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Women's changing participation in the Labor Force.
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Abstract

We examine, in this article, the effect, on the women's participation in the labor market, of increasing commercial opening of the Moroccan economy (further to the Association Agreement with the European Union, the Agadir Agreement, etc.). To do this, we build a multi-sector computable general equilibrium (CGE) model, which differentiates the work of men and women. The model is then calibrated on real data of the Moroccan economy before being used for analytical purposes. It highlights an improvement of the employment demand of womens in the main exporting sectors in particular the agriculture, food-processing industry and that of the leather and textile industry. From the methodological point of view, an unconditional sensitivity analysis allows to give evidence of the robustness of the results1.

Key words: Commercial opening, gender, labor market, computable general equilibrium model.

JEL : F14, F16, J11, D58

<u>Résumé</u>

Les relations entre l'intégration commerciale et le développement des pays en développement ont fait l'objet de nombreuses réflexions. On examine, dans cet article, l'effet, sur la participation des femmes au marché du travail, de l'ouverture commerciale croissante de l'économie marocaine (suite à l'accord d'Association avec l'Union Européenne, l'Accord d'Agadir, etc.). Pour ce faire, on construit un modèle d'équilibre général calculable à plusieurs secteurs, qui différencie le travail des hommes de celui des femmes. Le modèle est ensuite calibré sur des données réelles de l'économie marocaine avant d'être utilisé à des fins analytiques. Il met en exergue une amélioration de la demande d'emploi des femmes dans les principaux secteurs exportateurs notamment l'agriculture, l'industrie agro-alimentaire et celle du textile et cuir. Du point de vue méthodologique, une analyse de sensibilité inconditionnelle permet d'attester de la robustesse des résultats.

1 Introduction

Like many Mediterranean countries, Morocco, since its adhesion to the GATT in 1987, made of the commercial integration policy the key of its development. The Association Agreement signed with the European Union (E.U.) in 1996 came into effect on March first, 2000. It truly constitutes the symbol of this policy of integration. It provides in particular that Morocco and the countries of EU must, consecutively with the progressive reduction of the customs duties, to facilitate the access of the partner to their respective markets. This reduction should succeed in the long term, In other words since 2012, with an agreement of complete free trade. Let us note that Morocco concluded some similar trade agreements with Turkey (2005), the United States (2006) as well as with several Arab countries - regarding this last case, it is the Agadir agreement (2007)[2].

The opening to other regional zones thus became, for Morocco, a priority axis of economic policy. Expected effects of such policy are double: On the one hand, the acceleration of the growth in Morocco; on the other hand and more generally, the improvement of its economic performances, the whole under the effect of the significant growth of the exchanges resulting to a greater competition.

The commercial turning operated by Morocco, just as those undertaken by other countries of the euro-Mediterranean zone (Tunisia, Jordan, etc) raises theoretical and political questions. In general, the analysis of the impact of the commercial opening on the growth and the employment made since a few years already the object of a special attention of the political decision makers of these countries. To answer this request, one attended the flowering of many work, mainly quantitative. This work support on simulations carried out using computable general equilibrium models: thus, Marouani (2000, 2004 and 2008) has been interested in the consequences of the Tunisian commercial opening on the well-being and unemployment, Abdelkhalek and Abdelkhalek and others (2006) on its effects as regards poverty with Morocco and Bouzhazah and others (2007) on the bond between commercial opening and migration in Morocco.

The results of this various work are however contrasted. They did not allow to clearly identify a relation between the degree of opening of the various studied countries and the modification of the characteristics structural of the socio-economic environment. As opposed to what lets think a certain interpretation of the theories free-traders, materialized by the consensus of Washington3, the beneficial effects of the liberalization of the exchanges on the growth and the employment are not always univocal, at least in a dynamic approach. For Abdelkhalek (2006), for example, the Association Agreement should increase the possibilities of exploitation of the scale economies of Moroccan production and to thus increase the productivity of the sectors which would succeed to be adapted to increased competition. In addition, the prices of many consumer goods should decrease and the population's capacity of purchase should increase in the long run. Nevertheless, in the short run, some negative effects are foreseeable, insofar as the

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[2] Come into effect in March 2007, the Agadir agreement concerns Morocco, Egypt, Jordan and Tunisia.

3 The "Washington Consensus" is transleted into a list of recommendations to the developing countries. It was prepared in 1989 by John Williamson and is located in the right line of the "recommendations" generally recommended by the World Bank and the IMF. The commercial opening is one of the key points of this program, in the line of the most traditional theories free-traders.

contraction of the production of certain sectors could generate unemployment and lower the wages.

It is however a related problem which until now has not attracted little interest yet: that of the potential consequences of the liberalization of the trade on the structure of the labour market, as well from the point of view of its sectoral composition as of its feminization. However, it is known, at least if one refers to the theory of the comparative advantages, that the external opening of a developing country starts a process of structural transformations which emerges, in fine, on a growth with strong coefficient of little qualified labour force. More precisely, the workers move towards the intensive sectors in labour, but on low level of qualification, in which the country concerned has a comparative advantage. It follows, with in step to doubt it, profound changes in the structure of the occupied active population, whether it is in terms of qualification level, sectors in growth, gender, age, etc.

Ever since the eighties, as Morocco liberalized its economy, one could note a clear tendency to the feminization of the labour market. Thus, the number of active women passed from nearly 1,2 million in 1982 to 4,1 million in 2010[4]. Expressed as a percentage, the share of the women in the active population was 19,7% in 1982 and 30,7% in 2010. These evolutions are however opposed by a parallel phenomenon of feminization of the under-employment: thus, in 2010, 39,2% of the provided active women with a diploma of higher learning were unemployed against 23,9% for the men.

These "stylized facts" present to the spirit, it is interesting to study up in which measure a part of the feminization of the Moroccan labour market can be allotted to the liberalization of the trade that has known its economy since two decades. More useful still is to envisage the long-term transformations of the Moroccan labour market and to know if the former tendencies will continue or it will accelerate, taking into account the increasing opening of Morocco in the years to come.

A priori, as the majority of Moroccan female employment is concentrated in the sectors of exchangeable goods, particularly the textile, the clothing or the agro-alimentary, we would be expected to wait for a reduction policy of the trade barriers to feeds the tendency to feminization. (Marouani (2000) highlighted off such effects one the example of Tunisia.) A Moroccan specificity plays in the same direction: the fact that the female employment is located in the private sector and merchant of the economy (Assad, 2006). (The situation thus differs from that off countries like Egypt where the request offemale employment emanates primarily from the State).

Always it is that this article is mainly fasteners to answer a double question: the acceleration of the commercial opening of Morocco affects it and by which channels, the sectoral composition off the employment? Does it Start - and according to which methods - a process reallocation of total work between men and women? Complementarily, we will also try; to evaluate the general impact of thesis phenomena one

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[4] Several macroeconomic factors were advanced to explain the increasing feminization of developing economies. We can mention, among others, the structural adjustment programs (Catagaly and Ozler, 1995), the deregulation of labor markets, (Schultz, 1990), etc

the aggregate well-being of the households and the inequalities of incomes between the genders.

The tool of analysis is consisted of a multisector computable general equilibrium model, which differentiates work according to if it's male or female. This model will allow us to study, in a suitable formal framework, the consequences of the progressive reduction of the customs duties such it is envisaged by the Association agreement; between Morocco and the European Union.

Such an approach by the computable general equilibrium is justified for two reasons at least: On one hand, the consideration of all the markets of the economy is certainly preferable with an analysis of partial balance; On the other hand, the relative scarcity of the statistics available makes vain any attempt of direct econometric estimate.

The continuation of this article, consequently, is organized as follows. The second section presents a sectoral analysis of the Moroccan economy, while the third details the structure of the model. Fourth is devoted to its calibration, thus to the definition of the scenarios considered and the discussion of the results. The fifth implemets a systematic sensitivity analysis of the model, so as to control the robustness of the results obtained. (Let us note that it acts there a methodological characteristic of our work.) Lastly, the sixth and last section report of work, while outlining some of its possible prolongations.

2   Structure of the Moroccan economy

The agricultural sector represents in 2010, 21,2% of the total GDP of Morocco. In addition, 12,8% of its production are exported. It still occupies solely nearly 60% of the active population of which about half are women. These last works mainly in the breeding and horticulture sectors.

The manufacturing industry contributes, as for it, to a total value of 26,7%, of the formation of the total GDP, 60% of total exports and 83% of the total imports. These figures testify a high degree of dependence of the sector with the regard of the foreign trade. Within the employment, the formal industrial sector employs 1,3 million people, that is to say 13,4% of the total workforce of the country.

One should note that the industry occupies more than 202.000 women, of which 86% work in the urban industrial parks. They are particularly present in the manufacture of clothing, fabrics, shoes, electricals appliance and agro-alimentary products which, thereafter, are exported by transnational corporations.

It is necessary for us to insist on the singularity of the under-sectors of the agribusiness industry and of textile-leather. On a side, these under-sectors gather the greatest of number indeed; companies; their share in the industrial added-value is respectively of 15,5% and 17,5%. Of the other, these two dies headlights are prone to several handicapping factors relating to the level of the production costs, of the structure of fabric of the actors and the flexibility of the handiwork, the latter being less marked than that several directly competitor countries (Mc Kinsey, 2005). Let us retain finally that the "textile and leather" are provider of the three quats female employment in Morocco and illustrate for this reason, perfectly, the situation of the Moroccan workers.

Suppression with the world level of the quantitative restrictions on exports of textiles and clothing coming into effect on January 1, 2005 will without any doubt have (and has already) important consequences for these under-sectors and the whole Moroccan economy. 7

The agreement of free trade recently concluded with Turkey, producer important and diversified textiles, is a decisive element of this strategy, as it will allow the Moroccan companies to supply in textiles while complying with the rules of origin of the European Union. Agreements concluded with the European Union and the United States could also be advantageous with the sector; in particular, this last country is for the hour an almost unexploited market for Morocco.

A study of the United Nations, based on computable general equilibrium model GTAP (Total Trade Analysis Project), implies that Morocco could record in the long run a reduction of 11% and 18%, respectively, of its textile exportations of products and clothing following the elimination of the quotas. The whole would correspond to a fall of 0,22% of the Gross domestic product.

Moroccan agribusiness industries constitute the natural prolongation of the agricultural activities and halieutics. This sector holds a place privileged in the Moroccan economy, since it counts some 1745 establishments and ensures 25,5% of the total production. Its degree of external dependence is however weak, since the national market absorbs 88% of its production.

Other manufacturing industries, among which the mines, the metal workings, electric and electronic, chemistry and the parachimy, ensure 42,4% of the industrial production and generate 13,4% of the total GDP. Their exports account for 35% (in value) of the industry as a whole. The employment is primarily male here. Consequently, the proportion of the women is weak there and does not exceed 10% of the total of manpower of the sector.

The construction industries ensure, for their part, 16% of the industrial added-value. The proportion of the women is there, in a way little surprising, almost negligible.

In general, the impact of the Moroccan secondary industry (all at least its "emerged" part) on the growth remains weak (26,7% of the GDP).

The services represent in Morocco 42,7% of the Gross domestic product and occupies 30,2% of the active population to work. The increase in the employment was there three times that of the secondary industry and more of once and half that of the agriculture, which illustrates the potential of this sector in terms of expansion. However, its feminization is not very visible yet, although the one witnesses an increase in the number of women in the Moroccan administration (table 1).

Table 1. Feminization of the Moroccan administration

Years	1970	1981	1985	2008
Feminization rate	1,5	13,3	20,9	32,1

Also let us announce that the trade, transport and tourism take there a choice place with 51,4% of the added-value released by the entire service sector. Exports, they, account for 21,8% of the total of exports.

To finish this turn in horizon of the Moroccan economy, here a table which details the share of the various sectors in the principal large aggregates of the economy. (The significance of the various sectoral abbreviations is detailed in A1 table attached to this article.)

Table 2. Sectoral distribution of the principal aggregates of the Moroccan economy (Shares in %)

	P	D	w	wf	wm	M	X	X/P	M/D
AGR	14,6	14,9	5,3	11,6	3,4	16,8	13,1	12,6	19,6
IAA	11,3	11,6	4,1	10,8	2,1	6,2	9,7	12,0	9,4
ITC	7,1	3,5	5,9	18,2	2,3	16,3	29,4	57,8	81,1
AIM	18,8	18,5	12,8	5,6	14,9	60,7	21,0	15,7	57,2
BTP	7,1	8,3	4,7	0,0	6,1	0,0	0,0	0,0	0,0
CTT	16,8	18,5	14,9	6,6	17,3	0,0	4,9	4,9	0,0
ASM	15,0	14,0	25,0	11,0	29,1	0,0	19,5	19,5	0,0
SNM	9,2	10,8	27,4	36,3	24,8	0,0	0,0	0,0	0,0
Total	100	100	100	100	100	100	100	14	17,4

Note: P is the production, D is the domestic demand, W is the wage rate, WF the female wage rate, Wm is the male wage rate, M are the imports and X exports.

3   Presentation of the model

The model used is a static multi-sector general equilibrium model. It registered voter in the line of the models built by Shoven and Whalley (1970) like Decaluwé and Al (2001). Three agents, namely explicitly there the consumers, the producers and the public authorities, are introduced. However, to take into account the foreign trade and more generally the degree of opening of the Moroccan economy, we add a fourth agent to it: the rest of the world.

3.1   Behavior of the companies

For each of the 8 sectors of the Moroccan economy, subscripted by I, the behavior of the companies is summarized by that of a representative firm. Each one of them uses a technology with constant returns and operates in perfect competition. The production, of sector I is a combination, in fixed proportions, added-value and intermediate consumptions. Thus we specifiy a production function of the Leontief type.

$$Y_i = \min\left[\frac{CI_i}{oi_i}, \frac{V_i}{v_i}\right], \tag{1}$$

Where CI_i represent the total intermediate consumption of sector I and V_i the added-value of this same sector. Parameters oi_i et v_i and are the technical coefficients of the Léontief function. They respectively represent the quantities of intermediate goods and added-value necessary to the production of one unit of good I. Of course, there are the restrictions[5]: : $0 < oi_i < 1$, $0 < v_i < 1$ et $v_i + oi_i = 1$.

Then, the added-value is modelled in the form of a function on two floors. On the first floor, we finds a combination, traditional, of capital K_i and of incorporated work L_i, combination which is formalized with the Cobb-Douglas type function with an elasticity of technical substitution equalizes to a unity, is:

$$V_i = A_i K_i^{\alpha_i} L_i^{1-\alpha_i}, \tag{2}$$

A_i is a parameter of scale specific to sector I and α_i the share of the incomes of the capital factor in the added-value of good I.

One of the singularities of the model resides in the differentiation of work according to it is exerted by men and women; moreover, work is sectorielly substitutable with variable degrees. On the second floor thus, a function with elasticity of constant substitution (ECS) makes it possible to take account of this differentiated substitutability. Which is written:

$$L_i = \left[\beta_i L_{i,m}^{\frac{\theta_i-1}{\theta_i}} + (1-\beta_i) L_{i,f}^{\frac{\theta_i-1}{\theta_i}} \right]^{\frac{\theta_i}{\theta_i-1}}, \tag{3}$$

where β_i is the share of male's work in the total work of sector I and θ_i is the elasticity of substitution of the two types of work in this same sector.

The women's labour demand relative to that of men is, for the companies, a decreasing function of the female wage relative, which can be put as follow:

$$\frac{L_{if}}{L_{i,m}} = \left[\left(\frac{w_{i,m}}{w_{if}} \right) \left(\frac{1-\beta_i}{\beta_i} \right) \right]^{\theta_i}, \tag{4}$$

In order to take account of the possibility for a producer of selling at the same time on the local market and the exterior markets, we supposes that the transformation of the products is imperfect, taking into account that they are intended for the local market or to export. This mechanism is modelled with the help of; a constant elasticity of transformation function (CET). In a formal way we have:

$$Y_i = A_i \left[\alpha_i x_{ir}^{\frac{\varepsilon_i-1}{\varepsilon_i}} + (1-\alpha_i) x_{im}^{\frac{\varepsilon_i-1}{\varepsilon_i}} \right]^{\frac{\varepsilon_i}{\varepsilon_i-1}}, \tag{5}$$

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[5] The strict positivity of the coefficuients imlplic that sector I production requires at the same time intermediate inputs and value-added.

Where the index r and m respectively indicates the reste of the world and Morocco and ε_i the constant elasticity of transformation, with $-\infty \prec \varepsilon_i \prec 0$.

with Producer I, while maximizing his profit, can affect his production in variable proportions Y_i, either for exports x_{ir}, either for the local sales x_{im}. At the optimum, the share of the local production relative to the exported production is thus:

$$x_{im} = \frac{1-\alpha_i}{\alpha_i}\left(\frac{q_{ir}}{q_{im}}\right)^{\varepsilon_i} x_{ir}, \tag{6}$$

With q_{im} and q_{ir} the prices for the producer of good I for saling respectively on the domestic markets and outside (in this last case, the taxes on export are included).

3.2   The behavior of the households

It is supposed that there exists a representative household whose decisions of consumption depend on its income, prices and its preferences. These last are expressed by a utility function which one specifies as being of Cobb-Douglas type. It writing in the following way :

$$U_m = \prod_{i=1}^{8} x_{im}^{\mu_m}, \tag{7}$$

with x_{im} is the quantity of the composite good (a composite good is a basket made up of domestic and imported products) demanded per m, the Moroccan consumer, and μ_{im} the constant share of the income spent for the acquisition of this composite good I. Of course, we have $\mu_{im} \geq 0$ and $\sum_{i=1}^{8} \mu_{im} = 1$.

The representative consumer is supposed to make a distinction between the goods according to their geographic origin of production. Thus, the Moroccan consumer consider as imperfectly substitutable two intrinsically identical goods, since one is produced in Morocco and the other abroad[6]. In other terms, we suppose: 1. that on the market, the elasticity of substitution is constant; 2. that this elasticity is also constant for any couple of goods being competed with on the same market. Consequently, the demand function of the representative household takes the form of a CES function, which would mean:

$$x_{im} = \left[\beta_{im,m}^{\frac{1}{\sigma_i}} x_{im,m}^{\frac{\sigma_i-1}{\sigma_i}} + (1-\beta_{im,m})^{\frac{1}{\sigma_i}} x_{im,r}^{\frac{\sigma_i-1}{\sigma_i}}\right], \tag{8}$$

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[6] This assumption is known as the Armington assumption (see Armington (1969)). It makes it possible to take into account the difference of prices between identical goods, but locally produced or imported. It represents an alternative at the same time compared to "traditional" work (local and foreign products are perfectly homogeneous, the elasticity of substitution being infinite) and "structuralist" (the differentiated products are perfectly complementary, the elasticity of subsititution being zero).

The notations are transparent: σ_i is the elasticity of substitution between the local and imported goods of the same sector (which means of a same composite good), $\beta_{im,m}$ indicate the parameter of preferences for the local goods, while $x_{im,m}$ and $x_{im,r}$ represents the quantities of good I product respectively in Morocco and in the rest of the world. The "under utility" function –i.e the equation (8) - can be interpreted as an aggregate which is the price index is associated:

$$p_{im} = \left[\beta_{im,m} p_{im,m}^{1-\sigma_i} + \left(1 - \beta_{im,m}\right) p_{im,r}^{1-\sigma_i} \right], \tag{9}$$

In (9), $p_{im,m}$ and $p_{im,r}$ represents the paid price by the Moroccan consumer for the acquisition of the same good I, product either in Morocco, or in the rest of the world. The price of the imported goods I includes, in addition to the producing price, $q_{im,r}$ a share relating to the tariff barriers and another to the VAT. Also, we have the following relation between the two prices:

$$p_{im,m} = q_{im,m} (1 + \tau_i^{va}), \tag{10}$$

$$p_{im,r} = q_{im,r} e_i^{mr} (1 + \tau_i^{dd})(1 + \tau_i^{va}), \tag{11}$$

Where τ_i^{dd} the rate, *ad valorem*, of the tariff barriers, τ_i^{va} the rate of the value added tax (an interior tax on the consumption of certain goods included) and e_i^{mr} is a fixed nominal exchange rate between the Moroccan currency, the dirham, and the dollar (all flows in currencies are thus expressed in dollars).

The representative household determines the quantities to consume from each good by maximizing its utility (equation (1)) under a budgetary constraint. The overall expenditure is equal to the sum of the related spending with the purchase of the goods coming from the two areas (Morocco and the rest of the world are indexed per m and r with $M = \{m, r\}$) should not exceed the resources of the household, W^m.

The constraint of budget is writing thus:

$$\sum_{k \in M} p_{im,k} x_{im,k} W^m, \tag{12}$$

For the households income, it is made up of a constant share λ^m, capital incomes, male's and female's wages, w_m and w_f, transfers of the State T^E also of those received from the rest of the world T^r. Ultimately, we have:

$$W^m = \lambda^m \sum_i r_i K_i + w_m \sum_i L_{im} + w_f \sum_i L_{if} + T^E + T^r, \tag{13}$$

The income of the representative households is not entirely consumed. Indeed, a part is devoted to transfers to the rest of the world TRM^v and another to saving E. implicitly, like the investment is exogenic, it adjust to saving so that I=E.

The amount of the saving is given by:

$$E = W^{m}(1 - \tau^{dm}) - \sum_{k \in M} p_{im,k}\, x_{im,k} - TRM^{v}, \tag{14}$$

where τ^{dm} is the tax rate on the households income.

The determination of the optimal vector of consumption is realized in two stages. First of all, the representative consumer distributes his consumer expenditure W^{mc} (a fraction of its total income W^{m}) between the various types of composite goods in their conscrant a fixed share of the income μ_{im}. So we have:

$$x_{im}\, p_{im} = \mu_{im} W^{mc}, \tag{15}$$

It distributes then its expenditure between domestic products and imported products and this, for the different sectors concerned. Ultimately, final consumptions are given by:

$$x_{im,r} = \beta_{im,r} \left(\frac{p_{im,m}}{p_{im,r}} \right)^{\sigma_i} x_{im,m}, \tag{16}$$

The relation (16) means that the demanded quantity of the good I, produces abroad is, in good logic, a decreasing function of its price $p_{im,r}$.

3.3. Public authorities

The behavior of the public authorities is not explicitly modelled[7]. The State is satisfied to raise four types of taxes (taxes indirect, customs duties, tax on the household income, income, tax on the company's income) which the product is used to finance its different expenditure. Its receipts are thus composed of the incomes of the indirect taxation:

$$RTI = \sum_{i} \tau_{i}^{va}[q_{im,m} x_{im,m} + (1 + \tau_{i}^{dd})e_{i}^{mr} x_{im,r}], \tag{17}$$

Of incomes related to the customs duties

$$RDD = \sum_{i} \tau_{i}^{dd} e_{i}^{mr} q_{im,r} x_{im,r}, \tag{18}$$

and of those related to the direct taxes on the households and the companies

$$RTD = \tau_{dm} W^{m} + \tau_{de} W^{e}, \tag{19}$$

Let us note in addition that the public expenditure is consisted of the consumer expenditure and of the investment, of the debt service and transfers carried out in favour of various agents.

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[7] In the sense where the public authorities do not adopted an optimizing behavior.

4   Calibration, scenarios and simulations

Thus we have already announced, the countable framework of the model is provided by the social accounting matrix of the Moroccan economy built starting from the data of the input-output table (I.O.T.) 2005 published by The High Commission for Planning in 2002 (for brevity, we will not describe all the operations which make it possible to pass from IOT to the matrix in question).In addition, volumes of male's and female's work per sector are obtained by disaggregating the labor demand total of the corresponding sector.

Apart from those relating to the labor market, all the parameters were calibrated as usual now[8]. Let us note simply that the elasticity of substitution between female's work and male's work, in the absence of econometric estimates specific to Morocco, was fixed, like Fontana and Wood (1999), to 0,5[9].

The following table provides the values retained for the various parameters:

	Parameters by branch					Parameters by product
	σ_i	ε_i	PmL	PmK	θ_i	PmC
AGR	0,60	0,9	0,05	0,29	0,5	0,20
IAA	0,6	0,9	0,04	0,04	0,5	0,25
ITC	0,6	0,9	0,06	0,04	0,5	0,07
AIM	0,6	0,9	0,13	0,14	0,5	0,15
BTP	0,6	0,9	0,05	0,04	0,5	0,02
CTT	0,6	0,9	0,15	0,26	0,5	0,14
ASM	0,6	0,9	0,25	0,19	0,5	0,19

Note: PmL is the marginal productivity of labour, PmK is the marginal productivity of the capital and PmC is the marginal prpoension to consume per product.

Three scenarios principal were considered. The first corresponds to the maintenance in the state of the commercial relations between Morocco and the European Union. The second considers a suppression partial (25%) of tariff barriers, distributed in a uniform way on all the sectors, the public saving remaining constant. The third supposes the total dismantling of all those barriers, but always with constant public saving. This way, it is possible to compare a reference state (scenario 1) with the final state corresponding to an intermediate stage (Sim1) or to the ultimate stage of constitution of a free exchange zone with the rest of the world, in particular the Europe (Sim2).

Let us note that the total removal of the customs duties and other barriers means the free access to the Moroccan national market of all the goods coming from the foreigner, industrialists like agricultural. On the other hand, for the rest of the world, it affects only the Moroccan agricultural produce, the industrial goods profiting from the free access since the Seventies.

To appreciate the gain or the loss of well-being consecutive to a modification of the prices and incomes, we built an indicator of equivalent variation within the meaning

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[8] See *Decaluwé* and others (2001).
[9] This value translates the weak substitutability between men's work and that of women.

of Hicks (VEH)[10]. The principle in is simple. That is to say the indirect utility function of monetary µ (Q; p, W) which measures the sum (monetary) of which the consumer, confronted with the vector of the prices Q, need to be at least as well as if the vector of the prices were equal to p and its income equal to W. The function µ is thus identically equal to the expenditure function E (Q; v (p, W)):

$$\mu(q\,;p,w) = e(q\,;v(p,w))\,,\tag{20}$$

where v (p, W) represent the level of utility associated with the income W. if we consider the two states µ (Q; p', w') and µ (Q; p0, w0), the equivalent variation is then defined by:

$$\Delta V = \mu(p_0;p',w') - \mu(p_0;p_0,w_0) = \mu(p_0;p',w') - w_0\tag{21}$$

This measurement of the difference of the utility takes as bases the current prices and answers the question of knowing which variation of the income at these current prices would be equal to the modification under consideration in terms of its impact on the utility. On the whole, a gain (resp. a loss) of well-being is measured by a positive equivalent variation (resp. negative).

In a practical way, simulations considered consist of a shock related to the reduction of the customs duties, 25% or 100%, on all the imported goods. In order to neutralize the effect of the degradation of the public saving consecutive to the losses of customs receipts on the labor market, in particular female, we supposed that the shortfall due to the dismantling of the tariff barriers is compensated by taking away corresponding to the title of the indirect taxation, primarily the value-added tax. An alternative consist to be supposed, following Dessus and Suwa-Eisenmann (1998), that these budgetary losses are counterbalanced by an increase in the tax household income. Nevertheless, in the case of Morocco, the income taxes seem capped; in any case, it is what arises from the observations of the last mission of the technical assistance of the IMF. For these reasons, the public saving is maintained constant due to the levies on the receipts of the indirect taxation, in particular the VAT When the customs duties it lower by 25%, the sectors where the female employment demand increases more, consecutively with liberalization, are those of agribusiness industries, the textile and leather. Like we have announced, it concern there the principal exporting sectors of the Moroccan economy. Such an assertion is perfectly in agreement with the theory of Hecksher, Ohlin and Samuelson, since the fall of the production costs allows *in fine* to increase exports significantly and to thus limit the losses pulled by the increased competition of the products imported on the domestic market.

In contrast, the sectors which lost more of female's employment are the sectors of the "non-tradables goods", such as communication, transport and tourism as well as the other commercial services which are protected sectors.

The gains or the losses in the movement of the two types of work, female and male, influence, at the same occasion, on the sense of variation of the values-added generated by the sectors. In particular, the creation of the value-added is operate in the sectors gaining of work. The magnitude of the labor demand impact on the

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[10] For more details on this point, see Hicks (1946, additional note A) and Shoven and Whalley (1992).

values-added depends itself on the value of the marginal productivity of these factors.

Count 4. Réallocation of female and male's work and effects on the values-added (Sim1)

	AGR	IAA	ITC	AIND	BTP	CTT	ASM
Lf	+ 2,9%	+ 4,5%	+ 5,6 %	- 3,3%	-	- 5,5%	- 4,6%
Lm	+ 3,7%	+ 3,9%	+ 3,6%	- 6,5%	+ 1,5%	- 4,8%	- 3,7%
Total V	+ 2,7%	+ 4,8%	+ 4,6 %	- 5,5%	+ 3,5%	- 3,8%	- 3,7%

The increase in the uniform female wage rate can be explained by the rise of the values-added in the agricultural sector, the agribusiness industry, the industry of the textile and leather and that of the Buildings and Public Works sector (BTP) which are carried on the falls recorded in other industries, the BTP, the trade, transport and tourism also in the other commercial services. Following the increase in this uniform wages rate, the well-being of the households recorded a gain equal to a positive equivalent variation in an order of 0,1% of the GDP.

As for simulation 2, when the customs duties are abolished, it is prove that the branches where the demand for female labor increases more are primarily agribusiness industries, textile and leather. They are not protected sectors and consequently, exporters, of the Moroccan economy.

The sectors which lost more female labor are those of the "non-tradables goods" such as Buildings and Public Works, communications, transport and tourism as well as the other commercial services. They are sectors excellently protected.

Count 5. Réallocation of work and effects on the values-added (Sim 2)

	AGR	IAA	ITC	AIND	BTP	CTT	ASM
Lf	+ 4,8%	+ 6,5%	+ 7,6%	- 5,3%	-	- 7,5%	- 6,6%
Lm	+ 5,7%	+ 5,9%	+ 5,6%	- 7,5%	+ 2,5%	- 6,8%	- 4,7%
V totale	+ 4,7%	+ 6,8%	+ 5,6%	- 6,5%	+ 4,5%	- 5,8%	-5,7%

Following the increase in the uniform wage rate, the well-being of the households recorded a gain much more important than simulation 1, which is confirmed by an "equivalent variation" of Hicks positive in the order of 0,2% of the GDP.

It should be noted that in two simulations, a tendency to the standardization of the female's and male's wages rate is observed. Obviously, this is not valid only under a hypothesis of imperfect substitution between female's labor and male's labor.

5 Sensitivity Analysis

In general, the sensitivity analysis consists in studying the robustness of simulations obtained. Indeed, when a computable general equilibrium model is calibrated, it is not possible to fix, with certainty, the value of each one of its parameters. It is particularly the case of elasticities which we evaluate in a more or less *ad hoc* way. The uncertainty on their true values generates consequently an uncertainty on the out-put results.

5.1. Overview of the analytical method:

The sensitivity analysis consists in measuring the sensitivity of the final results by evaluating the impact of the modifications of the parameter's values on the values of the out-put variables. While referring us to Abdelkhalek and Dufour (1998, 2002) and Dawkins (2005), we can distinguish two great types of procedures:

i) Systematic sensitivity analysis and conditional (for example Harrison (1986), Harrison, Jones, Kimbell and Wigle (1993)) study the effect on the final solution of unilateral perturbations (we can say one by one) of each parameter, the clause *ceteris paribus* are applying.

ii) Systematic sensitivity analysis and unconditional (Wigle (1991), Harrison, Jones, Kimbell and Wigle (1993)) examine a grid of values of the parameters by taking account of their possible interactions. This last approach is thus more rigorous, since it takes into account the cross effects between the various variables (Piet, 2002).

Several projections were made recently out of matter of unconditional analysis. Thus, Harrison and Vinod (1992) developed an approach by sampling of Monte Carlo resting on the specification *a priori* of a distribution for each parameter. Arndt (1996), De Vuyst and Preckel (1997) and Dawkins (2005), as for them, extended the preceding procedure by using the Gaussian quadrature method, usually used on occasion of numerical calculation of integrals. The latter presents the favours of being more sparing in calculations and especially to be based on properly exact replications, and not approximated of model, contrary to the approache of Harrison and Vinod which underestimates the variability of the parameters (De Vuyst and Preckel (1997)).

Via an unconditional sensitivity analysis, we wish to check that the variability of the model as a whole is not too important in the event of simultaneous modification of all the parameters. To do this, the Gaussian quadrature method is implemented. While sending to Arndt (1996), De Vuyst and Preckel (1997) and Piet (2002) for more precise details, here is the essential.

Every model can be summarized with the vector function G (X, θ) =0 where X is the vector of the output variables and θ that of the parameters. The vector of the solutions, that we note x*, is thus a function of θ: x*=x* (θ). So the uncertainty relating to the vector of the parameters refers directly on that of the solutions of the model. The unconditional sensitivity analysis precisely consists in estimating the error relating to the vector of solutions of the model compared to the error relating to the parameters, the whole while taking of account the effects of interaction between those latter. It consequently amounts to estimate the moments (we stoped generally with the expectation and the variance) of the vector x* and this, according to the hazard θ. So, we show that the expectation of the solutions of the model is a function of the potential values of the vector of the parameters:

$$E[x^*(\theta)] = \int_\omega x^*(\theta)g(\theta)d\theta \qquad (22)$$

 where G(θ) represents the density of the random vector absolutely continuous θ and ω indicates the area of integration, in this case all the values which can take the parameters. (Without going into the details, let us note simply that the Gaussian quadrature method make it possible to evaluate the integral (22).)

Following Arndt (1996) and Piet (2002), there will be recourse, to estimate the distribution of the parameters, with a quadrature with order 3, which bases itself on the formula of Stroud.

5.2. Application of the unconditional procedure

We carry out first of all the calculation of the squarture for all the twenty and one elasticities of the model (three elasticities for each of the seven sectors). We evaluate also forty-two points of squarture: K = 1,..., 42. Lastly, we obtain the values of three elasticities for each of the seven sectors and of the forty-two points of squarture, that is to say a matrix with dimension 42x21. (It is attached to this article: cfr. A6 table.)

The following stage results in simulating the model once again. We concentrate then at the first two time of the vector thus generated. The first one between them (i.e the expectation) is to be compared with the solution given by the central values, or calibrated, of the parameters and the second one, the variance, with the variability of the parameters, which is posed equal to 20% in this case. The table 6 hereafter indexes all the results concerning the output variable "Well-being of the households".

Table 6. Output Values obtained by the Gaussian quadrature method (Variable "wellbeing)

1	299377,8	**15**	344127,1	**29**	378286
2	302371,6	**16**	347568,3	**30**	380177,4
3	305395,3	**17**	351044	**31**	382078,3
4	308449,3	**18**	354554,5	**32**	383988,7
5	311533,7	**19**	358100	**33**	385908,6
6	314649,1	**20**	361681	**34**	387838,2
7	317795,6	**21**	363489,4	**35**	389777,4
8	320973,5	**22**	365306,9	**36**	391726,3
9	324183,3	**23**	367133,4	**37**	393684,9
10	327425,1	**24**	368969,1	**38**	395653,3
11	330699,4	**25**	370813,9	**39**	397631,6
12	334006,3	**26**	372668	**40**	399619,8
13	337346,4	**27**	374531,3	**41**	401617,8
14	340719,9	**28**	376404	**42**	403625,9
Theoretical average (sim 1)=296416,2			**Theoretical average (sim 2)=296781,4**		
Empirical average 357688,8			**Standard deviation (ET)=31432,04, ratio AND average = 0,087875**		

It arises from the examination of this table that the model is relatively stable. Indeed, a variation of 20% of all the parameters generates an increase of 8,8% of the wellbeing of the households. That means that, even if an uncertainty remains as for the true value of certain parameters, it deteriorates only in a tiny measurement the direction and the value of the results.

It is finally possible to define a confidence interval on the variable "Wellbeing". To do this we used the Bienaymé-Tchebychev inequality, which is stated as follows: if X is a random variable admitting a moment in order 2, then for any K > 0.

$$P(|X\text{-}E(X)| \geq k) \leq \frac{\text{Var}(X)}{k^2}$$

Consequently, *mutatis-mutandis*, by considering a level of significance it follows that the "true average" μ of the level of wellbeing is included in the following interval:

$$P(217121,6 < \mu < 498\,256,1) \geq 0,95$$

It appears immediately that the "theoretical" averages obtained starting from simulations Sim1 and Sim2 are included in this interval.

6 Conclusions

This article wanted to be a contribution to the analysis of the impact, on the interior employment, of the insertion of Morocco in the worldwide economy. Its main result is summarized in a sentence: a larger opening of the Moroccan economy results in an increase in demand for female labor in the principal exporting sectors, in particular the agriculture, the agribusiness industry, the textile industry and leather.

More precisely, the increasing opening results in more female employment in the sectors which are competitive and intensives in the same time in this type of labor. Such a result confirms the relation between expansion of exporting industries and the increasing of the female employment, relation already observed by Cagatay and Ozler (1995), like by Ozler (2000, 2003). A flat however: if the female labor in these sectors is an object of a supported demand, it is because the female labour force flexible as much as is very underpaid there. Commercial liberalization in Morocco creates thus gaining and of the losers among the women according to their mobility and of the assignment of their work.

To finish, we would like to insist on some of the limitations of this article and also, in connection, on some of its prolongations. The first limitation of the model presented is due to its static character, which does not make it possible to recall the dynamic effects of the commercial opening. Moreover, this latter is modelled only under the angle of the suppression of the customs duties. However, the existence of noncustoms barriers is a fact. Their disappearance can, in certain cases, be proved more important than those of the customs duties. Undoubtedly, the incorporation of a dynamic form and barriers noncustoms in the model increase its realism. In the same way, not taken it into account of the arbitration between female work, leisures and housework implies the inexistence of perverse effects on female labor.

Lastly, the perfect competition is postulated on the markets of the goods and services. The introduction of elements of imperfect competition and the increasing returns to scale could at the very least moderate the results obtained. Similarly, the taking into account of the imperfect intersector mobility of the workers would constitute an interesting prolongation of this work.

It remains however - it will be the ultimate conclusion - that our model such it is founded on the selected hypotesis appears completely robust against the modifications of its essential parameters and consequently, its validity appears also assured.

7 Appendices

The abbreviations used in this appendix are the following ones:

WF: female wage rate; Wm: male wage rate; PVAi: price of the value-added of sector I; Yi: production of sector I; Lfi: female's labor demand per sector; Lmi: male's labor demand per sector; Pi: composite price of good I; RG: income of the State; RE: income of the companies; SG: savings of the State; SM: saving of the households; VEH: equivalent variation.

A1 table. Sectors selected

Code	Sectors
AGR	Agriculture and Fishing
IAA	Agribusiness industry
ITC	Textile industry, clothing and shoes
AIM	Different manufacturing industries
BTP	Building and public works
CTT	Trade, transport and tourism
ASM	Other commercial services
ADM	Administration

A2 table. Commercial liberalization and the prices variation

Variables	Basic year	Sim 1 (%)	Sim 2 (%)
Wf	1.000	1.056	1.095
Wh	1.000	1.025	1.078
PVA agr	1.000	2.560	5.823
PVA iaa	1.000	4.589	4.568
PVA itc	1.000	4.674	4.236
PVA aind	1.000	-6.256	-6.425
PVA btp	1.000	2.548	3.250
PVA ctt	1.000	-5.364	-5.612
PVA asm	1.000	-5.320	-3.610
P agr	1.028	2.256	3.584
P iaa	1.088	2.568	4.526
P itc	1.072	2.684	5.686
P aind	1.140	-5.642	-6.584
P btp	1.109	2.522	2.350
P ctt	1.048	-3.589	-5.364
P asm	1.058	-2.568	-5.684

A3 table. Commercial liberalization and sectoral productions

Variables	Basic year	Sim 1 (%)	Sim 2 (%)
V agr	69469,000	2,712	4,700
V iaa	15226,000	4,800	6,842
V itc	44034,000	4,600	5,600
V aind	14759,000	-5,500	-6,500
V btp	72121,000	3,500	4,511
V ctt	68124,000	-3,800	-5,825
V asm	68124,000	-3,700	-5,700
Y agr	97477,000	2,700	5,700
Y iaa	72673,000	3,900	5,900

Y itc	45532,000	3,600	5,600
Y aind	111978,000	-6,500	-7,500
Y btp	43006,000	1,500	2,500
Y ctt	107522,000	-4,800	-6,800
Y asm	97973,000	-3,700	-4,700

A4 table. Commercial liberalization and adjustment of work

Variables	Basic year	Sim 1 (%)	Sim 2 (%)
Lf agr	2950.000	2.900	4.800
Lf iaa	2736.000	4.5000	6.500
Lf itc	4617.000	5.600	7.600
Lf aind	1434.000	-3.300	-5.300
Lf btp	00.000	0.000	0.000
Lf ctt	1672.000	-5.500	-7.500
Lf asm	28035.000	-4.600	-6.600
Lm agr	2950.000	3.700	5.700
Lm iaa	1824.000	3.900	5.900
Lm itc	1979.000	3.600	5.600
Lm aind	12910.000	-5.600	-7.500
Lm btp	5318.000	1.500	2.500
Lm ctt	150052.000	-4.800	-6.800
Lm asm	25230.000	-3.700	-4.700

A5 table. Commercial liberalization and incomes

Variables	Basic year	Sim 1 (%)	Sim 2 (%)
W	299377.000	-0.989	-0.867
RG	83884.000	0.000	0.000
RE	128704.590	0.053	0.053
SG	4038.000	2.532	1.523
SE	19598.100	0.005	0.051
SM	39872.160	-0.147	-0.147
EVH/PIB	0.000	1.069	1,265

A6 table. Values of the parameters by the squarture method

Points/sectors	1	2	3	4	5	6	7
1	0.76781	0.625293	0.752899	0.673633	0.724403	0.641137	0.684852
2	0.762166	0.650022	0.705809	0.732681	0.612682	0.679819	0.515146
3	0.752899	0.673633	0.637763	0.765451	0.49419	0.713741	0.430294
4	0.740217	0.695599	0.562236	0.765451	0.43219	0.740879	0.515149
5	0.724403	0.715429	0.49419	0.732681	0.459783	0.759613	0.684855
6	0.705209	0.732681	0.4471	0.673632	0.562239	0.768828	0.769706
7	0.624852	0.74697	0.430294	0.599999	0.684855	0.767972	0.68485
8	0.662	0.757975	0.447101	0.526366	0.762167	0.757097	0.515144
9	0.637763	0.765451	0.494192	0.467318	0.752898	0.736852	0.430294
10	0.612682	0.769231	0.562239	0.434549	0.661998	0.708444	0.515151

11	0.587317	0.769231	0.637765	0.43455	0.537979	0.673567	0.684857
12	0.562236	0.765451	0.705811	0.46732	0.447099	0.634303	0.769706
13	0.537999	0.757974	0.7529	0.5637	0.437835	0.592993	0.864848
14	0.515146	0.746969	0.769706	0.600002	0.515151	0.5521	0.515142
15	0.49419	0.732681	0.752898	0.673635	0.637767	0.514065	0.430294
16	0.475596	0.715428	0.705808	0.732683	0.74022	0.481155	0.515153
17	0.459782	0.695598	0.63776	0.765451	0.767809	0.455334	0.684859
18	0.4471	0.673632	0.562234	0.76545	0.705806	0.438142	0.769706
19	0.437834	0.650021	0.494188	0.732679	0.587312	0.430605	0.684846
20	0.43219	0.625292	0.447099	0.673629	0.475593	0.433171	0.51514
21	0.430294	0.599999	0.430294	0.599996	0.430294	0.445688	0.430294
22	0.43219	0.574705	0.447102	0.526364	0.475601	0.467409	0.515155
23	0.437834	0.549977	0.494193	0.467316	0.587325	0.497039	0.684861
24	0.447101	0.526366	0.562241	0.434548	0.705815	0.53281	0.769706
25	0.459783	0.5044	0.637767	0.43455	0.767811	0.572589	0.684844
26	0.475598	0.48457	0.705813	0.467322	0.740213	0.614003	0.515138
27	0.494192	0.467318	0.752902	0.523672	0.637755	0.654581	0.430294
28	0.515149	0.45303	0.769706	0.600005	0.51514	0.691904	0.515157
29	0.538001	0.442025	0.752897	0.673637	0.437831	0.723746	0.684863
30	0.562239	0.434549	0.705806	0.732685	0.447104	0.748206	0.769706
31	0.58732	0.430769	0.637758	0.765452	0.538008	0.763826	0.684842
32	0.612684	0.430769	0.562231	0.765449	0.662009	0.769674	0.515136
33	0.637765	0.43455	0.494186	0.732678	0.752904	0.765402	0.430294
34	0.662002	0.442026	0.447098	0.673627	0.762163	0.751265	0.515159
35	0.684855	0.453032	0.430294	0.599994	0.684844	0.728104	0.684865
36	0.705811	0.46732	0.447103	0.526362	0.562227	0.697303	0.769706
37	0.724405	0.484572	0.494195	0.467315	0.459776	0.660698	0.684839
38	0.740219	0.504403	0.562244	0.434548	0.432192	0.620473	0.515134
39	0.7529	0.52637	0.63777	0.435451	0.494199	0.579026	0.430294
40	0.762167	0.549981	0.705815	0.467323	0.612694	0.53883	0.515162
41	0.767811	0.574709	0.752903	0.526374	0.724411	0.502283	0.684868
42	0.769706	0.600002	0.769706	0.600007	0.769706	0.471565	0.769706

1	2	3	4	5	6	7
-0.77272	-0.65182	-0.84336	-0.64615	-0.91902	-0.66304	-0.993
-1.02728	-0.78955	-1.12935	-0.93794	-1.15171	-1.07315	-1.0866
-1.15456	-1.09902	-1.05871	-1.14818	-0.84335	-1.01045	-0.67065
-1.02728	-1.09902	-0.74128	-0.82496	-0.65675	-0.64615	-0.88098
-0.77272	-0.78955	-0.67065	-0.66304	-0.99301	-0.97504	-1.14325
-0.64544	-0.65182	-0.95665	-1.01045	-1.12935	-1.09902	-0.74128
-0.77272	-0.90001	-1.15456	-1.12045	-0.77271	-0.67954	-0.77273
-1.02728	-1.14818	-0.95664	-0.7566	-0.68968	-0.86207	-1.15172
-1.15456	-1.01044	-0.67065	-0.70098	-1.05872	-1.14817	-0.84335
-1.02727	-0.70097	-0.74129	-1.07315	-1.0866	-0.75659	-0.68968
-0.77271	-0.70098	-1.05872	-1.07314	-0.71339	-0.75661	-1.11033
-0.64544	-1.01046	-1.12935	-0.70097	-0.74129	-1.14818	-0.95663

-0.77273	-1.14817	-0.84335	-0.75661	-1.11033	-0.86205	-0.64829
-1.02729	-0.89999	-0.64544	-1.12046	-1.02727	-0.67955	-1.02729
-1.15456	-0.65182	-0.84337	-1.01044	-0.67064	-1.09903	-1.0587
-1.02727	-0.78956	-1.12935	-0.66303	-0.80701	-097501	-0.65675
-0.77271	-1.09903	-1.0587	-0.82498	-1.14325	-0.64615	-0.91904
-0.64544	-1.09901	-0.74127	-1.14818	-0.95663	-1.01047	-1.12934
-0.77273	-0.78954	-0.67066	-0.93792	-0.64828	-1.07313	-0.71338
-1.02729	-0.65183	-0.95666	-0.64615	-0.881	-0.66303	-0.80702
-1.15456	-0.90002	-1.15456	-0.90002	-1.15456	-0.90002	-1.15456
-1.02727	-1.14818	-0.95663	-1.15385	-0.88096	-1.13695	-0.80698
-0.77271	-1.01043	-0.67064	-0.86204	-0.64829	-0.72684	-0.71341
-0.64544	-0.70097	-0.7413	-0.65183	-0.95667	-0.78958	-1.12936
-0.77723	-0.70099	-1.05873	-0.97506	-1.14324	-1.15385	-0.91899
-1.02729	-1.01047	-1.12934	-1.13695	-0.80698	-0.82494	-0.65676
-1.15456	-1.14817	-0.84333	-0.78953	-0.67066	-0.701	-1.05874
-1.02726	-0.89998	-0.64544	-0.67956	-1.0273	-1.12047	-1.02725
-0.77271	-0.65182	-0.84338	-1.04342	-1.11031	-0.93791	-0.64828
-0.64544	-0.87957	-1.12936	-1.099	-0.74126	-0.65183	-0.95668
-0.77274	-1.09904	-1.0587	-0.72683	-0.71342	-1.04343	-1.11031
-1.0273	-1.09901	-0.74127	-0.72688	-1.08663	-1.04337	-0.68965
-1.15456	-0.78953	-0.67066	-1.09904	-1.05869	-0.65182	-0.84339
-1.02726	-0.65183	-0.95667	-1.04337	-0.68966	-0.93798	-1.15171
-0.7727	-0.90003	-1.15456	-0.67953	-0.77275	-1.12043	-0.77269
-0.64544	-1.14818	-0.95662	-0.78958	-1.12936	-0.70095	-0.74132
-0.77274	-1.01042	-0.67064	-1.13698	-0.99297	-0.82501	-1.14326
-1.0273	-0.70096	-0.74131	-0.975	-0.65674	-1.15384	-0.88093
-1.15456	-0.701	-1.05874	-0.65182	-0.84339	-0.78951	-0.67067
-1.02726	-1.01048	-1.12934	-0.8621	-1.15172	-0.72689	-1.08664
-0.7727	-1.14817	-0.84332	-1.15385	-0.91898	-1.13698	-0.99296
-0.64544	-0.89997	-0.64544	-0.89996	-0.64544	-0.89995	-0.64544

1	2	3	4	5	6	7
0.411825	0.610567	0.383152	0.579665	0.364861	0.541684	0.45
0.468532	0.362124	0.551669	0.368355	0.616849	0.420336	0.525
0.627415	0.561362	0.531467	0.637876	0.411823	0.610566	0.4875
0.372582	0.561358	0.396333	0.403807	0.551671	0.368356	0.50625
0.531473	0.362125	0.639841	0.521082	0.489427	0.641026	0.496875
0.588171	0.61057	0.372582	0.561356	0.468536	0.362123	0.501563
0.358579	0.499995	0.570716	0.377528	0.570705	0.622478	0.499219
0.588179	0.389436	0.510562	0.641026	0.396336	0.403804	0.500391
0.531463	0.637877	0.411831	0.389428	0.627413	0.561368	0.499805
0.372587	0.438633	0.635136	0.541693	0.36016	0.478913	0.500098
0.62742	0.438647	0.364859	0.541676	0.639843	0.478932	0.499951
0.468522	0.637874	0.588183	0.389439	0.372579	0.56135	0.500024

0.451833	0.389426	0.489421	0.641025	0.603678	0.403818	0.499988
0.641421	0.50001	0.4293	0.37752	0.429278	0.622468	0.500006
0.411817	0.610561	0.627411	0.561372	0.531483	0.362128	0.499997
0.468542	0.362122	0.360156	0.521064	0.510553	0.641027	0.500002
0.627411	0.561372	0.603679	0.40382	0.448348	0.368349	0.499999
0.372578	0.561348	0.468516	0.637872	0.588162	0.610578	0.5
0.531483	0.362128	0.448348	0.368349	0.383162	0.42032	0.5
0.588163	0.610577	0.616838	0.579679	0.635133	0.541703	0.5
0.358579	0.499984	0.358579	0.499982	0.358579	0.49998	0.5
0.588188	0.389443	0.616858	0.42035	0.635144	0.458335	0.5
0.531453	0.637879	0.448315	0.631638	0.38314	0.579648	0.5
0.372591	0.438624	0.46855	0.36212	0.588192	0.389446	0.5
0.627424	0.438656	0.603655	0.596206	0.448311	0.631637	0.5
0.468512	0.637871	0.360161	0.478901	0.510593	0.358976	0.5
0.411841	0.38942	0.627426	0.43866	0.531444	0.637881	0.5
0.641421	0.500021	0.429269	0.622463	0.429312	0.377512	0.5
0.411808	0.610554	0.489456	0.358972	0.603651	0.596211	0.5
0.468552	0.362119	0.588155	0.610583	0.372596	0.438614	0.5
0.627406	0.561381	0.364869	0.45829	0.639837	0.521107	0.5
0.372573	0.561339	0.635146	0.458341	0.360154	0.521048	0.5
0.531493	0.36213	0.411804	0.61055	0.62743	0.438668	0.5
0.588155	0.610583	0.510597	0.358976	0.396309	0.596168	0.5
0.358579	0.499974	0.570685	0.622489	0.570739	0.377542	0.5
0.588196	0.389449	0.372597	0.438612	0.468498	0.637868	0.5
0.531442	0.637882	0.639846	0.478953	0.489466	0.358971	0.5
0.372596	0.438614	0.396309	0.596168	0.551634	0.631658	0.5
0.627429	0.438666	0.531501	0.362132	0.411854	0.389409	0.5
0.468502	0.637869	0.551636	0.631658	0.616827	0.579697	0.5
0.411849	0.389413	0.383172	0.420306	0.364873	0.458278	0.5
0.641421	0.500031	0.641421	0.500035	0.641421	0.500039	0.5

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