

POVERTY IMPACT ASSESSMENT OF THE AfCFTA's IMPLEMENTATION: A MACRO-MICRO SIMULATION APPROACH

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POVERTY IMPACT ASSESSMENT OF THE AfCFTA

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INTRODUCTION

- ❑ launched officially on January 1, 2021, the African Continental Free Trade Area (AfCFTA) is the largest free trade area in the world in terms of the number of members.
- ❑ It aims, among others, to expand intra-African trade through better harmonization and coordination of trade liberalization and facilitation.
- ❑ It should boost economic growth in Africa and contribute to achieve the targets of the SDGs and those of the 2063 African Union's Agenda, including poverty and inequality reductions.

INTRODUCTION

- ❑ Poverty reduction a major objective in Africa:
- ❑ Africa has made significant progress in recent decades.
Economic growth in recent years has contributed to reducing extreme poverty rate by 13 percentage points between 1990 and 2015.
- ❑ However, at the same time, the number of poor has increased from about 278 million in 1990 to 413 million in 2015.
- ❑ Thus, Africa's contribution to world poverty tends to increase so that, in 2015, 3 in 5 poor persons in the world lived in the African continent (Christiaensen and Hill, 2019).

INTRODUCTION

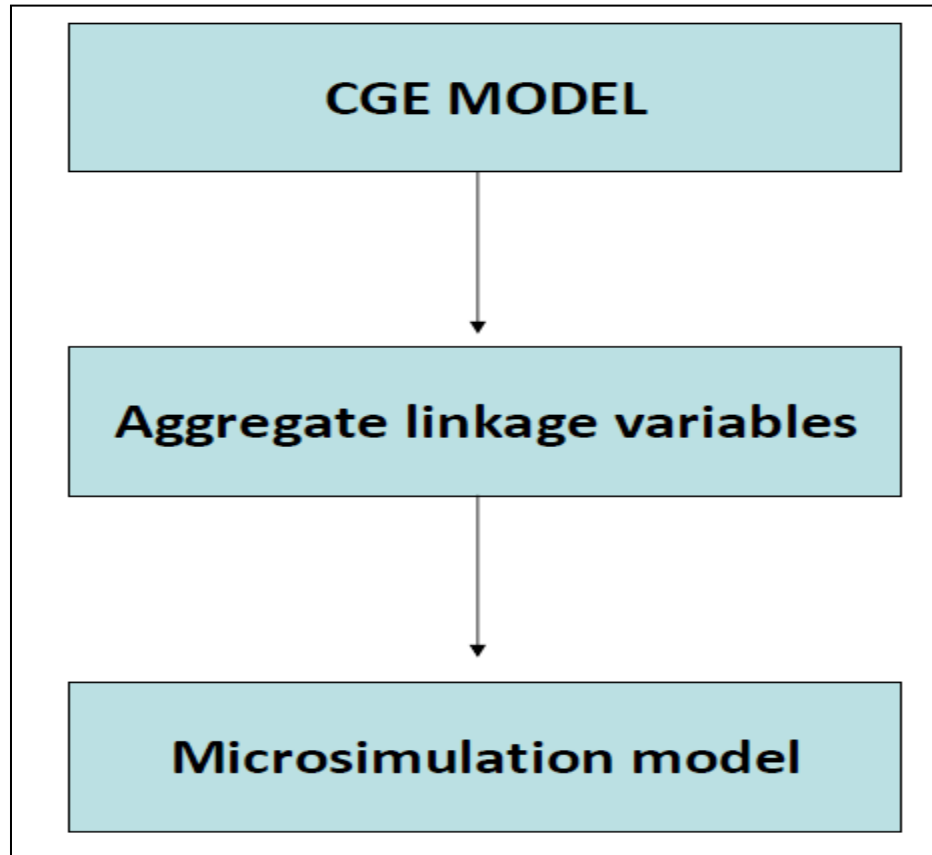
- ❑ A recent World Bank evaluation (2020) showed that the AfCFTA could have positive effects in terms of poverty reduction.
- ❑ Its results indicate that as much as 67.9 million people could be lifted out of poverty in 2035.
- ❑ However, those results are assessed from the implementation of a reform that goes beyond strictly the AfCFTA Agreement.
- ❑ It includes measures to facilitate trade across borders within the multilateral framework of the WTO TFA.
- ❑ As such, we suspect that the effects of the sole AfCFTA reform on poverty reduction would be positive but expected to be significantly lower.

OBJECTIVES

- ❑ The objective of this study is to assess the impact of AfCFTA implementation on poverty and income distribution in Africa strictly in line with the content of the Agreement as it emerged from the negotiations.
- ❑ By focusing strictly on the content of the agreement (but without considering any trade facilitation reform due to costs associated which cannot currently be well captured in CGE setting), it aims to contribute to the debates on the next phases of the negotiations
- ❑ This study is part of ATPC/ECA's activities to inform discussions on the potential impact of the AfCFTA.

METHODOLOGICAL ASPECTS

The methodological approach used is a sequential combination of a macro model with a microeconomic model.



Source: Sánchez and Cicowiez (2012)

METHODOLOGICAL ASPECTS

- ❑ Our study is an application of the technique developed by Tiberti, Cocowiez, and Cockburn (2017 and 2018)
- ❑ The CGE model is the latest MIRAGE-e (see Fontagne, Foure, and Ramos, 2013 for earlier version). This is a multi-sectoral and multi-regional CGE model.
- ❑ It is able to capture the complex economic interactions taking place between economic agents and within and between countries and sectors.
- ❑ The MIRAGE model is calibrated with the GTAP 10.1 database: it gives us the ability to explicitly model 26 African countries with the rest of Africa being aggregated into six blocks of countries.

METHODOLOGICAL ASPECTS

- ❑ The microsimulation model is part of the family of so-called behavioral micro-simulation models intensively used in the literature by authors such as Hérault (2006 and 2009).
- ❑ It has two components, namely: (i) the income formation model and (ii) the household consumption model.
- ❑ Household income comes from labor income, profits and an exogenous income.

$$Y_{h,t} = \sum_{i=1}^N \sum_{s=(H,L)} w_t^s I(E_{i,t}^s = 1) + \sum_{j=(F,NA)} \pi_{h,t}^j + y_{h,t}^e$$

- ❑ The generation of household labor income involves an occupational choice model and an earnings model.

METHODOLOGICAL ASPECTS

- ❑ The employment status of individuals or households can be broken down into four modalities: employees, non-agricultural self-employed workers, farmers, and the inactive.
- ❑ The choice of each individual is determined through a discrete multinomial choice function.
- ❑ The labor supply will be estimated separately by category of worker based on the level of qualification: (i) skilled workers and (ii) unskilled workers.
- ❑ Using this approach, the probabilities associated with each employment status can be estimated and a new status can be assigned to each individual in the survey sample based on their observable and unobservable characteristics.

METHODOLOGICAL ASPECTS

- ❑ Profit represents the income from agricultural or non-agricultural activities of self-employed workers in these sectors.
- ❑ It is estimated using an instrumental variable method. This choice is justified by the fact that some explanatory variables (such as the number of family workers) may be endogenous and therefore correlated with the error term.

METHODOLOGICAL ASPECTS

- ❑ Considering the limitations of the solver, we aggregated regions and sectors of activities.
- ❑ The geographical and sectoral aggregation will take into account the quality of the data and the priority sectors in the economic and social development of the African continent.
- ❑ Among the 27 defined regions, 18 are African countries, members of the AfCFTA were modeled individually.
- ❑ The microsimulation model use household survey data collected from AfCFTA member countries.

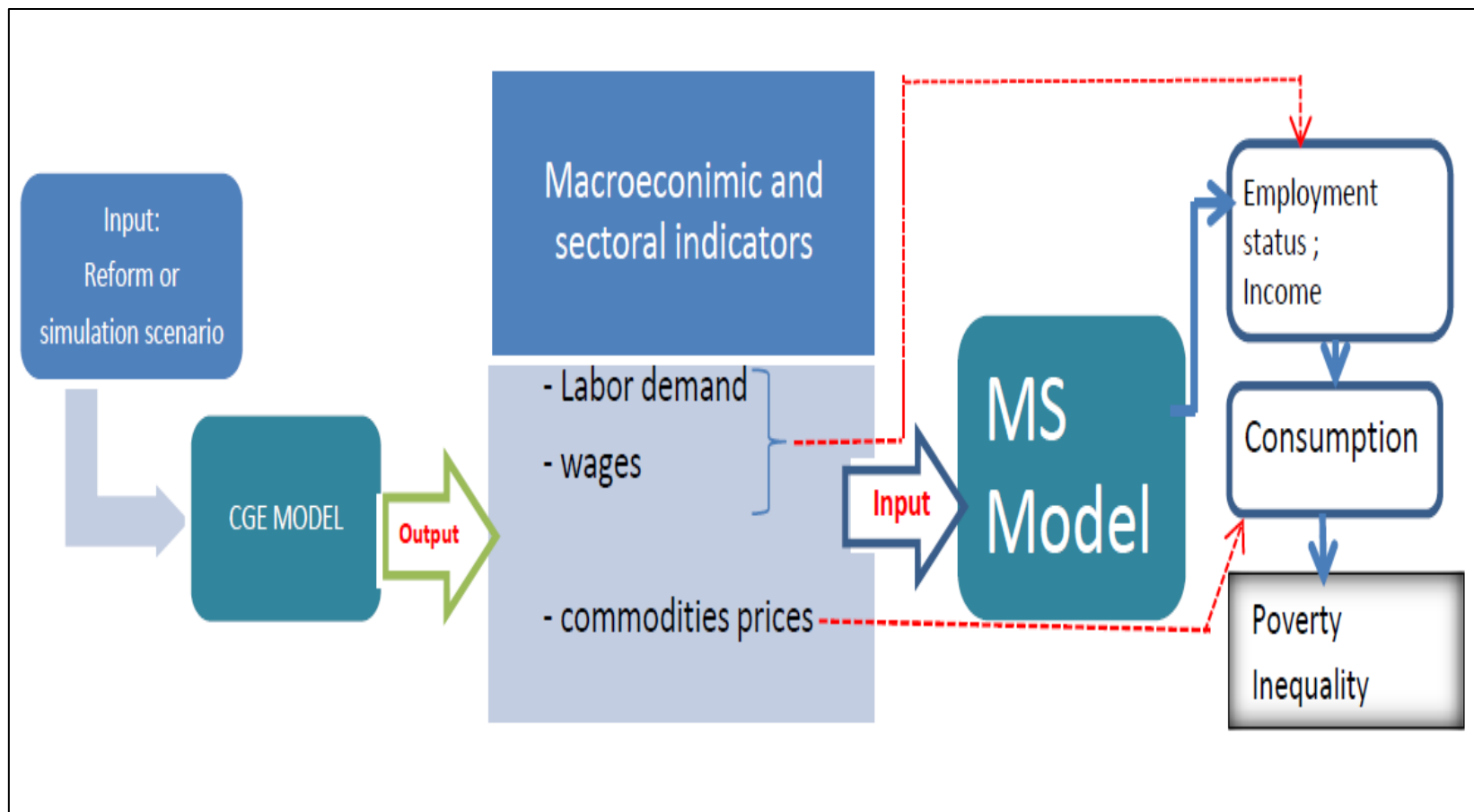
METHODOLOGICAL ASPECTS

Poverty and inequality estimation follow the different steps bellow:

- ✓ Step 1: Reclassify the products and services in the survey's household consumption basket into the same categories as those in the social accounting matrix of the computable general equilibrium model (GTAP database) ;
- ✓ Step 2: To take into account the heterogeneity of the effect of prices on household consumption, establish a consumer price index for each household in the survey. The price index is used as a deflator to calculate an equivalent income according to King's (1983) approach;
- ✓ Step 3: the equivalent income calculated in step 2 captures the heterogeneity of households in terms of well-being.

METHODOLOGICAL ASPECTS

Figure 1: Illustration of the CGE-MS combination



Source: Author's elaboration

GEOGRAPHIC COVERAGE

The study is part of a larger effort to cover as many African countries as possible.

It will be expanded as data become available:

- inclusion of countries as individual economies in the GTAP database used in MEGC;
- availability of household survey data for the microsimulation module

GEOGRAPHIC COVERAGE

Special distribution of modeled countries

Region	Country
North Africa	Egypt
	Morocco
West Africa	Benin
	Cote d'Ivoire
	Ghana
	Nigeria
	Senegal
Central Africa	Cameroon
East Africa	Ethiopia
	Kenya
	Rwanda
	Tanzania
	Uganda
Southern Africa	Mauritius
	Mozambique
	Namibia
	South Africa
	Zimbabwe

NEXT STEPS

- ☐ We have just completed the CGE simulations and the poverty analysis is now beginning.
- ☐ The analysis may later be expended to other african countries depending on the ongoing collection of Households surveys data through National Offices in charge of Statistics.



THANK YOU!

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Ideas
to
Action