# ENSEA – CRDI (Development Research Centre): SERIAL ARTICLE

## High risk of vulnerability employment, Gender and Economic growth in ECOWAS: Case of unpaid family and self-employment jobs

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## ABSTRACT

In view of the efforts made by West African countries to increase women's participation in the labour market, and especially in view of their high proportion of employment at high risk of vulnerability, this study, taking a macroeconomic approach, investigated the contribution of jobs at high risk of vulnerability to the economic growth of these countries according to their gender profile. In essence, it is a question of whether the employment vulnerability of men and women has differential effects on growth. To this end, the study covered thirteen West African countries during the period 1991-2018 due to data availability. In doing so, the study achieved two major results. First, employment at high risk of vulnerability is associated with lower economic growth regardless of gender.  Second, there is no significant difference in the growth effects of these types of jobs for either women or men. Thus, the different employment policies of States must take into account the quality of the jobs that are offered to the population. On the one hand, there is a need to strengthen monitoring of hiring practices and strengthen labour law texts to avoid a proliferation of vulnerable jobs. This requires the professionalization of certain activities, including domestic work; the reduction of unpaid jobs and the implementation of an adequate and inclusive minimum wage system.  On the other hand, macroeconomic policies for gender equality in the labour market must be pursued, but these must be accompanied by the formalisation of the jobs created. Of course, the actors in the informal system must be motivated to engage effectively in the formal system. This can be achieved through tax incentives, advantageous social safety nets and skills development.

## KEYWORDS

Vulnerable employment; Gender; Growth; Panel; West Africa

## CODE JEL

J16; O10; C23

## 1) Introduction

Economic growth has long been at the heart of debates in the conduct of the economic policy of nations. Its origins are diverse, and are generally attributed to factor endowments, technological advancement, and human capital, among others (Solow, 1956; Romer, 1986 and 1990; Lucas, 1988; Barro and Lee, 1994). Over time, the challenges of achieving sustained growth have moved beyond increasing the wealth and productive capacity of economies to address social problems. In Sub-Saharan Africa, for example, the economic growth recorded in recent years has led to an improvement in the social situation and advances in human development in many countries in the region, even though these improvements have been small in magnitude (AfDB, 2016). One of the reasons for this is that more growth is needed to achieve better results (AfDB, 2016). Thus, studies will show that developing countries, especially those in sub-Saharan Africa, could achieve more growth if they succeeded in reducing gender inequalities in the labour market (Pervaiz et al., 2011; Cavalcanti and Tavares, 2015; Kim et al., 2018). The idea is that the potential of the labour force to produce more growth is not sufficiently exploited. As proof, in most Sub-Saharan African countries, women constitute at least half of the population but much less than half of the labour force even though they are economically very active (ILO, 2016). However, studies will show that it is not enough to reduce inequalities between men and women in terms of participation in the labour market, since not every job is likely to create more growth because it may have negative externalities on the latter. In the case in point, these are informal, irregular, unpaid or low-productive jobs (La Porta and Shleifer, 2008; Levy, 2010; Gatti et al. 2011; Benjamin and Mbaye, 2012; Anton et al., 2012). In other words, jobs with a high risk of vulnerability are likely to undermine growth despite policies to reduce gender inequalities in the labour market.

Vulnerability in employment means jobs with at least one of the criteria of differentiation, including the informality of the contract, the arduousness of the activity, the irregularity of the remuneration or its absence, the precariousness or irregularity of the job, the absence of social security, the situation of underemployment, etc. (Bocquier et al., 2009). In its guide on the new employment indicators for the Millennium Development Goals published in 2009, the International Labour Office (ILO) defines vulnerable employment as the set of jobs that are most likely to be informal, with less access to social. The ILO believes that all vulnerable employment should be highly correlated with poverty in developing countries and indeed measures vulnerable employment as all own-account workers and unpaid family workers.

In the specific case of the Economic Community of West African States (ECOWAS), the economic environment over the last two decades has been marked by an average annual growth rate of more than 5% between 2003 and 2012 and a little less between 2013 and 2018 (OECD, 2008; ADB, 2018). In 2018, six of the ten fastest growing economies on the African continent were in West Africa and countries such as Côte d'Ivoire, Ghana and Senegal were among the ten fastest growing economies in the world (OXFAM, 2019). However, the growth recorded in the sub-region remains below that set by the sustainable development objectives for the sub-region (at least 10%) within the framework of the post-2015 Africa follow-up process and the Rio+20 Conference to help African countries participate effectively in the overall Sustainable Development Goals (SDOs) process. At the same time, the labour market in the sub-region continues to be characterized by a high labour force participation rate. More than 80% of jobs are informal and vulnerable (ILO, 2019). Given the high level of gender inequalities in terms of labour market participation, several policies have been implemented by the States. Although these policies are of various kinds, direct support to women has been advocated in order to increase their empowerment for long-term poverty reduction and improved growth. However, efforts to reduce the employment gap between men and women have been mostly focused on the creation of vulnerable jobs. This has made women the significant proportion of individuals in this type of employment in West Africa, especially since, on average, women perform at least two and a half times more domestic chores and unpaid care activities than men (ILO, 2016; ADB, 2018).

In such a context, we are tempted to say that the failure to achieve the growth target set by the sub-region could be due to the large proportion of high-risk, vulnerable jobs that are mostly unproductive or low-productive. Indeed, several studies have pointed out that our countries would enjoy enormous growth potential if, however, the structure of jobs migrated from low-productivity to high-productivity jobs (McMillan and Rodrik, 2011; McMillan et al., 2014).

Consequently, it is important to question the contribution of jobs with a high risk of vulnerability to economic growth in the region. In other words, are self-employment and family jobs an obstacle to achieving high growth in the sub-region? Do their effects on growth differ between men and women? Based on the hypothesis that high vulnerability risk jobs are a brake on economic growth regardless of gender, the objective of this study is to investigate the contribution of unpaid family and self-employment jobs to economic growth in West African countries according to the gender profile.

Our contribution to the literature on this issue is twofold. Indeed, the question of gender in the labour market in relation to growth has long focused on the transmission channels through which

the gender issue could affect growth. Apart from the indirect relationship, some studies will highlight a direct link with respect to the differences that exist in the capacity of growth to generate employment from a gender perspective. Another part of the direct link between employment and growth has focused more on low-productivity jobs of the informal type without, however, insisting on the gender dimension. Thus, our study is a continuation of work that looks at the direct effects of low-productivity jobs on growth. In contrast, our study considers self-employment and family employment at the macro level, integrates gender perspectives and focuses on a sample of West African countries. In addition to the empirical contribution, our study makes a contribution in terms of economic policy. Indeed, the study highlights the rather problematic nature of the policies taken to address gender inequalities between sexes in the labour market and the growth objective envisaged by the states.

Since the analysis of the relationship is at the macro level and data on self-employment and unpaid family jobs are only available for a relatively recent period, this work favours a panel data analysis approach that has better properties in small samples. To this end, it adopts the Autoregressive Distributed Lag model proposed by Pesaran and Smith (1995) and Pesaran et al. (1999), respectively, for the study. By relaxing the hypotheses of the Error Correction Method regarding the time-series properties of the variables, in which they must be integrated of the same order, the model makes it possible to model the short- and long term dynamics in a single step. In addition, the model takes into account issues of heterogeneity that may exist between the countries in the study and corrects for endogeneity biases by including explained and lagged explanatory and variables.

With this in mind, this study is organized into four main sections. The first section provides a critical review of the literature, the second presents the methodology and the third addresses the data. The fourth section conducts the analysis of the results as well as the discussions. The study concludes with a presentation of the main findings and policy implications.

## 2) Literature review

The question of gender in the labour market in relation to growth has long been concerned with the transmission channels through which gender issues could affect growth.

For some authors, gender wage inequality in the production of labour-intensive export goods increases price competitiveness, leads to export expansion and increases the resources needed

for investment and growth (Seguino, 2000; Busse and Spielmann, 2006; Mitra-Kahn and MitraKahn, 2008). In contrast to these authors, Cavalcanti and Tavares (2015) find that gender inequalities in the labour market discourage women's participation in terms of hours worked while reducing family production or income. For Kim et al (2018), these inequalities reduce the opportunity cost of children, leading to higher population growth and thus a reduction in per capita output. Pervaiz et al. (2011) show that lower gender inequality could improve women's participation in the labour market, as they will spend their income on children's education and health. This investment in future generations will lead to an increase in the productivity and efficiency of the workforce for the future, which will promote long-term growth. Furthermore, Gonzales et al (2015) and Agénor (2018) show that more egalitarian laws in terms of social norms tend to stimulate women's participation in the labour market and can be very effective in promoting growth and development. Also, gender inequalities in the labour market in terms of occupational choice and the existence of barriers to hierarchical responsibilities also affect growth. To this end, Cuberes and Teignier (2016) assess the production cost of the gender gap in entrepreneurship and labour force participation. They show that the gender gap in entrepreneurship has a negative effect on income and overall productivity. Lee (2018) in a macroeconomic model attempts to explain the glass ceiling and the cost of production of gender discrimination in the Korean labour market and finds that aggregate output increases by 8.4 per cent when the glass ceiling disappears.

Apart from the indirect relationship, some studies will highlight a direct link to differences in the ability of growth to generate employment from a gender perspective.

To this end, Kapsos (2005) in a study of a large sample of countries attests that growth has been intensive in female employment relative to male employment at the global level due to the catching-up of women's participation in the labour market relative to that of men. Anderson and Braunstein (2013) estimate the gender elasticity of employment growth for 160 countries over the period 1990-2010. On the one hand, these authors find that the elasticities are higher for women than for men. On the other hand, they find that the relative size of the service sector and the ratio of women's labour force participation are the main determinants of gender differences in employment elasticities. In another study, Anderson (2016) examines the gendered nature of the link between growth and employment by analysing the differential impacts that macroeconomic policies and structures have on the ability of growth to be employment-intensive for a sample of eighty countries over the period 1990-2012. The author finds that policies that support the reduction of unpaid work, prioritize public spending on education, and encourage the enrolment

of girls in secondary education are particularly related to more employment-intensive growth for women.

Another part of the direct link between employment and growth has focused instead on low-productivity jobs without, however, emphasizing the gender dimension.

In this regard, several authors have shown that unlike much of Asia, many Latin American and African countries have experienced structural changes in employment from high-productivity to low-productivity sectors, leading to reduced growth (McMillan and Rodrik, 2011; McMillan et al., 2014). For others, precarious, irregular, unpaid, or low-paid jobs are associated with lower productivity (Perry et al., 2007; La Porta and Shleifer, 2008; Benjamin and Mbaye, 2012). The low productivity resulting from these jobs negatively influences people's standard of living (La Porta and Shleifer, 2008; Gatti et al. 2011). Some authors also point out that these jobs are a source of negative externalities because they are generally the result of informal activities that use and congest public infrastructure without bringing in tax revenues to replenish it. This negatively affects more productive activities and reduces growth prospects (Loayza, 1999; Levy, 2010; Anton et al., 2012).

With regard to the existing literature, we are following up on work that looks at the direct effects of low-productivity jobs on growth. To this end, we consider jobs at high risk of vulnerability, including unpaid family and self-employment jobs in economic growth while integrating gender perspectives in the case of a sample of West African countries.

## 3) Methodology of the study

Analysing the contribution of unpaid family and self-employment jobs to economic growth can be quite tedious, given the different ways in which these jobs could affect growth. However, because these jobs are theoretically associated with low productivity and wages, we assume that they have a direct impact on per capita income and thus on the growth rate of GDP per capita. Thus, assuming that the growth rate of GDP per capita is a function of the weight of these jobs in the economy, we have:

$$y = f(x) \tag{1}$$

Where y is the growth rate of GDP per capita and x is the share of unpaid family and self-employment jobs in total employment. However, these jobs alone cannot explain the growth rate.

To do this, we use a set of control variables. In particular, investment is the main driver of growth. Given that the most important activity sectors with the highest growth rates in the sub-region are the agricultural and service sectors, their value added is retained as a control variable. In addition, we consider domestic credit granted by the financial system. This variable reflects not only the role of the financial sector in the economy but also the perception that credit institutions have of the institutional environment.

Equation 1 augmented by the set **Z** of the above-mentioned control variables, then by the random term with **i** the country identifier and **t** the time identifier becomes:

$$y_{i,t} = \alpha_0 + \alpha_1 x_{i,t} + \alpha'_i Z_{i,t} + \varepsilon_{i,t} \qquad (2)$$

Growth in GDP per capita may depend on its past values, but it may also depend on past values of family and self-employment levels and any other variables that can explain it. Therefore, equation 2 can be thought of as an autoregressive distributed lag model:

$$y_{it} = \mu_i + \sum_{j=1}^{p} a_{ij} y_{i,t-j} + \sum_{j=0}^{q} b_{ij} x_{i,t-j} + \sum_{j=0}^{q} c'_{ij} Z_{i,t-j} + \varepsilon_{it} \qquad (3)$$

Where $\mu i$ is the individual fixed effect, p the number of lags of the endogenous variable, q the number of lags of the explanatory variables, $a_{ij}$ the coefficients related to the lagged endogenous variable, $b_{ij}$ the coefficient of vulnerable employment, and $c'\,ij$ the vector of coefficients related to the control variables. Thus, rewriting equation 3 as proposed by Pesaran et al. (1999) in the context of the reparameterisation of the Autoregressive Distributed Lag (ARDL) models gives the following:

$$\Delta y_{it} = \mu_i + \varphi_i y_{i,t-1} + \omega_i x_{it} + \beta'_i Z_{it} + \sum_{j=1}^{p-1} a^*_{ij} \Delta y_{i,t-j} + \sum_{j=0}^{q-1} b^*_{ij} \Delta x_{i,t-j} + \sum_{j=0}^{q-1} c^{*'}_{ij} \Delta Z_{i,t-j}$$
$$+ \ \varepsilon_{it} \qquad (4)$$

With $\varphi_i = -(1 - \sum_{j=1}^{p} a_{ij})$ , $\beta_i = \sum_{j=0}^{q} c_{ij}$ , $\omega_i = \sum_{j=0}^{q} b_{ij}$; $a^*_{ij} = -\sum_{m=j+1}^{p} a_{im}$, *j=1, 2, ..., p-1*

In addition, under the hypothesis that the error term $\varepsilon it$ or a stationary process, the model can be re-specified in the form of an error-correction model in which the short-term dynamics are influenced by the deviation from the long-term relationship as follows:

$$\Delta y_{it} = \mu_i + \varphi_i \big( y_{i,t-1} - \delta_i x_{it} - \theta'_i Z_{it} \big) + \sum_{j=1}^{p-1} a^*_{ij} \Delta y_{i,t-j} + \sum_{j=0}^{q-1} b^*_{ij} \Delta x_{i,t-j} + \sum_{j=0}^{q-1} c^{*'}_{ij} \Delta Z_{i,t-j}$$
$$+ \ \varepsilon_{it} \qquad (5)$$

Where $\theta_i = -(\frac{\beta_i}{\varphi_i})$ and $\delta_i = -\left(\frac{\omega_i}{\varphi_i}\right)$ are the vectors of the long term coefficients whereas $a_{ij}^*$, $c_{ij}^{*\prime}$ and $b_{ij}^*$ are the short-term coefficients. $\Delta$ is the variation operator between two successive dates and $\varphi i$ is the adjustment coefficient. The latter represents the restoring force to equilibrium, and by hypothesis, it is significantly non-zero and negative if the ARDL representation is valid.

Recall, however, that it is necessary to estimate our specified model to know the effect of family and self-employment jobs levels on GDP per capita growth. In view of the strong heterogeneity between ECOWAS countries (Djogbenou et al., 2018), we use the Mean Group (MG) and Pooled Mean Group (PMG) estimators proposed by Pesaran and Smith (1995) and Pesaran et al. (1999) respectively. These authors show that in the presence of heterogeneity, several estimators commonly used in the literature can be affected by potential biases especially in small samples of countries. The Mean Group estimator allows heterogeneity in both short-term parameters and long-term coefficients. This technique estimates the equation for each country in the sample and then calculates the unweighted means of the coefficients over the entire panel. The Pooled Mean Group estimator allows the short-term coefficients and the adjustment coefficient to vary across countries, but the long-term coefficients are the same for all countries. This seems to be appropriate for ECOWAS countries that envisage the convergence of their economies in the long term.

However, the use of these estimators requires that the variables be integrated of an order less than 2 and cointegrated. The tests used in this case are the unit root test of Maddala and Wu (1999) and the cointegration test of Westerlund (2007) (see Appendix). Furthermore, the selected estimators remain efficient in small samples like ours and the idea that the long term coefficients are the same for all ECOWAS countries can be tested using a Hausman-type test as follows:

$$H_0: \theta_i = -\left(\frac{\beta_i}{\varphi_i}\right) = \theta \qquad\qquad 6$$

## 4) Data

The data in this study covers the period 1991-2018 for 13 West African countries, and more specifically ECOWAS. These countries include Benin, Burkina Faso, Côte d'Ivoire, Gambia, Ghana, Guinea Conakry, Guinea Bissau, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo. The temporal range of the data is conditioned by the availability of data on employment at high risk of vulnerability, i.e. unpaid family and self-employment jobs. High-risk vulnerable employment

refers to vulnerable jobs or jobs likely to be vulnerable. Thus, because the family jobs selected are those that are unpaid, then they are considered vulnerable. With regard to self-employment jobs, it should be noted that it is almost informal and strongly correlated with poverty according to the ILO. To this effect, they have a high vulnerability rate. The data used and their sources are described in Table 1 below.

Table 1 : Data and sources

| Variables | Source |
|---|---|
| GDP per capita growth rate in annual percentage terms | WDI, 2020 |
| Unpaid family and self-employment jobs, women (% of employed women) | ILO, 2019 |
| Unpaid family and self-employment jobs, men (% of employed men) | ILO, 2019 |
| Unpaid family and self-employment jobs (Total) | ILO, 2019 |
| Gross fixed capital formation (% of GDP) | WDI, 2020 |
| Services, value added (% of GDP) | WDI, 2020 |
| Agriculture, forestry, fishing, value added (% of GDP) | WDI, 2020 |
| Domestic credit from the financial sector (% of GDP) | WDI, 2020 |

Source: Author

Over the period 1991-2018 the average GDP per capita growth rate of was over 1.2%. Its maximum was reached by Sierra Leone in 2002 and its minimum by Guinea Bissau in 1998. As for the share of unpaid family and self-employed jobs in female and male employment, the averages are high. The share of female unpaid family and self-employment jobs is higher than that of male jobs, with a value of 89.69 versus 77.75 (Table 2).

Table 2: Descriptive statistics

| Variables | Obs. | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| GDP per capita growth | 364 | 1.24 | 4.33 | -29.46 | 21.02 |
| Unpaid family and self-employment jobs, women (% of employed women) | 364 | 89.69 | 5.07 | 72.90 | 96.92 |
| Unpaid family and self-employment jobs, men (% of employed men) | 364 | 77.75 | 8.43 | 60.03 | 91.50 |
| Unpaid family and self-employment jobs (total) | 364 | 82.78 | 6.97 | 64.88 | 93.99 |
| Investment | 364 | 18.86 | 8.27 | -2.42 | 52.41 |
| Value added (primary sector) | 364 | 30.88 | 10.90 | 11.97 | 61.41 |
| Value added  (service sector) | 364 | 42.65 | 9.43 | 12.43 | 67.59 |
| Credit to the economy | 360 | 19.50 | 11.12 | -0.001 | 90.04 |

Source: Author

Looking at table 3, countries such as Burkina Faso and Niger have the highest average rates of male unpaid family and self-employment jobs, while Gambia and Ghana have the lowest rates. In terms of female unpaid family and self-employment jobs, Guinea and Burkina have the highest

average rates, while Senegal and Ghana have the lowest rates. Also, these female jobs are found to be higher than their male counterparts everywhere. The largest average gaps are recorded in Côte d'Ivoire, Gambia, Ghana, and Guinea Bissau (Table 3).

Table 3: Statistics on unpaid family and self-employment jobs by country

| Countries | Unpaid family and self-employment jobs (Men) | | | Unpaid family and self-employment jobs (Women) | | |
|---|---|---|---|---|---|---|
| | Mean | Min | Max | Mean | Min | Max |
| Benin | 85.22 | 81.80 | 87.85 | 95.50 | 94.32 | 96.44 |
| Burkina-Faso | 88.89 | 83.61 | 91.50 | 94.56 | 90.05 | 96.39 |
| Cote d'Ivoire | 69.87 | 63.80 | 72.11 | 88.815 | 84.62 | 90.19 |
| Gambia | 66.98 | 64.12 | 70.15 | 84.87 | 83.10 | 86.78 |
| Ghana | 67.76 | 60.30 | 73.02 | 83.90 | 78.13 | 87.28 |
| Guinea-Bissau | 72.35 | 70.8 | 73.11 | 87.77 | 86.74 | 88.36 |
| Guinea | 85.79 | 83.81 | 86.79 | 96.62 | 96.06 | 96.92 |
| Mali | 85.33 | 83.68 | 86.52 | 94.34 | 93.34 | 95.33 |
| Niger | 88.09 | 87.40 | 88.44 | 91.71 | 91.22 | 91.93 |
| Nigeria | 75.53 | 72.73 | 78.54 | 86.34 | 84.59 | 88.09 |
| Senegal | 71.31 | 60.03 | 84.4 | 82.70 | 72.90 | 93.19 |
| Sierra-Leone | 82.11 | 80.42 | 83.67 | 92.46 | 91.77 | 92.97 |
| Togo | 71.54 | 69.64 | 73.03 | 86.41 | 85.27 | 87.27 |

Source: Author

In addition, there is a weak negative correlation between our variables of interest. In other words, the GDP per capita growth rate in the region is negatively correlated with unpaid family and self-employment jobs for both men and women. The same is true when these jobs are considered as a whole (Table 4).

Table 4: Correlations between variables

| Variables | GDP per capita growth | Unpaid family and self-employment jobs (Women) | Unpaid family and self-employment jobs (Men) |
|---|---|---|---|
| GDP per capita growth | 1.0000 | | |
| Unpaid family and self-employment jobs (Women) | -0.0288 | 1.0000 | |
| Unpaid family and self-employment jobs (Men) | -0.0052 | 0.9004 | 1.0000 |
| Unpaid family and self-employment jobs (Total) | -0.0234 | 0.8363 | 0.8861 |

Source: Author

## 5) Results and discussion

This section of the work presents the pre-tests results, estimates and the results discussion. In doing so, the analysis of the stationarity of the variables shows that all our series are stationary in

level except for unpaid family and self-employment, value-added services, and domestic credit from the financial sector. Once the variables are differentiated at order 1, they all become stationary (Table 5).

Table 5: Unit Root Test Results from Maddala and Wu (1999)

| Variables | In level | In difference |
|---|---|---|
| GDP per capita growth | 251.36*** (0.000) | 701.26 *** ( 0.000) |
| Unpaid family and self-employment jobs (Women) | 2.32 (1.000) | 143.70 *** (0.000) |
| Unpaid family and self-employment jobs (Men) | 8.82 (0.999) | 70.88*** (0.000) |
| Unpaid family and self-employment jobs (total combined women and men) | 7.4026 (0.999) | 89.96*** (0.000) |
| Investment | 69.35*** (0.000) | 204.11*** (0.000) |
| Value added (primary sector) | 55.79 *** (0.000) | 241.68*** (0.000) |
| Value added (service sector) | 38.35 (0.056) | 200.40 *** (0.000) |
| Credit to the economy | 13.52 (0.978) | 120.56 *** (0.000) |

Source: Author. Note: ** (****) represents significance at the 5% (1%) threshold.

With respect to Table 6, all cointegration tests accept the presence of a long-term relationship between our variables. Indeed, these tests indicate on the one hand that there is at least one country in the sample for which the variables are cointegrated and on the other hand, considering the panel as a whole, the variables are cointegrated.

Tableau 6: Westerlund cointegration test (2007)

| Specification with unpaid family and self-employment jobs (women) | | | |
|---|---|---|---|
| Statistics | Value | Z-value | P-value |
| Gt | -3.238*** | -5.862 | 0.000 |
| Ga | -12.098*** | -3.283 | 0.001 |
| Pt | -12.540*** | -7.363 | 0.000 |
| Pa | -13.383*** | -7.433 | 0.000 |
| Specification with unpaid family and self-employment jobs (men) | | | |
| Statistics | Value | Z-value | P-value |
| Gt | -3.495*** | -6.893 | 0.000 |
| Ga | -12.406*** | -3.486 | 0.000 |
| Pt | -13.274*** | -8.101 | 0.000 |
| Pa | -14.158*** | -8.063 | 0.000 |
| Specification with unpaid family and self-employment jobs (total combined women and men) | | | |
| Statistics | Value | Z-value | p-value |
| Gt | -3.333*** | -6.241 | 0.000 |
| Ga | -12.342*** | -3.444 | 0.000 |
| Pt | -12.879*** | -7.704 | 0.000 |
| Pa | -13.931*** | -7.879 | 0.000 |

Note: ** (***) represents significance at the 5% (1%) threshold. The *Ga* and *Gt* statistical tests test $H_0: a_{0i} = 0$ for all i against $H_1: a_{0i} < 0$ for at least one *i*. The *Pa* and *Pt* statistical tests combine information from all the time series and test for $H_0: a_{0i} = 0$ for all i against $H_1: a_{0i} < 0$ for all *i*. The rejection of $H0$ is considered the rejection of no cointegration.

The long-term effects of unpaid family and self-employment jobs on growth are captured through the analysis in Table 7 below. The error-correction coefficient, which is the restoring force to long-term equilibrium, is negative and significant at the 5 per cent level, indicating that the autoregressive distributed lag representation is valid. However, a coefficient below -0.9 in each model indicates a high speed of convergence to long-term equilibrium. Indicating that short-term deviations from the long-term equilibrium of the relationship are correcting more than 90% per year by feedback effect. Thus, our results indicate that unpaid family and self-employment jobs both for women and men significantly reduce the GDP per capita growth rate. This result remains consistent when we consider these jobs as a whole, i.e. men and women simultaneously. At the same time, the finding is such that the effects of the vulnerability of female and male employment are not different with respect to the coefficients but, more importantly, to the overlapping confidence intervals (see Appendix Tables A1 and A2).

Table 7: Result of long-term estimates

| The variable explained in all regressions is the GDP per capita growth rate. | | | |
|---|---|---|---|
| Specification with unpaid family and self-employment jobs (women) | | | |
| Variables | coefficients | Std. Err. | P-value |
| Unpaid family and self-employment jobs (Women) | -0.245*** | 0.086 | 0.004 |
| Investment | 0.072*** | 0.020 | 0.000 |
| Value added (primary sector) | 0.122*** | 0.027 | 0.000 |
| Value added (service sector) | 0.092*** | 0.024 | 0.000 |
| Credit to the economy | -0.049*** | 0.017 | 0.005 |
| Error Correction Term | -0.976*** | 0.109 | 0.000 |
| Specification with unpaid family and self-employment jobs (men) | | | |
| Variables | coefficients | Std. Err. | P-value |
| Unpaid family and self-employment jobs (Men) | -0.229*** | 0.070 | 0.001 |
| Investment | 0.047*** | 0.020 | 0.021 |
| Value added (primary sector) | 0.118*** | 0.027 | 0.000 |
| Value added (service sector) | 0.082*** | 0.023 | 0.001 |
| Credit to the economy | -0.034** | 0.017 | 0.046 |
| Error Correction Term | -0.931*** | 0.066 | 0.000 |
| Specification with combined unpaid family and self-employment jobs (men and women) | | | |
| Variables | coefficients | Std. Err. | P-value |
| Unpaid family and self-employment jobs Combined (Men and Women) | -0.285*** | 0.097 | 0.003 |
| Investment | 0.052*** | 0.013 | 0.000 |
| Value added (primary sector) | 0.086*** | 0.008 | 0.000 |
| Value added (service sector) | 0.021** | 0.008 | 0.011 |
| Credit to the economy | -0.114*** | 0.008 | 0.000 |
| Error Correction Term | -0.885*** | 0.085 | 0.000 |

Source: Author. Note: ** (****) represents significance at the 5% (1%) threshold.

A more plausible explanation for the effects of unpaid family and self-employment jobs lies within the different characteristics of the latter. First, unpaid family and self-employment jobs are characterized by low or no wages. Workers in this case cannot adequately support themselves and their families. Investment in education and health cannot be made under such conditions and the future of future generations and their participation in future growth is compromised. Second, the precariousness and lack of social protection in almost all of these jobs removes the bargaining power of the workers concerned. They can neither access jobs that are more in line with their abilities nor claim higher wages. In such cases, the productivity of these workers is reduced, as is the efficiency of the labour market and beyond. Finally, these jobs are an important source of production for the working poor and allow the establishment of a vicious circle of self-perpetuating poverty. However, poverty and social exclusion entail negatively significant direct and indirect costs on economic growth. These include dropping out of school, increased costs to the health care system, increased inequality, increased crime and the weakening of the democratic system.

It should also be noted that the majority of unpaid family and self-employment jobs are in activities that are part of the informal sector. These mostly micro enterprises, but also those that are part of the national and international network, jeopardize the prospects for economic growth through the loss of countries' tax revenues. Also, the resulting unfair competition to formal firms further penalizes economic development because the latter are likely to file for bankruptcy or even to fall into the informal sector and thus maintain this vicious circle of recession.

In addition, value added in the agricultural and service sectors positively influences the per capita income growth rate. This is quite normal, especially since these sectors are the most important in the GDP. Also, the negative effect of credit to the economy is attributable to the credit structure in the sub-region. Indeed, it appears that the financial sector, whose primary attribute is to mobilize the financial savings of households and companies, has not played a decisive role in allocating credit to promote growth. In fact, in all ECOWAS countries, there has been a strong shift in the distribution of credit in favour of households to the detriment of companies. This state of affairs implies that the credit granted is generally consumer or short term credit to the detriment of long-term credit that can adequately finance investments and create growth.

## 6) Robustness Check

Although the previous methodology allowed us to arrive at a negative effect of high vulnerability employment on growth, it is important to be sure of the results. Indeed, if the type of employment is able to influence growth, it is possible that the type of growth is in turn the basis of the type of

jobs available. To do this, we use the IV method developed by Hayakawa et al. (2019) in the framework of weakly exogenous variables, because it is more efficient than the ordinary finite-sample IV and GMM estimators (Hayakawa et al. (2019).

## 7) Conclusion

With regard to the United Nations and ECOWAS sustainable development objectives in terms of employment and growth, it seemed important to investigate the contribution of jobs with high risk of vulnerability to economic growth. Thus, the objective of this study is to analyse the effects of unpaid family and self-employment jobs on economic growth in West African countries according to gender profile. The study was carried out in thirteen ECOWAS countries during the period 1991-2018 and the methodology used yielded several results. Firstly, unpaid family and self-employment jobs negatively affect economic growth regardless of gender. Second, there is no significant difference in the effects of male and female unpaid family and self-employment jobs on growth.

Overall, these results provide a number of policy implications. First, they indicate that the importance of the issue of high-risk and vulnerable jobs should not be downplayed if countries in the sub-region want to accelerate the growth of their economies and raise the income level of their populations. In fact, because they have not given a central place to this phenomenon, the policies pursued to reduce unemployment and increase women's participation in the labour market have not made it possible to bridge the unproductive gap between employment and wealth production. To this end, this study provides empirical evidence against unpaid family and self-employment jobs . Therefore, it is important that different state employment policies take into account the quality of the jobs that are offered to the population.

To do this, efforts must be pooled to strengthen labour market institutions so that they promote non-vulnerable jobs. It is necessary to professionalize jobs, especially in the area of human services; to implement a policy of wage transparency through an adequate and inclusive minimum wage system. Also, macroeconomic policies in favour of gender equality in the labour market must be pursued, but these must be accompanied by the formalization of the jobs created. Of course, actors in the informal system must be motivated to engage in the formal system. This can be achieved through tax incentives, advantageous social safety nets, and skills development.

# Bibliography

Agénor, P-R. (2018). A Theory of Social Norms, Women's Time Allocation, and Gender Inequality in the Process of Development. Centre for Growth and Business Cycles Research Working Paper, 237.

Anderson, B. (2016). Do Macroeconomic Structures and Policies Shape the Employment Intensity of Growth Differently for Women and Men? *Journal of Economic Issues*, L(4), 940-962.

Anderson, B. & Braunstein E. (2013). Economic Growth and Employment from 1990-2010: Explaining Elasticities by Gender. *Review of Radical Political Economics,* 45(3), 269-277.

Antón, A., Trillo, F. H., & Levy, S. (2012). *The end of informality in México? : fiscal reform for universal social insurance (Vol. 1300)*. Washington, DC: Inter-American Development Bank.

Banque Africaine de Développement. (2018). *Perspectives économiques en Afrique de l'Ouest.*

Banque Africaine de Développement. (2016). *Rapport sur le développement en Afrique, Croissance, pauvreté et inégalités: Lever les obstacles au développement durable.*

Barro, R. J., & Lee, J.-W. (1994). Sources of Economic Growth. Carnegie-Rochester Conference Series on Public Policy, 40 (1), 1–46.

Benjamin, N. C., & Mbaye, A. A. (2012). The Informal Sector, Productivity, and Enforcement in West Africa: A Firm-level Analysis. *Review of Development Economics*, 16(4), 664-680.

Bocquier P., Nordman C.I & Vescovo A. (2009). Employment Vulnerability and Earnings in Urban West Africa. Miméo DIAL, Communication à la conférence annuelle du CSAE, Université d'Oxford.

Busse, M. et Spielmann, C. (2006). Gender Inequality and Trade. *Review of International Economics*, 14, 3, 362−79

Cavalcanti, T., & Tavares, J. (2015). The output cost of gender discrimination: A model-based macroeconomic estimate. *The Economic Journal*, 126, 109–134.

Cuberes, D., & Teignier, M. (2016). Aggregate effects of gender gaps in the labor market: A quantitative estimate. *Journal of Human Capital*, 10, 1, 1–32.

Djogbenou, R., Kanga, D., & Ouattara A. (2018) hétérogénéité des économies de la CEDEAO : quel défi pour une politique monétaire commune ? *Revue économique et monétaire*, (24), 49-91.

Gatti, R., Angel-Urdinola, D., Silva, J., & Bodor, A. (2011). *Striving for better jobs: the challenge of informality in the Middle East and North Africa region*. World Bank, Washington DC.

Gonzales, C., Jain-Chandra, S., Kochhar, K., & Newiak, M. (2015). *Fair Play: More Equal Laws Boost Female Labor Force Participation*, International Monetary Fund.

International Labour Organization. (2019). ILOSTAT database | *Data*. Available at: https://ilostat.ilo.org/fr/data.

International Labour Organisation. (2016). *Les femmes au travail* : *Tendances 2016*.

International Labour Organisation. (2009). *Guide sur les nouveaux Indicateurs d'Emploi des Objectifs du Millénaire pour le Développement*.

Kapsos, S. (2005). *Employment intensity of growth: The trends and macroeconomic determinants.* Employment Strategy Papers 2005/12. International Labour Organization.

Kim, J., Lee, J. W., & Shin, K. (2018). Gender inequality and economic growth in Korea. *Pacific Economic Review*, 23, 4, 658-682.

La Porta, R.., & Shleifer, A. (2008). *The unofficial economy and economic development* (No. w14520). National Bureau of Economic Research.

Lee, H. (2018). Output cost of gender discrimination in the Korean labour market. *Pacifique Economic Review*, DOI: 10.1111/1468-0106.12285

Levy, S. (2010). *Good intentions, bad outcomes: Social policy, informality, and economic growth in Mexico*. Brookings Institution Press.

Loayza, N. (1999). *The economics of the informal sector: a simple model and some empirical evidence from Latin America*. The World Bank.

Lucas, R.E. (1988). On the mecanism of economic development. *Journal of Monetary Economics*, 22, 3-42.

McMillan, M.S., Rodrik, D, Verduzco-Gallo, I. (2014). Globalization, Structural Change, and Productivity Growth, with an Update on Africa. *World Development*, 63,11–32.

McMillan, M.S. & Rodrik, D.  (2011). Globalization, Structural Change and Productivity Growth. National Bureau of Economic Research Working Paper, 17143.

Maddala, G. S., & Wu, S. (1999). A comparative study of unit root tests with panel data and a new simple test. *Oxford Bulletin of Economics and statistics*, 61(S1), 631-652.

Mitra-Kahn, B. & Mitra-Kahn, T. (2008). Gender Wage-gaps and Growth: What goes up must come down. paper presented at the International Feminist Economics Association workshop on 'Inequality, Development, and Growth', 18-20 May, United Nations, New York

OCDE. (2008). *Rapport Afrique de l'Ouest 2007-2008.*

OXFAM. (2019).  *La crise des Inégalité en Afrique de l'Ouest : Quelles sont les solutions face à l'échec des pays d'Afrique de l'Ouest à réduire les Inégalités*.

Perry, G. E., Arias, O., Fajnzylber, P., Maloney, W. F., Mason, A., & Saavedra-Chanduvi, J. (2007). *Informality: Exit and exclusion*. The World Bank.

Pervaiz, Z., Chani, M.I., Jan, S.A. & Chaudhary, A.R. (2011). Gender Inequality and Economic Growth: A Time Series Analysis for Pakistan. *Middle-East Journal of Scientific Research*, 10, 4, 434-439.

Pesaran, M. H., & Smith, R. (1995). Estimating long-run relationships from dynamic heterogeneous panels. *Journal of econometrics*, 68(1), 79-113.

Pesaran, M. H., Shin, Y., & Smith, R. P. (1999). Pooled mean group estimation of dynamic heterogeneous panels. *Journal of the american statistical association*, 94(446), 621-634.

Romer, P. (1986). Endogenous technical change. *Journal of Political Economy*, 98(5).

Romer, P. (1990). Increasing returns and long run growth. *Journal of Political Economy*, 94, 1002-1037.

Seguino S. (2000). Gender inequality and economic growth: A cross-country analysis. *World Development*, 28, 7, 1211–1230.

Solow, R. (1956). A contribution to the theory of economic growth. *Quaterly Journal of Economics*, 70, 65-94.

The World Bank. (2020). *World Development Indicators | Data*. Available at: https:// https://databank.worldbank.org/source/world-development-indicators.

Westerlund, J. (2007). Testing for error correction in panel data. *Oxford Bulletin of Economics and statistics*, *69*(6), 709-748.

## Appendix

1. Westerlund cointegration test (2007)

The cointegration test adopted in this study is that of Westerlund (2007). This test has the particularity to take into account heterogeneity and to be efficient even in the presence of inter-individual dependence. In fact, this test includes four cointegration tests that are based not on residuals but on the structural dynamics of the relationships and therefore do not impose any restrictions on common factors. The test considers the following error-correction model:

$$\Delta Y_{it} = c_i + a_{0i}(y_{i,t-1} - b_i x_{i,t-1}) + \sum_{j=1}^{k_{1t}} a_{1ij}\,\Delta Y_{i,t-j} + \sum_{-k_{2t}}^{k_{3t}} a_{2ij}\,\Delta x_{i,t-j} + u_{it} \qquad (1)$$

The *Ga* and *Gt* statistical tests test $H_0: a_{0i} = 0$ for all i against $H_1: a_{0i} < 0$ for at least one *i*. The *Pa* and *Pt* statistical tests combine information from all the time series and test for $H_0: a_{0i} = 0$ for all *i* against $H_1: a_{0i} < 0$ for all *i*. The rejection of $H0$ is therefore considered to be the rejection of non-cointegration for the entire panel. When individual series are suspected to be correlated, robust critical values can be obtained from ≪bootstrapping≫. The four tests are normally distributed and accommodate fairly well short period individual dynamics, trends, individual-specific parameters, and intra-individual dependencies (Westerlund, 2007). The first two tests test

the null hypothesis of absence of cointegration against the alternative hypothesis that the panel as a whole is cointegrated, while the last two tests test the alternative existence of at least one individual for whom the variables are cointegrated.

2. Unit root panel tests

Let's consider the following Z-series based on a general ADF representation:

$$\Delta Z_{it} = \alpha_i + \gamma_i Z_{i,t-1} + \sum_{j=1}^{m} \partial_{ij} \Delta Z_{i,t-j} + \varepsilon_{it} ; \quad i = 1, \dots, N \ et \ t = 1, \dots, T \qquad (2)$$

With $\Delta$ the first difference operator, $\alpha i$ the individual effect, m the number of lags, and $\varepsilon it$ the error term normally and identically distributed. The test of Maddala and Wu (1999) does not retain the alternative restrictive hypothesis according to which the autoregressive coefficient $\gamma i$ is the same for all individuals. These authors propose a non-parametric Fisher test similar to the Im-Pesaran-Shin (2003) test. The test is based on a combination of the levels of significance (i.e. p-values) of the N independent individual unit root tests. The MW statistic is defined as:

$$\lambda = -2 \sum_{i=1}^{N} ln\pi_i \qquad (3)$$

3. Supplementary tables of estimates

Table A1: Regression with Male unpaid family and self-employment jobs

| GDP per capita growth rate | Coef. | Std. Err. | z | P>z | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| Unpaid family and self-employment jobs (Men) | -0.2293 | 0.0701331 | -3.27 | 0.001 | -0.3667727 | -0.0918561 |
| Investment | 0.0479 | 0.0207536 | 2.31 | 0.021 | 0.0072424 | 0.088595 |
| Value added (primary sector) | 0.1181 | 0.0271393 | 4.35 | 0.000 | 0.0649933 | 0.1713773 |
| Value added  (service sector) | 0.0821 | 0.0236299 | 3.48 | 0.001 | 0.0358318 | 0.1284594 |
| Credit to the economy | -0.0345 | 0.0173072 | -2.00 | 0.046 | -0.0684796 | -0.0006364 |
| ECT | -0.9315 | 0.0668588 | -13.93 | 0.000 | -1.06259 | -0.8005087 |

Source: Author's calculations

Table A1: Regression with Female unpaid family and self-employment jobs

| GDP per capita growth rate | Coef. | Std. Err. | z | P>z | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| Unpaid family and self-employment jobs (Women) | -0.2457 | 0.0861323 | -2.85 | 0.004 | -0.4146109 | -0.0769787 |
| Investment | 0.0723 | 0.020189 | 3.58 | 0.000 | 0.0327775 | 0.111917 |
| Value added (primary sector) | 0.1221 | 0.0272717 | 4.48 | 0.000 | 0.0687205 | 0.1756234 |
| Value added  (service sector) | 0.0925 | 0.0242258 | 3.82 | 0.000 | 0.0450664 | 0.1400298 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Credit to the economy | -0.0490 | 0.0176007 | -2.79 | 0.005 | -0.0835865 | -0.0145932 |
| ECT | -0.9761 | 0.1093432 | -8.93 | 0.000 | -1.190466 | -0.7618482 |

Source: Author's calculations

## Table A3: Regression with Combined Unpaid family and self-employment jobs (Men and Women)

| GDP per capita growth rate | Coef. | Std. Err. | z | P>z | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|
| Unpaid family and self-employment jobs (total men and women) | -0.28541 | 0.097148 | -2.94 | 0.003 | -0.4758255 | -0.0950108 |
| Investment | 0.052127 | 0.013962 | 3.73 | 0.000 | 0.0247625 | 0.0794931 |
| Value added (primary sector) | 0.086303 | 0.008833 | 9.77 | 0.000 | 0.06899 | 0.1036176 |
| Value added  (service sector) | 0.02193 | 0.008627 | 2.54 | 0.011 | 0.0050257 | 0.0388462 |
| Credit to the economy | -0.11456 | 0.008412 | -13.62 | 0.000 | -0.1310581 | -0.09808 |
| ECT | -0.88570 | 0.085074 | -10.41 | 0.000 | -1.052449 | -.7189641 |

Source: Author's calculations