

Macroeconomic and social impacts of EPAs on Ivorian Economy: A New Assessment

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Abstract

In this study, we use a standard CGE model with positive externalities of public investment in education, health and economic infrastructure in order to reassess the macroeconomic and social impacts of EPAs in Côte d'Ivoire. In the current debate on the drawback of this trade liberalization, previous studies highlight on potential negative macroeconomic and social impacts of these agreements particularly losses in government revenues due to the removal of all tariffs on imports. That reduces the leeway for public investment. This analysis aims to provide some insight in this debate by refreshing the question to show how this situation could be transformed in opportunities for Côte d'Ivoire to promote economic growth and reduce poverty. We postulate positive productive externalities of new economic infrastructure, investment in education and health in each industry associated with these public spending. Our results reveal that, despite this decline in government revenues, if government invests in economic infrastructure, health and education after detecting industries with great potential, EPAs will generate more revenue for government due to the raise in tax revenue on firm, household and tax on overall production, household income will increase so does their final consumption. There won't be decline in economic growth.

Keywords: Public investment externalities, trade policy, CGE

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1. Introduction

The Economic Partnership Agreements are free trade preferential agreements between developing countries (ACP) and European Union (EU), coming after Lomé Convention (1975) and Cotonou agreements (2000) which have shown their limit both in expanding trade and promoting economic growth in developing countries such Côte d'Ivoire. Its consist in the removal of all trade barriers on international trade flows between ACP countries and EU's. Several studies have been made to carry out the direct impacts of this reform on trade performance and economic growth. The main result highlighted is negative drawback for the whole economic in terms of strengthening poverty, reducing government revenues, increasing unemployment and reducing economic growth.

According to most various development partners, an important determinant to promote economic growth and road out of poverty is improvements in productivity. Education and health have received great attention as tools to improve labor productivity in developing countries. As a result significant investment has been made in education and health, and major reforms have been implemented, to improve education and health conditions in developing countries. In addition, increasing investment in economic infrastructures (road, communication, etc) can also lead to more productivity even if the role of infrastructure was somewhat neglected in the context of stabilization and structural adjustment programs (Savard, 2010). Some authors believed that, a decline in productivity would be induced by slow expansion of public infrastructure investment (Bergman and Suan, 1996; and Binder and Smith, 1997). As local government must support this public investment. However, EPAs, with the removal of tariffs on imports, will reduce their leeway in funding that investment and various programs to help them achieve the MDGs by 2015.

The immediate priority of this study is to feed into the flagship study of ACP countries trade relationship with EU highlighting the extent to which EPAs could be a great opportunity for them. Using a Computable General Equilibrium model, we postulate positive productive externalities of new economic infrastructure, new investment in education and health in each industry associated with public investments. To our knowledge, there isn't any papers before which take into account positive productive externality of public investment assessing trade policy impact in a CGE model. By doing a comparative analysis will be made with the situation without such investment in order to put out main differences due to externalities. We draw on Savard (2010), Estache and al; (2007), Fay and Yepes (2003) and Savard and Adjovi, (1998). These authors explore how positive productivity externalities due to investment in economic infrastructure, education and health can be taken into account in a CGE modeling. They propose several ways to do this and propose parameters value for specific response of industries to this public investment Savard (2010). We don't impose increases in public spending to maintain and repair the new economic infrastructure (Estache and al., 2007). We suppose that spending is a part of the whole government spending. And we introduce an additional element by imposing budget equilibrium without deficit and all public saving is used to finance public investment. This assumption excluded potential negative macroeconomic consequences of scaling up aid (Gupta and al.,2006; Foster and Killick, 2006; McKinley, 2005).

The paper is structured as follows: we present the model in its main characteristics, and then set it structure and data used. Then we present closure rules and the simulation scenario and it expected impact without externalities. We end the paper with simulation results before concluding remarks and possible extensions.

2. Characteristics of the model

There are numerous advantages of using CGE model as an analytical tool for impact assessment of trade liberalization. The main characteristics of this used in this study are twofold. First, the labor market is modeled by considering two categories of workers, unskilled and skilled, and we assume that there is unemployment on this market explained by lack of good education and bad health. Second, as it hasn't been done before in CGE assessing the impact of trade reforms, we postulate positive productive externalities of public investment in economic infrastructure, education and health. The following subsections give details about these characteristics.

2.1. Modeling labor market, education and health externalities

We assume equilibrium with unemployment on the labor market. The rate of unemployment μ_l is set to 24% (National Institute of Statistic, 2008). We suppose that this rate is the same for both skilled and unskilled workers. Public investment in health and education for example improve both type of worker's productivity. Improving human capital has positive productive impact on economic growth (Lucas, 1988; Savard and Adjovi., 1998; Anderson and Martin, 1998; Mérette and Fern, 1999; Mesplé-Dumont and Soms, 2000, Jung and Thorbecke, 2003; Voyvoda and Yeldan, 2005). Investment in human capital can be evaluated through public spending in education and health. This increases factors productivity and production in each industry. Considering a country like the Côte d'Ivoire, it is obvious that such investments are important for economic growth.

In addition, we consider that, the entrance or exit of unemployment for each category depends on the comparison made by workers between the current wage rate and the wage rate of the base year.

This trade-off is done according to the equation:

$$\mu_l = \left(\frac{w_l}{w_l^0} \right)^\varepsilon * \mu_l^0 \quad (1)$$

with ε the sensitivity of unemployment compared to the variation of the wage rate of any category and w_l^0 the wage rate of the base year. By considering this specification, the model clearly includes in the assessment the consequences of EPAs on the labor market and household incomes. Thus, we assumed that, positive productive externalities will decline with a drop in education and health investment.

2.2. Economic infrastructure investment externalities

Public investment in economic infrastructure can act as a source of comparative advantage if the relationship between the whole production factors productivity and the sector's production is sector specific. An increase in infrastructure investment will generate positive production externalities on the different production sector in the economy. The sector specific elasticity allows us to capture the different impact the investment will have on a particular sector. Investment in economic infrastructures increases overall productivity of production factors (Barro, 1991). Authors have attempted to take into account effects of public investment in economic infrastructure (Estache et al., 2007; Savard, 2010). All these works highlight the externalities generated by these expenditures and their macroeconomic impacts. They show that they are drivers of economic growth and poverty reduction.

The key assumptions to capture the impact of infrastructure investment concern their production externalities. Here, we assumed that the government spending includes also

constraint to fund operating and maintained costs generated by this economic infrastructures. This approach differs from Estache et al. (2007). The budget constraint without deficit is:

$$SG = YG - G \quad (2)$$

with SG , YG and G respectively government savings, government total income and government current expenditures. It is assumed that government savings is entirely used to finance public investments (new economic infrastructure, investment n education and health) so that:

$$SG = IG \quad (3)$$

Assuming that government spending is exogenous, we have also public savings exogenous. As it is equal to the whole public investment, the latest is also exogenous. Hence to fund new public investment, the government will need an endogenous source of revenue such as a tax instrument. Thus, the only adjustment variable to return to balance budget without deficit is the level of government revenue YG .

Here, economic infrastructures lead to increase the total productivity of factors in the value added equation. For this, we draw on Savard (2010), Estache and al., (2007) and a vast literature linking economic infrastructure to private sector factor productivity. We don't include private investment in the externality function (Estache and al.,(2008). The function is as follows:

$$\theta_j^e = \left(\frac{SG}{SG_0}\right)^{\varphi_j^e} \quad (4)$$

With θ_j^e is the externality parameter, SG and SG_0 represent the level of government saving in the current year and the base year. φ_j^e the economic infrastructure investments sector-specific elasticity. The value of this parameter (table1) were constructed using a combination of information from Estache and al. (2008) and Harchaoui and Tarkhani (2003), Savard, (2010). In general, the values of our parameters are consecutive with respect to this literature, ranging from 0,01 to 0,039. Table 1 gives the specific parameter values.

Table 1: Externality elasticity by sector

N°	Sectors or industries	θ_j^e
1	subsistence farming	0.01
2	Export agriculture / industrial	0.018
3	Livestock and hunting	0.011
4	Forestry, forestry expl., services schedule	0.003
5	fishing	0.012
6	mining and quarrying	0.027
7	agribusiness	0.025
8	Manufacture of textiles, clothing and leather work	0.038
9	Other industrial activities	0.025
10	Electricity, gas and water	0.039
11	construction	0.021
12	trade	0.022
13	Hosting and catering	0.01
14	Transport and communications	0.018
15	financial activities	0.013
16	Activities of public administration	0.01
17	Education	0.01
18	Health activities and social work	0.01
19	other services	0.01

Externalities are introduced into the equation of the added value as follows:

$$VA_j = \theta_j^e * B_j^{VA} \left[\beta_j^{VA} * \theta_j^s * LDC_j^{-\rho_j^{VA}} + (1 - \beta_j^{VA}) * KDC_j^{-\rho_j^{VA}} \right]^{\frac{1}{\rho_j^{VA}}} \quad (4)$$

With:

VA_j Industry j value added

KDC_j Industry j demand for composite capital

LDC_j Industry j demand for composite labor

B_j^{VA} Scale parameter

β_j^{VA} Share parameter

ρ_j^{VA} Elasticity parameter

Hence, an increase in θ_j^e represents a Hicks neutral productivity improvement, like one modeled in Yeaple and Golub (2007) and the externality act as a source of comparative advantage.

Regarding health and education expenditures, it is assumed that they influence human capital and are modeled in the same way that infrastructure spending. We assume that $\theta_j^e = \theta_j^s$ and $\varphi_j^e = \varphi_j^s \cdot \theta_j^s$ and φ_j^s are the externality parameter and the sector-specific elasticity to changes in health and education investment.

However, it should be noted that the effects of these public investments are noticeable over time. Therefore dynamic models are shown to evaluate the impact of policy in the presence of externalities. But these seem more restrictive as to the possibility of disaggregation of the economy, given the limitations of calculations. This, indeed, limits the scope of such models in their dynamic version (Savard et al., 1998). As in the proposed model, it was adopted a

disaggregated level in order to assess the impact of EPAs on the Ivorian economy, we built a static model because handling a dynamic model would be relatively difficult to perform the simulations considered in this case.

3. Model structure and data

The model is based on the Social Accounting Matrix of 2007. It summarizes economic transactions occurring between domestic agents on the one hand and between the domestic and the rest of the world on the other. The model structure is based on two elements: the economic agents and sectors.

About the first element, there are four groups of economic agents: domestic households, domestic firms, the government and the rest of the world. Nine household categories were distinguished. Civil servants, Employees in the formal private, Employees of informal private, Farmers industrial (for export), Subsistence farmers, Breeders, Fishermen, Independents and non-agricultural employers, Inactive. We consider a representative household that maximizes its utility function under its disposable income constraint. It provides labor while he is the holder of firms and derives, therefore, all revenues due to this quality (wages and return on capital). It also receives transfers from the rest of the world and the government to whom it pays taxes on its income. It also carries out transfers to firms, government and the rest of the world.

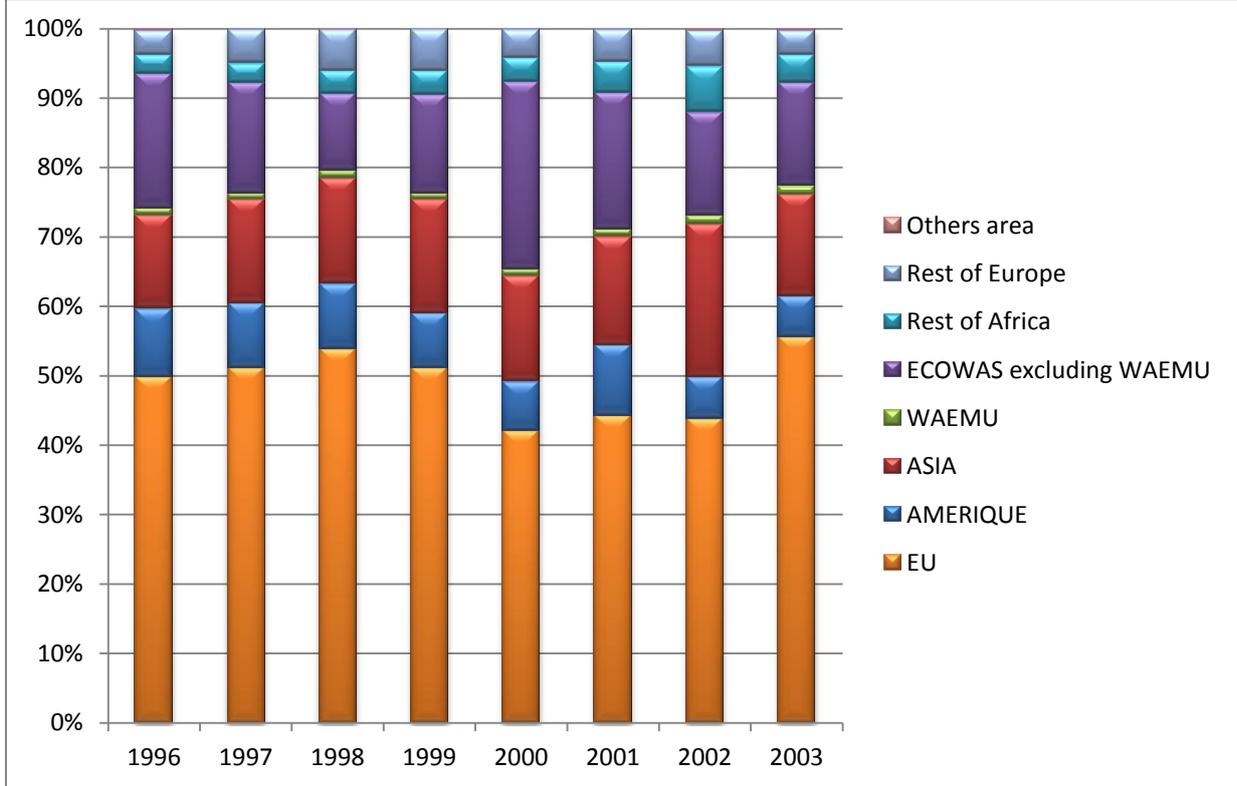
Firms determine the level of their production by maximizing their profit function under technological constraints. They get their income from the gross operating surplus excluding the remuneration of production factors. Firms can also receive transfers from households, the government and the rest of the world. Moreover, they provide the payment of taxes to the government related to goods and services, production and profits they make. They also make transfers in favor of the government as well as households and the rest of the world.

Contrary to households and firms, the behavior of the government described in the model, is not the result of an optimization process decision. The government revenues come mainly from taxes collected from domestic economy. The model adopts three groups of taxes revenue: direct taxes, indirect taxes and tariffs on goods and services imported and/or

exported. There are also transfers flow between the government and other economic agents, domestic and foreign (in the rest of the world).

In the model for the rest of the world, it was considered that the commercial and financial transactions between the domestic and the rest of the world will operate mainly in the direction of two spaces WAEMU and the rest of the world without WAEMU. Figure 1 shows the evolution of the share of Côte d'Ivoire's imports from the rest of the world.

Figure 1: Share of Côte d'Ivoire imports in the rest of the world



Source : BNETD

Despite the decline in imports between 1999 and 2002, the share of imports from Côte d'Ivoire from the EU remains high.

Regarding the sectors, nineteen branches were included in the SAM. Table 2 provides a description of branches showing the equivalence with ka industry classification of activities of national accounts.

Table 2: Equivalence between the SAM and nomenclature of National Accounts

N°	SAM	National Accounts
1	subsistence farming	1
2	Export agriculture / industrial	2
3	Livestock and hunting	3 et 4
4	Forestry, forestry expl., services schedule	5
5	fishing	6
6	mining and quarrying	7
7	agribusiness	8 à 15
8	Manufacture of textiles, clothing and leather work	16 et 17
9	Other industrial activities	18 à 28
10	Electricity, gas and water	29
11	construction	30
12	trade	31 et 32
13	Hosting and catering	33
14	Transport and communications	34 et 35
15	financial activities	36 à 38
16	Activities of public administration	39
17	Education	40
18	Health activities and social work	41
19	other services	42 à 44

Data used in this study are from the National Institute of Statistics.

4. Closure rules

With respect to the closure rules, its concern prices, production factors market, investment and saving equilibrium, balance of payments and government budget. Prices on domestic markets products and the index of consumer prices are determined by the model.

International prices of imports from the rest of the world and those exports are assumed to be exogenous. In the model production factors considered are: skilled labor, unskilled labor and capital. The operation of each market is different.

The labor market has a high unemployment rate in recent years because of the socio-political crisis. It would be inappropriate in this context to retain the assumption of full employment in this market and wage flexibility. And nominal wages were fixed at their initial levels.

In addition, we made the assumption of labor mobility between different industries. Under these conditions, the adjustment variable of the labor market is the overall volume of employment rather than wage rates.

Regarding capital, it was set to its initial level of the SAM. This excludes any mobility between industries. In addition, it was assumed a Johansen closure rule. The level of public investment is set at its initial level as well as public savings. Households and firms savings are endogenous to adjust ex-post total savings to the total investment.

Concerning the balance of payments, current account level was fixed. Similarly, the nominal exchange rate was set to one in order to incorporate that Côte d'Ivoire has a fixed exchange rate with the euro. The nominal exchange rate is chosen as numeraire. Its value is set to 1. Thus the external deficit is explained by the model. So an increase in exports to the rest of the world would reduce the external deficit, the current account of the balance of payments and so on foreign savings.

Concerning the government budget, we impose the constraint of balance without deficit. Resources are equal to expenditures. We assume that the government deficit is set and that it is the government's spending that adjust to fluctuations in government revenue.

5. Simulation scenario

It will be consider a complete removal of tariffs on imports. Two cases will be analyzed in this study, a situation with and without externality effects.

EPAs are agreements to full liberalization of foreign trade of Côte d'Ivoire in particular the trade with the EU. According to the official journal of the EU on EPA Progress signed by Côte d'Ivoire, it is provided for in Articles 12 and 13.

According to article 12: *"The products originating in Côte d'Ivoire are imported into the European community free of customs duties, except for products listed, and the conditions set out in Annex I"*

Article 13 which complete the previous tells: *“tariffs on products coming from the European community to Côte d’Ivoire are reduced or eliminated in accordance with the schedule of tariff Dismantling in Annex 2”*.

On a theoretical level, it is consistent with a reduction of trade barriers that impede Côte d’Ivoire foreign trade. The decrease in imports taxes usually causes a drop in customs duties revenue and may lead to reduce the government leeway regarding the rigging of social programs, where other source of funding isn’t found. Moreover the foreign goods and services become relatively cheaper; they are preferred by domestic consumers, which would induce a decline in domestic demand addressed to domestic firms. This constraint may lead them to reduce their production and their input demand. The consequence may be increasing unemployment and lowering growth rates due to lower domestic production. The magnitude of the expected effects depends largely on the initial level of tariffs, the respective proportions of imports and domestic production in domestic supply and elasticity’s of substitution between imports and domestic production. Also retained the closure imposed to fix the current account balance, such a closure induces that any assessment of the imports is equivalently compensated by exports. We simulated for example, the removal of all tariffs on imports.

6. Results

The study covers the effects on government and taxes revenues, foreign trade, domestic demand, production, production factors and prices.

6.1. Government revenue and taxes revenues

The results in terms of taxes revenues corroborate our expectations in both cases according to government revenues, indirect taxes, taxes on goods and VAT. The extent of tariff reductions has the effect of bringing down these categories of taxes revenues but the decline is less with public investment externalities respectively -27% vs -13,63%, -13,52% vs -6,03%, -44,34% vs -39,07% and -15,69% vs -8,51%.

However, taxes on firms, households and production increase with externality effect contrary into the situation without externalities where they decline.

These taxes revenues increase respectively by 23%, 9% and 13% while they decline respectively by 5,41%, 6,23% and 6,44% without externalities (see table 3).

Table 3: Government revenue and fiscal revenues

	Base year	Without externat effect		Witz externat effect	
		Sim1	variation (%)	Sim2	variation (%)
Government revenues	1959323	1430337,59	-27,00	1692148,08	-13,64
Direct taxes on firm	278994	263887,143	-5,41	340340,03	21,99
Direct taxes on Households	146207	137094,434	-6,23	159323,157	8,97
Indirect taxes	41443	35841,0975	-13,52	38943,2287	-6,03
Taxes on good	1073428,00	597471,52	-44,34	654061,77	-39,07
VAT	371573	313281,825	-15,69	339959,212	-8,51
Taxes on production	49590	46396,3053	-6,44	55925,8478	12,78

It seems that companies become more productive and the price effect of lower tariffs was offset by an economic activity that generates a significant volume effect due to external effects induced by public investment.

6.2. Production and domestic demand

Despite this supposed revival, production, domestic demand and aggregate supply are declining in the presence of externality effects. These variables decline respectively by 14,59%, 15, 25% and 8,03% (see table 4).

Table 4: Production and domestic demand

	Base year	Without externality effect		Witz externality effect	
		Sim1	variation (%)	Sim2	variation (%)
Production	17232241	17097627,2	-1,27	14829708,3	-14,59
Domestic Demand	12887405	12651763,7	0,14	10960767,2	-15,25
Offre	17003049	16706373,4	-0,73	15557992,7	-8,03
Government spending	1297510,26	1351769,06	8,38	811426,54	-15,74
Investment	969417,00	445582,00	-54,04	844103,89	-12,93
Household consumption	6707025,67	6860888,17	2,00	7011591,53	4,04
Houshold income	7762154,00	7259796,63	-6,48	8440852,62	9,27

Due to the increase in the consumer prices index (+3,89%), the demand for consumption government and total investment fall by 15,74% and 13%, while households demand of final consumption goods increase (+4,04%) due to the increase of their incomes (+9,27%). But as

we notice, this increase is not quite enough to prevent the decline in production and the aggregate supply adjusts accordingly which also declines. Without externalities the situation is quite similar. Despite lower revenue (-27%) and household income (-6,48%), but because of lower consumer prices (CPI was down by 8,61%), those agents that are the Government and households experiencing an increase in their consumption volume. There is an increase of public consumption by (8,38%) and household consumption (2%).

6.3.Foreign trade

This decline in domestic demand leads to a decline in supply. This reduction in supply is offset by higher importations (+22,72%) (See table 5).

The decline in production remain important which causes also the relative high decline in exports (8,79%) (See table 5).

Table 5: Foreign trade

	Base year	Without externality effect		with externality effect	
		Sim1	variation (%)	Sim2	variation (%)
Importations	4115644	4041388,51	-2,26	4498559,57	22,72
Exportations	4344836	4440506,02	2,33	3868941,11	-8,79

This decrease is particularly important in mining industries (48,6%) and public administration (49%) (See appendix table A1). Furthermore, the decrease in taxes on imports will not induce a loss of about 10,28% growth of the Ivorian economy taking into account public investment externalities (See appendix table A2).

6.4.Production factors

As it appears in table 6, simulations lead to increase labor demand in both cases. But the demand of unskilled labor is higher respectively 1,57% vs 4,14% without externalities and with public investment externality effect. The same result is showed for skilled labor 0,03% vs 1,66%. This increase in labor demand despite higher wage rate (see table 7) is explained by higher productivity of human capital due to externality effects of public investments. The situation is different without these externality effects. In fact, the wage rate declines in each category of workers (see table 7) and this decline explain the decrease in unemployment rate in this situation. As the price of labor is declining, firms hire more workers.

This shift in labor demand causes a fall shy of unemployment among skilled and unskilled in the case without externality effects of public investment. But unemployment goes up when we consider these externalities (see table 3 in appendix) despite the shift in labor demand. Unfortunately this shift in labor demand does not lead to lower unemployment. Unemployment rises to about 1.03% (see table 3 in appendix).

Table 6: Production factor demand

Labor demand	Base wear	Without externality effect		with externality effect	
		Sim1	variation (%)	Sim2	variation (%)
Unskilled Labor	3422298	3439409,38	1,57	3411076,16	4,14
skilled Labor	2236451	2244590,59	0,03	2224119,82	1,66
Capital demand	3008624	3008624	0,00	3008624	0,00

These are probably the perverse effects of productivity gains due to public investments in infrastructure, education and in health.

6.5.Prices

Prices analysis takes into account the cost of production factors of firms, the price index (CPI) and GDP deflator.

Table 7: Prices

Wage	Base year	without externat effect		witz externat effect	
		Sim1	variation (%)	Sim2	variation (%)
Unskilled Labor	1	0,92	-7,67	1,05	5,19
skilled Labor	1	0,94	-5,63	1,09	8,73
Deflator	1	0,94	-6,36	1,00	0,00
CPI	1	0,91	-8,61	1,04	3,89
Capital return	1	0,96	-4,12	1,13	13,24

Measuring the reduction of customs duties on imports of 100% had a deflationary effect on the Ivorian economy without considering public investment externality effects. In fact, there is a decline in the GDP deflator (-6,36%) when considering the consumer price index highlight a larger movement to lower prices (-8,61%). On contrary, with theses externalities, deflator doesn't change any more but wage rate (both unskilled and skilled labor) and consumer price index go up so does capital return respectively 5,19% (unskilled labor), 8,79%

(skilled labor), 3,89% and 13,24% (table 7). Thus households earn more revenues and they consume more in this case (as we see in table 4).

7. Conclusion

In this study we construct a standard CGE model in order to reassess the effects of the implementation of EPAs on Ivoirian economy taking into account externalities effects likely in industries. The simulations show that losses of government revenues are lower and those direct taxes on firms, households and production increase. Moreover, any loss of economic growth that would result will be almost marginal. While unemployment is up slightly despite the demand for labor increases. But capital return, households income and final consumption will increase, as well as imports. Finally, EPAs appears to be a real opportunity for Côte d'Ivoire. But care should be taken to identify the sectors most sensitive to productivity gains from public investment, the sectors with high growth potential to guide them effectively.

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9. Annexes

Table A1: Production of each industry

Industries	Without externat effect			Witz externat effect	
	Base year	Sim1	variation (%)	Sim2	variation (%)
Subsistence farming	1578284	1594657,18	1,03740384	1563804,2	-0,91743975
Export agriculture / industrial	1198505	1219393,82	1,97903514	1079494,15	-8,76361429
Livestock and hunting	239730	245244,269	2,03014647	235322,48	3,11408761
Forestry, forestry expl., services schedule	383755	378238,764	-2,62908212	366515,577	-6,3011497
Fishing	36359	40546,6687	11,3599411	31241,9084	-14,9345899
Mining and quarrying	602094	603483,731	-3,64370376	406424,271	-48,6132906
Agribusiness	2016116	2033942,21	0,86176346	1665425,35	-20,7644636
Manufacture of textiles, clothing and leather work	204066	210680,548	2,80312162	179660,843	-13,233298
Other industrial activities	3678751	3562534,42	-3,47178963	3109183,91	-14,793897
Electricity, gas and water	337971	339310,889	-2,21589035	254529,193	-33,6837757
Construction	610971	415578,915	-28,885317	540965,739	-8,16213364
trade	1231757	1223334,56	-0,94675666	1073868,4	-22,5967685
Hosting and catering	82632	87592,43	6,81314553	80382,4733	-1,24056228
Transport and communications	1383780	1407514,18	-0,26574756	1237903,53	-13,1565726
Financial activities	550971	564529,065	-0,23957835	535378,624	-3,4448903
Activities of public administration	900512	927588,642	3,00680529	450808,025	-49,9386987
Education	334609	354174,225	5,32741059	308531,462	-5,19083316
Health activities and social work	118045	124973,748	4,74414498	108118,956	-8,42227059
Other services	1743333	1764308,9	0,41090351	1602149,24	-5,25253118

Table A2: Economic growth

Evaluation mode	Without externat effect			witz externat effect	
	BASE	SIM1	Variation (%)	SIM2	Variation (%)
Market Price	9790391	8783385,45	-10,285652	9790391	0
Base year Price	8716963	8185913,94	-6,09213396	8716963	0
GDP optical demand	9790391	8783385,45	-10,285652	9790391	0
GDP optical income	9790391	8783385,45	-10,285652	9790391	0

Table A3: Unemployment rate

Unemployment	Without externat effect			witz externat effect	
	BASE	SIM1	VARIATION	SIM2	VARIATION
Uniskis Labor	0,24	0,2362002	-1,5833237	0,2424927	1,038
skilled Labor	0,24	0,2372337	-1,1525116	0,2441903	1,746