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# Intergenerational Dynamics and Sustainable Development : The Franc Zone Between Youth Unemployment, Aging of the Active Population and Intergenerational Solidarity

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***Abstract***

*This article examines the impact of youth unemployment and the aging of the labor force on intergenerational solidarity in the Franc Zone. Through an empirical analysis based on an ARDL panel model, the results show that these two factors significantly increase the dependence of future generations. The study also reveals that education spending, while essential, is not always adapted to the needs of the labor market. The originality of this article lies in its highlighting of the link between intergenerational dynamics and the Sustainable Development Goals (SDGs), in particular Goals 8 and 10. These results underline the need for an overhaul of education policies and pension schemes in order to guarantee a balanced intergenerational transition and sustainability development in the Franc Zone.*

**Keywords:** Youth Unemployment, Aging of the Working Population, Intergenerational Dependency, Sustainable Development, Pension Systems.

## Introduction

For several decades, the Franc zone has been facing a dual demographic and economic dynamic that calls into question the balance of its socio-economic systems. On the one hand, the youth unemployment rate continues to rise ; on the other, the working population is experiencing progressive aging [1]. Indeed, although the majority of the population (60%) is under 25 years old, youth unemployment remains high, reaching peaks in some countries such as Gabon (40%), the Republic of Congo (36%) or Senegal (19.5% for the 20-24 age group and 17.5% for the 25-29 age group) [2, 3]. In addition, almost all young workers (90%) work in the informal sector, and there is the rate of young people not in employment, education or training (NEET), which is particularly high in low-income countries (20.4% on average for men and 37% for women) [4, 5].

At the same time, the proportion of people aged over 50 in the Franc zone increased from 12.95% of the total population in 2006 to 14.13% in 2023. The International Labour Organization highlights in a recent report that the share of workers over 50 continues to increase, raising, among other things, the question of workforce renewal and the sustainability of social protection systems. In sub-Saharan Africa, the World Bank (2023) estimates that by 2050, the number of workers aged 55 to 64 will increase by more than 50%, exacerbating tensions on pension schemes and accentuating the challenge of financing healthcare costs for seniors [6]. This active aging poses a particular problem in the Franc zone, where the viability of pay-as-you-go pension systems is increasingly being called into question.

This dual observation raises major concerns regarding intergenerational solidarity. On the one hand, young people, faced with massive unemployment and precariousness, are struggling to gain lasting access to the labor market and contribute to social protection systems. On the other hand, the aging of the working population is leading to an increase in pension and healthcare spending, putting a strain on public finances and requiring in-depth consideration of the balance between active and inactive workers [7]. The scale of the problem is also manifested through the pressure on family solidarity mechanisms, which are very

prevalent in French-speaking Africa. Young unemployed people often depend financially on their parents until old age, while underfunded pension systems rely heavily on intergenerational transfers. According to the Economic Commission for Africa, more than 60% of workers over 60 in the Franc zone still rely on family support for their economic survival. This interdependence between young and old people creates a vicious circle in which working people bear a double financial burden, thus weighing on household consumption and economic growth [8].

In light of these trends, a key question arises: what are the consequences of this dual phenomenon on the autonomy of future generations ?

This article aims to analyze the implications of youth unemployment and the aging of the labor force on intergenerational solidarity, with an emphasis on the economic dependence of future generations. Indeed, in a context where the Sustainable Development Goals (SDGs), in particular Goals 8, on decent work and economic growth, and 10, on reducing inequalities, highlight economic inclusion and social justice, the issue of youth dependency and their access to financial independence is of particular importance.

From this perspective, the Franc zone constitutes a relevant framework for analysis, given the current dynamics of unemployment and the aging of the population, which could ultimately call into question the ability of young people to achieve financial independence and contribute effectively to the economic development of the region.

The remainder of the article is organized as follows: Section 2 presents the literature review, followed by the stylized facts in Section 3, the methodology in Section 4, the results and their discussion in Section 5, and then the conclusion.

## Literature Review

The demographic dynamics of the Franc zone are marked by two concurrent phenomena: high youth unemployment and a gradual aging of its working population. These trends pose major challenges in terms of intergenerational solidarity, dependency, and socioeconomic vulnerability.
This literature review explores theories and empirical studies on these issues.

### Theoretical Review

Various theories underlie the analysis of the interactions between youth unemployment, population aging and intergenerational solidarity.

First, human capital theory postulates that investment in education and training improves the productivity of individuals, thus facilitating their integration into the labor market [9-12]. However, in the context of the Franc zone, despite a majority young population, youth unemployment remains high, suggesting a mismatch between acquired skills and market needs. This situation is exacerbated by the predominance of the informal sector, which absorbs a large part of the young workforce, often without social protection or career prospects.

On the other hand, the segmentation of the labor market, explained by the theory of dualism, highlights the existence of two segments: a formal sector, offering stable jobs with career prospects, and an informal sector, marked by precariousness and the absence of social protection [13]. In the Franc zone, more than 90% of young people enter the informal sector, which limits their ability to contribute to pension schemes and increases their economic vulnerability [14, 15].

As for the concept of "active aging", promoted by the World Health Organization (2002), it encourages the continued participation of older people in social, economic and cultural life. However, the aging of the working population in the Franc zone raises questions about the sustainability of social protection systems, particularly pay-as-you-go pension schemes, faced with a restricted contributory base and an increase in beneficiaries [16].

The demographic transition theory, on the other hand, explains that societies move from a demographic regime of high birth and death rates to a regime of low birth and death rates, which leads to an aging population [17, 18]. In French-speaking Africa, although the birth rate remains high, the increase in life expectancy contributes to the progressive aging of the working population, increasing pressures on pension systems and health expenditures [19].

Intergenerational solidarity, a central concept in sociology, refers to the bonds of mutual support between different generations [20]. In Francophone Africa, family solidarity mechanisms play a crucial role in providing economic support to individuals, particularly in the absence of robust social protection systems. However, the double burden of youth unemployment and an aging workforce is straining these traditional mechanisms, increasing the vulnerability of households and communities.

Finally, dependency theory highlights the importance of a balance between active and inactive people to ensure the viability of social protection systems [21]. In the Franc zone, this balance is weakened by the increase in the number of inactive people, which increases the pressure on the active and calls into question the sustainability of pension and social protection financing models [22].

### Empirical Review

Several recent empirical studies have analyzed the impact of labor force aging and youth unemployment on intergenerational solidarity and economic vulnerability. This section reviews recent studies that address these dynamics from various perspectives.

Maestas et al. (2023), in a study in the United States, show that the aging of the labor force reduces productivity growth and changes the structure of the labor market. They emphasize that the increase in the share of older workers leads to a slowdown in skills renewal, thus limiting employment opportunities for young workers.

Hasanov (2024), in his report published by the IMF, shows that the total dependency ratio in Slovakia, which includes both young and old people in relation to the working population, will increase significantly by 2050. This trend is due to the increase in life expectancy, which will lead to an increase in the share of

elderly people in the population, and low fertility, which will reduce the proportion of young people. The old-age dependency ratio is thus expected to double, while life expectancy will exceed 80 years, although it will remain below the EU median.

Kouadio (2022), in their study on Côte d'Ivoire, analyzes the determinants of youth unemployment by highlighting the weight of the informal sector. They show that more than 85% of young workers hold precarious jobs, which limits their contribution to social protection systems and perpetuates a cycle of intergenerational poverty.

A World Bank study (2023) on Senegal and Cameroon highlights the impact of aging on the sustainability of pay-as-you-go pension systems. The increase in the number of retirees, combined with low pension coverage rates, increases the dependence of older people on family support.

Gendreau and Dackam-Ngatchou (2023) highlight the persistence of financial dependence among young people due to structural unemployment. Based on surveys conducted in African countries, they find that young adults depend on their families until old age, which weighs on household consumption and savings.

A 2023 survey by the International Labour Organization (ILO) highlights the economic challenges faced by older workers in sub-Saharan Africa. It shows that working seniors struggle to maintain a sufficient income and that public support policies are insufficient to ensure their economic security.

Duthé et al. (2024) explore the relationship between aging and economic growth in Africa. They show that economies with rapidly aging working populations are exposed to a decrease in social security coverage rates and a weakening of family solidarity in the long term.

Aiyar et al. (2016) point out that the aging of the European labor force, which is expected to intensify in the coming decades, has a negative impact on labor productivity, particularly on total factor productivity growth.

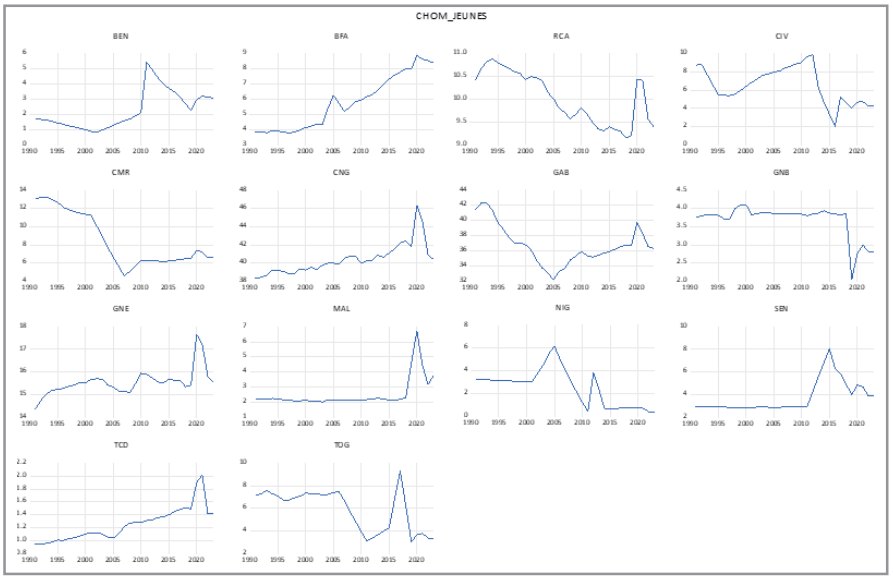
Finally, a study by the Economic Commission for Africa analyzes public policies implemented to promote the integration of young people into the labor market. It highlights the challenges related to vocational training and the lack of synergies between the education sector and the needs of businesses [23].

These studies highlight the interdependencies between youth unemployment, the aging of the labor force, and intergenerational solidarity in the Franc zone. The results highlight the need for appropriate public policies to strengthen the inclusion of young people in the labor market, while ensuring the sustainability of social protection systems for older workers.

**Stylized Facts**

Three main facts relating to intergenerational dynamics in the Franc zone are the subject of our observations.

**Persistent Unemployment Among Young People**



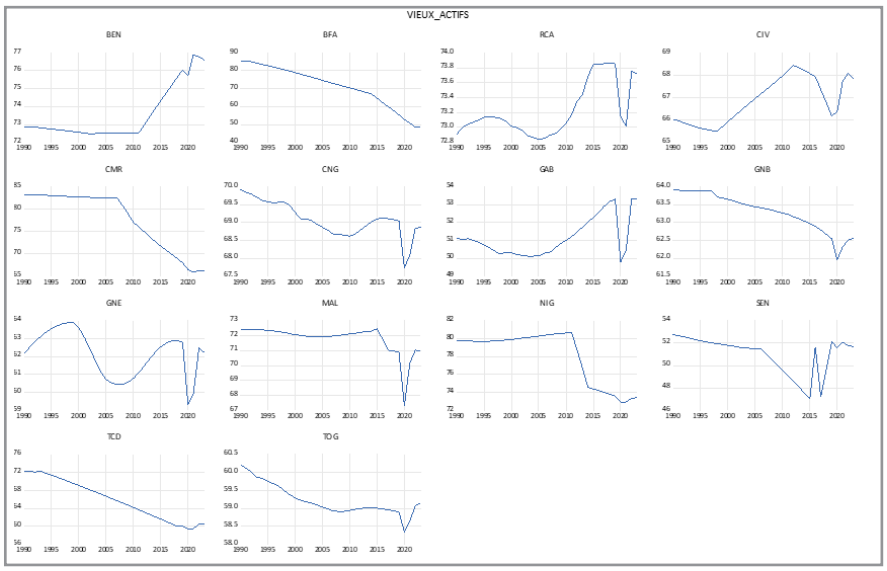

**Source:** Author from Eviews 12 Software

Chart 1 shows the evolution of youth unemployment in the Franc Zone between 1990 and 2023. It shows that the youth unemployment rate remains high and is generally on the rise. Although some countries have relatively low rates, most are at alarming levels.

For example, youth unemployment in Gabon reaches 40%, while in Mali it peaks at 46%. These figures reflect a structural difficulty in integrating young people into the labor market, often due to the mismatch between training supply and business demand. The informal economy also absorbs a large proportion of young workers, but these precarious jobs do not allow for stable and lasting integration into the workforce.

Rising unemployment could put a strain on intergenerational solidarity mechanisms, as a growing proportion of young people remain dependent on their parents or community support. This situation poses a serious challenge in terms of financing social protection systems and ensuring the financial independence of younger generations.

**A strong Presence of Elderly People in Economic Activity**

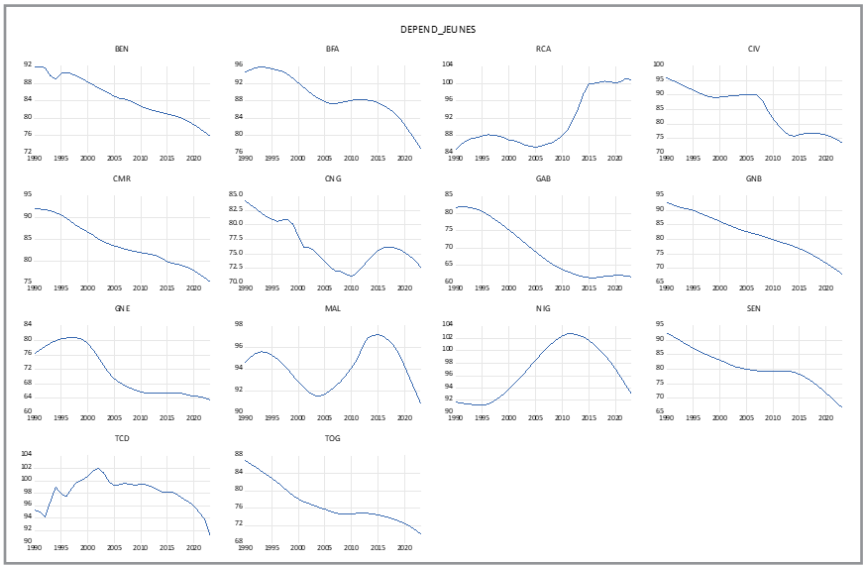



**Source:** Author from Eviews 12 Software

Figure 2 illustrates the evolution of the participation of older people in economic activity. There is a general increase in this participation. While the general trend is downward in some countries (Burkina Faso, Guinea Bissau, and Niger), Benin recorded one of the largest increases (from 72.5% in 2010 to 76.8% in 2022), while in other economies (Côte d'Ivoire, Central African Republic, and Equatorial Guinea), the trend has been fluctuating. In Mali, Gabon, and the Republic of Congo, after a sharp decline in 2019, the participation of older people started to rise again in 2020.

The high level of involvement of older workers in the economy, with minimum participation rates of 56%, reflects an imbalance in workforce renewal. This phenomenon could exacerbate the difficulties of young people entering the job market and raises the question of the intergenerational transmission of skills.

**A Still Very Strong Dependence on Young People**




**Source:** Author from Eviews 12 Software

Chart 3 illustrates the evolution of the youth dependency rate in the Franc Zone. There is a general downward trend, but levels remain high (above 60%). This dependency reflects the difficulty young people face in achieving economic independence due to a non-inclusive labor market and education that remains unsuited to market needs.

Despite the decline observed in the countries of the zone, with the exception of the Central African Republic, youth dependency remains structurally high (84% on average). This raises questions about the capacity of the economies of the Franc Zone to effectively absorb this workforce and ensure sustainable integration.

Moreover, with an aging workforce and persistent youth unemployment, the risk of this dependency worsening in the future is real. The assessment of this risk will be the subject of the analysis that we will present in the methodology.

## Methodology

This study seeks to test the hypothesis that youth unemployment and the aging of the labor force increase the long-term depen-

dency of future generations. To do this, we analyze the consequences of intergenerational dynamics by assessing the impact of these two factors on intergenerational solidarity, particularly the dependency of young people in the Franc zone.

**The Model**

The purpose of the model is to highlight the links between intergenerational dynamics and sustainable development, with a particular focus on the effects of youth unemployment and the aging of the labor force on the dependency of future generations. To this end, we draw inspiration from the study conducted by the IMF under the supervision of Hasanov and Shinya (2024), who analyzed "The Effect of Population Aging on Economic Growth in Slovakia." However, unlike this study, which mainly investigated the effects of aging on economic growth, our approach is distinguished by its focus on the dependency of future generations, in connection with the aging labor force and, above all, youth unemployment.

Therefore, we retain as variables:

The Future Generation Dependency Ratio (DEPEND ) as a dependent variable. It is measured by the ratio of dependents (young and/or old) to the working-age population, i.e., people aged 15 to 64. The data are presented as the proportion of dependents per 100 working-age people.

The explanatory variables are grouped into two groups: variables of interest and control variables.

**Regarding the variables of interest, we have:**

The Youth Unemployment Rate (CHOM_JEUNES ). Youth unemployment is the proportion of the workforce aged 15 to 24 who are unemployed but available for and seeking employment (ILO, 2024). We measure this variable as the percentage of unemployed youth in the total labor force. A high youth unemployment rate is expected to increase the dependency ratio, as young people are less integrated into the labor market, making the economy more dependent on the solidarity of other generations;

The Proportion of Elderly People in the Labor Force (VIEUX_ACTIFS ). We capture this variable using a proxy. This is the activity rate, which is measured by the proportion of the population aged 15 to 64 who are economically active (all people who provide labor for the production of goods and services during a given period). Given the high youth unemployment that characterizes the Franc zone, the active proportion here (in the formal sector) is predominantly composed of elderly people. A higher rate of elderly people in the labor force could also increase dependency, as it puts more pressure on the active generations to finance the needs of retirees.

**Concerning the control variables, we would retain two variables cited in the literature for their impact on youth dependency.**

These are:

Social Security Contributions (COTI_SOCIALES ). The choice of this variable is guided by the extensive literature on the role of social security contributions in intergenerational solidarity. Indeed, contributions from current workers and their employers are used to finance the benefits of current retirees (World Bank, 2019). We measure them as the percentage of social security contributions as a share of income.

Education Expenditure (DEPENSES_EDU ). Education remains the main determinant of employment and financial independence for young people (Becker, 1964). We measure this variable as the percentage of public education expenditure as a percentage of gross domestic product (GDP).

Education spending and social security contributions are expected to have a moderating effect, potentially reducing long-term dependency by contributing to better access to education and social security coverage.

The chosen model is as follows:

DEPEND=f(CHOM_JEUNES,VIEUX_ACTIFS,COTI_SOCIALES,DEPENSES_EDU

With :

DEPEND : The dependency rate of future generations;

CHOM_JEUNES : The youth unemployment rate;

VIEUX_ACTIFS : The proportion of elderly people in the working population;

COTI_SOCIALES : Social contributions;

DEPENSES_EDU : Education expenses.

This model, expressed in econometric form, is as follows:

$$DEPEND_t = \alpha_0 + \alpha_1 CHOM\_JEUNES_t + \alpha_2 VIEUX\_ACTIFS_t + \alpha_3 COTI\_SOCIALES_t + \alpha_4 DEPENSES\_EDU_t + \varepsilon_t$$

With :

$DEPEND_t$ : The dependency rate of future generations at the date t ;

$CHOM\_JEUNES_t$ : The youth unemployment rate as of the date t;

VIEUX_ACTIFS : The proportion of elderly people in the working population at the date t;

$COTI\_SOCIALES_t$ : Social contributions on the date t;

DEPENSES_EDU : Education expenditures as of the date t ;

$\alpha_0$ : The constant ;

$\alpha_1$ : The coefficient associated with the youth unemployment rate on the date t;

$\alpha_2$ : The coefficient associated with the proportion of elderly people in the active population on the date t;

$\alpha_3$ : The coefficient associated with social contributions on the date t;

$\alpha_4$ : The coefficient associated with education expenditure at the date t;

$\varepsilon_t$ : The error term, which represents the deviation between the model's predictions and reality.

**Data**

The data used in this study come from the World Bank Development Database and the International Labour Organization database, which is the global reference for labour statistics [24, 25].

Descriptive statistics for these data are summarized in the following Table 1:



[1]Social security contributions include social security contributions from employees, employers, and the self-employed. They also include actual or imputed contributions to government-run social insurance schemes (World Bank, 2023).

[2]Current and capital public expenditure on education includes public expenditure on educational institutions (public and private) and educational administration as well as subsidies to private entities (students/households and other private entities) (World Bank, 2023).

**Table 1:** Descriptive Statistics

| Name | Number of observations | Average | Standard deviation | Minimum | Maximum |
|---|---|---|---|---|---|
| DEPEND | 476 | 84.29 | 10.15 | 61.56 | 102.75 |
| CHOM_JEUNES | 476 | 10.39 | 12.20 | 0.41 | 46.33 |
| VIEUX_ACTIFS | 476 | 66.73 | 9.15 | 47.03 | 85.65 |
| COTI_SOCIALES | 279 | 2.56 | 1.55 | 0.53 | 6.40 |
| DEPENSES_EDU | 289 | 3.09 | 1.03 | 0.54 | 6.78 |

Source: Author's calculations.

The dependency ratio data, which includes 476 observations, shows a mean of 84.29% and a standard deviation of 10.15. This shows that the values are relatively concentrated around the mean, although there are significant disparities. The minimum recorded is 61.56%, while the maximum reaches 102.75%. This distribution indicates significant variability that can be attributed to structural differences between the Franc Zone countries.

The youth unemployment rate, with 476 observations, has a mean of 10.39% and a standard deviation of 12.20. The minimum is 0.41 and the maximum is 46.33. The wide dispersion of values suggests major disparities between countries, with some having very low levels of unemployment or economic participation, while others have particularly high values.

Regarding the participation rate of elderly people in economic activity, its average is 66.73% and its standard deviation is 9.15, reflecting a homogeneity of values despite existing gaps. The minimum rates of 47.03% and maximum of 85.65% show that intergenerational trends in the Franc Zone remain marked by a progressive aging of the active population.

The percentages of social security contributions and education expenditure, with 279 and 289 observations respectively, present averages of 2.56% and 3.09% with relatively low standard deviations (1.55 and 1.03). These values indicate a more stable and less dispersed distribution, although the minimum (0.53 and 0.54) and maximum (6.40 and 6.78) values show the existence of disparities attributable to national contexts.

## Data Analysis

Data analysis will be performed using a panel ARDL model, which offers the advantage of testing short- and long-term relationships between variables. It is particularly suitable for time series and panel data, as it allows for short-term effects to be taken into account while estimating long-term equilibrium effects.

The analysis will take place in four stages. First, we will perform stationarity tests to avoid problems of spurious regressions [26]. Next, we will identify the optimal ARDL model using the main information criteria, the optimal model being the one that minimizes the selected criteria.

The third step will be to analyze the correlation by calculating the correlation coefficient. Finally, the last step of the analysis will involve verifying the research hypothesis by estimating the short- and long-term coefficients. Among the different estimation methods for an ARDL model, we will favor the " Pooled " model. Mean Group (PMG) estimator, as it allows for the specific estimation of short-term variables, while in the long run, the structural coefficients of variables tend to be similar across countries. This model allows for heterogeneity in the dynamic adjustment of variables toward the long-run relationship. The PMG estimator also has an advantage for dynamic panels where the number of time-domain observations exceeds that of individuals [27]. It is based on the assumption that the model constant, as well as the short-term coefficients and error variances, can differ across individuals, while the long-run coefficients are constrained to be identical across countries.

## Results and Discussions

The results will mainly focus on stationarity tests, identification of the optimal ARDL model, correlation tests and estimation of short and long term coefficients [28-30].

### Results of Stationarity Tests

Table 2 presents the summary of these tests.

**Table 2:** Results of Stationarity Tests

| Series | Test value in level | Probability | Conclusion |
|---|---|---|---|
| DEPEND | -8.26 | 0.0000 | I(0) |
| CHOM_JEUNES | -2.71 | 0.0034 | I(0) |
| VIEUX_ACTIFS | -1.40 | 0.0799 | I(0) |
| COTI_SOCIALES | -6.62 | 0.0000 | I(0) |
| DEPENSES_EDU | -5.15 | 0.0000 | I(0) |

I(0): Integrated of order 0 (Stationary in level)
Source: The author, from Eviews 12 software

Stationarity tests reveal that all variables are stationary in first difference at the 5% threshold on a linear model with constant and trend.

### The Optimal ARDL Model

The selected model and the selection criteria are presented in Figure 1 below.

**Figure 1:** Selection Criteria for the Optimal ARDL Model

| Model | LogL | AIC * | BIC | HQ | Specification |
|---|---|---|---|---|---|
| 1 | 45.89 | -1.83 | -0.77 | -1.53 | ARDL ( 1,1,1,1,1 ) |

Source: the author, from Eviews 12 software

The optimal ARDL model is the ARDL ( 1,1,1,1,1 ) model which corresponds to the lowest value of the Akaike information criterion ( AIC) (-1.83).

**Correlation Tests**

They are summarized in Table 3.

**Table 3:** Correlation Tests

| | DEPEND | CHOM_JEUNES | VIEUX_ACTIFS |
|---|---|---|---|
| DEPEND | 1 | -0.54 | 0.56 |
| CHOM_JEUNES | -0.54 | 1 | -0.27 |
| VIEUX_ACTIFS | 0.56 | -0.27 | 1 |

Source: the author, from Eviews 12 software

The tests reveal the existence of correlations, respectively negative (-0.54) between youth unemployment and the dependency of future generations and positive (0.56) between the aging of the active population and the dependency of future generations in the franc zone. However, since these tests do not allow a causal link to be established between the variables, recourse to the estimation of effects is necessary [31].

**Results of the ARDL Model Estimation**

The results of the estimation of the ARDL model by the " Pooled " method Mean Group (PMG) are summarized in Table 4.

**Table 4:** Estimation Results

| Explanatory variable:DEPEND | | |
|---|---|---|
| **Explanatory variables** | **Long-term coefficients** | **Short-term coefficients** |
| CHOM_JEUNES | 0.83*<br>[4,02] | 0.69<br>[0,90] |
| VIEUX_ACTIFS | 1.07*<br>[6, 30] | 0.33<br>[0,85] |
| COTI_SOCIALES | -0.29<br>[-0, 58] | 0.87<br>[-1,46] |
| DEPENSES_EDU | 2.45*<br>[4, 88] | -0.25*<br>[ -3,01] |
| Restoring force | -0.15*<br>[-3, 17] | |

[ ]: Student statistic

∗ : Significance at the 5% threshold

Source: the author, from Eviews 12 software

The results obtained confirm the hypothesis that the aging of the active population and youth unemployment increase, in the long term, the dependence of future generations [32, 33].

Indeed, the estimates show that youth unemployment has a positive (0.83) and significant (t-stat = 4.02) effect on dependency, as does the increase in the proportion of elderly people in the labor force, which has a positive (1.07) and significant (t-stat = 6.30) effect. This means that the longer young people remain unemployed, the greater their economic dependence on other generations [34]. Furthermore, the increase in the proportion of older workers, although essential in the short term to maintain economic activity, also creates a risk of demographic inversion that will affect intergenerational solidarity and the sustainability of social systems in the long term [35].

Another key finding concerns the impact of education spending. Contrary to expectations, this has a positive (2.45) and significant (t-stat = 4.88) effect on long-term dependency. Increased public spending, which should in principle reduce dependency, produces an opposite effect in the long run. This observation suggests that despite investments in training, the mismatch between acquired skills and market needs limits their impact on the economic autonomy of young people. In several Franc Zone countries, training remains focused on services, while structural challenges, particularly in industry, the environment, and infrastructure, would require different educational orientations [36].

Short-term analysis, however, reveals that education spending has a negative (-0.25) and significant (t-stat = 3.01) effect on dependency. This can be explained by the fact that, in the short term, scholarships and financial aid allow young people to avoid excessive dependence on older generations. However, this effect is temporary and once these aids are withdrawn, young people often find themselves without stable formal employment, which contributes to the spiral of dependency [37].

Overall, the results confirm existing literature on the risks associated with population aging and structural youth unemployment. Increased aging complicates the sustainability of future

pensions, as current contributors are expected to be today's young workers. However, with high youth unemployment, the number of contributors is declining, making pension systems increasingly fragile. If this trend continues, the next generation will be unable to effectively support retirees, exacerbating economic dependency and undermining intergenerational solidarity [38].

These findings therefore call for a review of training and professional integration policies. It is becoming imperative to reorient training towards growth sectors, particularly manufacturing and technological industries, in order to reduce the mismatch between the supply of skills and market needs. It is with this in mind that the national conference on priority professions and training for the development of Gabon will be held, for example, on May 10, 2024 in the Nkok special economic zone . On this occasion, emphasis was placed on the importance of training a qualified workforce adapted to market needs. These conferences also made it possible to highlight several key sectors through a mapping of professions and training linked to sustainable development. The priority sectors identified include aviation and air navigation, agriculture and agronomy, information technology and new communication technologies , wood and the environment, architecture and design, buildings, bridges and roads, mining and oil, industrial mechanics, biology, biotechnology, as well as science and the environment.

Furthermore, the establishment of more autonomous retirement mechanisms, based on individual capitalization, could limit the imbalances linked to the aging of the working population.

Finally, the dynamics highlighted by these results demonstrate a real intergenerational challenge in the Franc Zone. Persistent youth unemployment, combined with the growing involvement of older workers and the continued high economic dependency of young people, constitutes fertile ground for potential social and economic tensions. These factors should encourage a more proactive policy on youth employment, pension reform, and strengthening the capacity of local economies to foster the autonomy of new generations.

## Conclusion

This article analyzed intergenerational dynamics in the Franc Zone from the perspective of youth unemployment, the aging of the labor force, and intergenerational solidarity. The study highlighted the amplifying effects of youth unemployment and the aging of the workforce on the economic dependence of future generations, calling into question the sustainability of social protection systems.

The results show that persistent youth unemployment and the increasing participation of older people in the economy are increasing the dependency of future generations. Furthermore, the analysis revealed that education spending, while significant, is currently misdirected and is struggling to reduce this dependency. These findings underscore the urgent need to adapt public policies to promote the integration of young people and ensure intergenerational balance.

An important area of reflection concerns the reform of pension systems. Faced with an aging working population and a growing imbalance between contributors and retirees, it is becoming necessary to explore alternative models, such as individual capitalization, in order to ensure sustainable social protection.

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**Annexes**

**Appendix 1 : Stationarity tests**

- DEPEND

| Panel unit root test: Summary | | | | |
|---|---|---|---|---|
| Series: DEPEND | | | | |
| Date: 03/10/25 Time: 19:14 | | | | |
| Sample: 1990 2023 | | | | |
| Exogenous variables: Individual effects | | | | |
| User-specified lags: 1 | | | | |
| Newey-West automatic bandwidth selection and Bartlett kernel | | | | |
| Balanced observations for each test | | | | |
| | | | Cross- | |
| Method | Statistic | Prob.** | sections | Obs |
| Null: Unit root (assumes common unit root process) | | | | |
| Levin, Lin & Chu t* | -8.25996 | 0.0000 | 14 | 448 |
| Null: Unit root (assumes individual unit root process) | | | | |
| Im, Pesaran and Shin W-stat | -2.51250 | 0.0060 | 14 | 448 |
| ADF - Fisher Chi-square | 100.684 | 0.0000 | 14 | 448 |
| PP - Fisher Chi-square | 9.34970 | 0.9996 | 14 | 462 |
| ** Probabilities for Fisher tests are computed using an asymptotic Chi | | | | |
| -square distribution. All other tests assume asymptotic normality. | | | | |

**CHOM_JEUNES**

| Panel unit root test: Summary | | | | |
|---|---|---|---|---|
| Series: CHOM_JEUNES | | | | |
| Date: 03/10/25 Time: 19:16 | | | | |
| Sample: 1990 2023 | | | | |
| Exogenous variables: Individual effects | | | | |
| User-specified lags: 1 | | | | |
| Newey-West automatic bandwidth selection and Bartlett kernel | | | | |
| Balanced observations for each test | | | | |
| | | | Cross- | |
| Method | Statistic | Prob.** | sections | Obs |
| Null: Unit root (assumes common unit root process) | | | | |
| Levin, Lin & Chu t* | -2.70576 | 0.0034 | 14 | 434 |
| Null: Unit root (assumes individual unit root process) | | | | |
| Im, Pesaran and Shin W-stat | -1.67195 | 0.0473 | 14 | 434 |
| ADF - Fisher Chi-square | 38.8015 | 0.0842 | 14 | 434 |
| PP - Fisher Chi-square | 26.3190 | 0.5555 | 14 | 448 |
| ** Probabilities for Fisher tests are computed using an asymptotic Chi | | | | |
| -square distribution. All other tests assume asymptotic normality. | | | | |

**VIEUX_ACTIFS**

| Panel unit root test: Summary | | | | |
|---|---|---|---|---|
| Series: VIEUX_ACTIFS | | | | |
| Date: 03/10/25 Time: 19:16 | | | | |
| Sample: 1990 2023 | | | | |
| Exogenous variables: Individual effects, individual linear trends | | | | |
| User-specified lags: 1 | | | | |
| Newey-West automatic bandwidth selection and Bartlett kernel | | | | |
| Balanced observations for each test | | | | |
| | | | Cross- | |
| Method | Statistic | Prob.** | sections | Obs |
| Null: Unit root (assumes common unit root process) | | | | |
| Levin, Lin & Chu t* | -1.40554 | 0.0799 | 14 | 448 |
| Breitung t-stat | 2.80669 | 0.9975 | 14 | 434 |
| Null: Unit root (assumes individual unit root process) | | | | |
| Im, Pesaran and Shin W-stat | -0.08023 | 0.4680 | 14 | 448 |
| ADF - Fisher Chi-square | 27.1007 | 0.5128 | 14 | 448 |
| PP - Fisher Chi-square | 21.4282 | 0.8071 | 14 | 462 |
| ** Probabilities for Fisher tests are computed using an asymptotic Chi | | | | |
| -square distribution. All other tests assume asymptotic normality. | | | | |

**COTI_SOCIALES**

| Panel unit root test: Summary |
|---|
| Series: COTI_SOCIALES |
| Date: 03/10/25 Time: 19:17 |
| Sample: 1990 2023 |
| Exogenous variables: Individual effects, individual linear trends |

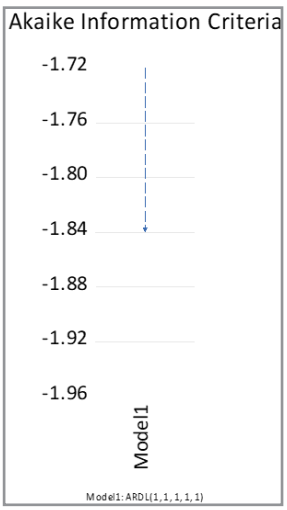
| User-specified lags: 1 | | | | |
|---|---|---|---|---|
| Newey-West automatic bandwidth selection and Bartlett kernel | | | | |
| | | | Cross- | |
| Method | Statistic | Prob.** | sections | Obs |
| Null: Unit root (assumes common unit root process) | | | | |
| Levin, Lin & Chu t* | -6.62448 | 0.0000 | 3 | 27 |
| Breitung t-stat | -0.19789 | 0.4216 | 3 | 24 |
| Null: Unit root (assumes individual unit root process) | | | | |
| Im, Pesaran and Shin W-stat | -0.66694 | 0.2524 | 3 | 27 |
| ADF - Fisher Chi-square | 16.4929 | 0.0113 | 3 | 27 |
| PP - Fisher Chi-square | 3.24925 | 0.7770 | 3 | 32 |
| ** Probabilities for Fisher tests are computed using an asymptotic Chi | | | | |
| -square distribution. All other tests assume asymptotic normality. | | | | |

**DEPENSES_EDU**

| Panel unit root test: Summary | | | | |
|---|---|---|---|---|
| Series: DEPENSES_EDU_PIB | | | | |
| Date: 03/10/25 Time: 19:18 | | | | |
| Sample: 1990 2023 | | | | |
| Exogenous variables: Individual effects, individual linear trends | | | | |
| User-specified lags: 1 | | | | |
| Newey-West automatic bandwidth selection and Bartlett kernel | | | | |
| | | | Cross- | |
| Method | Statistic | Prob.** | sections | Obs |
| Null: Unit root (assumes common unit root process) | | | | |
| Levin, Lin & Chu t* | -5.15332 | 0.0000 | 12 | 219 |
| Breitung t-stat | -1.00769 | 0.1568 | 12 | 207 |
| Null: Unit root (assumes individual unit root process) | | | | |
| Im, Pesaran and Shin W-stat | -1.82116 | 0.0343 | 12 | 219 |
| ADF - Fisher Chi-square | 54.4639 | 0.0004 | 12 | 219 |
| PP - Fisher Chi-square | 68.4538 | 0.0000 | 12 | 248 |
| ** Probabilities for Fisher tests are computed using an asymptotic Chi | | | | |
| -square distribution. All other tests assume asymptotic normality. | | | | |

**Appendix 2: Selection criteria for the optimal model**

- **AIC criteria**



**Summary table of selection criteria**

| Model Selection Criteria Table | | | | | |
|---|---|---|---|---|---|
| Dependent Variable: DEPEND | | | | | |
| Date: 03/10/25 Time: 19:23 | | | | | |
| Sample : 1990-2023 | | | | | |
| Included observations: 32 | | | | | |
| Model | LogL | AIC* | BIC | HQ | Specification |
| 1 | 45.892033 | -1.837849 | -0.773305 | -1.531299 | ARDL( 1, 1, 1,1, 1) |

**Appendix 3:** Correlation tests

| | DEPEND | CHOM_JEUNES | VIEUX_ACTIFS |
|---|---|---|---|
| DEPEND | 1 | -0.5413107654142235 | 0.5567266764241349 |
| CHOM_JEUNES | -0.5413107654142235 | 1 | -0.2748205665328329 |
| VIEUX_ACTIFS | 0.5567266764241349 | -0.2748205665328329 | 1 |

**Appendix 4:** Estimates

| Dependent Variable: D(DEPEND) | | | | |
|---|---|---|---|---|
| Method: ARDL | | | | |
| Date: 03/10/25 Time: 19:50 | | | | |
| Sample: 1992 2022 | | | | |
| Included observations: 26 | | | | |
| Maximum dependent lags: 1 (Automatic selection) | | | | |
| Model selection method: Akaike info criterion (AIC) | | | | |
| Dynamic regressors (1 lag, automatic): CHOM_JEUNES VIEUX_ACTIFS | | | | |
| COTI_SOCIALES DEPENSES_EDU_PIB | | | | |
| Fixed regressors: C | | | | |
| Number of models evalulated: 1 | | | | |
| Selected Model: ARDL(1, 1, 1, 1, 1) | | | | |
| Note: final equation sample is larger than selection sample | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.* |
| | Long Run Equation | | | |
| CHOM_JEUNES | 0.828696 | 0.205866 | 4.025417 | 0.0024 |
| VIEUX_ACTIFS | 1.070497 | 0.169827 | 6.303458 | 0.0001 |
| COTI_SOCIALES | -0.296883 | 0.512051 | -0.579792 | 0.5749 |
| DEPENSES_EDU_PIB | 2.445927 | 0.500726 | 4.884758 | 0.0006 |
| | Short Run Equation | | | |
| COINTEQ01 | -0.150680 | 0.128894 | -3.169026 | 0.0295 |
| D(CHOM_JEUNES) | 0.690725 | 0.765333 | 0.902515 | 0.3880 |
| D(VIEUX_ACTIFS) | 0.333174 | 0.387446 | 0.859923 | 0.4100 |
| D(COTI_SOCIALES) | -0.871209 | 0.596296 | -1.461035 | 0.1747 |
| D(DEPENSES_EDU_PIB) | -0.247924 | 0.082286 | -3.012945 | 0.0131 |
| C | -3.391056 | 1.428292 | -2.374203 | 0.0390 |
| Root MSE | 0.052279 | Mean dependent var | -0.580617 | |
| S.D. dependent var | 0.604220 | S.E. of regression | 0.093519 | |
| Akaike info criterion | -1.493252 | Sum squared resid | 0.087457 | |
| Schwarz criterion | -0.485559 | Log likelihood | 45.89203 | |
| Hannan-Quinn criter. | -1.159230 | | | |
| *Note: p-values and any subsequent tests do not account for model selection. | | | | |