



## **Journal of Economics, Management and Trade**

**24(2): 1-15, 2019; Article no.JEMT.49555**

**ISSN: 2456-9216**

*(Past name: British Journal of Economics, Management & Trade, Past ISSN: 2278-098X)*

# **Impact of Trade Liberalization on Employment in West African Economic and Monetary Union (WAEMU): A Gender Approach**

**Lesfran Sam Wanilo Agbahoungba<sup>1\*</sup>**

<sup>1</sup>*Economic and Management Research Unit (LAREG), University of Parakou, Benin.*

### **Author's contribution**

*The sole author designed, analysed, interpreted and prepared the manuscript.*

### **Article Information**

DOI: 10.9734/JEMT/2019/v24i230158

#### Editor(s):

(1) Dr. Pavle Jakovac, Department of Economic Theory, Faculty of Economics, University in Rijeka, Croatia.

#### Reviewers:

(1) Umar Muhammad Gummi, Sokoto State University, Nigeria.

(2) Firtescu Bogdan-Narcis, Alexandru Ioan Cuza University, Romania.

Complete Peer review History: <http://www.sdiarticle3.com/review-history/49555>

**Original Research Article**

**Received 28 March 2019**

**Accepted 12 June 2019**

**Published 24 June 2019**

## **ABSTRACT**

The main objective of this paper is to assess the impact of trade liberalization on employment in West African Economic and Monetary Union (WAEMU) through a gender approach. We apply generalized least squares (GLS) estimation techniques with both random and fixed effects on panel data covering the period of 2000-2017. Due to the lack of data, Guinea-Bissau is not part of our analysis. The results show that, while trade liberalization does not explain women's employment patterns, it rather contributes in job destruction for men in the WAEMU. In conclusion, the impact of trade liberalization of employment is not gender neutral. Rather, it varies depending on the sex of people. In terms of policy implications, this study calls policy makers to setting up, better negotiating or renegotiating trade agreements and implementing trade policies that are more inclusive and beneficial particularly to the population. This could be done by taking into consideration women's employment particularities in the union, enhancing productive capacities of men, reducing and eliminating inequalities related to people gender and sex.

*Keywords: Trade liberalization; employment; gender; panel; WAEMU.*

*\*Corresponding author: E-mail: lesfran.wanilo@gmail.com;*

## 1. INTRODUCTION

Promoting gender equality and empowering women for sustainable development are new concepts of the last two decades or the 3<sup>rd</sup> millennium. The concept has been receiving a great attention from all over the world and especially from international institutions such as the World Bank, IMF, UN, etc. All countries are called to design inclusive economic policies that take into consideration gender aspects. Sometimes, supports from international institutions to countries are conditioned by the enforcement of gender-led economic policies. The concept of gender equality comes in the context of globalization, trade liberalization and the UN development agenda. On trade policy ground, the Doha Round of multilateral trade negotiations, launched in 2001, considered the development as a core objective to achieve and trade liberalization should lead to economic growth and development for all.

Nowadays, the idea that trade policy is gender neutral has been challenged by several authors and facts. Gender aspects, trade policies and economic performance are interlinked in that mainstreaming gender aspects in trade policies are crucial to benefit more from trade reforms. In fact, economies are gender structured and men and women are assigned with different economic and social roles. Due to various social considerations and gender biases, trade liberalization is likely to negatively affect women as opposed to men. Particularly, women face bigger challenges than men when it comes to taking advantage from the opportunities trade offers. Some of these gender biases include differences in education and training, gender inequalities in the distribution of income and command over resources, as well as unequal access to productive inputs such as credit, land, and technology. Trade liberalization may result in an increase or reduction in employment and income opportunities for women, depending on whether the sectors where they work expand or contract. While men and women are differently affected by trade policies, gender inequalities, in turn, impact on trade policy outcomes and economic growth. In these conditions, it is not straight forward to predict the actual impact of trade liberalization on women's employment. Various studies have been carried out by a number of scholars on the topic. They mostly focused on developed and some Asian developing countries or Sub-Saharan countries [1] Very few of them have taken a keen interest

in Sub-Saharan Africa. As far as we know, there is no empirical research that tackles the gendered employment effects of trade policies in WAEMU. This paper aims at filling this gap and providing policy-makers with empirical support about the effects of trade reforms on employment at regional level.

Since the failure of import substitution development strategy, trade policies have changed from being protectionist towards liberalization in West Africa via Structural Adjustment Programs (SAPs). This trade liberalization has been reinforced by the creation in 1995 and the adherence of almost all West African into the World Trade Organization (WTO). The main pursued objective was to enhance economic growth through international free trade channels. The free market model was regarded as the most efficient mechanism to reallocate economic resources. The theoretical belief is that free trade or trade openness is beneficial for all countries and contributes in increasing welfare [2]. This operates through various channels such as the increase in GDP, in FDI, trade growth, employment, etc. These arguments are backed by comparative advantage developed by Ricardo (1817) and extended by HOS theorem. In the mind of those schools of thoughts, trade policies are gender neutral and assure prosperity for all regardless of the roles played by the actors.

But, more recently, there are several contributions from scholars [3] called "Feminist economists" who brought out the potential impacts that trade liberalization could have on people depending on their sex. They challenged the gender neutrality of trade policies and exposed the potential complex gendered effects. For instance, according to Benería (2003) quoted by [4], while the women's share of employment increased rapidly in semi-industrialized countries, their working conditions tended to be precarious over time. Moreover, the more countries move up the industrial ladder, the more employment possibilities reduce [5].

As far as we know, Sub-Saharan Africa's developing countries particularly WAEMU members have received less attention on the subject. However, these economies present specific characteristics including the predominance of the agricultural sector, the existence of developed informal sector and the atrophy of the industrial sector. The primary sector is the major sector that contributes to

more than 35% to the GDP and generates more than 65% of employment in West Africa according to WDI of World Bank. It (subsistence agricultural sector) concentrates the major part of women's employment [4]. Even in that sector, there are gender discrepancies. For instance, in Benin, Women are clustered in agricultural sectors, live in rural areas and accomplish 60-80% of agricultural tasks destined to the family (AFD, 2016)<sup>1</sup>. In SSA in general and in West Africa in particular, the secondary sector is at an embryonic stage of development and generates very minimal employment. The informal sector plays an important role in those countries and is highly dominated by women's activities. The development of that sector and the concentration of women's jobs in the informal sector show how vulnerable women are. This depicts the degree of women exclusion the formal employments. As stated by [6], the concentration of women in the informal sector in SSA is more indicative of residual unemployment than of a livelihood choice. Unlike women, men are mostly found in the formal sector, expanding sectors such as cash crops and mineral extraction [4]. This discrimination in employment between men and women particularly in West Africa is reinforced by increased gender inequalities. Gender biases (non-access to economic opportunities, lack of resources, low educational skill, etc.) which is particularly rigid, assign women with specific economic roles in the society. In that context, women lack of resources to effectively respond to incentives to export (World Bank, 2012). Thus, as the economies are growing up, the employment opportunities created are likely to favour men at the expense of women. In that context, economic policies particularly trade policies and related employment opportunities would be differently shared. In fact, those policies affect in different manner men and women. The explanation may be gender consideration and the rigidity of the economic roles that women play. Thus, it becomes unobvious that trade liberalization leads to prosperity for all as stated by traditional trade theories. Indeed, trade liberalization exposes women to higher competition. Imported goods compete with goods locally produced by women. Moreover, trade liberalization could lead to decrease in governmental expenditures on which women heavily rely on. The impact of trade liberalization on women's employment in that case may be negative. Increasing gender inequalities are

supposed to be a source of economic underperformance of economies especially in LDCs. So, after several years of implementing progressive trade reforms by WAEMU members, we are in the position to assess the impact of trade liberalization on gender for that sub-region.

The main objective of this paper is to assess, with focus on the sex of people, the impact of trade liberalization on employment in WAEMU. To carry out this study, we employ methodology inspired from [4] and apply to WAEMU economies. Due to lack of data, we exclude Guinea-Bissau from the analysis. It is thus a panel data covering seven (07) countries and from 2000 to 2017. We use both random effects (RE) and fixed effects (FE) and generalized least squares (GLS) estimation techniques. The results show that trade liberalization does not explain women's employment patterns while it contributes to job destruction for men in the WAEMU.

The rest of the thesis is structured as followed: the section 1 outlines the literature review; the section 2 exposes the methodology used, the section 3 deals the estimation procedures and results. In fine, the last section deals with the conclusion and the implication of economic policies.

## 2. LITERATURE REVIEW

### 2.1 Theoretical Review

Standard trade theory asserts that a country's comparative advantage in trade is based on its factor endowments (labour and capital) and that it will export those commodities that use its relatively abundant factor most intensively. Accordingly, the Heckscher-Ohlin-Samuelson (HOS) theorems predict that returns to the relatively abundant factor that is used more intensively in exports will rise as the demand for it increases [7]. Since developing countries are abundant in labour rather than capital, the returns to labour (wages) are expected to rise when trade is liberalized. Another way to think about this framework is in terms of skill level. In fact, if rich countries are abundant in high-skill labour and poor countries in low-skill labour, trade will increase the returns to low-skill labour in the latter. And if women are assumed to form a bulk of the low-skill labour pool, then trade liberalization should increase the demand for women's labour and lower the demand for male labour. Female wages are expected to rise when

---

<sup>1</sup><https://plateforme-elsa.org/wp-content/uploads/2016/10/Profil-Genre-Benin.pdf>

male wages are expected to fall, leading to a lower gender wage gap. This interpretation of standard trade theory leads to the prediction that trade liberalization promotes gender equality. Based on comparative advantages as developed by Ricardo (1817) (2x2 model) whereby country specializes in the production and export of the good it can produce domestically at a relatively lower cost, [8] to conclude that, inequalities emerging from trade liberalization under standard trade theory are purely transitional and not accounted for. However, the case is not that simple. According to [8] cited by [9], countries do not compete based on their comparative advantages; rather they compete based on the principle of competitive or absolute advantage to better capture trade patterns and outcomes. The author argued that there is empirical evidence that trade liberalization may result in persistence trade imbalances that systematically disadvantage one country in relation to the other.

The standard trade theory has been criticized and even been challenged on both theoretical and empirical grounds. The standard trade theorists have been attacked one of the most important hypotheses of the theory. For instance, by hypothesizing: "Developing countries are endowed in unskilled female labour", the standard trade theory could not hold for all countries. It could work for a number of developing countries but not all of them. Some countries are relatively rich in agricultural resources; in others, women are relatively well educated [9]. In the same vein, [5,10] argue that gender discrimination is not a natural fact; rather it is socially built. Then, it is misplaced to use the natural factor endowments model as a basis for the analysis of a phenomenon so influenced by social norms.

Contrary to standard trade theorists, heterodox theorists have developed their trade theory based on absolute or competitive advantage as developed by Smith (1776). According to heterodox perspectives, a country that produces a good more cheaply will dominate the international market and outperform its competitors. In this perspective, international competition plays an important role. The search for lower labour cost becomes a priority for firms since they compete on absolute unit costs rather than relative costs. In line with the heterodox theory and in search for being competitive, firms could exacerbate the existing gender inequalities. For instance, in labour-intensive activities where they are suitable for, firms will

hire women just to bring down the cost of production. In such cases, women serve as a source of competitive advantage for export-oriented firms that face intensive competition in the international market. Thus, trade liberalization does not necessarily result in a reduction in gender inequalities. Rather, trade policies may possibly contribute to increase existing gender inequalities.

On the theoretical ground, the impact of trade policies on gender inequalities is inconclusive. The real assessment of the impacts that trade policies and particularly trade liberalization could have on gender should be of empirical studies concerns.

## 2.2 Empirical Review

Numerous scholars have examined the gendered employment effects of trade [9,4,11]. According to these studies, a comprehensive analysis of gendered employment effects of trade should distinguish impacts across sectors. Trade effects on gender could vary depending on sectors: agriculture, manufacturing and services.

For instance, in the agricultural sector, it is known that expansion of agricultural exports is generally less favourable to female than to male farmers. Even a crop which is initially and traditionally considered female-intensive, its commercial exploitation causes men to enter the sector and to take over production and/or marketing [9]. [12] came up with the same conclusion in their studies concerning rice in the Gambia. For the leafy vegetables sectors in Uganda, [13] found similar results. They actually described the situation whereby a specific sector or product becomes profitable as a result of trade measures. Based on various previous studies, the authors affirmed that, opportunities generated by trade liberalization often lead to a higher competition between men and women. Women are likely to be phased out by this competition. In addition, it may result in a fall in high income prospects<sup>2</sup> of trade for women because being small-scale farmers and traders. As underlined by [9], in agriculture-based economies, the participation in international trade

---

<sup>2</sup>Whenever a crop begins to appreciate in the market and starts fetching higher income, men tend to push their way into the trade. Higher income prospects in any trade create competition and sooner or later non-competitive segments of the market fall by the way side in due course, and in our case these would be small-scale farmers and traders Shiundu and Oniang'o (2007).

is beneficial for women more through wage employment opportunities on estate farms or packing house than directly through product markets. It is so because they are seen as secondary workers and relatively easier to lay off due to their lower bargaining power [14]. In the same vein, [15] argued that the employment of women in commercial farms tends to vary greatly by crop. In the agricultural sector, another important source of employment for rural women nowadays is employment in Non-Traditional Agricultural Export (NTAE) according to [9]. This type of source of employment has emerged particularly in Latin American countries (such as Colombia, Ecuador, Brazil, Chile, Mexico and Peru) as well as in some African countries (such as Kenya, Uganda, Zambia, and more recently, Ethiopia). However, as mentioned by [16], the share of rural labour force employed in NTAE is very low and the scope for their future expansion is limited. Moreover, there are also regional differences in how NTAEs affect gender equality [9]. In sub-Saharan Africa, the rise of cash crop exports has resulted in more employment opportunities for men rather women [4].

For their part, [17] were interested in the gender inequality effects of trade liberalization in Pakistan. They included in the analysis various dimensions of gender inequalities such as labour market, education and health facilities. To bypass the difficulties related to data limitations in Pakistan, they constructed a composite index of gender inequality<sup>3</sup>. They came up with the conclusion that trade liberalization has contributed to significant reduction in gender inequalities particularly in labour market. The determinants of this positive impact are, in the period 1973-2005 changes in per capita income along with the ratios of girls and boys schools and the ratio the number of female teachers to the number of schools. Balianoune-Lutz [18] carried out a comparative analysis between SSA and non-SSA and empirically assessed the impact of trade liberalization on gender equality of literacy. To account for potential endogeneity problems of trade and growth, the author employed the OLS technique and TSLS estimations. According to the author, increases in gender inequality of literacy may be the result of higher integration into markets.

<sup>3</sup> The composite index of gender inequality includes eight indicators which include both demand and supply side indicators such as; primary enrolment, secondary enrolment, adult literacy rate, number of employed teachers, crude death rate, life expectancy, mortality rate in 1-4 years old and labour force participation rate (Ahmed & Hyder, 2006; p31).

Interested in labour effects of globalization, [19] assessed the impact of trade liberalization on female labour force participation rate over the period 1970-1975. The findings are contrary to previous conclusions on the topic. Thus, the gendered employment effects of trade liberalization are inconclusive. One explanation of this inconclusiveness is given by [4]. According to them, the trade liberalization effects on labour force vary with the differences in structures of production and trade. Recently, scholars interested in the gendered employment effects of trade liberalization in Sub-Saharan Africa [20,21,22]. Their findings converge in their conclusion. They found gender inequalities in benefiting opportunities offered by trade liberalization. Men and women do not have the same facilities to enjoy trade opportunities. According to them, this is due to the fact the expanding sectors are natural resource extraction sectors and those sectors are men-dominated. Kucera [11] went further in the analysis and found empirical proof that tariff cuts on labour-intensive imports have hurt more women's employment than men. This conclusion is shrill in several African countries where the manufacturing sector is less competitive than in the Asia region.

### 3. METHODOLOGY AND DATA

For the empirical analysis, we follow the macroeconomic approach used by several authors including [4,23]. The time period 2000-2017 is chosen because of data availability concerning tariffs.

To assess the impact of trade liberalization on women's employment in WAEMU, we have used the following model:

$$lfpr_{it} = \beta_0 + \beta_1 trlib_{it} + \beta_2 gdp\_per_{it} + \beta_3 \log(impr)_{it} + \beta_4 \log(gne)_{it} + \beta_5 \log(exp)_{it} \mu_i + \varphi_t + \varepsilon_{it}$$

*lfpr* is the dependent variable: the Labour force participation rate. It is one of the most widely used indicators of gender inequality in paid work [9]. The rate measures the number of persons in the workforce as a percentage of the population in working age. It is usually disaggregated by sex and age. Both those who are employed and those who are unemployed but looking for jobs are included.

The variable of interest is trade liberalization (*trlib*). As discussed above and in line with the objective, we use trade-weighted tariff average

as trade liberalization indicator. According to [24], the trade-weighted tariff average is an adequate proxy for trade liberalization because it measures a country's trade restrictiveness. Depending on the level of openness and the importance of trade restrictions, the expected sign of this proxy could be positive or negative. For instance, the expected sign would be positive with low level of tariff rate.

The other independent variables include the growth rate of real GDP per capita (*gdp\_per*), gross national expenditure and the economic structure. The growth rate of real GDP per capita is included to capture the effects of aggregate demand on gendered employment. Increased economic growth rate is often associated with increased job creation for women due to their lower wages rate [4]. Thus, the GDP per capita is expected to have positive effects on women's employment. Trade openness is also likely to reduce tariff revenues, and this, in turn, may have gender-specific effects on the size and the composition of government expenditure. Even if the government manages to replace tariffs with alternative direct or indirect taxes, these may have a gender-differentiated impact [9]. To capture this, we include the gross national expenditure (*gne*). The increasing in the gross national expenditure would be associated with an increase in the LFPR. Trade or trade liberalization may lead to changes in the structure of production, with sectors producing for export expected to expand and other sectors sensitive to import competition expected to contract. This, in turn, causes changes in the level and the distribution of employment of different categories of workers (employed in different sectors with different intensities), as well as in their remuneration. The exports and imports are introduced in the equation to capture the changes in the production system. The model is not a log-version. However, in the concern of normalization and reduction of biases related to the existence of very high values and ratio in the same model, the logarithm has been applied to two variables as mentioned in the above equation.

#### 4. ESTIMATION PROCEDURES AND RESULTS

This section is split into two sub-sections as follows: in the first sub-section, we expose in detail and step by step the estimation procedures. In the second sub-section, come the results followed by their analysis and discussions.

#### 4.1 Estimation Procedures

Firstly, we conduct a descriptive statistical analysis to find out the nature of data whether they are homogeneous or not. This analysis is important and useful to support random or fixed effects when estimating panel models.

Secondly, the unit root tests have been done to check out whether the variables are stationary or not. Im-Pesaran-Shin (IPS) test has been employed. If the p-values associated with the statistics given by those tests are less than 5 per cent, the concerned variable is stationary at 5% level. The variable is non-stationary otherwise. It is highly important to test for stationarity or non-stationarity for various reasons: according to several econometric modules, the stationarity or not of series can strongly influence its behaviour and properties – for instance, the persistence of shocks will be infinite for non-stationary series; to avoid spurious regressions: If two variables are trending over time, a regression of one on the other could have a high  $R^2$  even if the two are totally unrelated; and finally, If the variables in the regression model are not stationary, then it can be proved that the standard assumptions for asymptotic analysis will not be valid. In other words, the usual “*t-ratios*” will not follow a *t-distribution*, so we cannot validly undertake hypothesis tests about the regression parameters.

Thirdly, the Hausman test is ran to choose, among the fixed and random effects, the most relevant model. The Hausman test which  $Prob > chi2$  is greater than 5% indicates that the appropriate model to estimate is the random one. However, before running the Hausman test, we check for the existence or not of any cointegration relationship between variables for preventive purpose. Lastly, we run the estimations according to the results of Hausman test.

#### 4.2 Tests and Results

According to results displayed in above table, the average labour participation rate is 58.53% and 78.32% for female and male respectively. The relatively low value of the standard deviation (13.33 for female and 7.40 for male) means that there is a certain homogeneity in the WAEMU region regarding this variable. By applying the logarithm, it eliminates outliers from import, export and gross national expenditures data and helps minimize the standard deviations. The min

max values of GDP per capita growth show that WAEMU countries present a very high differences in terms of economic growth. However, on average, they are basically LDCs as highlighted by the GDP per mean which is 1.34%. As far as trade liberalization (trlib) is concerned, the observation numbers is 119, less than 129. This is due to the lack of data on the whole time period. However, since the number of missed values is very small, it does not negatively influence results. On average, the applied tariff is homogenous across countries and is around 9.84% which a standard deviation of 2.02%. However, while certain countries like Cote d'Ivoire and Senegal are deeply engaged in tariff cuts, some (like Benin) still have a higher tariff level or are liberalizing trade but at snail space. This justifies the differences in max and min values observed over the time period 2000-2017.

Based on, the p-values associated with the statistics given by IPS test are less than 5% for

all of the variables of the model. This means that all of the variables are stationary at the 5% level. In other words, estimations with OLS method should provide sound results and the risk of cointegration is minimized. However, since the size of the panel is quite small and for preventive purpose, we run the Kao cointegration test. Results are summarized in the Table 3.

Kao cointegration test displays five (05) tests for cointegration. If the p-value is less than 5%, it means that variables are cointegrated and there may exist an error correction mechanism in long run. According to results shown above, either for the female equation or the male equation, the p-value are all greater than 5%. In other words, there is no cointegration relationship among variables. We can then confidently run estimation using OLS methods. But, before proceeding, it is important to do Hausman test to find out the most relevant model to use. Results are in the Table 4.

**Table 1. Descriptive statistical results**

Variables	Obs	Mean	Std. Dev.	Min	Max
lfpr_f	126	58.53338	13.66016	33.66896	80.58108
lfpr_m	126	78.32525	7.40312	66.15913	91.11611
gdp_per	126	1.337458	2.813584	-6.647608	12.05011
limp	126	21.7032	0.7850061	19.95116	23.21399
lexp	126	21.33361	0.9698341	19.33939	23.33776
lgne	126	22.79087	0.7247524	21.10538	24.39985
trlib	119	9.844	2.027331	6.33	17.22

Source: Author based on WDI data

**Table 2. Results of unit root tests**

Variables	At level		
	p-value (P> t )	Options	Decision
lfpr_f	0.0488	Cons &Trend	Stat.
lfpr_m	0.0001	Cons	Stat.
gdp_per	0.0075	Cons &Trend	Stat.
lgne	0.0416	Cons &Trend	Stat.
lexp	0.0000	Cons	Stat.
limp	0.0000	Cons	Stat.
trlib	0.0399	Cons	Stat.

Source: Author, based on calculations

**Table 3. Kao cointegration test results**

Kao cointegration test	Female		Male	
	Statistic	p-value	Statistic	p-value
Modified Dickey-Fuller t	0.6836	0.2471	-1.0019	0.1582
Dickey-Fuller t	0.6672	0.2523	-1.2500	0.1057
Augmented Dickey-Fuller t	1.2195	0.1113	-0.9884	0.1615
Unadjusted modified Dickey-Fuller t	0.6727	0.2506	-0.9565	0.1694
Unadjusted Dickey-Fuller t	0.6569	0.2556	-1.2264	0.1100

Source: Author, based on calculations

**Table 4. Hausman test results**

Equations	Trade	Hausman test: Prob>chi2	Decision
Female equation (LFPR_F)	Imports	0.3275>5%	Random-effects
	Exports	0.0000<5%	Fixed-effects
Male equation (LFPR_M)	Imports	0.9821>5%	Random-effects
	Exports	0.9878>5%	Random-effects

Source: Author, based on calculations

Within each equation, the estimations are done separately by considering imports and exports. The reason is that these two components of trade usually have contradictory impacts on employment. By doing so, it helps provide recommendations about type of policy to promote.

Based on the above results, for the female equation (LFPR\_F), the Hausman test indicates that the random effect model is the most relevant. In fact, the Prob>chi2 is equal to 0.3275 which is greater than 5%. In contrary, the Prob>chi2 is equal 0.0000 which is less than 5% with exports as trade structure. This means that the Hausman test indicates that the fixed effect model is the most adequate in that case.

For the male equation (LFPR\_M), with both imports and exports as trade component variables, the Hausman test indicates that the random effect model is the most relevant. Indeed, the Prob>chi2 results are equal to 0.9821 with imports variable and 0.9878 with exports variable. These results are all greater than 5%. In respect of estimation settings, the results obtained from Stata are summarized in the Table 5.

The results show that the coefficients associated with the variable trade liberalization (trlib) are not statistically significant in explaining women's

employment in WAEMU zone. In fact, the p-value of 0.307 and 0.121 in all cases are less than the 5%. This means that trade liberalization measures in implementation in that zone do not explain women's employment in the Union. On the other hand, trade liberalization measures exert significant negative effect on men's employment. In fact, in the regression with imports as trade structure variable, the p-value of 0.087 is less than 10% and in the regression with exports as trade structure variable, the p-value of 0.015 is less than 5%. These results imply that trade liberalization measures do not generate employment in the union. Instead, they contribute to the destruction of job opportunities for men in the area. With their low productive capacities, WAEMU member are not efficient enough to face high competition from abroad. Furthermore, there are internal constraints that undermine the productive system. These constraints may include institutional and governance problems, lack of negotiation's skills. This situation makes them highly dependent on imported goods and incidentally leads to an outperformance of domestic producers cutting jobs. The insignificant impact of trade liberalization on women's employment exports results from the fact that WAEMU countries are not much diversified and rely on goods for the production of which women are underrepresented. For instance, the economies of the Union are basically dependent

**Table 5. Estimations results<sup>4</sup>**

Variables	Female equation (LFPR_F)		Male equation (LFPR_M)	
	Imports	Exports	Imports	Exports
gdp_per	<b>-0.3454**</b> (0.022)	<b>-0.3860***</b> (0.005)	<b>-0.3077**</b> (0.021)	<b>-0.3529***</b> (0.002)
lgne	<b>13.3967***</b> (0.000)	<b>15.6814***</b> (0.000)	4.6362 (0.167)	<b>9.0680***</b> (0.000)
lexp	- -	<b>-10.2354***</b> (0.000)	- -	<b>-9.2196***</b> (0.000)
limp	<b>-8.5312***</b> (0.009)	- -	<b>-5.5181*</b> (0.053)	- -
trlib	-0.3657 (0.307)	-0.4979 (0.121)	<b>-0.5379*</b> (0.087)	<b>-0.6643**</b> (0.015)

Source: Author, based on calculations

<sup>4</sup> Note: \*\*\*, \*\*, and \* indicate statistical significance at 1%, 5%, and 10% levels respectively. P-values are in parentheses.



on agricultural products such as cotton, coffee, cocoa, and cashew. The production of these commodities is male-dominated, with women only involved in family tasks such as cooking. In addition, sectors that are most involved in international trade in those countries are male-dominated. Women are not found in mineral and extractive sectors for instance. These results are relevant in that many studies including [25,26] have already concluded that African developing countries are not enjoying trade liberalization.

Trade negatively affects women's employment. In fact, the probability tests (p-value) of 0.009 for imports and 0.0000 for exports are less than 5%. This means that an increase in imports (respectively exports) by 1% will lead to a decline in women's employment by 8 units (respectively 10 units). By increasing imports, liberalization reforms increase competition on the local markets. As a result, there may be falls in local production done by women and losses of their jobs. The negative impact of trade liberalization on women's employment exports results from the fact that women in that region are mostly active in informal activities with low value-added. Trade liberalization reforms come with reforms against informal sectors where women are mainly found and very high import competition. It results in loss of job for them.

The gross national expenditures (gne) exerts a positive and significant effect on women's employment in the WAEMU. In fact, the p-value (0.000) associated with this variable is less than the 5%. This means that an increase in government expenditures by 1% will lead to an increase in women's employment by around 13 units. This result shows the high vulnerability of women to reductions in Government expenditure. If trade liberalization leads to a decrease in governmental revenue, incidentally, opportunities for women would be highly and negatively affected. Although, governmental expenditures also exert the same effects on men's employment as women's employment, the sizes are quite different. The positive magnitude is much higher for women than for men. This sheds light on the level of dependency of women on governmental expenditures.

The analysis is quite inversely similar in the case of the effects of GDP per capita on women's employment. This variable exerts a negative and significant effect on women's employment in the union. An increase in GDP per capita by 1 unit leads to a decrease in women's employment by

0.3454 units or 0.3860 units as the case may be<sup>5</sup>. Same conclusion for men's employment. This result means that, economic growth (i.e. an increase in GDP) does not necessarily lead to job creation for women or for men. The result, albeit paradoxical, needs a deeper analysis to see how the welfare is created and shared in the union. In conclusion, the impact of trade liberalization of employment is not gender neutral. Rather, it varies depending on the sex of the people.

## 5. CONCLUSION AND RECOMMENDATIONS

The main objective of this paper was to assess the impact of trade liberalisation on employment in the West African Economic and Monetary Union. To do so, the econometrical approach based on [4,23]; has been employed. The estimations are conducted on a panel data and cover seven of the eight WAEMU member countries over the period from 2000 to 2017. The results show that, overall, trade liberalization does not explain women's employment patterns in that Union. In other words, women do not enjoy the benefit generated by trade liberalization. Rather, it contributes employ destruction for men. In such context whereby women's opportunities are excluded and men's one are negatively affected, one could not expect that trade policy generates economic performance in that area.

In terms of policy implications, this study calls policy makers to setting up, better negotiating or renegotiating trade agreements and implementing trade policy that are more inclusive and beneficial particularly to women. This is crucial in that, in the context whereby the population structure is young and female-dominated, trade policies which do not positively affect women is likely to undermine economic performance. This could be done by taking into consideration women's employment particularities in the union, reducing and eliminating inequalities related to gender and the sex of people. It is also necessary to protect men's employment from foreign high competition. Lastly, as underlined by [27] trade liberalization's threshold must to be in conformity with the development level of countries.

This empirical case study on a WAEMU region is an important support destined to other

---

<sup>5</sup> We are referring here to the trade structure.

researchers and trade and gender specialists, trade negotiators and more importantly policy makers. It helps them to understand what are the real effects of trade reforms they are undertaken and to better support gender mainstreaming policies for an inclusive growth. However, the size of the sample and model relatively simple may constitute some limitations to this work. Moreover, this work does not well capture women's employment situation in this region. We suggest, for future research and proposal enhancements, to identify women's activities and propose solutions to make both men and women reap benefit from trade liberalization opportunities.

### ACKNOWLEDGEMENTS

Author is grateful to TRAPCA programme which offered me the opportunity to deepen my understanding trade policy and trade law. Heartfelt thanks to Jacques Degbelo (PhD), my colleague Sangwani Mkandawire and all my colleagues from LAREG (University of Parakou, Benin) and from CREFAT (University of Thies, Senegal).

### COMPETING INTERESTS

Author has declared that no competing interests exist.

### REFERENCES

1. Seguino S, Were M. Gendered perspectives on economic growth and development in sub-Saharan Africa. WIDER Working Paper; 2014.
2. Grossman GM, Helpman E. Trade, knowledge spillovers, and growth. *Eur. Econ. Rev.* 1991;35(2-3):517-526.
3. Cornia GA, Jolly R, Stewart F. Adjustment with a human face: Protecting the vulnerable and promoting growth-1990. Clarendon Press; 1987.
4. Wamboye E, Seguino S. Economic structure, trade openness, and gendered employment in sub-Saharan Africa. *Feminist Economist*. University of Vermont, Burlington; 2012.
5. Tejani S, Milberg W. Industrial upgrading, deindustrialization and the defeminization of manufacturing employment. SCEPA Working Paper, The New School; 2010.
6. Arbache JS, Kolev A, Filipiak E. Gender disparities in Africa's labor market. The World Bank; 2010.
7. Heckscher EF, Ohlin BG. Heckscher-Ohlin trade theory. The MIT Press; 1991.
8. Shaikh A. Globalization and the myth of free trade AN WA R SHAIKH. In *Globalization and the Myths of Free Trade*, Routledge. 2007;70-88.
9. UNCTAD. Trade and Gender: Unfolding the links; 2010.
10. Tejani S, Milberg W. Global defeminization. *Ind. Upgrad. Occup. Segmentation Manuf. Employ. Middle—Income Ctries*; 2010.
11. Kucera D, Roncolato L, Von Uexkull E. Trade contraction and employment in India and South Africa during the global crisis. *World Dev.* 2012;40(6):1122-1134.
12. Von Braun J, Johm KB, Puetz D. Nutritional effects of commercialization of a woman's crop: Irrigated rice in The Gambia; 2012.
13. Shiundu KM, Oniang'o RK. Marketing African leafy vegetables: Challenges and opportunities in the Kenyan context. *Afr. J. Food Agric. Nutr. Dev.* 2007;7(4): 1-17.
14. Barrientos S, Kritzing A. Squaring the circle: Global production and the informalization of work in South African fruit exports. *J. Int. Dev.* 2004;16(1):81-92.
15. Chan MK. Informal workers in global horticulture and commodities value chains: A review of literature. *Women Informal Employ. Glob. Organ.* Camb. MA; 2013.
16. Fontana M, Paciello C. Gender dimensions of rural and agricultural employment: Differentiated pathways out of poverty—A global perspective. In *Institute of Development Studies at Sussex (England)*. Paper submitted to the FAO-IFAD-ILO Workshop on 'Gaps, Trends and Current Research in Gender Dimensions of Agricultural and Rural Employment: Differentiated Pathways out of Poverty' Rome. 2009;31.
17. Ahmed N, Hyder K. Gender inequality and trade liberalization: A case study of Pakistan; 2006.
18. Balamoune-Lutz M. Globalisation and gender inequality: Is Africa different? *J. Afr. Econ.* 2006;16(2):301-348.
19. Meyer LB. Trade liberalization and women's integration into national labor markets: A cross-country analysis. *Soc. Indic. Res.* 2006;75(1):83-121.
20. Bussolo M, De Hoyos RE. Gender aspects of the trade and poverty nexus: A macro-micro approach. The World Bank; 2009.

21. Fontana M. Modelling the effects of trade on women, at work and at home: comparative perspectives. *Econ. Int.* 2004; 3:49–80.
22. Braunstein E. Neoliberal development macroeconomics: A consideration of its gendered employment effects. United Nations Research Inst. for Social Development; 2012.
23. Richards DL, Gelleny R. Women's status and economic globalization. *Int. Stud. Q.* 2007;51(4):855–876.
24. Manwa F, Wijeweera A. Trade liberalisation and economic growth link: The case of Southern African Custom Union countries. *Econ. Anal. Policy.* 2016; 51:12–21.
25. Ekodo R, Ngoms A. Ouverture commerciale Et croissance Economique En Zone CEMAC. *Journal of Economics and Development Studies.* 2017;58–67.
26. Eriş MN, Ulaşan B. Trade openness and economic growth: Bayesian model averaging estimate of cross-country growth regressions. *Econ. Model.* 2013;33:867–883.
27. Zahonogo P. Trade and economic growth in developing countries: Evidence from sub-Saharan Africa. *J. Afr. Trade.* 2016; 3(1–2):41–56.

## APPENDIX

### ▪ Descriptive statistics

```
summarize lfpr_f lfpr_m gdp_per limp lexp lgne trlib
```

Variable	Obs	Mean	Std. Dev.	Min	Max
lfpr_f	126	58.53338	13.66016	33.66896	80.58108
lfpr_m	126	78.32525	7.40312	66.15913	91.11611
gdp_per	126	1.337458	2.813584	-6.647608	12.05011
limp	126	21.7032	.7850061	19.95116	23.21399
lexp	126	21.33361	.9698341	19.33939	23.33776
lgne	126	22.79087	.7247524	21.10538	24.39985
trlib	119	9.844	2.027331	6.33	17.22

### ▪ Kao cointegration test

```
xtcointtest kao lfpr_f gdp_per trlib lgne limp lexp
```

Kao test for cointegration

```
-----
Ho: No cointegration                Number of panels    = > 7
Ha: All panels are cointegrated     Number of periods   = > 15
```

```
Cointegrating vector: Same
Panel means:           Included           Kernel:           Bartlett
Time trend:           Not included       Lags:            0.71 (Newey> -West)
AR parameter:         Same               Augmented lags:  1
```

```
-----> -----
                Statistic           p-value
-----> -----
Modified Dickey-Fuller t           0.6836           0.2471
Dickey-Fuller t                    0.6672           0.2523
Augmented Dickey-Fuller t          1.2195           0.1113
Unadjusted modified Dickey-Fuller t 0.6727           0.2506
Unadjusted Dickey-Fuller t         0.6569           0.2556
-----> -----
```

```
. xtcointtest kao lfpr_m gdp_per trlib lgne limp lexp
```

Kao test for cointegration

```
-----
Ho: No cointegration                Number of panels    = > 7
Ha: All panels are cointegrated     Number of periods   = > 15
```

```
Cointegrating vector: Same
Panel means:           Included           Kernel:           Bartlett
Time trend:           Not included       Lags:            1.00 (Newey> -West)
AR parameter:         Same               Augmented lags:  1
```

```
-----> -----
                Statistic           p-value
-----> -----
Modified Dickey-Fuller t           -1.0019          0.1582
Dickey-Fuller t                    -1.2500          0.1057
Augmented Dickey-Fuller t          -0.9884          0.1615
Unadjusted modified Dickey-Fuller t -0.9565          0.1694
Unadjusted Dickey-Fuller t         -1.2264          0.1100
-----> -----
```



**xtreg lfpr\_m gdp\_per tav trlib lgne limp, re**

```

Random-effects GLS regression           Number of obs    =    113
Group variable: individuus             Number of groups =     7

R-sq:  within = 0.1377                Obs per group:  min =    11
      between = 0.0246                avg              =   16.1
      overall = 0.0088                max              =    17

corr(u_i, X) = 0 (assumed)            Wald chi2(5)     =    16.43
                                         Prob > chi2      =    0.0057
    
```

lfpr_m	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
gdp_per	-.3077301	.1332701	-2.31	0.021	-.5689347	-.0465256
tav	.1095237	.1060623	1.03	0.302	-.0983545	.3174019
trlib	-.5379194	.3144954	-1.71	0.087	-1.154319	.0784802
lgne	4.636204	3.35206	1.38	0.167	-1.933712	11.20612
limp	-5.518079	2.851645	-1.94	0.053	-11.1072	.0710414
_cons	93.1617	25.83418	3.61	0.000	42.52763	143.7958
sigma_u	10.170916					
sigma_e	3.6332834					
rho	.88683289	(fraction of variance due to u_i)				

hausman fe re

	---- Coefficients ----			
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
gdp_per	-.3859752	-.3879723	.0019971	.
tav	.0683001	.0550578	.0132423	.0078842
trlib	-.4979236	-.476739	-.0211846	.
lgne	15.68136	15.4343	.2470668	.1645308
lexp	-10.23538	-10.09702	-.1383619	.1397208

b = consistent under Ho and Ha; obtained from xtreg  
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(5) = (b-B)'[(V\_b-V\_B)^(-1)](b-B)  
= 206.36  
Prob>chi2 = 0.0000  
(V\_b-V\_B is not positive definite)

**xtreg lfpr\_f gdp\_per tav trlib lgne lexp, fe**

```

Fixed-effects (within) regression       Number of obs    =    113
Group variable: individuus             Number of groups =     7

R-sq:  within = 0.4004                Obs per group:  min =    11
      between = 0.2912                avg              =   16.1
      overall = 0.1266                max              =    17

corr(u_i, Xb) = -0.6292              F(5,101)        =    13.49
                                         Prob > F         =    0.0000
    
```

lfpr_f	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
gdp_per	-.3859752	.13447	-2.87	0.005	-.6527276	-.1192228
tav	.0683001	.1030791	0.66	0.509	-.1361811	.2727813
trlib	-.4979236	.3180965	-1.57	0.121	-1.128941	.1330942
lgne	15.68136	2.161203	7.26	0.000	11.39412	19.96861
lexp	-10.23538	1.695899	-6.04	0.000	-13.59959	-6.87117
_cons	-78.86761	23.8935	-3.30	0.001	-126.2659	-31.46933

```
-----+-----
sigma_u | 17.125019
sigma_e | 3.6048216
rho     | .95756973 (fraction of variance due to u_i)
-----+-----
F test that all u_i=0:      F(6, 101) = 151.78          Prob > F = 0.0000
```

**hausman fe re**

```
-----+-----
          ---- Coefficients ----
          |          (b)          (B)          (b-B)          sqrt(diag(V_b-V_B))
          |          fe          re          Difference          S.E.
-----+-----
gdp_per | -.349565  -.3529168  .0033518  .0203373
tav     | .0991429  .0847321  .0144108  .0204662
trlib   | -.6659122  -.6642821  -.0016301  .0532557
lgne    | 9.183041  9.067964  .1150773  .4285887
lexp    | -9.272147 -9.219645  -.0525021  .3436753
-----+-----
```

b = consistent under Ho and Ha; obtained from xtreg  
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\begin{aligned} \chi^2(5) &= (b-B)' [(V_b-V_B)^{-1}] (b-B) \\ &= 0.61 \\ \text{Prob}>\chi^2 &= 0.9878 \end{aligned}$$

**xtreg lfpr\_m gdp\_per tav trlib lgne lexp, re**

```
Random-effects GLS regression              Number of obs   =   113
Group variable: individuus                 Number of groups =    7

R-sq:  within = 0.3565                      Obs per group:  min =   11
        between = 0.1738                      avg           =  16.1
        overall = 0.1932                      max           =   17

Wald chi2(5) = 58.23
corr(u_i, X) = 0 (assumed)                  Prob > chi2     = 0.0000
```

```
-----+-----
lfpr_m |      Coef.   Std. Err.      z    P>|z|    [95% Conf. Interval]
-----+-----
gdp_per | -.3529168   .1153038   -3.06  0.002   - .5789081   -.1269255
tav     | .0847321   .0873868    0.97  0.332   - .0865428    .256007
trlib   | -.6642821   .2717996   -2.44  0.015   -1.197     -.1315646
lgne    | 9.067964   1.832311    4.95  0.000    5.476701   12.65923
lexp    | -9.219645   1.436075   -6.42  0.000   -12.0343   -6.404989
_cons   | 71.46021   20.65749    3.46  0.001   30.97227   111.9482
-----+-----
sigma_u | 9.140221
sigma_e | 3.1387328
rho     | .89451669 (fraction of variance due to u_i)
-----+-----
```

© 2019 Agbahoungba; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

**Peer-review history:**  
 The peer review history for this paper can be accessed here:  
<http://www.sdiarticle3.com/review-history/49555>