The Effects of the Trade Liberalization between Morocco and European Union on the Moroccan Economy: Evaluation Using an Intertemporal CGE Model

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Abstract

The objective of this paper is to study and compare the effects of the free trade agreement between Morocco and European Union on the Moroccan economy. The approach adopted is a dynamic computable general equilibrium (CGE) model with perfect competition and constant returns. We build, in the first time, a standard static CGE model, which is a model with perfect competition and constant returns. Into the basic model, we integrate intertemporal dynamics. The modeling of the intertemporal behaviors shows that liberalization affects negatively some variables in the short-term, but its impact on the whole of the indicators is positive on long-term.

Keywords: Trade liberalization, Computable General Equilibrium Model, Intertemporal optimization.

1. Introduction

Following Morocco's accession to the GATT, its participation in the negotiations of Uruguay Round and its accession to OMC, and because of its economic characteristics (productive fabric and commercial regime), Morocco began to integrate into a free trade area (FTA) with the European Union (EU) since 2000. This partnership agreement has great stakes which contain, on one side, real opportunities to exploit and, on other side, big challenges to be noted.

The assessment of the impact of regional integration of a small open less developed country with many developed countries should affect the trade regime and its geographical structure, the price level, the level of domestic production…, it should affect the whole economy and its exchanges with outside, this is why our article is designed to provide some answers to the following questions: Which will be the consequences of this agreement on the welfare? How trade flows will they evolve? Which sectors will see their activities increasing and those will see their activities decreasing? What will be the impact of liberalization on the reallocation of productive resources?

After having briefly shown the essential characteristics of the standard model used in the first section, we integrate, in the second section, intertemporal dynamics. We present our principal results in the third section. Concluding and some recommendations is the subject of the last section.

2. Methodology

In order to evaluate the impact of this trade opening on reallocation of factors of production, the welfare and the economic growth in Morocco, we developed an intertemporal CGE model. The model is calibrated using a matrix of social accounting (SAM) of 2003. 2003 is regarded as basic year covering the real sphere of the economy (all transactions on the goods and services).

The mathematical specifications corresponding to the structure of the model will not be referred in this work. It is a question of providing an overall review of the model and database used. The SAM contains twenty-nine accounts with ten activities, ten products, two factors of production (capital and labor), one household budget, one business account, one account of State, two accounts of accumulation and two accounts of the rest of the world (RDM).

The branches of activity are with some exceptions those of the national accounting. For each branch of activity corresponds a product and there are 10 products for 10 branches. Labor and capital are the two factors of production of the model. The data of the foreign trade of Morocco are classified following two geographical areas of exchange namely: trade with the Member State of the EU and the trade with the rest of the world.

In Morocco, it should be recalled that 74% of total exports are intended to EU. France is one of the main customers, with a share of 49% of total exports, it remains the first importer. In the second rank, Spain accounts for 15% of these exports. At the imports level, 56% come from the EU. The main of these imports consists of energy products, semi-finished products and final products.

3. The Structure of the Model

The model is derived from the models standard, and largely applied to the international trade, it is in the line of work of Dervis et al. (1982); Rutherford and Tarr (1994); Decaluwé et al (2001).

As for the dynamic specification, it is relatively similar to those generally used for this kind of exercise (cf Goulder and Eichengreen (1992); Go (1994); Keuschnigg and Kohler (1996); Mercenier and Yeldan (1997); Devarajan and Go (1998); Diao et al. (1998); Dissou (2002)).

The model developed for this study belongs to the family of the dynamic intertemporal CGE model. This dynamic dimension, if it is more demanding in data than a static model, allows to study the effects of dismantling customs on the dynamics of transition from the economy and not only static effects. Moreover, it makes possible to model in a flexible and realistic way the allowance of the investment towards the most productive sectors. It also permits to incorporate assumptions on the population growth, the production growth and the growth of the government spending, in order to make the model more precise and more realistic.

Within the framework, we present initially the static specification of the model (economic equilibrium within the same period of time), then its dynamic specification. The model is implemented under GAMS software.

3.1. Households

We supposed that the intertemporal utility function of the consumer is assumed to be time-separable and time additive[1]. Under an intertemporal budget constraint.

The consumer has to maximize his utility function subject to the constraints[2], is written in the following form:

$$MaxU = \sum_{t=0}^{\infty} \left(\frac{1+n}{1+\rho} \right)^t * \ln\left(CHT_t\right) \tag{1.1}$$

$$sc$$

$$(1+n)*A_{t+1} = (1+re)*A_t + (1-txy_h)*(YL_t + \varepsilon * YK_t) + Trf_{govt\_h} - PC_t * CHT_t \tag{1.2}$$

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[1] As it Decaluwé (B), Martens (A) and Savard (L) stressed, (2001, P425) the property of additivity of the function of intertemporal utility means that the level of utility which the household enjoys, in unspecified year, is independent of what he known in the past and of his future prospects.

[2] The intertemporal budget constraint imposes that the agent does not leave any debt not paid at the end of its horizon of life. In other words, the discount value of the expenditure of household consumption should not exceed its wealth. It is the constraint of solvency. To obtain the expression of the intertemporal budget constraint; we suppose that the representative consumer has access to a perfect financial market where it can carry out operations of debt and loan to the same interest rate (r^e).

$$YL_t = w_t * \left(\sum_{i,ni} L_{it} + L_{nit} \right) : \text{Employment income} ; \quad YK_t = \sum_i r_{it} * K_{it} : \text{Capital income}$$

A_t, CHT_t, $\rho \in \,]0,1[$, w_t, L_{it}, L_{nit}, txy_h, εYK_t, Trf_{govt_h}, re and PC_t denote respectively, household financial wealth including the total value of firms; real consumption expenditure; time preference rate; the sectoral wage rate, the labor input of firm , labor in the public sector , the tax rate on labor income, the capital share in the value of the output, the nets transfers of the government towards the households, the interest rate and the dual price of consumption.

The dynamics of the consumption is determined by the Euler equation:

$$\frac{CHT_{t+1}}{CHT_t} = \left[\frac{1+re}{1+\rho} \cdot \frac{PC_t}{PC_{t+1}} \right] \qquad (1.3)$$

Where the total consumption CHT_t is a Cobb-Douglas function of different composite goods and PC_t the dual price determined from the intra-temporal decisions.

3.2. Firms and Investment

The firm chooses the optimal investment which maximizes its present value (VF) that is equal to the sum of its discounted cash flows, subject to a capital accumulation constraint, given the capital depreciation rate and the initial capital stock. The dynamic program of maximization of the firm is defined as follows:

$$
\begin{cases}
MaxVF_{it} = \displaystyle\sum_{t=0}^{\infty} \left(\frac{1+n}{1+re} \right)^t * RN_{it} & (1.4) \\[4mm]
subject \quad to \quad : & \\[4mm]
& (1.5) \\[4mm]
(1+n) * K_{it+1} = (1-\delta_K) * K_{it} + I_{it} &
\end{cases}
$$

Where:

$$RN_{it} = Pvq_{it} * VA_{it} - W_t * L_{it} - PK_t * \left(I_{it} + \frac{\phi_i}{2} * \frac{I_{it}^2}{K_{it}} \right)$$

RN_i, K_{it} I_{it}, δ_k represent respectively the cash flows; the initial capital stock; quantity of new capital equipment built through investment at time t; the positive capital depreciation rate.

The cash flow includes an adjustment costs function[3]. The presence of adjustment costs indicates that in the case of a positive exogenous shock, firms adjust progressively their investment to reach its optimal level.

The sectors investment with a quadratic and homogeneous adjustment costs, (Schubert, 2000) is:

$$CA_{it} = \frac{\phi_i}{2} * \frac{I_{it}^2}{K_{it}} \qquad (1.6)$$

With CA_{it} and ϕ_i represent the capital adjustment costs and an adjustment parameter.

The first order conditions resulting from the firm's values maximizations are: the investment demand function; the Euler equation for the shadow price of capital (or equivalently Tobin's q); and the capital accumulation equation.

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[3] It is frequently represented by a quadratic function.

Investment demand function : $I_t = \dfrac{K_t}{\phi}\left[\dfrac{q_t - PK_t}{PK_t}\right]$

Shadow price of capital :

$$\left(1-\delta_k\right)\,q_{t+1} \;=\; \left(1+re\right)\,q_t - \left[R_{t+1} + PK_{t+1}\,\dfrac{\phi}{2}\left(\dfrac{I_{t+1}}{K_{t+1}}\right)^2\right]$$

Capital accumulation equation: $\left(1+n\right)K_{t+1} = \left(1-\delta_k\right)K_t + I_t$

Where q_t, R_t are the Lagrange multipliers representing the shadow price of capital and the physical marginal productivity of capital.

The investment is positive only if the real shadow price of capital is greater than one. With given investment, capital, capital replacement price and the adjustment cost parameter, the investment equation is used to calibrate the base run shadow price of capital as follows:

$$q_t = PK_t\left[1 + \phi * \dfrac{I_{it}}{K_{it}}\right]$$

Note that:

- The shadow price of capital is equal to its marginal cost
- There is a positive relation between investment and Tobin's q

Following Annabi and Rajhi's (2001) based on Hayashi (1982), with liner adjustment cost function, homogenous investment and capital and a constant return to scale production function, we obtain, by imposing the required transversality condition, the identity between the marginal q and average q of Tobin, therefore the firm value is:

$$VF_{it+1} = q_{it} * K_{it+1}$$

3.3. Government

Incomes of government are constituted of taxes on household's income, on the production, import tariffs, value added tax, and allocates its expenditure between goods and services in fixed proportions, pay public wages and makes transfers to households. If expenditure exceeds revenues, we assume that government issues bonds to finance its deficit, Sav_{g_t}.

The evolution of the government debt is expressed by the following equation:

$$\left(1+n\right)* DG_{t+1} = \left(1+re\right)* DG_t + Sav_{g_t} \qquad (1.8)$$

3.4. Foreign Trade

In our case, the substitution between the foreign and domestic goods is imperfect, which is indicated by a function of constant elasticity of substitution of Armington (P.S), (1969).

$$\dfrac{M_{it}}{D_{it}} = \left[\dfrac{\delta_i}{\left(1-\delta_i\right)}\dfrac{Pd_{it}}{Pm_{it}}\right]^{\sigma_i}$$

Where the imported goods demand is a function of the real exchange rate for consumer and , σ_i and δ_i are respectively the substitution elasticity and the share parameter in the CES function.

While exports are determined through the constant elasticity of transformation function (CET). Thus the supply is affected by the real exchange rate for producer:

$$\frac{EX_{it}}{D_{it}} = \left[\frac{Pe_{it}}{Pl_{it}} \frac{(1-\theta_i)}{\theta_i} \right]^{\gamma_i}$$

γ_i and θ_i are transformation elasticity and share parameter.

With the small open economy assumption, the world prices of imports and exports are exogenous, and the trade balance is:

$$CAB = ER * \left[\left(\sum_i Pwm_i * M_i \right) - \left(\sum_i Pwe_i * EX_i \right) \right]$$

Where *ER* is the nominal exchange rate, *M* is imports, *EX* is exports, *Pwm* is import price and *Pwe* is export price. If domestic investment exceeds domestic saving, the gap is financed by foreign borrowing.

Then we can write the dynamic external debt, borne by households, equation:

$$(1+n)*DX_{t+1} = (1+re)*DX_t + CAB_t \tag{1.9}$$

3.5. Equilibrium and Terminal Conditions

The model is calibrated with the SAM 2003, built from the input output table of Morocco. The initial SAM contains ten sectors that we aggregated for this version into three sectors, agriculture and fisheries, industrial sector and services.

In each period, the general equilibrium is characterized by the equality between the supply and demand of goods and services and the equality between total investment and total saving in the economy. Domestic agents cannot play a Ponzi game. All constraints and optimal conditions must be satisfied and the domestic absorption is equal to the sum of public and private consumptions, intermediate demand and sectors investment. The nominal exchange rate, ER is chosen as numeraire.

The steady state and terminal conditions are given as below:

$$(n-re)A_s = (1-t_y)(YL_s + YK_s) + TRF_s - PC_s CHT_s$$

The steady state equilibrium requires that foreign debt and public debt grow at a constant rate given by *(n-re)*

$$DX_s * (n-re) = CAB_s$$
$$DG_s * (n-re) = Sav_{g_s}$$

Steady state equilibrium also requires that capital stock grow at a constant rate given by $(n+\delta)$:

$$\frac{I_{is}}{K_{is}} = (n + \delta_k)$$

Finally, the shadow price of capital becomes a constant, as does the marginal return to capital:

$$q_{is} K_{is} = VF_{is}$$

$$q_s^i (re + \delta_k) = r_{is} + PK_s \frac{\phi}{2} \left(\frac{I_{is}}{K_{is}} \right)^2$$

4. Simulation, Interpretation and Comparison of Results

In this section, we discuss impacts on macroeconomic level and on sectors of a complete and unilateral liberalization of the foreign trade. Then, we present the consequences on various indicators of welfare and reallocation of factors of production. To carry out this simulation, the balance of the budget of the government is ensured in each period thanks to the endogenous adjustment of a neutral indirect tax.

In order to evaluate the impact of the liberalization of the exchanges between Morocco and EU and to compare them with the results obtained by the static model, we carry out two simulations.

The first consists with a progressive dismantling of 10% of the customs tariffs on all the products coming from all the partners. The second simulation consists with a progressive reduction of 10% of the customs tariffs on all the products coming from the EU.

4.1. Effects of dismantling of 10% of the Customs tariffs on all the Products coming from all the Partners

The gradual reduction of the customs tariffs by 10% involves an increase in the full value of the imports of 1.62% in the first year of liberalization and of 27.79% at the end of the horizon. This increase in the imports is explained by a substitution effect possible between the local and foreign goods, the fall in the prices of the imported goods (caused by liberalization) and the best quality of the latter.

In comparison with the trajectory of reference, export knows an important deterioration (of 17.07%) caused by commercial liberalization, at the beginning of the horizon. This considerable fall can be explained by the insufficiency of competence of the Moroccan exporters. However, export recovers its reference level at the end of 6 to 7 years (about 2015-2017 if commercial liberalization is application in 2010). The competition strengthened by commercial liberalization obliges the Moroccan firms naturally to improve their competence and to strengthen their productivity in order to compete with the more advanced foreign producers. We can interpret these periods like the time of amendment necessary, so that the Moroccan economy integrates the system of market completely. Thereafter, Moroccan export increases even more significantly compared to the trajectory of reference: from now on, export benefits fully from commercial liberalization with an increase of 10% at the end of about fifteen years (with the beginning of the year 2020). On the other hand, a quasi similar magnitude of positive impact of liberalization is maintained until the end of the horizon, with an export higher (of 18.66%) than its reference level.

**Graph n° 1: Impact of Liberalization on the Development of the Imports and Exports**
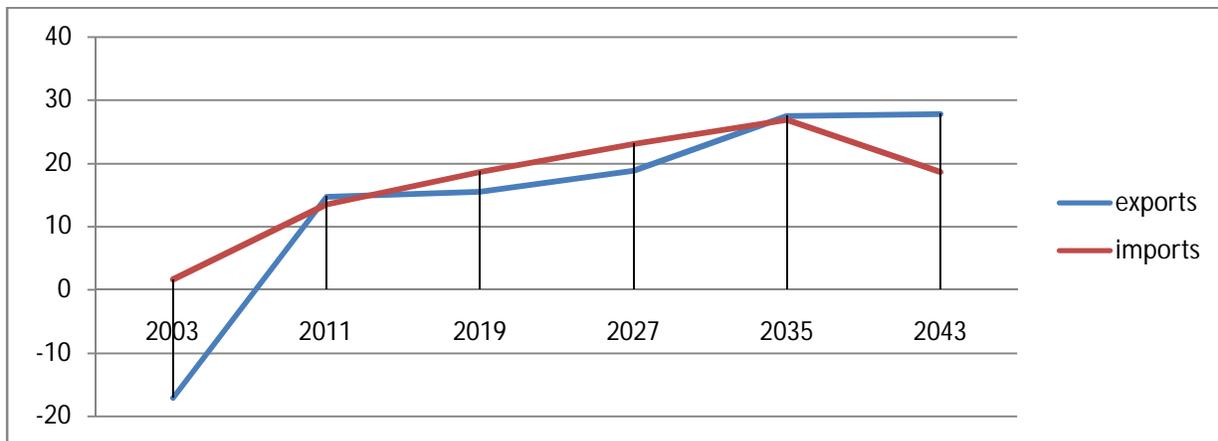
Graph n° 2: Impact of Liberalization on the Development of the Trade balance
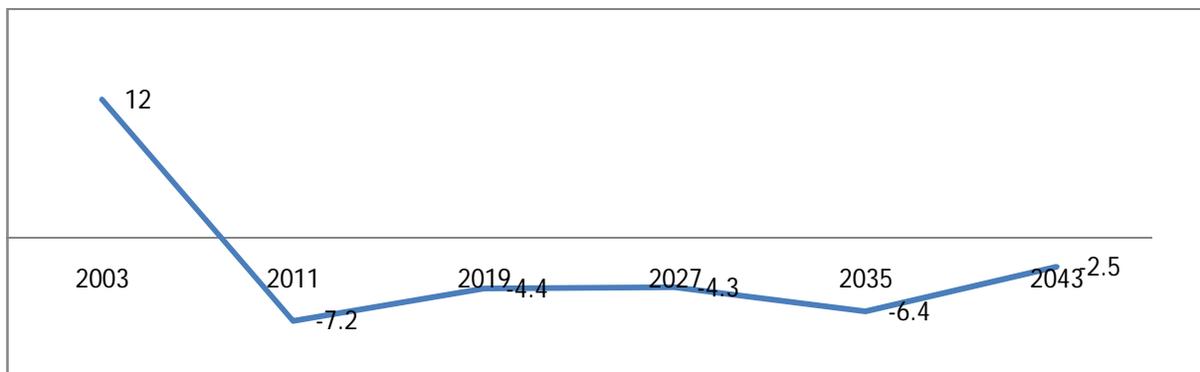
From the graph n°2, we notice that, at short term, the imports increase more than exports, which results in an increase in the deficit of the trade balance of 12%. This result confirms the very negative impact of the liberalization of the exchanges on the balance of payments of Morocco. This deterioration can lead to a considerable increase of the loan abroad and foreign debt of Morocco. In order to check these possibilities, the graph n°3 watches development of the foreign debt.
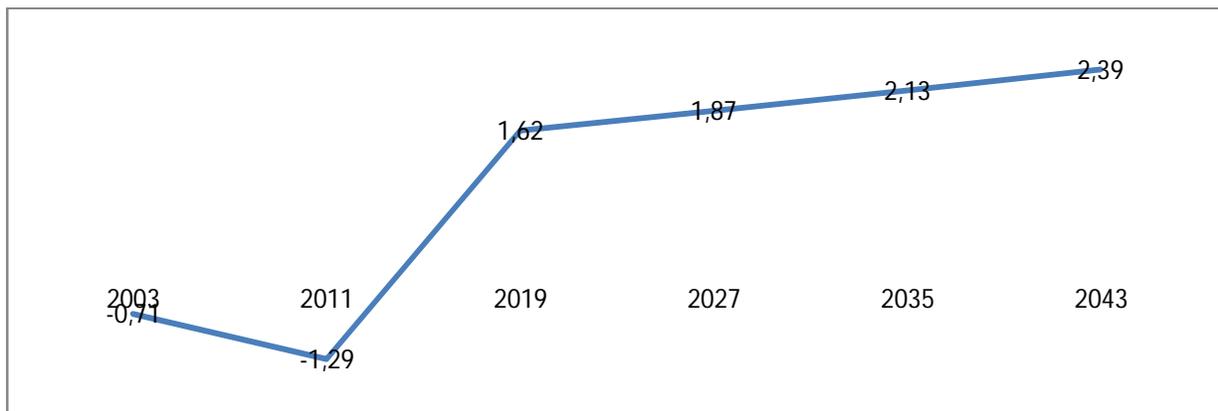
Graph n° 3: Impact of Liberalization on the Development of the Foreign debt (in %)

14.3	15.5	16.2	14.2	12.5	12
2003	2011	2019	2027	2035	2043
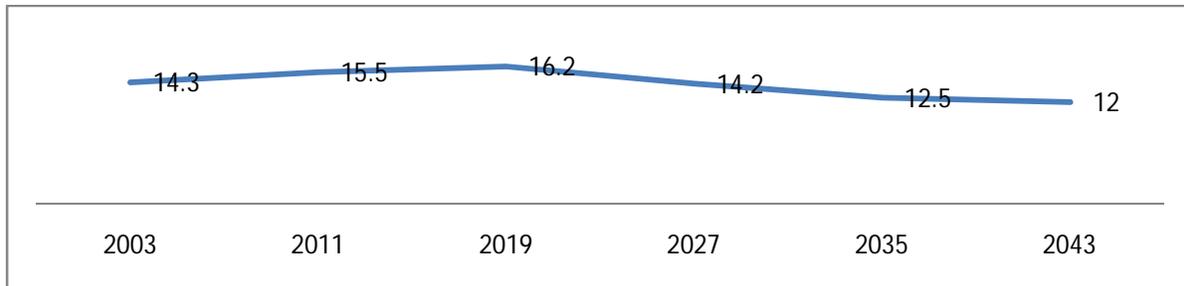
From this graph, we notice that commercial liberalization causes indeed an increase in the foreign debt in the short run. This increase can be interpreted like the financing of the trade deficit at the beginning of liberalization. On the other hand, as the trade balance improves of 2.5% in the long run (cf graph n°2), the foreign debt decreases during time. In the long run, the level of the debt tends towards the reference level, but remains however on a higher level (of 12.5%) compared to the static state.

The graph n°4 relates to the production of goods and services. Indeed, at the beginning of liberalization, the production falls in a considerable way: a fall of 0.71% compared to the situation of reference. According to our results, the production recovers its reference level about 2013, surroundings 1 year after the total suppression of the customs tariffs. Then, the production continues to increase, and reaches an increase of 1.62% compared to the trajectory of reference about 2019. The growth starts with accelerated throughout the examined horizon (2.39% in the long run). This result confirms the positive impact of commercial liberalization on the long run production and economic growth.

Graph n° 4: Impact of Liberalization on the Aggregate output

| 2003	2011	2019	2027	2035	2043
-0,71	-1,29	1,62	1,87	2,13	2,39

As for the impact of liberalization on consumption, it is not similar to that observed on the production. As of the first year of commercial liberalization, consumption is strengthened very significantly (more than 3.63%) compared to the trajectory of reference. Indeed, after the total suppression of the customs tariffs, consumption passes from 3.35% in 2011 to 1.43% in 2019. This relatively weak variation of consumption is also explained by the increase in the indirect tax which reaches 9.17% with the static state and which is used to make up the budget deficit. From 2027, TVA (taxes on value added) rates are stabilized and the price of the composite goods drops, from where a resumption of consumption throughout the horizon (2.49% in the long run). This result support the idea according to which, trade liberalization decreases consumption in short run, but the latter increases progressively, and benefits finally from the opening.

Graph n° 5: Impact of Liberalization on the Development of Private Consumption
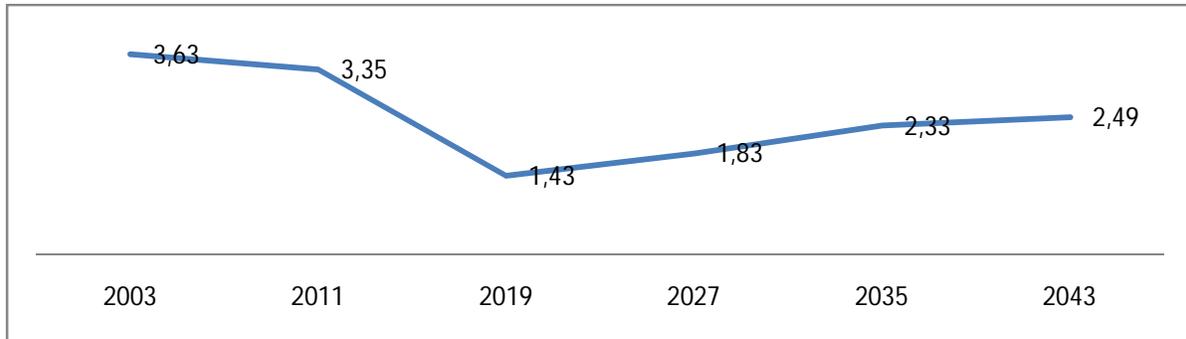
From the graph n°6 we can note that trade liberalization increases the investment in a very important way: The increase continues regularly until 2035 when it reaches 33.9%, then decreases to reach 24.45% at the final period. On the one hand, this considerable increase is ascribable to the consumption given up and the saving increased at beginning of the horizon. In addition, we consider that liberalization strengthens confidence in the Moroccan economy. Consequently, the overseas investment also takes part in the increase in the entire investment.

Graph n° 6: Impact of Liberalization on the Development of Invest Total
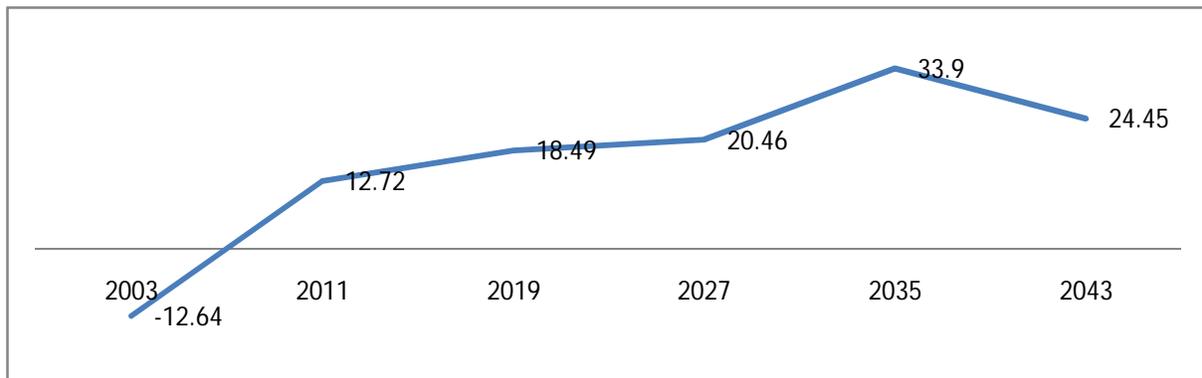
To explain the reasons of this increase in entire investment, we analyze in detail the impact on sectors of the reduction of the customs tariffs.

Table n° 1: Impact on Sectors in (%)

		AGR[4]	RAF[5]	IAA[6]	IMM[7]	TEX[8]	IMD[9]	ICH[10]	AIM[11]	SMR[12]
K	2003	-	-	-	-	-	-	-	-	-
	2043	2,11	6,53	1,87	5,64	7,52	2,35	8,40	2,63	2,43
L	2003	-3,24	-5,76	-4,67	-5,61	-8,66	-6,24	-5,22	-5,65	-3,83
	2043	8,85	9,95	9,17	9,44	17,08	9,77	9,77	10,36	9,1
M	2003	10,53	-0,41	9,42	-1,73	-8,13	-1,7	-2,74	-0,49	-4,16
	2043	2,97	3,12	3,23	3,18	2,52	3,08	2,85	2,66	4,17
Pwm	2003	-8,74	-7,39	-7,56	-8,07	-6,93	-8,06	-8,1	-6,71	-6,5
	2043	-2,51	-2,51	-2,51	-2,51	-2,51	-2,51	-2,51	-2,51	-2,51
EX	2003	-3,94	3,49	-0,44	3,58	1,96	10,86	1,57	0,78	1,60
	2043	1,12	1,64	0,66	1,71	7,05	1,44	2,08	2,26	0,71
I	2003	-2,69	-1,20	-1,72	-0,46	-1,45	-0,97	-1,19	-1,63	-1,35
	2043	1,54	3,74	0,69	4,64	3,9	1,77	5,77	1,8	0,61

If we look at the results of table n°1, we notice that tariff dismantling involves an increase in the accumulation of the capital because of reduction in its purchase costs, an increase in the profitability of the exporting branches and reallocation of the labor in favor of the growth sectors. This increase in the capital results in an increase in the production and a GDP growth at factor cost (1.83%) in the long run.

From table n°1, we note also that the sectors which profit the most accumulation of the capital, are the sectors of chemical industries and parachemical with an increase of 8.4%, industries of the textile (7.52%), industries of the refining and energy (6.53%), and mechanical engineering industries and metallurgical (5.64%).

Thus, the productions of these sectors increase, respectively, of 9.23%, 6.65%, 5.24%, and 4.38%. Moreover, the fall in the prices of exports involves a rise of their quantities. The positive variations of exports of all the sectors are determined by the intertemporal constraint requiring an improvement of the long run trade deficit.

Within the framework of the impact of the liberalization of the exchanges on the welfare level, it should be recalled that in a dynamic model, the change of the level of welfare expressed as a percentage measures by the variation path of consumption which makes the household neutral to the reform.

$$\sum_{t=0}^{\infty} \ln\left(\overline{C_t}(1+\Psi)\right)\left(\frac{1+n}{1+p}\right)^t = \sum_{t=0}^{\infty} \ln\left(C_t\right)\left(\frac{1+n}{1+p}\right)^t$$

Ψ, $\bar{C}_t$ and C_t respectively indicate the variation of the welfare, which can be interpreted like the amount of income which must be versed to the household at the year under review to enable him to reach the level of intertemporal utility that it would obtain after the shock, the path of reference of consumption and its profile after the introduction of the shock. According to our results of simulation, trade liberalization increases in an overall way the level of welfare of (1.73%) compared to the situation of reference.

4.2. Effects of dismantling of 10% of the Customs Tariffs on all the Products coming from the EU

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[4] Agriculture

[5] Energy industry

[6] Food industry

[7] Mechanical industry

[8] Textile industry

[9] Manufacturing

[10] Chemical industry

[11] Other manufacturing

[12] Service

The gradual reduction of the customs tariffs involves a weak increase in the total imports in the short run which is of 19.54%. But, in the long run, when the tariffs are entirely eliminated, their full value increases by 75.72%. On the other hand the full value of exports knows an important deterioration of -66.2% in the short run. However, in the long run, exports recovers its reference level and increases thereafter more significantly compared to the trajectory of reference (82.09% at the end of the horizon). This expansion of exports is explained by the fact why the prices of the domestic goods drop more than the prices of the exported goods. It encourages the national producers to move towards the foreign markets. These variations involve an improvement of the trade balance of 6.37% in the long run.

Table n° 2: Impact on Sectors in (%)

		AGR	RAF	IAA	IMM	TEX	IMD	ICH	AIM	SMR
K	2003	-	-	-	-	-	-	-	-	-
	2043	1,8	1,85	1,73	1,67	5,26	1,55	1,52	1,73	1,71
L	2003	-13,5	-15,65	-15,24	13,69	18,77	-15,47	15,45	-16,17	-13,31
	2043	-0,01	1,07	0,91	1,35	4,59	0,38	0,67	1,56	-1,4
M	2003	1,77	2,24	1,75	2,48	1,83	2,29	2,09	1,94	3,15
	2043	8,33	6,26	8,96	8,14	6,41	6,49	4,44	3,83	22,86
MUE	2003	2,5	3,06	2,81	3,44	3,42	3,39	2,95	2,46	5,57
	2043	13,92	10,55	13,07	8,78	7,1	13,85	9,2	4,45	22,86
MHUE	2003	-4,18	-4,36	-7,26	-7,22	-4,26	-8,42	-1,28	-2,04	-13,46
	2043	-7,75	-5,04	-12,72	-7,92	-21,09	-9,93	-9,08	-3,28	-21,54
EX	2003	-8,60	-6,34	-6,93	-9,97	-5,10	-6,18	-1,9	-2,15	-19,03
	2043	6,59	12,24	8,13	13,07	8,44	10,26	14,08	3,23	6,05
q/PK	2003	5,74	4,23	4,26	6,12	2,42	4,24	4,15	3,52	6,2
	2043	0	0	0	0	0	0	0	0	0
I	2003	-0,11	1,82	1,75	0,64	2,45	2,48	2,19	2,3	-0,16
	2043	2,02	1,19	1,03	1,83	2,1	2,0	2,03	2,04	1,88

From this table n°2, we notice that tariff dismantling with respect to the EU involves a fall in the prices of the European imports of origin and a rise in the prices of the imports coming from the area except European Union, which shows a diversion of the exchanges in favor of the EU. The imports of the latter increase in all sectors in short and long run.

On the other hand, the imports of origin (except EU) decrease for sectors. However, the effects which results from it, are in an increase in the imports of all the long run products.

Gradual liberalization implies that the increase in the composite imports of all the sectors is more important in short and long run. The increase in the imported quantities involves a reduction in all the interior prices (price of the domestic products) as well as the compound products. This involves a relative rising of prices of exports, leading to an increase in the exported quantities of all the sectors in long run. This increase in exports is explained by the competition strengthened by the liberalization of the exchanges which obliges the Moroccan firms to improve their competence and to strengthen their productivity in order to compete with the foreign producers.

As for the determinants of the sector-based investment, we notice that, in the short run, the shock involves an increase in the investment of all the sectors, except for the sector of agriculture and the commercial services, compared to his reference level. This increase in the investment is due to the fall of the price of acquisition of capital (since only the consumer goods support the rise of TVA). If we analyze the results deeply, we note that, the ratio (q/PK) which represents the real price implicit of the capital increases in all the sectors, which stimulates the investment, the accumulation of the capital and employment in particular in the sector of mechanical engineering industry and metallurgical and the industry of the textile.

However, under the impact of the TVA, the price of the capital starts to increase and the firms anticipate a future fall of their productivities. Consequently, the investment starts to decrease and accumulation slowed down in the long run.

In the long run the investment decreases compared to its reference level for all the sectors except for the sectors of the mechanical engineering industry and metallurgical, agriculture and the commercial services.

5. Conclusion

Tariff dismantling will exert a pressure on the balance of public finances by the mechanical reduction in the customs receipts. It would be difficult for Morocco to compensate this loss of the resources by a reduction notable in the expenditure, because of the importance of the requirements in infrastructure (education, health and safety in particular) and of the additional expenditure to finance the effects of sectors reallocation pulled by the exhibition increased to foreign competition (the programme of levelling of the economy, funds of promotion exports, employment support, etc). The government can resolve the problem primarily by increasing the receipts. Not to dig the primary education public deficit. Two types of solution can be considered. The first consists in finding another source of direct taxation and the second consists in weighing down the indirect tax pressure. According to the rules of looping of our model, the equilibrium of the government budget through indirect taxation does not seem be efficient. It involves the contraction of the whole of the sectors, except for the mechanical engineering industry and metallurgical sector, and a deterioration of the overall welfare of 0,71%. Other budgetary solutions of netting could be suggested, they are two. The first which are relating to the reduction of the grants at the same time on production and consumption of certain products. The second option consists in reducing, see eliminating, the tax incentives granted to certain manufacturing sectors (agriculture for example) or to certain categories of firms (offshore oil).

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