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AN ASSESSEMENT OF THE UNITED STATES-MOROCCO FREE TRADE AGREEMENT

THE IMPORTANCE OF AN ASSYMETRIC AGREEMENT

PRELIMINARY VERSION

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Abstract:

This paper provides an assessment of concluding free trade agreements between Morocco and the United States. The agreement recently signed between Morocco and the United States foresees several modalities in dismantling tariff. Our simulations show that in any scenario, the impact of trade liberalization on the rate of growth would be much more important for Morocco than for the US, taking into account the difference in the bilateral trade flows sizes. The FTA between the US and Morocco will have significant impact not only on trade between this 2 countries, but also on the trading relationship with the other countries. The most important trade diversion will affect the EU and particularly France, which is the biggest trading partner of Morocco. It will also have some adverse effect on the other North African countries. The FTA will thus offer the opportunity to Morocco to diversify its markets and its capabilities which are strongly focused on the EU, and particularly on France and Spain.

JEL CLASSIFICATION:
F13 - Commercial Policy; Protection; Promotion; Trade Negotiations
F17 - Trade Forecasting and Simulation
C68 - Computable General Equilibrium Models

1. Introduction

Free trade agreements between Morocco and the US will expose the Moroccan economy to increased competition on both price and quality in a range of products. This competitive pressure should provoke an increase in productivity on the part of Moroccan firms. Under such circumstances it is quite possible that giving US exports tariff-free access to the Moroccan market could result in substantial trade diversion. Although Moroccan consumers might enjoy lower prices, these gains could be more than offset for the economy as a whole because of the loss in tariff revenue and the purchase of goods from the United States rather than more efficient sources. In addition, there is the possibility that Morocco could experience declines in its terms of trade since its tariff reductions would be much larger than those of the United States.

The focus of the empirical analysis will be on the trade liberalisation component of the FTA. The following are the specific questions to be addressed. First, how do Morocco gains and loses based on the impacts on GDP, trade and other macroeconomic aggregates from the bilateral trade liberalisation between Morocco and the US. Second, what sectors lose and what sectors gain. Third, what are the welfare implications for Morocco from the FTA? Fourth, how does the formation of FTA affect trade expansion through the trade creation and trade diversion effects? Fifth, the fiscal implications of the FTA. Consequently, this study will also try to quantify the direct revenue implications. The quantification of the trade expansion will provide a basis for estimating the revenue effects resulting due to trade diversion from non US to US producers and suppliers. The agreement recently signed between Morocco and the United States foresees several modalities in dismantling tariff. The problems were going to be put, particularly for cereal, red meats and vegetables. A period of transition is necessary for the survival of these essential sectors. Indeed, the American agriculture is the most efficient in the world especially for cereal. A sector which remained the main obstacle for the finalisation of the FTA. Indeed, the Moroccan economy is largely based on the agriculture. 50 % of the working population work in the primary sector. 70 % of the farmers cultivate cereal. The American products will so be a serious threat for the Moroccan agriculture. They are of very good quality and at cheaper cost. Besides, they take advantage from domestic subsidies. The Moroccan party had recommended during the negotiations to reserve a special frame for cereal before the total liberalization. From his part, the American finds that a FTA has to contain also the agricultural sector. The interest of the FTA lies in the structural changes of the Moroccan agriculture to make it more competitive and to exploit better the comparative advantages of the country.

Finally, these questioning and the answers which arise from it converge on the same conclusion as we shall demonstrate namely the interest for both partners of an asymmetric agreement and a progressive dismantling, especially for Morocco.

The article is structured as follow. After this introduction, section 2 highlights the trade relations between US compared to those with EU. Section 3 presents the methodology used to assess the necessity of an asymmetric FTA. Section 4 describes the models used in the analysis. A description of the GTAP 6 model and WITS model is done in this section. Section 5 presents the main results obtained from the simulations. Lastly, section 6 concludes the paper.

Section 2. Trade performance of Morocco' economy

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Morocco's major imports and exports are manufactures (around 62 per cent of imports and 65 per cent of exports of goods in value terms in 2001). Machinery and transport equipment, textiles and chemicals, are the main imports. Imports of textiles are mainly in connection with sub-contracting, particularly with partners in the European Union (EU). The rapid increase in their share of total imports of goods was mainly due to a change in the way they are entered in the accounts (how they are reflected in trade statistics). Agricultural foodstuffs and products of the mining and quarrying industries are the principal primary goods imported. Variations in imports of fuel primarily reflect the fluctuations in their global prices.

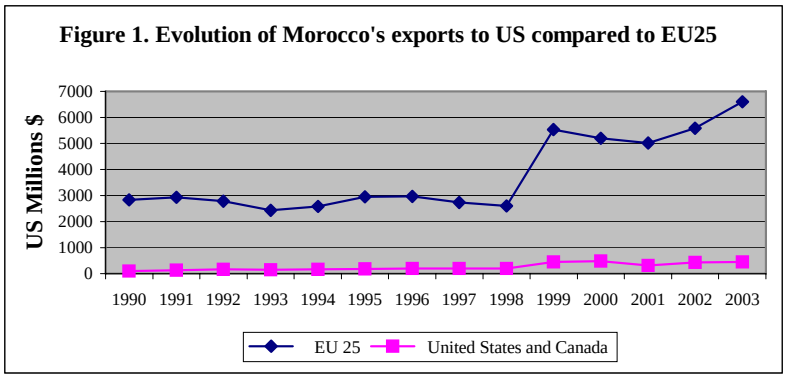
The EU is Morocco's principal trade partner, both for imports and exports (see figures 1 and 2). France alone provides over 20 per cent (24 per cent in 2000 and 22.5 per cent in 2001) of total imports; within the EU, the other main sources of Moroccan imports are Spain, the United Kingdom, Italy and Germany. Outside the EU, Morocco also imports goods from the United States and Saudi Arabia; the volume of imports from other regions is negligible.

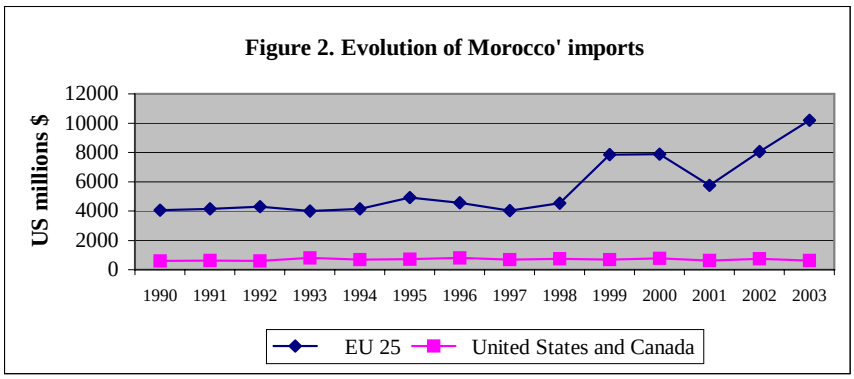
Table 1. Balance of payments, 1995-01
(US$ millions)

	1995	1996	1997	1998	1999	2000	2001
Balance in the current transactions account	**-1,296**	**-58**	**-169**	**-146**	**-171**	**-501**	**1,606.0**
Trade balance	-2,482	-2,193	-1,864	-2,319	-2,448	-3,235	-3,022.0
Exports f.o.b.	6,871	6,886	7,039	7,144	7,509	7,419	7,142.0
Imports, f.o.b.	-9,353	-9,080	-8,903	-9,463	-9,957	-10,654	-10,164.0
Services balance	283	961	747	864	1,112	1,142	1910
Credit	2,173	2,743	2,471	2,827	3,115	3,034	4,029.0
Debit	-1,890	-1,782	-1,724	-1,963	-2,003	-1,892	-2,119.0
Revenue balance	-1,318	-1,309	-1,176	-1,033	-985	-864	-833.0
Current transfers (net)	2,220	2,483	2,123	2,343	2,150	2,456	3,550.0
Capital account balance	**-6**	**73**	**-5**	**-10**	**-9**	**-6**	**-9.0**
Financial operations account balance	**-984**	**-897**	**-990**	**-644**	**-13**	**-774**	**-967.0**
Direct investment in Morocco	92	76	4	12	3	221	144.0
Direct investment abroad	-15	-30	-9	-20	-18	-59	-97.0
Portfolio investment	20	142	38	24	6	17	-8.0
Other investment	-1,083	-1,085	-1,022	-660	-4	-954	-1,006.0
Errors and omissions	**391**	**209**	**175**	**160**	**123**	**114**	**230.0**
Overall balance	**-1,895**	**-673**	**-988**	**-640**	**-69**	**-1,167**	**860**
Financing	**1,895**	**673**	**988**	**640**	**69**	**1,167**	**-860**
Reserve assets	984	-274	-553	-248	-1,636	416	-3,842.0
Use of IMF resources	-101	-47	-3	0	0	0	0.0
Exceptional financing	1,013	995	1,544	887	1,705	751	2,982.0
Gross official reserves							
Foreign exchange reserves in terms of months of imports	4.6	5	5.4	5.2	6.7	5.4	9.9

Source: IMF (2002).

France takes over one quarter of Morocco's exports of goods, followed by Spain, the United Kingdom, Italy, and Germany. In terms of share of trade, the order of importance of the leading partners is the same, both for imports and exports. The high concentration of exports to the EU is mainly due to the change in the method of reflecting sub-contracting operations in the accounts.





2. The Free trade Agreement between Morocco and US: General Equilibrium Analytical Methodology

This section discusses in details 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. This is the 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 levels.

2.1. Rationale for a General Equilibrium Methodology

Trade policy analysis largely involves analyzing 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 change, the demands for factors of production also change. Consequently, in any given economy, it is difficult to conceive a situation where the change in trade policy would affect

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 or group of countries trade policy instruments must be taken into account. The general equilibrium methodology provides an analytical framework that allows these 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) capture succinctly 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. This is because they fail to take account of the dynamic effects that accompany changes taking place in a given economy as a result of policy change. The Global Trade Analysis Project (GTAP) model is 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.

2.2. The GTAP Database and the Study Aggregation

2.2.1. Data description

The GTAP model is used together with the GTAP database. The database, like the model, captures different individual and composites of countries. In this exposition, Version 6 of the database is utilized. This base year for this version is 2001 and recognizes 87 regions as well as 57 sectors and 5 factors of production. Thus, for each of the individual or composite region, there are 57 sectors whose data is captured in the overall GTAP database. As already pointed out, not all countries are individually captured in GTAP, however, all the world economies are part of the database as they could be part of a given composite region or included as part of the rest of the world. Thus, global macroeconomic consistency holds. For the purpose of our study, Morocco and the US are present separately.

Bilateral trade data is a critical component of the GTAP database. It is this bilateral trade flows that transmit policy and growth shocks between countries. Indeed, trade shares are important in explaining the simulation results. The bilateral trade is also important when it

comes to looking at the terms of trade implications. The global bilateral data is sourced from the United Nations COMTRADE data. This is supplemented with individual countries global trade information and trade totals or aggregate bilateral trade statistics such as from the IMF, FAO and World Bank.

Another important sub-component of the GTAP database is the protection data. This data is both explicit and implicit. Explicit in the sense that tariff revenue or export revenue by commodity is available. In addition, anti-dumping data by commodity and region is also obtainable. It is implicit in the sense that the bilateral trade data is available both in market and world prices. The key sources of the protection data vary. In the case of tariffs, the agricultural tariffs are obtained from the Economic Research Service, the EU and the applied or MFN rates. Merchandise tariffs on the other hand are available from the World Integrated Trade Solution project of the World Bank and UNCTAD (details of WITS are presented in the section below discussing the SMART methodology). The domestic support protection data is obtained from the OECD's producer subsidy equivalent tables and this can be divided into output subsidies, input subsidies, land-based and capital-based payments.

2.2.2. Sectoral and geographical aggregations

For the present study, 87 regions have been aggregated into 5 subregions, and 57 sectors have been identified. A complete description of the sectoral and geographical aggregation is posted in annexe 1.

2.2.3. The scenarios tested in the CGE modelling

In order to assess the total effect of the FTA on the Moroccan economy, we test three scenarios:

- Scenario 1: *Strongly asymmetrical liberalization*. All tariffs and quotas are removed by the US on imports from Morocco (duty free, quota free entrance for Moroccan exports), while Morocco reduces tariffs on imports from the US by 10% (which is roughly corresponding to a one-year liberalization impact for Morocco in the actual agreement).
- Scenario 2: *Intermediate asymmetrical liberalization*. All tariffs are removed by the US on imports from Morocco, while Morocco reduces tariffs on imports from the US by 50%.
- Scenario 3: *Full reciprocity*, full liberalization. All bilateral tariffs are removed between Morocco and the US. All ad valorem tariffs, which appear in figure 1, are reduced to zero.

These 3 scenarios are compatible with the main objectives of the Doha agenda related to market access and the reductions of all forms of export subsidies and trade-distorting domestic support.

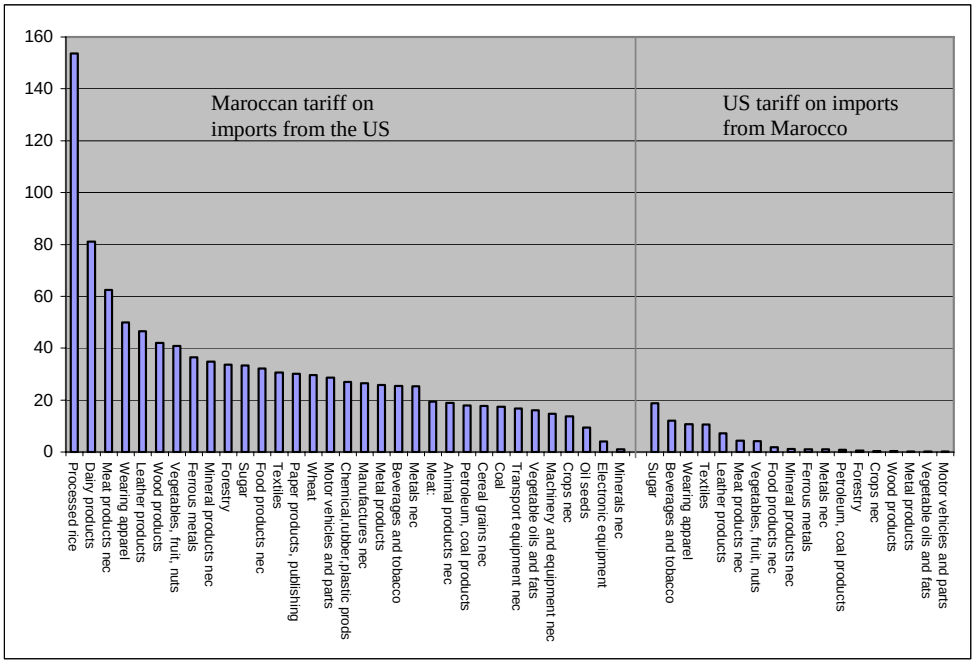
However, it is clear that none of these three scenarios really fits with the actual agreement but it gives some indications to the relative importance to have an asymmetric agreement. Indeed, the U.S.-Morocco FTA eliminates tariffs on 95% of bilateral trade in consumer and industrial products (including textile) with all remaining tariffs to be eliminated within 9 years. A particular treatment is reserved to agricultural products. Some important Moroccan exports such as clementines, tomatoes, olives will be able to enter the US duty free market from the

very first day of implementation. Morocco will in turn provide duty-free access immediately for American products such as pistachios, pecans, nuts, almonds, processed poultry product (with some restriction), pizza cheese and several other food products. For all the other agricultural products, tariffs will be phased out in 5 to 15 years.

The agreement includes broad commitments in some key services, namely banking and insurance (with a 4-year protection period), distribution, express delivery, engineering, audiovisual and telecommunications.

An important characteristic of the agreement is that it includes asymmetrical commitments at Morocco's advantage, as suggested by scenarios 1 and 2. This asymmetry is justified by the difference in the level of development of the trading partners and by the difference in the average level of the tariff schedules of the 2 countries: more than 20% for Morocco against 4% for the US (figure 3).

Figure 3. Ad valorem tariffs on different commodities (bilateral trade)



Source: TRAINS database

Obviously, with such a difference in the tariffs schedules, the gain for Morocco would be far less important than the US one in a full liberalization scenario.

Of course, the complexity of the actual US-Morocco agreement cannot be captured by a simple scenario formula. However, inasmuch as the real agreement is a (complex) combination of these scenarios we can expect to draw some interesting conclusions by comparing these scenarios.

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

3.1. 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 first-best option as general equilibrium models, not only measure the first-round effects of simulated changes, but also the second-round effects which include inter-industry effects and macroeconomic adjustments. However, as has been indicated in the discussions on the GTAP modelling and database frameworks, GTAP does not provide any information at the tariff lines levels. Or, the data at the tariff lines levels could gives us important information concerning the economic impact of the FTA between Morocco and 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 a 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 REC setting are also ignored in a partial equilibrium framework. The only point of convergence of 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 even on tariff revenues while holding everything else constant.

Milner et al. (2002) provides a simple analytical framework explaining the theory behind partial equilibrium modelling and notes 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, due to scarcity of individual and regional CGE models for developing countries then partial equilibrium models would be alternative choices. Milner et al. (2002) also raise a valid observation that the database for general equilibrium models lacks the commodity detail to take account of the specific sensitive and special products that are of interest to both the sub-Saharan African countries and the EU in this particular case. A partial equilibrium framework is in a better position in spite of its shortcomings to allow for the utilisation of the now widely available trade data at the appropriate level of details 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 details such as at tariff line level.

3.2. The WITS/SMART Model

For the purposes of this study, it is proposed that the WITS/SMART model will be the applied partial equilibrium framework. The World Integrated Trade Solution (WITS) brings together various databases ranging from bilateral trade, commodity trade flows and various levels and types of protection. WITS also integrate analytical tools that support simulation analysis. The SMART simulation model is one of the analytical tools in WITS for simulation purposes. SMART contains in-built analytical modules that support trade policy analysis such

as effects of multilateral tariff cuts, preferential trade liberalization and ad hoc tariff changes. The underlying theory behind this analytical tool is the standard partial equilibrium framework that considers dynamic effects constant. Like any partial equilibrium model, it has these strong assumptions allowing the trade policy analysis to be undertaken a country at a time. In spite of this weakness, WITS/SMART can help estimate trade creation, diversion, welfare and revenue effects.

3.3. The simulations scenarios

Unlike the general equilibrium analysis where it was possible to look at several scenarios, only one simulation was undertaken for this FTA with the partial model. This scenario looks only at the reciprocity principal. Due to the weaknesses already pointed out especially the ceteris paribus assumption upon which this model operates; only one-way liberalization is possible. The results discussed here are the possible outcomes of reducing to zero the import duties that Morocco imposes on US goods. One special advantage of the WITS/SMART model is that it allowed the analysis to be undertaken at the 6-digit level. There was therefore no aggregation problem such as the one with the GTAP database. The trade created from the full reciprocity scenario depends on the following three key elements as discussed in the analytical methodology: the initial level of trade (imports from the US), the initial level of protection and the price elasticity of import demand. The higher the initial level of protection, the greater would be the change expected from the reciprocation policy. The transmission mechanism for the trade effects is simple: the elimination of existing tariffs on US imports reduces the prices that consumers in the importing African country face compared to domestic substitutes and the responsiveness of demand to the price change influences the amount of trade created or diverted. The substitutability of the US goods for domestic goods is implicitly assumed. The Armington assumption at HS 6-digit level is that goods imported from different countries are imperfect substitutes. It is also assumed that the supply response to the price reduction will allow the US producers and exporters to meet any demand arising in the importing countries as a result of price reduction. That is, export supplies are perfectly elastic which means that world supplies of each variety of the goods by origin are given.

4. Simulation results

This section discusses in details the results obtained from the empirical analysis. The GTAP model analysis is complemented in the study with a partial equilibrium analysis model. This is the SMART model developed jointly by The World Bank and UNCTAD.

4.1. General Equilibrium Results

Using the GTAP simulation model, we propose a quantitative assessment of the potential impacts of the 3 possible implementations of free trade described above on the economic growth of the two countries, on welfare, on sectoral value added, on exports, imports, trade balance and terms of trade. These results will give some tangible elements concerning the necessity to have an asymmetric agreement.

4.1.1. Impacts on welfare and growth

As shown in table 2 and figures 4 and 5 the additional growth provided by trade liberalization is modest in the 2 countries, but not inconsiderable in Morocco (the rate of growth of the Moroccan GDP would be increased by an additional 0.37% and a net welfare gain equal to $ 37 millions in the first scenario (strongly asymmetrical liberalization).

The difference in the impacts on the US and Moroccan GDP and welfare are clearly related to the difference in the sizes of the 2 countries and in the importance of their bilateral trade relations.

In any scenario, the impact of trade liberalization on the rate of growth would be much more important for Morocco than for the US, taking into account the difference in the bilateral trade flows sizes: the US imports from Morocco represent 0.03% of the total US imports, while the Moroccan import from the US are corresponding to 3.4% of the total Moroccan imports.

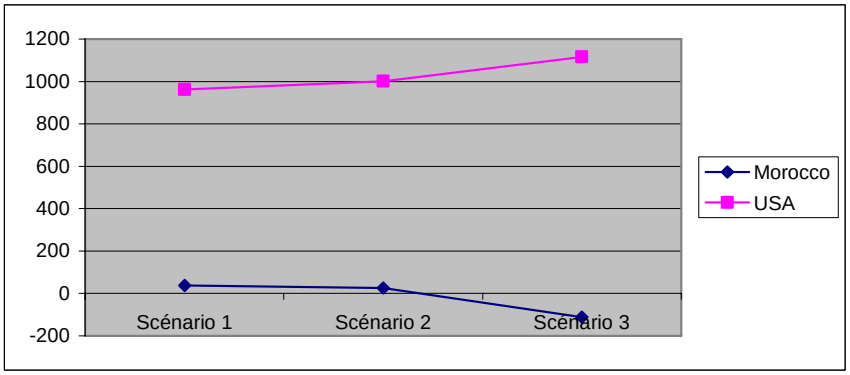
At the opposite the welfare effects are much greater in the US. The impact on the total welfare of a one dollar reduction of the price of an imported good is greater for a 300 millions people country than for a 30.6 millions people. Lastly and more importantly, these results prove the importance of an asymmetrical and gradual liberalization process for Morocco. As liberalization scenario become more liberal, the changes in the GDP and in welfare are lowered for Morocco and increased for the US. Finally, the Moroccan gains associated to scenarios 1 and 2 turn into recession and impoverishment with scenario 3 (see table 2 and figures 4 and 5).

Table 2. Impacts of three different scenarios on welfare (in millions of US dollars) and GDP growth rate (in %)

Scenarios	Scenario 1		Scenario 2		Scenario 3	
Regions	Welfare	GDP	Welfare	GDP	Welfare	GDP
Morocco	37.08	0.37	26.49	0.18	-112.1	-0.78
USA	962.02	0.03	1001.65	0.03	1115.94	0.04
RofNAFR	-38.19	0.09	-39.55	0.09	-43.37	0.08
ROW	-1277.54	0.06	-1303.83	0.05	-1375.13	0.05

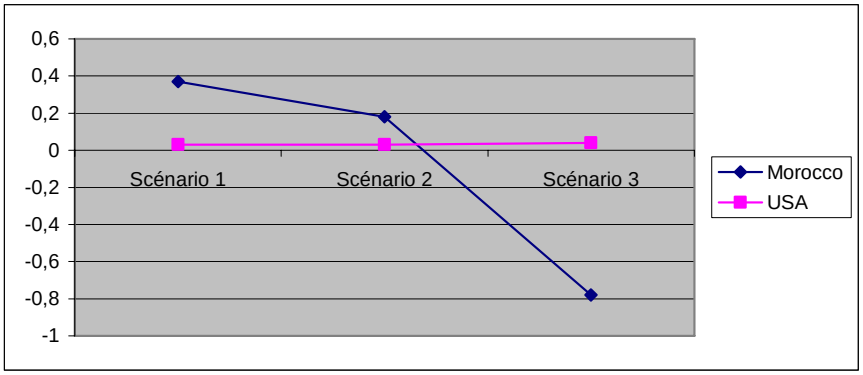
Source: Authors' GTAP simulation

Figure 4. Impacts on welfare (in millions of US dollars)



Source: Authors' GTAP simulation

Figure 5. Impacts on the rate of growth of the GDP (in %)



Source: Authors' GTAP simulation

4.1.2. Impacts on sectoral values added

If we consider the impacts on the output, and more precisely on the variation of the value added in the 2 countries, we can conclude that the FTA makes winners and losers in the 2 countries.

In Morocco, Meat, electronic equipments, leather, paddy rice and processed rice, textiles and wearing apparel are benefiting when the trade scenario becomes more and more liberal. Textile and clothing appears to be (and will probably be) one of the biggest winners. This activity can expect to get the advantage of an increasing production in a short period of time as a result of an immediate liberalization. At the opposite, transport equipment, metals and mineral products and wheat are losing with the same evolution. Our simulation is therefore consistent with the fact that wheat is a highly political issue in Morocco. Eight millions people in Morocco depend on production of wheat which is the main crop produced by small farmers. A full immediate liberalization in this sector would cause an important percentage of the Moroccan rural population to lose his livelihood. Not surprisingly, wheat is the only US product to remain subject to quota in the actual agreement.

US farmer are expected to be the biggest beneficiaries of the agreement with Morocco, namely for wheat production, beef and animal feed (particularly for poultry which correspond to the most important feed grain demand and the fastest growing meat production in Morocco). At the opposite, American paddy rice and oil seeds producers would experience severe losses in every scenario (table 3).

Table 3. Impacts of the three scenarios of trade liberalization on selected industrial and agricultural activities (% of variation of value added)

	Scenario 1		Scenario 2		Scenario 3	
Sectors	Morocco	USA	Morocco	USA	Morocco	USA
Meat products nec	-1.74	0.12	0.28	0.11	6.33	0.11
Meat: cattle,sheep,goats,horse	-1.57	0.1	-0.28	0.09	4.13	0.07
Electronic equipment	-1.34	0.08	-0.76	0.07	1.57	0.04
Transport equipment nec	-1.21	0.06	-3.84	0.06	-8.07	0.06
Metals nec	-1.07	0.07	-0.65	0.04	-2.02	0.07
Machinery and equipment nec	-0,86	0,05	-0,74	0,05	1,08	0,04
Animal products	-0.81	1.00	-0.44	0.97	-0.2	0.16
Ferrous metals	-0.8	0.04	-0.65	0.06	0.14	0.04
Vegetables, fruit, nuts	-0.17	-0.75	1.57	-1.26	0.26	-0.85
Mineral products nec	-0.14	0.03	-0.66	0.04	-2.02	0.07
Leather products	-0.14	0.18	-0.08	0.17	0.45	0.18
Paddy rice	-0.07	-32.87	0.19	-32.89	1.17	-32.95
Wheat	0.33	2.28	-0.87	2.68	-4.42	3.88
Processed rice	0.44	0.68	0.04	0.7	7.69	0.76
Textiles	0.88	0.11	1.84	0.13	5.26	0.2
Vegetable oils and fats	1.11	-1.25	1.57	-1.26	2.73	-1.27
Wearing apparel	2.82	0.03	3.64	0.04	6.42	0.09
Oil seeds	3.06	-10.65	2.52	-10.67	1.87	-10.76

Source: Authors' GTAP simulation

4.1.3. Impacts on sectoral exports, imports and trade balance

The general picture is roughly the same when we consider the potential effects on trade. In Morocco, under full liberalization, the trade balance would improve particularly for wearing apparel, sugar, vegetables, leather products, while it would deteriorate notably for wheat.

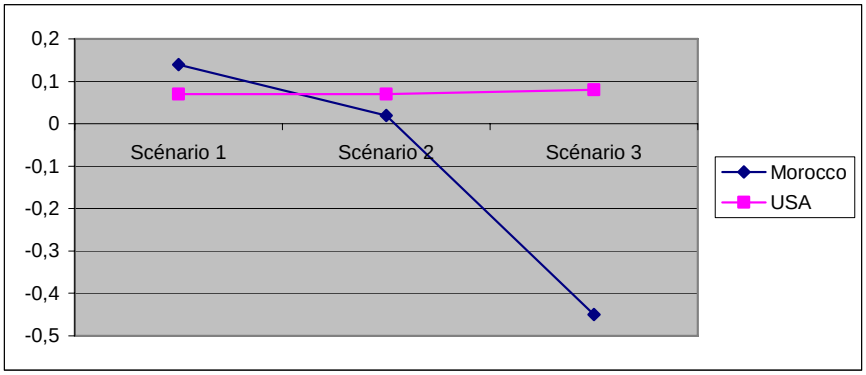
In the US, the FTA would cause the most important improvement for chemical, rubber and plastic products and textiles and the most important trade deterioration for oil seed and paddy rice (once again) and for vegetables (table 4). A part of these changes is related to the evolution of the terms of trade, which would deteriorate significantly for Morocco should the liberalization process be complete, immediate and perfectly reciprocal as described by the third scenario (figure 6)

Table 4. Changes in trade balance for selected products (in millions of US dollars)

	Scenario 1		Scenario 2		Scenario 3	
	Morocco	USA	Morocco	USA	Morocco	USA
Wearing apparel	89.13	-8.81	108.86	-3.23	166.24	39.38
Sugar	2.78	5.51	3.31	5.39	5.18	5.04
Vegetables, fruit, nuts	-1.85	-146.63	0.7	-147.43	4.9	-167.79
Leather products	-0.6	6.07	-0.13	5.29	3.5	4.58
Vegetable oils and fats	0.08	-146.65	-0.6	-152.03	3.12	-149.66
Crops nec	-0.04	-124.14	0.32	-134.27	2.49	-164.27
Plant-based fibers	1.04	25.4	1.3	23.81	2.32	19.16
Raw milk	1.33	-0.25	1.37	-0.28	1.51	-0.37
Fishing	-0.17	0.79	-0.12	0.78	0.27	0.76
Paddy rice	0.01	-271.52	0.01	-271.73	0.02	-272.33
Oil seeds	1.01	-789.22	0.25	-790.89	-0.58	-798.01
Meat products nec	-0.1	68.87	-0.08	67.05	-1.8	66.48
Cereal grains nec	-1.13	33.17	-4.74	38.55	-9.84	44.69
Chemical,rubber,plastic prods	-12.43	194.04	-13.33	195.33	-12.76	193.7
Machinery and equipment nec	-12.42	239.91	-15.3	226.23	-15.61	164
Dairy products	-1.36	-28.72	-1.54	-26.51	-17.36	4.72
Paper products, publishing	-1.91	30.86	-6.08	38.29	-18.57	56.17
Mineral products nec	-3.58	20.45	-12.69	32.59	-41.19	65.01
Textiles	-24.3	81.72	-29.96	99.31	-58.94	161.81
Wheat	-0.04	186.17	-19.43	215.63	-90.77	305

Source: Authors' GTAP simulation

Figure 6. Terms of Trade (%)



Source: Authors' GTAP simulation

4.2. Potential Economic and Welfare Impacts of FTA on Morocco: Partial Equilibrium Results

In this section, the results using the WITS/SMART partial equilibrium model showing the possible impacts of the FTA between Morocco and US 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 barrier on the Moroccan economy, and more precisely the impacts on welfare, tariff revenues and export. We choose to simulate the impact of a complete dismantlement of tariffs in order to clearly expose the effects of trade liberalisation on all the products in Morocco. This is therefore an "extreme scenario" which aims at delineating the general trends of the impact of liberalisation of Maroccan economies under the FTA.

The results on trade creation and diversion are also reported.

4.2.1. Impact on consumer's welfare

The concepts of producer and consumer surplus help economists to make welfare (normative) judgments about different ways of producing and distributing goods. In our CGE analysis, we have analysed the global welfare as a whole. However, WITS gives us the possibility to approximate only the consumer surplus.

Table 5 displays the Harmonised system chapters (HS02) yielding the highest welfare gains for Morocco. Together, these 6 products groups account for more than 65% of the total welfare gains of the country in case of liberalization of the trade with the US By far, the group of products yielding the highest welfare gains are cereals (32.4%), followed by the electric and plastic industries (20%).

Our simulations show that if we take into consideration only the effect on the consumer welfare – as opposed to table 2 which assesses the welfare implications for the whole of each economy, Moroccan consumers are obviously the biggest winners. They will be able to purchase US consumer's goods (part of the immediate liberalization) at cheaper prices, obtaining thus an immediate – but limited - improvement in their standard of living. Indeed, in a full liberalization scenario, the total improvement in the Moroccan consumers' welfare would be equal to 24.9 millions US dollars per year (table 4).

The consumers in the Morocco will derive gains from the FTA as they will have access to goods at lower prices. To this point, it is assumed that the US producers and exporters will not be pricing to market. In other words, there is an implicit assumption that the US exporters and the Morocan importers will pass on the benefits of the tariffs reduction to the Morocan consumers. If the benefits for tariff dismantlement are not passed on to the Morocan 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 the 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 stengthened to ensure that the FTA delivers its potential benefits.

However, it should be noted that the overall economic welfare effects are not clear within a partial equilibrium modelling framework since producer surplus changes especially due to supplanting of domestic producers by the EU producers has not been captured in this analysis. In our CGE analysis, we have shown that the total welfare will decrease to 112 US millions $. This result clearly indicates that the Morocan producers surplus will suffer from a full liberalisation scenario. This results could have significant implications on the structure of the production in Morocco. Therefore, this results milits clearly in favour of a progressive dismantelments in order to limit the adjustment costs.

While recognising the weakness of the consumer surplus as a proxy for welfare implications of the FTA, the partial equilibrium results tell only part of the story. Indeed, increased imports through trade creation do not only benefit consumers in the Morocco. In addition to this are potential gains likely to emanate from embodied technologies in some of the imports, that might eventually be welfare enhancing. This will however depend on whether capital equipments and machineries and such imports that tend to have embodied technologies.

Table 5. Impact of full liberalization on consumer's welfare in Morocco by commodity
(in millions of US dollars)

Sectors	**Welfare Changes**	%	Cumulative
Cereals	8.07	32.4%	32.0%
Electrical mchy equip parts thereof; sound recorder etc	3.20	12.8%	44.8%
Plastics and articles thereof	1.79	7.2%	52.0%
Paper & paperboard; art of paper pulp, paper/paperboard	1.61	6.5%	58.5%
Rubber and articles thereof	1.16	4.6%	63.1%
Mineral fuels, oils & product of their distillation; etc	1.13	4.5%	67.6%
Vehicles o/t railw/tramw roll-stock, pts & accessories	0.85	3.4%	71.0%
Tobacco and manufactured tobacco substitutes	0.79	3.2%	74.2%
Aircraft, spacecraft, and parts thereof	0.75	3.0%	77.2%
Nuclear reactors, boilers, mchy & mech appliance; parts	0.66	2.7%	79.9%
Iron and steel	0.46	1.8%	81.7%
Cotton	0.40	1.6%	83.3%
Man-made staple fibres	0.36	1.4%	84.8%
Miscellaneous chemical products	0.33	1.3%	86.1%
Articles of iron or steel	0.32	1.3%	87.4%
Pharmaceutical products	0.24	1.0%	88.3%
Others	2.8	11.7%	100.00%
Total	24.9	100.0%	

Source: Authors' WTIS simulation

4.2.2. Impact on Moroccan tariffs revenues

As would be expected, the elimination of tariffs on imports from the US is shown to harm the government revenues in Morocco.

In a full liberalization scenario, the FTA would significantly reduce the Moroccan tariff revenues by more than 147 millions of US dollars. Almost 60% of these losses would result from the elimination of duties on the import of US cereals (table 6). It represents, 0.5% of the GDP and 4.5% of the balance of payments. One may mentioned that cereals account for almost 60% of the revenue shortfall. Therefore, we understand why this product was treated separately during the negotiations.

In some cases, the bulk of the loss of revenues comes from the elimination of tariffs on goods that could easily be taxed otherwise (excise duty for example). Nevertheless, in terms of evaluating the FTA for Morocco, it can be noted that the revenue foregone is likely to have negative impacts on other government programmes. When this is combined with the feature of undermining regional integration, one is left with a picture that goes beyond the normal international trade theory arguments. The question about the significance of non-economic reasons for integration comes into play. It is therefore necessary to look closer at the real weight of such a revenue loss on Government's finance. If the FTA entails full liberalisation of US imports, Morocco would have to forgoe tariff revenues amounting to almost 2.5% of their public revenue.

It is important to note however that the revenue loss indicated by our simulations relates to imports tariff revenues. In reality, the increased imports presented earlier resulting from trade creation are in most countries subject to indirect taxes such as the VAT. As such, as long as there is rapid increase in the volume and value of imports into Morocco, and this country has indirect taxes such as VAT, then the revenue shortfall described will be tampered off. However, unless the elasticity of the VAT and indirect taxes is significantly higher than that for import duties, it is unlikely that the addition indirect taxes revenues will outweigh the revenue foregone from the import tariffs.

Table 6. Impact of full liberalization on tariff revenues losses in Morocco
(Millions of US dollars)

Description	Variation of tariff revenues	%
Cereals	-85.93	58.4%
Electrical mchy equip parts thereof; sound recorder etc	-9.90	6.7%
Mineral fuels, oils & product of their distillation; etc	-7.19	4.9%
Paper & paperboard; art of paper pulp, paper/paperboard	-6.27	4.3%
Tobacco and manufactured tobacco substitutes	-5.54	3.8%
Oil seed, oleagi fruits; miscell grain, seed, fruit etc	-5.147	3.5%
Nuclear reactors, boilers, mchy & mech appliance; parts	-3.43	2.3%
Aircraft, spacecraft, and parts thereof	-2.45	1.7%
Vehicles o/t railw/tramw roll-stock, pts & accessories	-2.17	1.5%
Iron and steel	-2.09	1.4%
Cotton	-1.57	1.1%
Articles of iron or steel	-1.54	1.0%
Man-made staple fibres	-1.43	1.0%
Rubber and articles thereof	-1.06	0.7%
Pharmaceutical products	-0.97	0.7%
Others	-10.50	7.0%
Total	**-147.21**	**100%**

Source: Authors' WTIS simulation

4.2.3. Impact on exports

By providing a duty free access to a 300 million American consumers market, the FTA will strongly stimulate the Moroccan exports in this market. Not surprisingly, this expansion would mostly 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 percent of total industrial employment). Table 7 shows that the agreement will likely have some strong effects concentrated only on a limited number of sectors. Simultaneously, the US exports to Morocco would increase still in a higher percentage: 36,28% against 22,58% (table 7).

Table 7. 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)

Products	Before	After	Change In Revenue	% of increase
Art of apparel & clothing access, not knitted/crocheted	48.83	71.48	22649.412	46.4%
Art of apparel & clothing access, knitted or crocheted	28.27	45.87	17603.708	62.3%
Mineral fuels, oils & product of their distillation; etc	131.15	139.65	8497.814	6.5%
Footwear, gaiters and the like; parts of such articles	4.54	6.47	1934.601	42.6%
Prep of meat, fish or crustaceans, molluscs etc	10.48	12.08	1608.979	15.4%
Edible vegetables and certain roots and tubers	6.00	6.57	566.686	9.4%
Total	**237.77**	**291.45**	**53.68**	**22.58%**

Source: Authors' WTIS simulation

Table 8. Total impact of full liberalization on the US exports to Morocco (Millions of US dollars)

Before	After	Change In Revenue	% of increase
567.57	773.51	205.936	36.28%

Source: Authors' WTIS simulation

4.2.4. Impact on third countries

This section looks at the possible trade diversion impact of the FTA on Morocco. It starts with a presentation of the losses in intra-regional trade, due to the substitution of intra-regional exports by US products. Then, it will attempt to identify which products could be most affected by losses of intra-regional trade. These products are the one that would suffer the most intensively from US competition.

Trade diversion is the quantity of exports that is being replaced by US products after liberalization. We assume here that the effect of the elimination of the tariff is fully transmited to consumer prices.

Indeed, the FTA between the US and Morocco will have significant impact not only on trade between this 2 countries, but also on the trading relationship with the other countries. The most important trade diversion will affect the EU and particularly France, which is the biggest trading partner of Morocco. It will also have some adverse effect on the other North African countries (table 9). The FTA will thus offer the opportunity to Morocco to diversify its markets and its capabilities which are strongly focused on the EU, and particularly on France and Spain.

Table 9. Impact of full liberalization on Moroccan trade with third countries
(in millions of US dollars)

Partner	Total Trade Diversion
USA	+ 92.60
UMA	-0.24
Tunisia	-0.20
Algeria	-0.03
Libya	-0.16
Rest of Africa	-3.63
European Union	-36.43
France	-17.23
Spain	-4.77
Rest of the World	-51.28

Source: Authors' WTIS simulation

Our partial equilibrium simulations show that imports from the US to Morocco would increase by approximately 53.68 million US$. Finally, our model shows some results, albeit incomplete concerning welfare gains. It seems that consumer surplus would mainly be improved through the lowering of price of industrial goods such as cars, machines and equipments. Furthermore, the FTA would significantly reduce the Moroccan tariff revenues by more than 147 millions of US dollars.

5. Conclusion

Our analysis justifies the idea that a free trade agreement between two zones of different development has to come along with a progressive process of tariff dismantling for the most strategic sectors so as to limit the adjustment costs. It also militates in favor of an agreement which is not based on the principle of full reciprocity. Under an immediate, full and reciprocal trade liberalization, Morocco would experience a decrease of its economic growth, a loss of economic welfare, a deterioration of its terms of trade and an important deterioration of its trade balance (scenario 3) At the opposite, a strongly asymmetrical and progressive liberalization (scenario 1) would stimulate the Moroccan economic growth, improve its welfare and its terms of trade and let the trade balance almost unchanged. Simultaneously, for the US, there is a relative indifference between the 3 scenarios, as far as the impacts on the welfare, the rate of growth and on the evolution of the value added are concerned. Table 2 and 3 show that the effects on the US are quite similar on these levels. When we consider, the impact on the sectoral trade balance of the 3 scenarios (table 4), the picture is more contrasted. A gradual and asymmetrical agreement would cause both improvements for the US trade balance (machinery and equipment, crops, raw milk, fishing, sugar, leather) and deteriorations (wheat, cereals, dairy products, paper, mineral products and textiles). However, according to our simulation, the global impact on the US trade balance would be more advantageous with the gradual agreement (the total impact of the scenario 1 is a deterioration equal to $ 77.65 millions) than with the full liberalization scenario (which would cause a $ 123.67 millions deterioration). As a result, the move from a more liberal to a less liberal scenario seems to be Pareto optimal.

However, these figures must be considered cautiously. A more precise evaluation would require a dynamic simulation and a comparison of full liberalization with a scenario closer to the actual agreement which is the objective of our oncoming research project.

Beyond this strictly economic assessment, it is clear that the objectives of the FTA for the two trading partners are very different in a more general perspective.

- For Morocco, engaging in free trade with the US is aimed at changing the country's reliance mostly on agriculture, which employs more than 40% of the labour force. Despite important investments in irrigation projects, this situation makes the country very vulnerable to weather hazards. As trade Minister Salaheddine Mezouar said, the government's goal is to create 500,000 jobs in industry over the next 10 year and increase the industrial gross domestic product to 23% of the total GDP by 2015 (as compared to 16% currently) and for industry to contribute to 1.6 percent of GDP growth every year. In short, the main objective is to reduce the country's dependence vis a vis agriculture, phosphate, and money sent home by its citizens living abroad, by developing industrial production and tourism.
These objectives will require important economic and social changes and infrastructure investments (see for example the massive expansion in the northern city of Tangier which will multiply port traffic by 15 times, reduce transport costs to the US by 50% and bring Morocco to an average 6 days sea distance from the US).

- For the US, the main objective is not neither merely nor principally economic, but rather geostrategic. Following the FTA with Jordan (in 2000), the agreement with Morocco is a new step toward the creation of a large United States-Middle East free trade area, an important goal of the Bush administration, so as to integrate the Middle East into the modern global economy and create a friend and ally zone in an uncertain region. The next step will be with Bahrain. National security considerations are probably the most important in this project; alongside the development of business transactions for the US farmers and investors. The choice of Morocco is not random, but the US political recognition of Morocco's commitment to reforms, modernization and openness.

The differences identified in the objectives and the potential results of FTA are not necessarily an obstacle with the installation of a "win-win game", because development and security issues play jointly to fight against poverty. The contemporary economic history shows that it is irrelevant to look for earnings balanced in the Trade relations. The differences in the specialization and the vigour of both economies envisaged here explain widely the differences of impact on the scale and the dynamics of the exports. For a young economy as Morocco, the required profits are due firstly to the cumulative reinforcement of the growth and the income but also with the modernization of the industrial system.

It would be a huge error to believe that the economic and social development can result automatically from the simple liberalization of trade, especially when the trading partner is the major world power as the United States. After all, the success of the experiences of development does not rely only on a global integration strategy. They are also securely based on the forces and the internal resources. No sustainable development is possible if it does not base on an endogenous dynamics.

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ANNEXES

ANNEXE 1: Sectoral aggregation

	New	sector			
No.	Code	Description			
1	pdr	Paddy rice	30	lum	Wood products
2	wht	Wheat	31	ppp	Paper products, publishing
3	gro	Cereal grains nec	32	p_c	Petroleum, coal products
4	v_f	Vegetables, fruit, nuts	33	crp	Chemical,rubber,plastic prods
5	osd	Oil seeds	34	nmm	Mineral products nec
6	c_b	Sugar cane, sugar beet	35	i_s	Ferrous metals
7	pfb	Plant-based fibers	36	nfm	Metals nec
8	ocr	Crops nec	37	fmp	Metal products
9	ctl	Cattle,sheep,goats,horses	38	mvh	Motor vehicles and parts
10	oap	Animal products nec	39	otn	Transport equipment nec
11	rmk	Raw milk	40	ele	Electronic equipment
12	wol	Wool, silk-worm cocoons	41	ome	Machinery and equipment nec
13	frs	Forestry	42	omf	Manufactures nec
14	fsh	Fishing	43	ely	Electricity
15	coa	Coal	44	gdt	Gas manufacture, distribution
16	oil	Oil	45	wtr	Water
17	gas	Gas	46	cns	Construction
18	omn	Minerals nec	47	trd	Trade
19	cmt	Meat: cattle,sheep,goats,horse	48	otp	Transport nec
20	omt	Meat products nec	49	wtp	Sea transport
21	vol	Vegetable oils and fats	50	atp	Air transport
22	mil	Dairy products	51	cmn	Communication
23	pcr	Processed rice	52	ofi	Financial services nec
24	sgr	Sugar	53	isr	Insurance
25	ofd	Food products nec	54	obs	Business services nec
26	b_t	Beverages and tobacco products	55	ros	Recreation and other services
27	tex	Textiles	56	osg	PubAdmin/Defence/Health/Educat
28	wap	Wearing apparel	57	dwe	Dwellings
29	lea	Leather products			

ANNEXE 2: Geographical aggregation

No.	Code	Aggregated région	Comprising
1	RofNAFR	Rest of North Africa	Tunisia; Rest of North Africa.
2	Morocco		Morocco.
3	EU25		Austria; Belgium; Denmark; Finland; France; Germany; United Kingdom; Greece; Ireland; Italy; Luxembourg; Netherlands; Portugal; Spain; Sweden; Cyprus; Czech Republic; Hungary; Malta; Poland; Slovakia; Slovenia; Estonia; Latvia; Lithuania.
4	USA		United States.
5	Turkey		Turkey.
6	ROW		Australia; New Zealand; Rest of Oceania; China; Hong Kong; Japan; Korea; Taiwan; Rest of East Asia; Indonesia; Malaysia; Philippines; Singapore; Thailand; Vietnam; Rest of Southeast Asia; Bangladesh; India; Sri Lanka; Rest of South Asia; Canada; Mexico; Rest of North America; Colombia; Peru; Venezuela; Rest of Andean Pact; Argentina; Brazil; Chile; Uruguay; Rest of South America; Central America; Rest of FTAA; Rest of the Caribbean; Switzerland; Rest of EFTA; Rest of Europe; Albania; Bulgaria; Croatia; Romania; Russian Federation; Rest of Former Soviet Union; Rest of Middle East; Botswana; South Africa; Rest of South African CU; Malawi; Mozambique; Tanzania; Zambia; Zimbabwe; Rest of SADC; Madagascar; Uganda; Rest of Sub-Saharan Africa.