicals would also deteriorate. In South Korea, the agreement would improve the trade balance for textile and deteriorate the balance for agro-industry ‘see table 3.

Table 3. Changes in trade balance for selected agricultural and industrial products under a full liberalization scenario (in millions of US $)		
Sectors	Morocco	Korea
Agriculture	-2.89	-4.09
Agro-industry	32.21	-21.49
Textile	-13.73	157.67
Paper products	0.85	-2.95
Chemicals	-4.88	-7.34
Mineral products	-1.54	-2.59
Ferrous metal	1.29	-8.81
Metals	3.64	-0.46
Transport equipment	-58.09	-64.97
Source: Authors' GTAP simulation		

4. Identifying specific products: Partial Equilibrium Results

IN PROGRESS

In this section, the results using the WITS/SMART partial equilibrium model showing the possible impact of the FTA on Morocco are discussed, under the assumption of a full reciprocity, full liberalization scenario. Essentially, we want to analyze the possible consequences of a complete elimination of tariff barriers on the Moroccan economy and first of all the impacts on consumer's surplus. One of the main justifications of liberalization is to reduce the price paid by consumers, increasing thus their purchasing power. So, our main objective is to analyze as accurately as possible consumers' potential gain for the products that we can identify as the most sensitive. In this section, we analyze also the consequence of this scenario on product-specific tariff revenues and exports. We choose to simulate the impact of a complete dismantlement of tariffs in order to clearly expose the effects of trade liberalization on all Moroccan products. This is therefore an "extreme scenario" which aims at delineating the general trends of the impact of liberalization of the Maroccan economy under the FTA.

The results on trade creation and diversion are also reported.

Impact on consumer's surplus

It is important to underline that the WITS SMART model does not allow us to evaluate the total impact of the FTA on welfare, because it captures only consumer's surplus. In order to obtain a complete view of this impact, it is necessary to address also the effects for producers. In addition, these impacts must not be evaluated product by product, but as a whole, taking into account general equilibrium linkages. This is what we intend to do in the next section. As underlined above, the partial equilibrium approach is just aimed at identifying sensitive products.

Table X displays the Harmonized system chapters (HS02) yielding the highest welfare gains for Morocco. ….

Moroccan consumers will derive gains from the FTA since they will have access to goods at lower prices. To this point, it is assumed that Korean producers and exporters will not be pricing to market. In other words, there is an implicit assumption that Korean exporters and Moroccan importers will pass the benefits of tariff reductions on to Moroccan consumers. If the benefits of tariff dismantlement are not passed on to Moroccan consumers but are captured by the exporter or the importer, it is possible that there will be no increase in consumer welfare.

It is therefore crucial to ensure that welfare is transmitted to consumers. To this end, it is necessary that the competition policy shield consumers against possible abuse of potential dominant positions or against collusion from large importers. Competition policy capacities and the judicial system supporting it should therefore be strengthened to ensure that the FTA delivers its potential benefits.

Table X. Impact of full liberalization on consumer welfare in Morocco by commodity

(in millions of US dollars)

Source: Authors' WTIS simulation

Impact on Moroccan tariffs revenues

Table X. Impact of full liberalization on tariff revenue losses in Morocco

(Millions of US dollars)

Source: Authors' WITS simulation

Impact on exports

By providing duty free access to an American consumer market with 300 million individuals, the FTA will strongly stimulate Moroccan exports. Not surprisingly, this expansion would primarily concern the textile and clothing industry, which is the most important industrial activity in Morocco (43% of the country's industrial exports, providing 39.5% of total industrial employment). Table 4 shows that the agreement will likely have strong effects concentrated only on a limited number of sectors. Simultaneously, US exports to Morocco would increase at a still higher percentage: 36,28% against 22,58% (Table 5).

Table X. Total impact of full liberalization on Morocco's exports to the US in selected products (in thousands of US dollars and as a % of the sectoral Moroccan exports to the US)

Table X. Total impact of full liberalization on US exports to Morocco (Millions of US dollars)

Impact on third countries

Table X. Impact of full liberalization on Moroccan trade with third countries (in millions of US dollars)

5. Conclusion and Policy recommendations: To be draft

References

Annexes

Annexe 1: Geographic and Sectoral aggregation

New region No.	Code	Description	Comprising old regions
1	**EU27**	European Union	Austria; Belgium; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Slovakia; Slovenia; Spain; Sweden; United Kingdom; Bulgaria; Romania.
2	**USA_CANADA**		Canada; United States of America; Rest of North America.
3	**CHINA**		China.
4	**OTHER_EMERGI**		Taiwan; Thailand; Viet Nam; Rest of Southeast Asia; India; Rest of South Asia; Mexico; Argentina; Brazil; Chile; Rest of Central America; Croatia; Russian Federation; Rest of Eastern Europe; Rest of Europe; Rest of Former Soviet Union; Turkey; South Africa.
5	**OTHER_DVING**		Rest of Oceania; Rest of East Asia; Cambodia; Indonesia; Malaysia; Philippines; Bangladesh; Pakistan; Sri Lanka; Bolivia; Colombia; Ecuador; Paraguay; Peru; Uruguay; Venezuela; Rest of South America; Nicaragua; Caribbean; Albania; Kazakhstan; Kyrgyztan; Iran Islamic Republic of; Rest of Western Asia; Nigeria; Senegal; Rest of Western Africa; Central Africa; South Central Africa; Madagascar; Malawi; Mauritius; Mozambique; Tanzania; Uganda; Zambia; Zimbabwe; Rest of Eastern Africa; Botswana; Rest of South African Customs .
6	**OTHER_DVPED**		Australia; New Zealand; Hong Kong; Japan; Singapore; Switzerland; Rest of EFTA.
7	**MOROCCO**		Morocco.
8	**REST_NA**		Egypt; Tunisia; Rest of North Africa.
9	**KOREA**		Korea.

New sector No.	Code	Description	Comprising old sectors
1	**Agriculture**		Paddy rice; Wheat; Cereal grains nec; Vegetables, fruit, nuts; Oil seeds; Sugar cane, sugar beet; Plant-based fibers; Crops nec; Cattle,sheep,goats,horses; Animal products nec; Raw milk; Wool, silk-worm cocoons; Forestry; Fishing.
2	**AgroIndustry**		Meat: cattle,sheep,goats,horse; Meat products nec; Vegetable oils and fats; Dairy products; Processed rice; Sugar; Food products nec; Beverages and tobacco products.
3	**Energy**		Coal; Oil; Gas; Electricity; Gas manufacture, distribution; Water.
4	**Textile**		Textiles; Wearing apparel; Leather products.

5	**Mining_Quarr**	Minerals nec.
6	**Wood**	Wood products.
7	**Paper_Prod**	Paper products, publishing.
8	**Chemicals**	Services and activities NES Petroleum, coal products; Chemical,rubber,plastic prods.
9	**Mineral_Prod**	Mineral products nec.
10	**Ferrous_Met**	Ferrous metals.
11	**Metals**	Metals nec.
12	**Transp_Equip**	Metal products; Motor vehicles and parts; Transport equipment nec; Electronic equipment; Machinery and equipment nec.
13	Manufactures	Manufactures nec.
14	**Construc**	Construction.
15	**Transp_Road**	Transport nec.
16	**Transp_Water**	Sea transport.
17	**Transp_Air**	Air transport.
18	**Other**	Trade; Communication; Financial services nec; Insurance; Business services nec; Recreation and other services; PubAdmin/Defence/Health/Educat; Dwellings.