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“Impact of AfCFTA Implementation on the Moroccan Economy: A CGE modeling assessment”

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Outline

I. What and why?

II. Methodology

III. Key findings

IV. Conclusion

V. Next steps

I. Problematic and justification

- **On January, 2021, Africa entered a new stage in its regional integration with the establishment of the African Continental Free Trade Area (AfCFTA) agreement,**

- **Morocco is among the countries that have signed and are in the process of ratifying the AfCFTA agreement.**
  - **This trade liberalization will open a market of more than a billion potential consumers for Morocco: Trade with African economies not exceed 4% in 2019.**
  - **The economy could benefit considerably from the acceleration of trade in intermediate goods within the continent.**
  - **The industrial sector would be one of the most profitable sectors.**
  - **Empirical estimate of trade facilitation show an increase in sub-regional industrial trade,**

I. Problematic and justification

- Role of trade liberalization on dynamics of growth and development : Spillover effects, technology transfers, productivity, market access….

- No consensus about the impact of openness on growth in the case of developing countries.

- The assessment represents a growing interest for public decision-makers,

Problematic

- How can AfCFTA, by removal of tariffs on import and export, impact Morocan's economy, and by which transmission channels?

- The main objective is to assess the impact of a complete cancellation of customs duties between Morocco and its African partners on trade, sector dynamics and on other aggregate variables.

II. Methodology : Data and modeling strategy

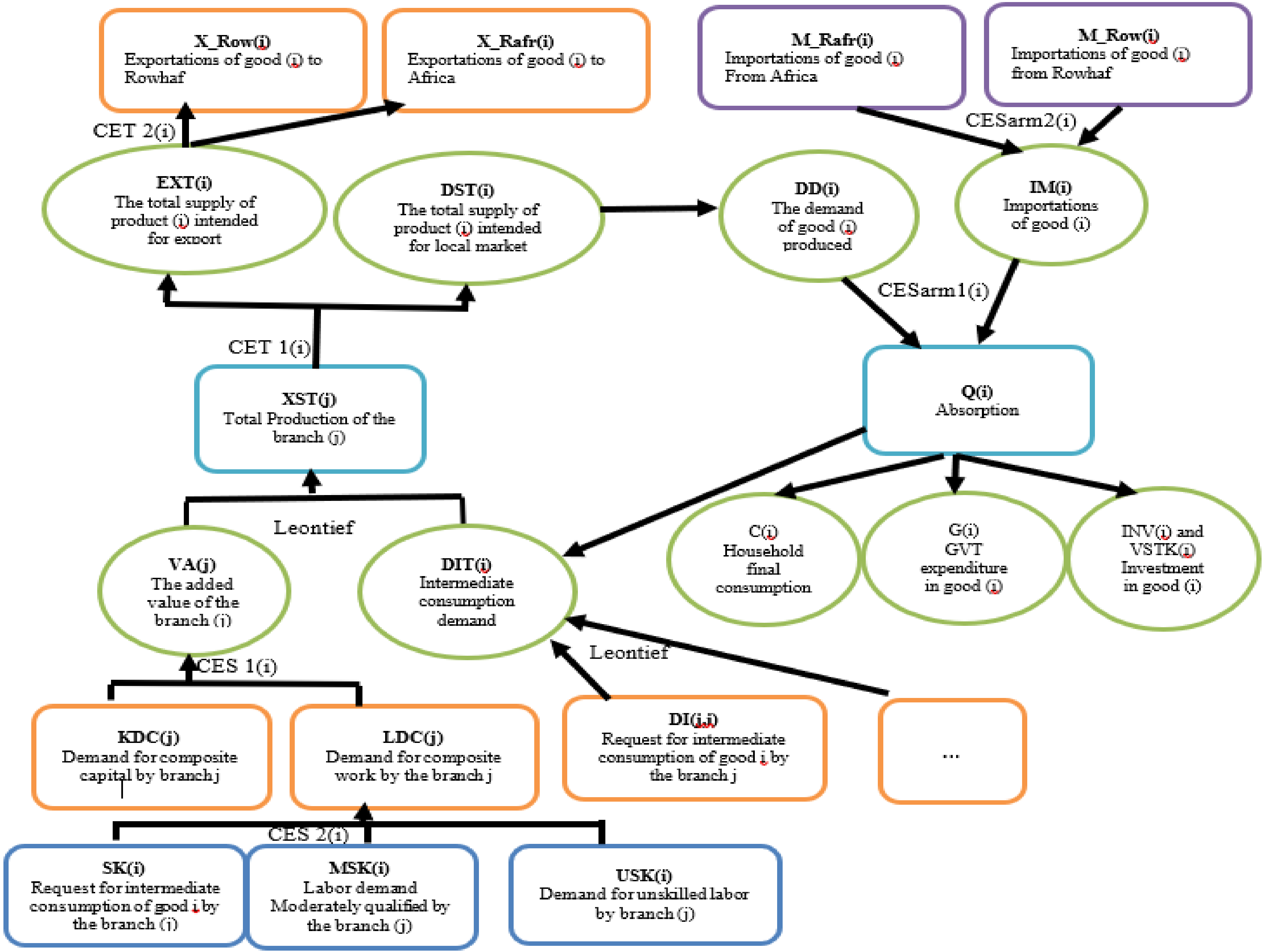
- National and static CGE Model for the Moroccan economy.
- Adapted from the PEP1-1 model and calibrated on the Moroccan SAM (2018) with 19 sectors,
- Disaggregation of the ROW account of the PEP1-1 model into two regions: Africa region (AFRICA) and rest of the world region excluding Africa (ROWHAF).
  - New branch in the CET (1) function which allocates the output of a branch between local sale and export. ***We added a disaggregation, using a CET (2) to allocate exports between the two regions*.**
  - ***We differentiated between the origin of imports by adding a branch in the CES (1) function which allocates absorption between the local product and total imports. This new branch is modeled using a CES (2).***

II. Methodology : Data and modeling strategy

- **Disaggregation of the labor on 3 factors: SK, MS and USK**

- Data on customs duties applied on export and import to or from Morocco by the two regions are extracted, by weighting, from the WTO database. These are the weighted averages by branch and by region: **Weighted on bilateral trade and by product.**

- The elasticities (CET and CES) relating to trade, level 1 and 2, are taken from estimates by the Moroccan Ministry of Foreign Trade (2011).


X_Row(i)
Exportations of good (i) to Rowhaf
X_Rafr(i)
Exportations of good (i) to Africa
M_Rafr(i)
Importations of good (i) From Africa
M_Row(i)
Importations of good (i) from Rowhaf
CET 2(i)
CESarm2(i)
EXT(i)
The total supply of product (i) intended for export
DST(i)
The total supply of product (i) intended for local market
DD(i)
The demand of good (i) produced
IM(i)
Importations of good (i)
CESarm1(i)
CET 1(i)
XST(j)
Total Production of the branch (j)
Q(i)
Absorption
Leontief
VA(j)
The added value of the branch (j)
DIT(i)
Intermediate consumption demand
C(i)
Household final consumption
G(i)
GVT expenditure in good (i)
INV(i) and VSTK(i)
Investment in good (i)
CES 1(i)
Leontief
KDC(j)
Demand for composite capital by branch j
LDC(j)
Demand for composite work by the branch j
DI(i,j)
Request for intermediate consumption of good i by the branch j
...
CES 2(i)
SK(i)
Request for intermediate consumption of good i by the branch (j)
MSK(i)
Labor demand Moderately qualified by the branch (j)
USK(i)
Demand for unskilled labor by branch (j)

Closures, Numeraire and implementation of the shock

- **Public closure**: fixed public expenditures and all tax rates constant.
- **External closure**, Morocco has long adopted a fixed exchange rate regime and is recently moving towards controlled flexibility (+/- 2.5%).
  - The current account is structurally in deficit. Therefore, we assume **the exchange rate to be constant** and the **current account to be variable**. The adjustment is made through the evolution of the relative prices of imports and exports according to the elasticities.
  - **Numeraire** is the consumer price index.
  - **The simulation:**

$$\boldsymbol{tm\_star\_rafr(i)) = te\_star\_rafr(i) = tm\_rafr(i) = te\_rafro(i) = 0}$$

III. Key findings

Branches	VAR in % compared to Baseline			
	M_Rafr(i) Import froma Africa	M_row(i) Import from ROW excluding Africa	PM_Rafr(i) Import price Africa	PM_Row(i) Import price ROW
A00: Agriculture, forestry and related services	14,15	1,36	-6,94	0,72
B05: Fishing, aquaculture	2,93	1,45	-0,38	0,82
C00: Extraction industry	15,79	-0,02	-6,41	0,05
D01: Food and tobacco industries	5,22	1,23	-5,62	0,65
D02: Textile and leather industries	12,16	0,25	-5,21	0,25
D03: Chemical and parachemical industry	2,30	0,35	-1,29	0,29
D04: Mechanical, metallurgical and electrical industry	11,43	0,73	-7,64	0,46
D05: Other manufacturing industries, except petroleum refining	3,72	0,56	-3,98	0,35
D06: Refining of petroleum and other energy products	4,02	0,98	-3,16	0,49

Variation in exports by destination and their prices

Branches	VAR in % compared to Baseline			
	X_Rafr(i) Export to Africa	X_Row(i) Export to ROW	PX_Rafr(i) Price of export Africa	PX_Row(i) Price of export ROW
A00: Agriculture, forestry and related services	23,84	-1,27	12,72	0,64
B05: Fishing, aquaculture	17,65	-1,81	16,64	0,92
C00: Extraction industry	6,372	-0,85	10,35	1,07
D01: Food and tobacco industries	12,92	0,93	15,26	-1,15
D02: Textile and leather industries	6,62	-0,36	9,95	0,45
D03: Chemical and parachemical industry	7,50	-0,08	3,83	0,10
D04: Mechanical, metallurgical and electrical industry	4,16	-0,28	5,99	0,36
D05: Other manufacturing industries, except petroleum refining	6,12	0,11	6,54	-0,14
E00 : Electricity et Water	-	-0,54	-	0,68
I01 : Transports	8,94	-0,51	5,32	0,64
I02 : Post and telecommunications	8,88	-0,58	5,43	0,74
J00 : Financial activities and insurance	8,87	-0,59	5,44	0,75
K00 : Real estate, rental and services rendered to businesses	12,26	-0,61	7,10	0,77
OPO: Other non-Financial services	1,53	-0,60	1,83	0,75

Production and labor demand by industry

	VAR in% compared to Baseline			
Branches	USK(i)	SK(i)	MSK(i)	XST(j)
A00: Agriculture, forestry and related services	-0,13	0,38	-0,02	-0,05
B05: Fishing, aquaculture	-0,76	-0,24	-0,65	-0,70
C00: Extraction industry	-1,07	-0,55	-0,96	-1,26
D01: Food and tobacco industries	1,05	1,58	1,17	1,01
D02: Textile and leather industries	-0,30	0,22	-0,18	-0,28
D03: Chemical and parachemical industry	0,83	1,36	0,95	0,86
D04: Mechanical, metallurgical and electrical industry	0,01	0,54	0,12	0,004
D05: Other manufacturing industries, except petroleum refining	0,29	0,81	0,40	0,25
E00 : Electricity et Water	0,17	0,70	0,28	0,035
F45 : Building and public construction	1,06	1,59	1,17	1,10
G00 : Commerce	0,18	0,71	0,29	0,11
H55 : Hotels et restaurants	-0,14	0,37	-0,03	-0,17
I01 : Transports	0,11	0,63	0,22	0,06
I02 : Post and telecommunications	0,14	0,67	0,25	0,06
J00 : Financial activities and insurance	0,22	0,75	0,34	0,08
K00 : Real estate, rental and services rendered to businesses	0,40	0,92	0,51	0,18
L75 : Public administration and social security	-1,13	-0,61	-1,02	-0,84
MNO : Education, health and social action	-0,95	-0,43	-0,83	-0,70
OP0 : Other non-Financial services	0,31	0,84	0,43	0,20

Change in demand components

Branches	VAR in% compared to Baseline		
	C(i) Final household consumption	Q(i) Aggregate demand	CI(j) Intermediate consumption
A00: Agriculture, forestry and related services	0,10	0,41	-0,05
B05: Fishing, aquaculture	-0,09	0,33	-0,70
C00: Extraction industry	0,89	0,51	-1,27
D01: Food and tobacco industries	0,51	0,48	1,02
D02: Textile and leather industries	0,62	0,10	-0,29
D03: Chemical and parachemical industry	0,64	0,32	0,87
D04: Mechanical, metallurgical and electrical industry	0,56	0,74	0,00
D05: Other manufacturing industries, except petroleum refining	0,67	0,47	0,26
E00 : Electricity et Water	0,25	0,12	0,04
F45 : Building and public construction	0,33	1,07	1,11
G00 : Commerce	0,12	0,42	0,11
H55 : Hotels et restaurants	0,10	-0,01	-0,17
I01 : Transports	0,38	0,30	0,06
I02 : Post and telecommunications	0,14	0,06	0,06
J00 : Financial activities and insurance	0,10	0,10	0,09
K00 : Real estate, rental and services rendered to businesses	0,12	0,23	0,19
L75 : Public administration and social security	0,23	-0,88	-0,84
MNO : Education, health and social action	0,19	-0,71	-0,71
OP0 : Other non-Financial services	0,15	0,13	0,20

Aggregates	Var %
GDP at basic price	1,25
Real GDP at basic price	**0,002**
GDP at market price	1,20
Household final consumption (CTH)	**1,13**
Inflation (GDP deflator)	1,25
Disposable income	
- **Household**	**1,13**
- **Firms**	1
- **GVT**	1,03
- **ROW**	1,18

IV. Conclusion

- Under the assumption of complete liberalization:
  - The most significant increases :
    - Agricultural sector (**23.84%**),
    - Fishing (**17.65%**),
    - Food and tobacco industries (**12.92%)**
    - Real estate and services provided to businesses (**12.26%**).
    - Service sectors (J00, I02, K00 and I01) could see their exports increase between **8.9% to 12.3%.**

IV. Conclusion

- Imports from Africa recorded an increase in all sectors and a decrease in their prices.
- The most significant variations concerned:
  - agricultural sector (14.15%),
  - the extractive industries sector (15.8%),
  - the textile and leather sector (12.16%) and the mechanical industries sector, metallurgical and electrical.
  - A slight diversion of trade in favor of Africa for the extractive industry sector is highlighted (C00).
- These results are in line with those advanced by studies covering the entire continent using multi-country MEGCs but differ in amplitude.
- Our results are more significant on trade but less important in terms of GDP and income.

V. Next steps

- Incorporating the dynamics to be able to simulate a gradual liberalization and capture the long-term dynamics.

- This work can also be improved by modeling the labor market to have more consistency with economic reality.

- Finally, it would be very useful to update the estimates of a certain number of key parameters in the model and to be able to disaggregate the household account. Multi-regions Model using GTAP database.

Thank you very much
for your attention