

**Volume 2, Issue 3**

**Research Article**

**Date of Submission:** 25 Jan, 2026

**Date of Acceptance:** 26 June, 2026

**Date of Publication:** 06 July, 2026

## **Market Integration in Africa: is the Simulated Single Currency an Accelerator Over Time?**

**Salomon Nyam A Nwachok<sup>1\*</sup>**, **Dieudonné Mignamissi<sup>2</sup>** and **Armand Manga Akoa<sup>3</sup>**

<sup>1</sup>PhD Candidate, University of Yaoundé II, Faculty of Economics, Cameroon

<sup>2</sup>Associate Professor, University of Yaoundé II, Faculty of Economics, Cameroon

<sup>3</sup>Professor, University of Yaoundé II, Faculty of Economics, Cameroon

**\*Corresponding Author:** Salomon Nyam A Nwachok, PhD Candidate, University of Yaoundé II, Faculty of Economics, Cameroon.

**Citation:** Nyam A Nwachok, S., Mignamissi, D., Manga Akoa. A. (2026). Market Integration in Africa: is the Simulated Single Currency an Accelerator Over Time?. *Int Rev Bus Trade Econ*, 2(3), 01-14.

### **Abstract**

This paper examines the trade effects of monetary integration dynamics in Africa through the concept of velocity. The data used are extracted from the World Bank and the CEPII gravity databases, covering the period 1995-2021. We use a gravity model estimated by the Poisson Pseudo Maximum Likelihood with High Dimensional Fixed Effects (PPMLHDFE) technique. The results obtained are analyzed at the regional and sub-regional levels, considering the main Regional Economic Communities (RECs) of the African Union. At the regional level, the simulation of a monetary union slowly but steadily stimulates trade. However, this effect diverges at the sub-regional level, highlighting the importance of the scale of monetary integration and the heterogeneities between RECs. To achieve the full potential of monetary integration on trade in Africa, we recommend promoting economic diversification and establishing a system to monitor the influence of currency on trade.

**Keywords:** Speed of Monetary Integration, Common Currency, Bilateral Trade, Africa

**JEL Codes:** F14, F15, F33, F45, O55, E42.

### **Introduction**

"The era of singular destinies is over," asserted Cheikh Hamidou Kane (1961), to highlight the need to think about the future in collective terms. According to this author, regional integration was proving to be an indispensable tool for bringing Africa's socio-economic development into the concert of nations.

This ambitious vision has recently been well received by African decision-makers and intellectuals with the transformation of the Organization of African Unity (OAU) into the African Union (AU) in 2002. Moreover, this new dynamic seems credible, especially as it is enabling the resurrection of the continental integration project. All the more so as it is based on a solid institutional architecture, whose compass, dubbed Agenda 2063, sets the gap and the horizon, "the Africa we want." The Abuja Treaty (1991), for its part, provides in Article 2 for the establishment of an African Economic Community (AEC) and the creation of a single African currency based on regional currencies by 2028-2034.

However, this reflection entitled "Market integration in Africa: is the single currency a catalyst?" builds on the new endogenous approach developed by Frankel and Rose (1998) to the theory of optimal currency areas (OCA) initiated by Mundell (1961) and attempts to contribute to the AU's vision, which places regional economic communities (RECs) at the heart of the future single continental currency [1,2]. However, the main question that arises is: Does the single currency accelerate market integration over time in Africa? This concern is more interesting today as our study makes three major scientific contributions.

First, it stands out for its dynamic approach to monetary union in Africa, specifying its impact on intra-African trade. Second, unlike previous research, which focused mainly on the cumulative effect of the single currency, our analysis explores how this effect evolves over time. This allows us to better understand whether the impact of the single currency is increasing, stable, or decreasing. Finally, this analysis provides insight into the evolution of intra-African trade flows and highlights periods when the single currency had a positive or negative impact on trade in Africa.

While it is true that a single currency could clearly be one of the best ways to accelerate market integration in Africa and strengthen the chances of success of the African Continental Free Trade Area (AfCFTA), the potential benefits associated with it in the literature are manifold, notably the mitigation of asymmetric shocks [3]. Nevertheless, the potential benefits associated with it in the literature are manifold, including the mitigation of asymmetric shocks, the attractiveness of investments, the synchronization of business cycles, increased bilateral trade, the creation of a framework conducive to growth, the sharing of monetary policies exchange rate credibility and political integration [1,3-5].

However, there is still some doubt as to whether such a link exists for a monetary union in the making, as is the case in Africa. The approach generally used is that of cost/benefit analysis in the sense of Bean (1992) or Tavlas (1994) [6,7]. For these authors, the decision to create (or join) a monetary union depends on the expected positive externalities, and the main costs involved are the loss of monetary sovereignty the asymmetry of economic shocks, the persistence of inflationary biases, the loss of control over monetary policy, and a constraint on fiscal policy [2].

It is crucial to focus on monetary integration in Africa because of the rise of international regionalism, coupled with the globalization of economies, which favors the opportunity for monetary alliances that are still in their infancy and undergoing rapid change in most regions of the world. For example, the BRICS countries are developing mechanisms and tools for creating a common currency within this organization.

Similarly, the Persian Gulf countries expressed their desire in 2010 to create a single currency. The South Asian states were considering creating a single currency in 2020. The countries of Southeast Asia have expressed their desire to create a single currency by 2030. There is also talk of establishing a monetary union in the Mercosur countries. These multiple monetary integration initiatives are part of a clear desire on the part of all regions of the globe beyond Africa to free themselves from dependence on international currencies and to pursue a coordinated and concerted monetary policy.

This research is motivated by the fact that action at the regional level would be a way for African countries to pool their strengths so that they can enter the global market better equipped and armed. It has been observed that, despite efforts to promote regional integration on the continent, RECs continue to trade more with other regions of the world than with the African continent. Between 2019 and 2023, Asia was the main destination for exports from ECCAS (68%), EAC (56%), SADC (47%), IGAD (41%), COMESA (38%), and ECOWAS (36%).

Europe was the main destination for exports from the AMU (67%) and CEN-SAD (45%). In 2023, intra-African exports and imports accounted for only 14.6% of Africa's total trade, highlighting the relatively small share of domestic trade on the continent. Similarly, trade within RECs remains variable. Thus, over the period 2019-2023, intra-ECOWAS trade is estimated at 9.33%, SADC trade at 11.97%, and EAC trade at 10.20%. Intra-ECCAS trade is the lowest in Africa, at 1.34%, with a maximum value of 1.80% in 2023 and a minimum value of 0.98% in 2022.

It is important to note that regional integration, in particular, and African continental integration in general, face several obstacles that prevent real market integration. In this regard, we can point to the fact that states belong to a multitude of RECs, the complexity of community mechanisms, the lack of complementarity between (extroverted) economies, the absence of integrating infrastructure (energy, corridors, internet connection, etc.), population size, not to mention the absence of a currency capable of boosting trade in Africa. This will be the contribution of this research project.

Historically, Africa's economic and monetary integration dates back to the colonial era. Before independence, most colonial territories were linked to their respective metropolises by monetary arrangements that allowed them to use the same currency in a common area. In this regard, the sequential integration recently instituted by the AU is considered a prudent strategy for bringing about the linear integration model proposed by Balassa (1961) and De Grauwe (2007) [8]. Thus, as the regional approach is not new in Africa, past failures call for more caution than regret in contemporary initiatives.

The rest of the paper is structured as follows: Section 2 presents a brief review of the theoretical and empirical literature; Section 3 presents the empirical strategy; Section 4 focuses on the presentation of results; Section 5 deals with robustness; and finally, Section 6 offers a conclusion.

### **A Brief Review of Theoretical and Empirical Literature**

From a literature perspective, as mentioned above, this work is based on the OCA theory, initiated by Mundell (1961), which emphasizes two opposing approaches: the traditional approach, which developed during the 1960s and 1970s, emphasizes that the formation of a monetary union requires several preconditions, such as the mobility of production

factors and wage and price flexibility the degree of openness of economies and the diversification of productive structures postulated by [2,9,10].

Other authors have extended this approach, such as Ingram (1962) and Scitovsky (1967) with financial integration, Jonhson (1970) with fiscal federalism, Haberler (1970), Fleming (1971) and Magnifico (1974) with zero inflation parallelism between economies, De Grauwe (1975) added a small differential in growth rates and living standards, Vaubel (1978) emphasizes low real exchange rate volatility, while Blanchard and Quah (1989) focus on the similarity of supply and demand shocks [11-14]. This list of criteria is not exhaustive. According to Rossouw (2006), convergence should be seen as an ongoing goal rather than a prerequisite for joining a monetary union.

In the wake of this, the second, so-called "endogenous" approach emerged in the 1990s. The vicious vision developed by Kugman (1993), through geographical economics, posits that monetary union promotes economic specialization and subsequently leads to asymmetry of shocks. While the virtuous vision underlying this work argues that monetary integration can also contribute ex post to consolidating the convergence of cycles between member economies, Rose (2000) believes that the single currency increases trade three times more than that of countries with their own currencies [1,3].

In the African context, the process of forming a monetary union is consistent with the endogenous approach of SMAs and shows that while the benefits of a single currency are potentially significant between African countries (particularly in terms of regional trade and macroeconomic performance), the costs remain nonetheless significant.

Empirically, few studies have examined the impact of a common currency on trade across Africa as a whole. Those that do exist focus mainly on the CFA franc zone. Overall, these studies highlight an increase in trade between member countries of a monetary union [15-25].

Although some monetary agreements have been concluded by several countries around the world, contrary to predictions, some studies have shown that monetary arrangements in Africa have not led to an increase in trade. On the other hand, other studies, such as those by Carrère (2004), Coulibaly (2007), and Afersorgbor and Bergeijk (2014), have found that monetary agreements in sub-Saharan Africa have increased trade flows between member countries [16].

However, we note a clear shortcoming in these studies. Except for Mignamissi and Njikam (2022), most of these studies only address the cumulative effect of a common currency on trade without taking into account how this effect behaves over time. In other words, the cumulative effect does not allow us to identify whether the impact is increasing, decreasing, or stable over time, which is the main objective of this paper.

## Empirical Strategy

### Construction of the Monetary Integration Variable

The monetary integration variable, denoted AfMU (African Monetary Union), is designed as an aggregation of five indicator variables (or dummy variables) corresponding to membership of an REC. Thus, we have the ECCAS, ECOWAS, CAE, SADC, and AMU as RECs.

AfMU takes the value 1 if countries  $i$  and  $j$  simultaneously belong to one of these RECs and share a common currency from year  $t$  onwards, otherwise it takes the value 0. In addition, AfMU is defined as the sum of the indicator variables associated with each REC:

$$AfMU_{ijt} = CEEAC_{ijt} + CEDEAO_{ijt} + CAE_{ijt} + SADC_{ijt} + UMA_{ijt} \quad (1)$$

Furthermore, each component of the AfMU variable corresponds to a dummy variable specific to each economic community. For each REC, the dummy variable takes the value 1 from year  $t$  onwards if countries  $i$  and  $j$  belong to the same REC and share a common currency, and the value 0 otherwise.

### Model Specification

We integrate equation 1 into a gravity model whose theoretical foundations date back to the work of Anderson and Wincoop (2003) and Head and Mayer (2014) [26]. In its log-linear form, we specify an augmented model of the AfMU variable as follows:

$$\ln(X_{ijt}) = \alpha_t AfMU_{ijt} + \omega Y_{it} + \mu W_{jt} + \beta Z_{ij} + \gamma_i + \delta_j + \mu_t + \varepsilon_{ijt} \quad (2)$$

Where  $X_{ijt}$  denotes exports from country  $i$  to country  $j$  in period  $t$ .  $AfMU_{ijt}$  is the binary variable indicating membership of an African monetary union. The speed of monetary integration (SMI) is given by the annual coefficient  $\alpha_t$  and is interpreted as the average SMI.  $Z_{ij}$  groups together time-invariant bilateral control variables (distance, common border, common language, and colonizer).  $Y_{it}$  ( $W_{jt}$ ) refers to all time-varying control variables such as GDP and the population of the exporting (importing) country,  $\gamma_i$  ( $\delta_j$ ) refers to the fixed effects of the exporting (importing) country, and  $\mu_t$  refers

to the fixed time effect.  $\varepsilon_{ijt}$  refers to the error term.

However, estimating equation (2) generally produces biased results due to heteroscedasticity and a high incidence of zero trade flows. A solution to this problem is proposed by Santos-Silva and Tenreyro (2006) [27]. To overcome this limitation, we use the Poisson Pseudo Maximum Likelihood High Dimension Fixed Effect (PPMLHDFE) estimator, recommended by Correia et al. (2020).

The gravity model is a multidimensional model that requires the exclusion or consideration of several specific effects. These specific effects are also important in circumventing the thorny issue of multilateral resistances, i.e., phenomena that are unobservable and sometimes unmeasurable but have a significant influence on the volume of trade between countries. In our empirical strategy, the different fixed effects can be the fixed effect of the country of origin (i), the fixed effect of the country of destination (j), the bilateral fixed effect (ij), and the temporal fixed effect (t). Controlling for these different effects in the estimation of the gravity model is a remarkable development in recent literature. For this reason, we refer to the work of Correia et al. (2020) and adopt the PPMLHDFE estimator, which has proven to be robust to statistical separation and convergence issues.

Thus, the estimated model takes the following form:

$$X_{ijt} = \exp(\alpha_t AFMU_{ijt} + \omega Y_{it} + \mu W_{jt} + \beta Z_{ijt} + \gamma_i + \delta_j + \mu_t) + \varepsilon_{ijt} \quad (3)$$

## Data

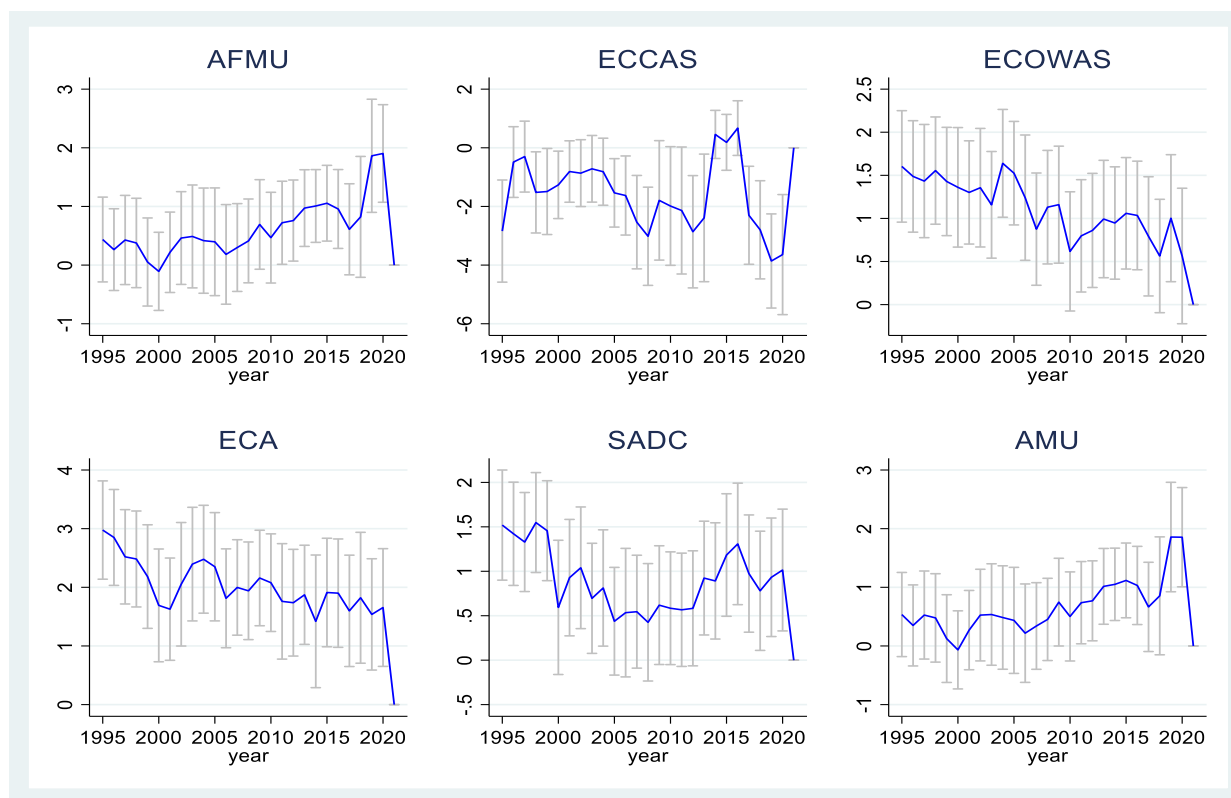
The data used comes mainly from two sources covering the period 1990-2021. The sample comprises 48 exporting countries from ECCAS, ECOWAS, EAC, SADC, and AMU. The partner countries are members of the EU, NAFTA, MERCOSUR, ASEAN, and BRICS (see Appendix 3). The control variables are drawn from the CEPII Gravitational Database, which provides detailed information on trade flows, geographic distance, common language, shared borders, colonial ties, GDP, and population. Finally, the variable of interest relating to AfMU membership is constructed by the authors based on the criteria described in subsection (2.1). Descriptive statistics and the correlation matrix are presented in Appendices 1 and 2.

## Results

The results of the analysis (Tables 1a and 1b) highlight the mixed impact of monetary integration dynamics on trade in Africa. The AMU, as a regional monetary union, is notable for its insignificant impact on bilateral exports between its members between 1995 and 2008, although the sign is positive. However, there was a significant stimulation of trade through monetary integration between 2009 and 2020. At the sub-regional level, however, monetary integration has a mixed impact on trade. In this regard, the AMU shows a similar trend to the AfMU. In the case of ECOWAS and ECA, the annual coefficients are generally positive, with a more pronounced effect on ECA trade. SADC shows more fluctuating results, while monetary integration in ECCAS significantly reduces trade volume over time. This result highlights the difficulties associated with economic heterogeneity and economic policy coordination.

The other control variables show signs consistent with theoretical expectations (Appendix 4). The exporter's GDP, which reflects a country's productive capacity, is positively associated with trade. A more developed economy has the resources to improve the competitiveness of its goods, particularly through investment in research and development (R&D) and technology. This suggests that improving productive capacity in exporting countries can increase export volumes due to the higher quality of the goods produced. On the other hand, the GDP of the importing country, which is an indicator of purchasing power, also shows a positive relationship, corroborating the idea that countries with greater purchasing power are more likely to import goods from their trading partners.

There is a non-significant effect of the exporter's and importer's population on export flows. The effect of distance, on the other hand, is in line with theoretical expectations, with a negative relationship between geographical distance and trade. Indeed, high transport costs and logistical barriers hinder trade between distant countries. Sharing a common border appears to have a positive effect on trade, probably due to reduced transportation costs and the absence of customs barriers, which facilitate cross-border trade. In addition, sharing a common language also increases exports, which can be interpreted as a factor promoting trade cooperation, as a shared language facilitates negotiation and coordination between companies in both countries.



Note: The graphs above show the estimated effects of monetary integration at the regional and sub-regional levels on bilateral exports, by year. The estimates are obtained from the standard gravity model, using the PPMLHDFE method. Each graph shows the coefficients associated with the common currency variable for a given period, with 95% confidence intervals.

Source: Authors.

**Figure 1: Evolution of SMI Over Time**

|       | <b>Dependent variable: bilateral export</b> |                     |                     |                     |                   |                   |
|-------|---------------------------------------------|---------------------|---------------------|---------------------|-------------------|-------------------|
| Years | ECCAS                                       | ECOWAS              | ECA                 | SADC                | AMU               | AfMU              |
| 1995  | -3.405***<br>(1.284)                        | 1.458***<br>(0.353) | 2.867***<br>(0.460) | 1.504***<br>(0.342) | 0.619<br>(0.438)  | 0.437<br>(0.369)  |
| 1996  | -0.673<br>(0.644)                           | 1.355***<br>(0.356) | 2.755***<br>(0.447) | 1.417***<br>(0.322) | 0.442<br>(0.424)  | 0.264<br>(0.355)  |
| 1997  | -0.485<br>(0.647)                           | 1.302***<br>(0.362) | 2.429***<br>(0.447) | 1.327***<br>(0.309) | 0.617<br>(0.444)  | 0.429<br>(0.388)  |
| 1998  | -1.697**<br>(0.726)                         | 1.432***<br>(0.341) | 2.403***<br>(0.458) | 1.540***<br>(0.305) | 0.568<br>(0.444)  | 0.377<br>(0.389)  |
| 1999  | -1.653**<br>(0.762)                         | 1.309***<br>(0.347) | 2.112***<br>(0.491) | 1.463***<br>(0.310) | 0.221<br>(0.449)  | 0.0529<br>(0.383) |
| 2000  | -1.461**<br>(0.634)                         | 1.246***<br>(0.378) | 1.630***<br>(0.531) | 0.584<br>(0.414)    | 0.0311<br>(0.401) | -0.107<br>(0.340) |
| 2001  | -0.973*<br>(0.567)                          | 1.190***<br>(0.328) | 1.571***<br>(0.483) | 0.919**<br>(0.364)  | 0.365<br>(0.404)  | 0.218<br>(0.350)  |
| 2002  | -1.022*<br>(0.616)                          | 1.252***<br>(0.371) | 2.002***<br>(0.576) | 1.032***<br>(0.378) | 0.617<br>(0.455)  | 0.462<br>(0.403)  |
| 2003  | -0.861<br>(0.610)                           | 1.058***<br>(0.337) | 2.351***<br>(0.531) | 0.690**<br>(0.343)  | 0.627<br>(0.489)  | 0.489<br>(0.448)  |
| 2004  | -0.937<br>(0.607)                           | 1.539***<br>(0.337) | 2.436***<br>(0.502) | 0.804**<br>(0.359)  | 0.573<br>(0.494)  | 0.417<br>(0.458)  |
| 2005  | -1.663***<br>(0.624)                        | 1.429***<br>(0.324) | 2.317***<br>(0.507) | 0.431<br>(0.334)    | 0.527<br>(0.504)  | 0.398<br>(0.469)  |
| 2006  | -1.744**                                    | 1.159***            | 1.791***            | 0.532               | 0.315             | 0.182             |

|                                                   |           |          |          |          |          |          |
|---------------------------------------------------|-----------|----------|----------|----------|----------|----------|
|                                                   | (0.710)   | (0.391)  | (0.464)  | (0.389)  | (0.476)  | (0.433)  |
| 2007                                              | -2.951*** | 0.808**  | 1.993*** | 0.552    | 0.446    | 0.300    |
|                                                   | (1.139)   | (0.352)  | (0.444)  | (0.348)  | (0.428)  | (0.382)  |
| 2008                                              | -3.441*** | 1.061*** | 1.935*** | 0.425    | 0.552    | 0.413    |
|                                                   | (1.212)   | (0.355)  | (0.453)  | (0.360)  | (0.411)  | (0.365)  |
| 2009                                              | -2.213    | 1.104*** | 2.171*** | 0.630*   | 0.851**  | 0.693*   |
|                                                   | (1.380)   | (0.363)  | (0.444)  | (0.364)  | (0.434)  | (0.390)  |
| 2010                                              | -2.414*   | 0.571    | 2.097*** | 0.595*   | 0.607    | 0.468    |
|                                                   | (1.377)   | (0.369)  | (0.449)  | (0.347)  | (0.436)  | (0.395)  |
| 2011                                              | -2.569*   | 0.760**  | 1.776*** | 0.582*   | 0.839**  | 0.722**  |
|                                                   | (1.446)   | (0.348)  | (0.511)  | (0.349)  | (0.408)  | (0.361)  |
| 2012                                              | -3.286**  | 0.828**  | 1.764*** | 0.598*   | 0.878**  | 0.760**  |
|                                                   | (1.330)   | (0.354)  | (0.473)  | (0.355)  | (0.395)  | (0.353)  |
| 2013                                              | -2.812*   | 0.966*** | 1.916*** | 0.938*** | 1.123*** | 0.972*** |
|                                                   | (1.448)   | (0.361)  | (0.452)  | (0.351)  | (0.379)  | (0.334)  |
| 2014                                              | 0.412     | 0.921*** | 1.452**  | 0.905**  | 1.138*** | 1.008*** |
|                                                   | (0.423)   | (0.346)  | (0.581)  | (0.357)  | (0.366)  | (0.317)  |
| 2015                                              | 0.151     | 1.039*** | 1.962*** | 1.196*** | 1.204*** | 1.055*** |
|                                                   | (0.492)   | (0.342)  | (0.490)  | (0.373)  | (0.373)  | (0.330)  |
| 2016                                              | 0.638     | 1.020*** | 1.958*** | 1.322*** | 1.119*** | 0.957*** |
|                                                   | (0.481)   | (0.332)  | (0.489)  | (0.371)  | (0.386)  | (0.343)  |
| 2017                                              | -2.613**  | 0.789**  | 1.657*** | 0.982*** | 0.763*   | 0.611    |
|                                                   | (1.115)   | (0.361)  | (0.501)  | (0.361)  | (0.436)  | (0.396)  |
| 2018                                              | -3.106*** | 0.564    | 1.884*** | 0.786**  | 0.954*   | 0.822    |
|                                                   | (1.108)   | (0.344)  | (0.568)  | (0.365)  | (0.547)  | (0.526)  |
| 2019                                              | -4.169*** | 1.007*** | 1.607*** | 0.938*** | 1.964*** | 1.863*** |
|                                                   | (1.082)   | (0.385)  | (0.496)  | (0.363)  | (0.490)  | (0.492)  |
| 2020                                              | -3.965*** | 0.582    | 1.736*** | 1.024*** | 1.974*** | 1.903*** |
|                                                   | (1.296)   | (0.407)  | (0.522)  | (0.371)  | (0.454)  | (0.425)  |
| Controls                                          | Yes       | Yes      | Yes      | Yes      | Yes      | Yes      |
| N                                                 | 54,462    | 54,462   | 54,462   | 54,462   | 54,462   | 58,361   |
| Pseudo R2                                         | 0.8417    | 0.8417   | 0.8417   | 0.8417   | 0.8417   | 0.8337   |
| Country FE                                        | Yes       | Yes      | Yes      | Yes      | Yes      | Yes      |
| Time FE                                           | Yes       | Yes      | Yes      | Yes      | Yes      | Yes      |
| *** p<0.01, ** p<0.05, * p<0.1<br>Source: Authors |           |          |          |          |          |          |

**Table 1: Dynamics of Monetary Integration on Trade (1995-2020), PPMLHDFE Estimator**

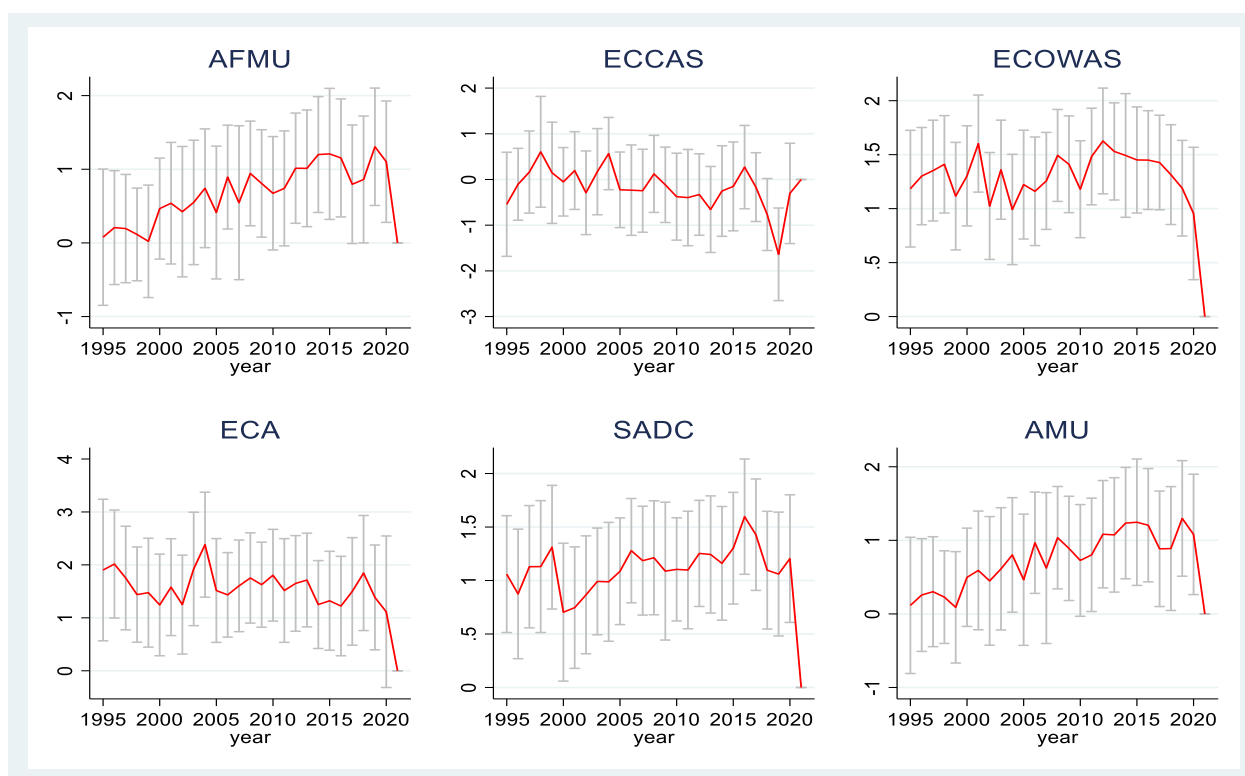
Regarding the effect of the colonial past, the results suggest that there is no statistically significant effect, which could indicate that other factors, such as current trade policies, have more influence on trade than the historical ties between former colonial powers and their former colonies. Furthermore, Figure 1 below shows the evolution of the SMI effect on trade at the regional and sub-regional levels. At the regional level, the AfMU shows an acceleration phase towards the end of the period, suggesting an improvement in economic integration on the continent. At the sub-regional level, contrasting trends are observed. For example, ECCAS shows high SMI instability. ECOWAS shows a gradual decline in SMI and, therefore, in trade. This result confirms the conclusion of De Sousa (2012) that the effect of a common currency decreases over time [28]. The EAC shows a slowdown at the beginning of the period, followed by a lack of trend, suggesting a certain stability or slight variation in SMI. The SADC shows instability, alternating between periods of slowdown and acceleration. Finally, the AMU shows an increase in SMI over the years.

## Robustness

### High-Dimensional Linear Regression

The use of linear regression based on the REGHDFE estimator is justified by the fact that, like the PPMLHDFE, fixed effects can be absorbed effectively, which makes it possible to control for unobserved heterogeneities and improve the estimation of the coefficients of the explanatory variables. The results obtained confirm the robustness of the trend

in the coefficients obtained by the PPMLHDFE (Table 1). Furthermore, the graphical representation of the coefficients broadly validates the evolution of the SMI at the regional and sub-regional levels.



Note: Each graph shows the coefficients associated with the common currency variable for a given period, with 95% confidence intervals.

Source: Authors.

**Figure 2: Evolution of the SMI Over Time (REGHDFE method)**

| Dependent variable: bilateral export |                    |                     |                     |                     |                    |                   |
|--------------------------------------|--------------------|---------------------|---------------------|---------------------|--------------------|-------------------|
| Years                                | ECCAS              | ECOWAS              | ECA                 | SADC                | AMU                | AfMU              |
| 1995                                 | -0.543<br>(0.581)  | 1.185***<br>(0.276) | 1.903***<br>(0.682) | 1.060***<br>(0.279) | 0.116<br>(0.472)   | 0.0772<br>(0.472) |
| 1996                                 | -0.106<br>(0.401)  | 1.301***<br>(0.230) | 2.016***<br>(0.520) | 0.875***<br>(0.309) | 0.257<br>(0.391)   | 0.208<br>(0.394)  |
| 1997                                 | 0.162<br>(0.458)   | 1.352***<br>(0.238) | 1.752***<br>(0.499) | 1.129***<br>(0.292) | 0.302<br>(0.381)   | 0.195<br>(0.375)  |
| 1998                                 | 0.605<br>(0.619)   | 1.410***<br>(0.230) | 1.439***<br>(0.459) | 1.130***<br>(0.314) | 0.228<br>(0.321)   | 0.115<br>(0.321)  |
| 1999                                 | 0.147<br>(0.565)   | 1.116***<br>(0.254) | 1.475***<br>(0.524) | 1.311***<br>(0.295) | 0.0895<br>(0.386)  | 0.0216<br>(0.389) |
| 2000                                 | -0.0508<br>(0.382) | 1.304***<br>(0.237) | 1.243**<br>(0.490)  | 0.704**<br>(0.329)  | 0.498<br>(0.341)   | 0.466<br>(0.349)  |
| 2001                                 | 0.195<br>(0.434)   | 1.603***<br>(0.229) | 1.579***<br>(0.466) | 0.747***<br>(0.290) | 0.591<br>(0.411)   | 0.539<br>(0.421)  |
| 2002                                 | -0.291<br>(0.467)  | 1.024***<br>(0.253) | 1.250***<br>(0.476) | 0.866***<br>(0.281) | 0.449<br>(0.446)   | 0.424<br>(0.451)  |
| 2003                                 | 0.170<br>(0.481)   | 1.360***<br>(0.234) | 1.923***<br>(0.546) | 0.991***<br>(0.254) | 0.612<br>(0.424)   | 0.550<br>(0.431)  |
| 2004                                 | 0.567<br>(0.404)   | 0.992***<br>(0.261) | 2.382***<br>(0.506) | 0.988***<br>(0.283) | 0.802**<br>(0.397) | 0.742*<br>(0.411) |
| 2005                                 | -0.226<br>(0.422)  | 1.222***<br>(0.257) | 1.516***<br>(0.500) | 1.087***<br>(0.254) | 0.464<br>(0.455)   | 0.412<br>(0.460)  |

|            |           |          |          |          |          |          |
|------------|-----------|----------|----------|----------|----------|----------|
| 2006       | -0.234    | 1.161*** | 1.434*** | 1.279*** | 0.967*** | 0.893**  |
|            | (0.505)   | (0.257)  | (0.407)  | (0.249)  | (0.351)  | (0.359)  |
| 2007       | -0.246    | 1.257*** | 1.604*** | 1.186*** | 0.623    | 0.545    |
|            | (0.463)   | (0.229)  | (0.441)  | (0.260)  | (0.523)  | (0.533)  |
| 2008       | 0.122     | 1.493*** | 1.753*** | 1.213*** | 1.036*** | 0.943*** |
|            | (0.430)   | (0.217)  | (0.435)  | (0.272)  | (0.355)  | (0.362)  |
| 2009       | -0.116    | 1.411*** | 1.626*** | 1.088*** | 0.890**  | 0.807**  |
|            | (0.421)   | (0.228)  | (0.410)  | (0.329)  | (0.361)  | (0.372)  |
| 2010       | -0.376    | 1.180*** | 1.805*** | 1.104*** | 0.727*   | 0.673*   |
|            | (0.485)   | (0.229)  | (0.442)  | (0.246)  | (0.387)  | (0.392)  |
| 2011       | -0.396    | 1.483*** | 1.516*** | 1.098*** | 0.803**  | 0.740*   |
|            | (0.537)   | (0.228)  | (0.499)  | (0.280)  | (0.393)  | (0.398)  |
| 2012       | -0.329    | 1.627*** | 1.650*** | 1.253*** | 1.083*** | 1.014*** |
|            | (0.455)   | (0.250)  | (0.461)  | (0.253)  | (0.372)  | (0.382)  |
| 2013       | -0.656    | 1.530*** | 1.714*** | 1.243*** | 1.074*** | 1.012**  |
|            | (0.480)   | (0.229)  | (0.452)  | (0.279)  | (0.396)  | (0.404)  |
| 2014       | -0.253    | 1.492*** | 1.251*** | 1.161*** | 1.234*** | 1.200*** |
|            | (0.505)   | (0.292)  | (0.424)  | (0.271)  | (0.386)  | (0.401)  |
| 2015       | -0.152    | 1.451*** | 1.323*** | 1.302*** | 1.246*** | 1.208*** |
|            | (0.496)   | (0.251)  | (0.476)  | (0.266)  | (0.438)  | (0.454)  |
| 2016       | 0.271     | 1.450*** | 1.223**  | 1.597*** | 1.205*** | 1.153*** |
|            | (0.465)   | (0.233)  | (0.479)  | (0.275)  | (0.393)  | (0.409)  |
| 2017       | -0.167    | 1.427*** | 1.499*** | 1.428*** | 0.884**  | 0.796*   |
|            | (0.384)   | (0.223)  | (0.518)  | (0.266)  | (0.400)  | (0.411)  |
| 2018       | -0.766*   | 1.315*** | 1.846*** | 1.097*** | 0.888**  | 0.861*   |
|            | (0.402)   | (0.236)  | (0.554)  | (0.281)  | (0.429)  | (0.439)  |
| 2019       | -1.638*** | 1.189*** | 1.386*** | 1.060*** | 1.298*** | 1.305*** |
|            | (0.517)   | (0.226)  | (0.505)  | (0.295)  | (0.401)  | (0.406)  |
| 2020       | -0.305    | 0.955*** | 1.115    | 1.205*** | 1.081*** | 1.103*** |
|            | (0.560)   | (0.313)  | (0.730)  | (0.304)  | (0.417)  | (0.420)  |
| Controls   | Yes       | Yes      | Yes      | Yes      | Yes      | Yes      |
| N          | 58,361    | 58,361   | 58,361   | 58,361   | 58,361   | 58,361   |
| R-2        | 0.582     | 0.582    | 0.582    | 0.582    | 0.582    | 0.577    |
| Country FE | Yes       | Yes      | Yes      | Yes      | Yes      | Yes      |
| Time FE    | Yes       | Yes      | Yes      | Yes      | Yes      | Yes      |

Note: This table presents the results of the standard gravity model estimation using the PPMLHDFE estimator. The dependent variable is the volume of exports from country i to country j.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1  
Source: Authors.

**Table 2: Dynamics of Monetary Integration on Trade (1995-2020), Reghdfe Estimator**

### Analysis of Short- and Long-Term SMI Using the Dynamic Gravity Model

As a general rule, the presence of high sunk costs, practical experience, or consumer purchasing habits would indicate that the gravity equation (equation 2) should be dynamic [29].

|          | (2)       | (1)       |
|----------|-----------|-----------|
|          | Trade     | Trade     |
| L.trade  | 0.475***  | 0.474***  |
|          | (0.00888) | (0.00888) |
| L2.trade | 0.205***  | 0.204***  |
|          | (0.00924) | (0.00923) |
| L3.trade | 0.149***  | 0.148***  |

|                                                                                                                                                                                                                                               |           |           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|
|                                                                                                                                                                                                                                               | (0.00770) | (0.00770) |
| African monetary union                                                                                                                                                                                                                        | -0.0402   |           |
|                                                                                                                                                                                                                                               | (0.0728)  |           |
| ECCAS monetary union                                                                                                                                                                                                                          |           | -0.0860   |
|                                                                                                                                                                                                                                               |           | (0.0876)  |
| ECOWAS monetary union                                                                                                                                                                                                                         |           | 0.230***  |
|                                                                                                                                                                                                                                               |           | (0.0486)  |
| EAC monetary union                                                                                                                                                                                                                            |           | 0.150*    |
|                                                                                                                                                                                                                                               |           | (0.0779)  |
| SADC monetary union                                                                                                                                                                                                                           |           | 0.257***  |
|                                                                                                                                                                                                                                               |           | (0.0552)  |
| AMU monetary union                                                                                                                                                                                                                            |           | 0.171***  |
|                                                                                                                                                                                                                                               |           | (0.0601)  |
| GDP_i                                                                                                                                                                                                                                         | 0.128***  | 0.129***  |
|                                                                                                                                                                                                                                               | (0.0444)  | (0.0444)  |
| GDP_j                                                                                                                                                                                                                                         | 0.134***  | 0.138***  |
|                                                                                                                                                                                                                                               | (0.0300)  | (0.0299)  |
| POPULATION_i                                                                                                                                                                                                                                  | 0.352***  | 0.359***  |
|                                                                                                                                                                                                                                               | (0.125)   | (0.125)   |
| POPULATION_j                                                                                                                                                                                                                                  | -0.118    | -0.108    |
|                                                                                                                                                                                                                                               | (0.0840)  | (0.0817)  |
| Distance_ij                                                                                                                                                                                                                                   | -0.268*** | -0.221*** |
|                                                                                                                                                                                                                                               | (0.0157)  | (0.0172)  |
| Common border                                                                                                                                                                                                                                 | 0.346***  | 0.333***  |
|                                                                                                                                                                                                                                               | (0.0336)  | (0.0348)  |
| Common language                                                                                                                                                                                                                               | 0.118***  | 0.103***  |
|                                                                                                                                                                                                                                               | (0.0264)  | (0.0275)  |
| Common Colonizer                                                                                                                                                                                                                              | 0.0253    | 0.0409    |
|                                                                                                                                                                                                                                               | (0.0300)  | (0.0304)  |
| Constant                                                                                                                                                                                                                                      | 1.188     | 0.611     |
|                                                                                                                                                                                                                                               | (1.428)   | (1.407)   |
| Observations                                                                                                                                                                                                                                  | 38,060    | 38,060    |
| R-squared                                                                                                                                                                                                                                     | 0.813     | 0.813     |
| Note: This table presents the results of the standard gravity model estimation using the REGHDFE estimator. The dependent variable is the volume of exports from country i to country j.<br>*** p<0.01, ** p<0.05, * p<0.1<br>Source: Authors |           |           |

**Table 3: Short-Term Dynamics of SMI on Trade**

In other words, trade depends not only on current transaction costs but also on the history of transaction costs [30-32]. A dynamic gravity model, also known as an LDV model, is specified as follows:

$$\ln(X_{ijt}) = \sum_{k=1}^k \partial_k \ln(X_{ij,t-k}) + \alpha AfMU_{ijt} + \omega Y_{it} + \mu W_{jt} + \beta Z_{ijt} + \gamma_i + \delta_j + \mu_t + \varepsilon_{ijt} \quad 4.$$

Estimating the equation also allows us to identify RECs that are fast in the short and long term in terms of SMI. In the short and long term, the speed of integration appears not to affect trade at the regional level.

At the sub-regional level, SADC is the fastest REC in terms of SMI, followed by ECOWAS, UMA, and EAC. ECCAS, on the other hand, is the slowest, with an insignificant effect. In the long term, the results reveal more robust dynamics, suggesting an acceleration of trade in the RECs with the exception of ECCAS.

| Monetary unions                                                                                                                                                                                                                                | Long-term effect |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Africa                                                                                                                                                                                                                                         | -3.02            |
| ECCAS                                                                                                                                                                                                                                          | -1.04            |
| ECOWAS                                                                                                                                                                                                                                         | 1.32***          |
| EAC                                                                                                                                                                                                                                            | 1.66***          |
| SADC                                                                                                                                                                                                                                           | 1.25***          |
| AMU                                                                                                                                                                                                                                            | 1.54***          |
| Note: This table presents the results of the standard gravity model estimation using the REGHDFE estimator. The dependent variable is the volume of exports from country i to country j.<br>*** p<0.01, ** p<0.05, * p<0.1<br>Source: Authors. |                  |

**Table 4: Long-Term Dynamics of SMI on Trade**

## Conclusion

Economic integration in Africa has shown significant potential in recent decades, although its scope and nature vary from region to region. Among the many steps taken, monetary integration stands out as an essential strategic tool for harmonizing African economies, particularly through the creation of common currency areas. Nevertheless, despite free trade initiatives and customs unions, trade within Africa remains limited, accounting for a minimal portion of the continent's overall trade. This observation underscores the imperative to deepen monetary integration in order to stimulate trade on the continent and reduce dependence on external partners, while strengthening African competitiveness on the international stage.

This paper makes a major contribution by studying the pace at which monetary integration influences trade flows in Africa. We also analyze how this impact has evolved. We empirically test this approach using a gravity model estimated by PPMLHDFE. This model allows for a robust estimation of the effects of monetary integration while controlling for fixed effects and overcoming problems of heteroscedasticity and zero trade flows. The results reveal a slow but steady acceleration of trade in countries that are members of a regional monetary union. However, this effect varies across sub-regions. The ECCAS is experiencing a slowdown in trade, while the ECOWAS and the EAC, despite a positive impact, particularly marked in the EAC, are experiencing a decline in trade over the years. The AMU, for its part, is experiencing a growing acceleration in trade as time goes by. In the case of the SADC, there is a form of instability in the SMI.

To achieve the full potential of monetary integration on intra-African trade, we recommend, as a first step, promoting economic diversification by encouraging African countries to reduce their dependence on primary sectors and develop value-added industries. This would increase the competitiveness of economies and encourage trade within the continent. Second, we propose establishing dynamic monitoring systems to measure the influence of the single currency on trade, allowing monetary and trade policies to be adjusted in real time to optimize short- and long-term gains.

## Funding

None

## Ethics Declarations

Competing Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. All authors read and approved the final manuscript.

## Ethics Approval

Ethical approval does not apply to this article.

## Data Availability Statements

The data that support the findings of this study are available from the following public websites:

## World Development Indicators (WDI)

<https://databank.worldbank.org/source/world-development-indicators>

## CEPII

[https://www.cepii.fr/CEPII/en/bdd\\_modele/bdd\\_modele\\_item.asp](https://www.cepii.fr/CEPII/en/bdd_modele/bdd_modele_item.asp)

## Details of the AI Usage:

- DeepL (<https://www.deepl.com/fr/translator>): for translation from French to English.
- Grammarly (<https://app.grammarly.com/>): for evaluating grammar, spelling, punctuation, and clarity.

## References

1. Mundell, R. A. (1961). A theory of optimum currency areas. *American Economic Review*, 51(4), 657-665.
2. Rose, A. K. (2000). One money, one market: the effect of common currencies on trade. *Economic policy*, 15(30), 08-45.
3. Bayoumi, T. et B. Eichengreen (1993), "Shocking Aspects of European Monetary Integration", in Torres F. et F. Giavazzi, eds., *Adjustment and Growth in European Monetary Union*, Cambridge, Cambridge University Press.
4. Vickers, J. (2000). Monetary union and economic growth (No. 10). NBB Working Paper.
5. Bean, C. R. (1992). Economic and monetary union in Europe. *Journal of Economic Perspectives*, 6(4), 31-52.
6. De Grauwe, P. (2007), *Economics of Monetary Union*, Oxford University Press, Oxford, United Kingdom.
7. Tavlas G. S., (1994). The Theory of Monetary Integration, *Open Economies Review*, Vol. 5 no. 2, pp 211-230.
8. McKinnon, R. I. (1963). Optimum currency areas. *The American economic review*, 53(4), 717-725.
9. Kenen, P. B. (1969). The theory of optimum currency areas: An eclectic view. In R. A. Mundell & A. Swoboda (Eds.), *Monetary problems of the international economy* (pp. 41-60). University of Chicago Press.
10. Ingram, J. C. (1962). Regional payments mechanisms: The case of Puerto Rico. (No Title).
11. Haberler G., (1970), "The International Monetary System: Some recent Developments and Discussions, in *Approaches to Greater Flexibility in Exchange Rates*, edited by George Halm, Princeton University Press, pp. 115-23.
12. Fleming, J. M. (1971). On exchange rate unification. *the economic Journal*, 81(323), 467-488.
13. Magnifico, G. (1974), *L'Europe par la monnaie*, éd. Lavauzelle.
14. Anyanwu, J. C. (2003). Estimating the macroeconomic effects of monetary unions: the case of trade and output. *African Development Review*, 15(2-3), 126-145.
15. Carrère, C. (2004). African regional agreements: impact on trade with or without currency unions. *Journal of African Economies*, 13(2), 199-239.
16. Masson, P. R., & Pattillo, C. A. (2005). *The monetary geography of Africa*. Brookings Institution Press.
17. Nitsch, V. (2004). Comparing Apples and Oranges: The Trade Effect of Multilateral Currency Unions (No. 34837). Darmstadt Technical University, Department of Business Administration, Economics and Law, Institute for Business Studies (BWL).
18. Ajayi, K. (2005). Regional financial and economic integration in West Africa. Department of Economics, Stanford University, Stanford, CA, 94309.
19. Fielding, D., & Shields, K. (2005). The impact of monetary union on macroeconomic integration: evidence from West Africa. *Economica*, 72(288), 683-704.
20. Tsangarides, C. G., Ewencyk, P., & Hulej, M. (2006). Stylized facts on bilateral trade and currency unions: Implications for Africa.
21. Masson, P. R. (2008). Currency unions in Africa: is the trade effect substantial enough to justify their formation?. *World Economy*, 31(4), 533-547.
22. Zannou, A. (2010). Determinants of intra-ECOWAS trade flows. *African Journal of Business Management*, 4(5), 678.
23. M. Adam, A., & Sharif Chaudhry, I. (2014). The currency union effect on intra-regional trade in Economic Community of West African States (ECOWAS). *Journal of International Trade Law and Policy*, 13(2), 102-122.
24. Adu, R., Litsios, I., & Baimbridge, M. (2022). ECOWAS single currency: Prospective effects on trade. *Journal of International Money and Finance*, 126, 102651.
25. Head, K., & Mayer, T. (2014). Gravity equations: Workhorse, toolkit, and cookbook. In *Handbook of international economics* (Vol. 4, pp. 131-195). Elsevier.
26. Silva, J. S., & Tenreyro, S. (2006). The log of gravity. *The Review of Economics and statistics*, 641-658.
27. De Sousa, J. (2012). The currency union effect on trade is decreasing over time. *Economics Letters*, 117(3), 917-920.
28. Campbell, D. L., & Chentsov, A. (2023). Breaking badly: The currency union effect on trade. *Journal of International Money and Finance*, 136, 102840.
29. Campbell, D. L. (2020). Relative prices and hysteresis: evidence from US manufacturing. *European Economic Review*, 129, 103474.
30. Campbell, D. L. (2010). History, culture, and trade: a dynamic gravity approach (No. 26/2010). EERI Research Paper Series.
31. Eichengreen, B., & Irwin, D. A. (1998). The role of history in bilateral trade flows. In *The regionalization of the world economy* (pp. 33-62). University of Chicago Press.
32. Agbohoun, N. (2015), *Le Franc CFA et l'Euro contre l'Afrique*, Ligue Associative Africaine, Shou, 23PA-N-INET 6251.
33. Atkeson, A., & Bayoumi, T. (1993). Do private capital markets insure regional risk? Evidence from the United States and Europe. *Open economies review*, 4(3), 303-324.
34. Arreaza A., (1998), "Consumption Smoothing, Capital Flows and Fiscal Policy in Latin American Countries", Mimeo, Central Bank of Venezuela.
35. Backus, D. K., Kehoe, P. J., & Kydland, F. E. (1992). International real business cycles. *Journal of political Economy*, 100(4), 745-775.
36. Barro, R. J., & Gordon, D. B. (1983). Rules, discretion and reputation in a model of monetary policy. *Journal of monetary economics*, 12(1), 101-121.
37. Bentolila, S. (1997). Sticky labor in Spanish regions. *European Economic Review*, 41(3-5), 591-598.
38. Bertola G., (2000), "Labor Markets in the European Union," *Ifo-Studien*; 46(1), pp. 99-122.
39. Bhagwati, J. N., & Krueger, A. O. (1995). *The dangerous drift to preferential trade agreements*. aei Press.

40. Blanchard O., (1999), "European unemployment: the role of shocks and institutions", Baffi Lecture, Banca d'Italia, Rome.
41. Blanchard, O., & Wolfers, J. (2000). The role of shocks and institutions in the rise of European unemployment: the aggregate evidence. *The economic journal*, 110(462), 1-33.
42. Bordo, M. D., Eichengreen, B., & Kim, J. (1998). Was there really an earlier period of international financial integration comparable to today?.
43. Braunerhjelm, P. (2000). Integration and the regions of Europe: How the right policies can prevent polarization (Vol. 10). Centre for Economic Policy Research.
44. Bruno, M., & Sachs, J. D. (1985). *Economics of worldwide stagflation*. Harvard University Press.
45. Cadiou L, S. Guichard et M. Maurel, (2001), *Labour market asymmetries and EMU*, CEPII, Paris, Mimeo.
46. Calmfors, L., & Driffill, J. (1988). Bargaining structure, corporatism and macroeconomic performance. *Economic policy*, 3(6), 13-61.
47. Canzoneri, M. B., Vallés, J., & Viñals, J. (1996). Do exchange rates move to address international macroeconomic imbalances?. Banco de España. Servicio de Estudios.
48. CNUCED. (2024). *Rapport sur le développement économique en Afrique 2024*.
49. Cooper R. (1977), "Worldwide versus Regional Integration: The Optimum Size of the Integrated Area", in Matchup F. ed., *Economic Integration, Worldwide, Regional, Sectoral*, London.
50. Crucini, M. J. (1999). On international and national dimensions of risk sharing. *Review of Economics and Statistics*, 81(1), 73-84.
51. Decressin, J., & Fatas, A. (1995). Regional labor market dynamics in Europe. *European Economic Review*, 39(9), 1627-1655.
52. Emerson, M. (1992). *One market, one money: an evaluation of the potential benefits and costs of forming an economic and monetary union*. Oxford University Press.
53. Friedman, M. (1953). The case for flexible exchange rates. published in.
54. Gandolfo G., (1992), "Monetary Unions" in P. Newman, M. Milgate and J. Eatwell (eds.), *The New Palgrave Dictionary of Money and Finance 2*, London, Macmillan, pp. 765-770.
55. Giavazzi F. et A. Giovannini, (1989), *Limiting Exchange Rate Flexibility: the European Monetary System*, The MIT Press, Cambridge, Massachusetts.
56. Goodhart, C. A. E., (1989), *Money, Information and Uncertainty*, Cambridge, Mass.: MIT Press.
57. Groshen E. L. et M. E. Schweitzer, (2000), "The Effects of Inflation on Wage Adjustments in Firm-Level Data: Grease or Sand?," ECB Labour Market Workshop, December 2000.
58. Guillermo C. et R. Carmen, (2000), *Fear Of Floating*, University of Maryland, mimeo.
59. Ishiyama, K. (1975). Political aspects of monetary integration in the European Economic Community. *Journal of Common Market Studies*, 14(2), 155-168.
60. Issing, O. (2001). *Monetary policy in the euro area: strategy and decision-making at the European Central Bank*. Cambridge University Press.
61. Johnson, H.G. (1970), *Further Essays in Monetary Theory*, Harvard University Press.
62. Kindleberger, C. P. (1986). International public goods without international government. *The american economic review*, 76(1), 1-13.
63. Kydland, F. E., & Prescott, E. C. (1977). Rules rather than discretion: The inconsistency of optimal plans. *Journal of political economy*, 85(3), 473-491.
64. Meade, J. E. (1957). The balance-of-payments problems of a European free-trade area. *The Economic Journal*, 67(267), 379-396.
65. Mintz, N. N. (1970), "Monetary Union and Economic Integration", *The Bulletin*, New York University.
66. Monga, C. et J.-C. Tchatchouang (1996), *Sortir du piège monétaire*, Economica.
67. Mongelli F. P., (2003), « "New" views on the optimum currency area theory: what in EMU telling us », European Central Bank working papers series.
68. OECD, (1999), *EMU: Facts, Challenges and Policies*, Paris, France.
69. Padoa-Schioppa, T. (1990). Financial and monetary integration in Europe: 1990, 1992, and beyond. (No Title).
70. Robson P., (1987), *The Economics of International Integration*, London, Allen and Unwin.
71. Rogoff, K. (1996). The purchasing power parity puzzle. *Journal of Economic literature*, 34(2), 647-668.
72. Scitovsky T., (1958), *Economic Theory and Western European Integration*, Stanford: Stanford University Press.
73. Sorensen, B. E., & Yosha, O. (2000). Is risk sharing in the united states a regional phenomenon?. *Economic Review- Federal Reserve Bank of Kansas City*, 85(2), 33-47.
74. Tchundjang Pouemi, J. (1981), *Monnaie, servitude et liberté: la répression monétaire de l'Afrique*, éd. J.A.
75. Tower, E., & Willett, T. D. (1976). The theory of optimum currency areas and exchange-rate flexibility. (No Title).
76. Thomas, M. A. H. (1993). *Saving, Investment, and the Regional Current Account: An Analysis of Canadian, British, and German Regions*. International Monetary Fund.
77. Viñals J., et J. F. Jimeno, (1996), "Monetary Union and European Unemployment", Banco de España, Working Paper, No. 9624.

## Appendices

| Variable               | N      | Mean   | Std. Dev. | Min    | Max    |
|------------------------|--------|--------|-----------|--------|--------|
| Trade                  | 58927  | 6.801  | 3.684     | -6.908 | 17.364 |
| African monetary union | 139968 | 0.389  | 0.488     | 0      | 1      |
| ECCAS monetary union   | 139968 | 0.019  | 0.135     | 0      | 1      |
| ECOWAS monetary union  | 139968 | 0.042  | 0.2       | 0      | 1      |
| EAC monetary union     | 139968 | 0.002  | 0.045     | 0      | 1      |
| SADC monetary union    | 139968 | 0.033  | 0.178     | 0      | 1      |
| AMU monetary union     | 139968 | 0.006  | 0.075     | 0      | 1      |
| GDP i                  | 138778 | -0.075 | 1.16      | -2.733 | 3.155  |
| GDP j                  | 137142 | 1.166  | 1.734     | -2.733 | 4.91   |
| Population i           | 139695 | 8.8    | 1.583     | 4.248  | 12.262 |
| Population j           | 138531 | 9.249  | 1.752     | 4.248  | 14.161 |
| Distance ij            | 138816 | 8.449  | 0.738     | 2.079  | 9.775  |
| Common border          | 138816 | 0.036  | 0.187     | 0      | 1      |
| Common language        | 138816 | 0.258  | 0.437     | 0      | 1      |
| Common Colonizer       | 138816 | 0.151  | 0.358     | 0      | 1      |
| Source: Authors.       |        |        |           |        |        |

**Table A1: Descriptive Statistics**

| Variables                                    | (1)     | (2)     | (3)     | (4)     | (5)     | (6)     | (7)     | (8)     | (9)     | (10)    | (11)    | (12)    | (13)   | (14)   | (15)  |
|----------------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|--------|-------|
| (1) Trade                                    | 1.000   |         |         |         |         |         |         |         |         |         |         |         |        |        |       |
| (2) African MU                               | -0.124* | 1.000   |         |         |         |         |         |         |         |         |         |         |        |        |       |
| (3) ECCAS MU                                 | 0.005   | 0.137*  | 1.000   |         |         |         |         |         |         |         |         |         |        |        |       |
| (4) ECOWAS MU                                | 0.048*  | 0.208*  | -0.029* | 1.000   |         |         |         |         |         |         |         |         |        |        |       |
| (5) EAC MU                                   | 0.063*  | 0.031*  | -0.006* | -0.009* | 1.000   |         |         |         |         |         |         |         |        |        |       |
| (6) SADC MU                                  | 0.052*  | 0.208*  | -0.025* | -0.038* | -0.008* | 1.000   |         |         |         |         |         |         |        |        |       |
| (7) AMU MU                                   | 0.092*  | 0.095*  | -0.010* | -0.016* | -0.003  | -0.014* | 1.000   |         |         |         |         |         |        |        |       |
| (8) GDP <sub>i</sub>                         | 0.194*  | 0.064*  | 0.001   | -0.092* | -0.027* | 0.062*  | 0.060*  | 1.000   |         |         |         |         |        |        |       |
| (9) GDP <sub>j</sub>                         | 0.193*  | -0.529* | -0.099* | -0.211* | -0.056* | -0.085* | -0.016* | 0.100*  | 1.000   |         |         |         |        |        |       |
| (10) Population <sub>i</sub>                 | 0.265*  | 0.017*  | -0.040* | 0.014*  | 0.039*  | -0.070* | 0.042*  | -0.255* | 0.039*  | 1.000   |         |         |        |        |       |
| (11) Population <sub>j</sub>                 | 0.260*  | -0.193* | -0.039* | -0.039* | 0.020*  | -0.123* | 0.010*  | 0.033*  | -0.070* | 0.003   | 1.000   |         |        |        |       |
| (12) Distance <sub>ij</sub>                  | -0.132* | -0.495* | -0.296* | -0.422* | -0.115* | -0.275* | -0.088* | 0.030*  | 0.313*  | -0.050* | 0.192*  | 1.000   |        |        |       |
| (13) Common border                           | 0.193*  | 0.188*  | 0.229*  | 0.224*  | 0.208*  | 0.164*  | 0.148*  | -0.027* | -0.156* | 0.066*  | 0.008*  | -0.479* | 1.000  |        |       |
| (14) Common language                         | 0.026*  | 0.332*  | 0.141*  | 0.045*  | 0.077*  | 0.159*  | 0.129*  | 0.021*  | -0.182* | -0.008* | -0.099* | -0.258* | 0.176* | 1.000  |       |
| (15) Common coloniser                        | -0.035* | 0.223*  | 0.051*  | 0.092*  | 0.037*  | 0.105*  | 0.045*  | -0.018* | -0.242* | 0.019*  | -0.085* | -0.170* | 0.153* | 0.510* | 1.000 |
| *** $p < 0.01$ , ** $p < 0.05$ , * $p < 0.1$ |         |         |         |         |         |         |         |         |         |         |         |         |        |        |       |
| Source: Authors.                             |         |         |         |         |         |         |         |         |         |         |         |         |        |        |       |

**Table A2: Pairwise correlations**

|                                  |               |          |            |            |                |               |             |           |
|----------------------------------|---------------|----------|------------|------------|----------------|---------------|-------------|-----------|
| ECCAS                            | ECOWAS        | EAC      | SADC       | AMU        | EU             | ALENA         | ASEAN       | MERCOSUR  |
| Angola                           | Benin         | Kenya    | Botswana   | Egypt      | Austria        | Canada        | Brunei      | Argentina |
| Burundi                          | Burkina Faso  | Rwanda   | Comoros    | Libya      | Belgium        | Mexico        | Indonesia   | Bolivia   |
| Central African Republic         | Côte d'Ivoire | Tanzania | Lesotho    | Morocco    | Bulgaria       | United States | Cambodia    | Brazil    |
| Cameroon                         | Cape Verde    | Uganda   | Namibia    | Mauritania | Cyprus         |               | Laos        | Chile     |
| Democratic Republic of the Congo | Ghana         |          | Madagascar | Tunisia    | Czech Republic |               | Myanmar     | Paraguay  |
| Republic of the Congo            | Guinea        |          | Mozambique |            | Germany        |               | Malaysia    | Uruguay   |
| Gabon                            | Gambia        |          | Mauritius  |            | Estonia        |               | Philippines | Singapore |
| Equatorial Guinea                | Guinea-Bissau | Malawi   |            | France     |                | Thailand      |             |           |
| Chad                             | Liberia       |          | Eswatini   |            | Finland        |               | Vietnam     |           |
| Sao Tome and Principe            | Mali          |          | Seychelles |            | Greece         |               |             |           |

|      |              |  |              |       |             |  |  |  |
|------|--------------|--|--------------|-------|-------------|--|--|--|
|      | Niger        |  | South Africa |       | Croatia     |  |  |  |
|      | Nigeria      |  | Zambia       |       | Hungary     |  |  |  |
|      | Senegal      |  | Zimbabwe     |       | Ireland     |  |  |  |
|      | Sierra Leone |  |              |       |             |  |  |  |
| Togo |              |  |              | Italy |             |  |  |  |
|      |              |  |              |       | Lithuania   |  |  |  |
|      |              |  |              |       | Luxembourg  |  |  |  |
|      |              |  |              |       | Latvia      |  |  |  |
|      |              |  |              |       | Malta       |  |  |  |
|      |              |  |              |       | Netherlands |  |  |  |
|      |              |  |              |       | Poland      |  |  |  |
|      |              |  |              |       | Portugal    |  |  |  |
|      |              |  |              |       | Romania     |  |  |  |
|      |              |  |              |       | Slovakia    |  |  |  |
|      |              |  |              |       | Slovenia    |  |  |  |
|      |              |  |              |       | Sweden      |  |  |  |

Source: Authors.

**Table A3: Sample countries**

|                  | (1)                 | (2)                     |
|------------------|---------------------|-------------------------|
|                  | Disaggregated union | Aggregated union (AfMU) |
| GDP_i            | 0.432**             | 0.427**                 |
|                  | (0.182)             | (0.168)                 |
| GDP_j            | 0.867***            | 0.858***                |
|                  | (0.0949)            | (0.0926)                |
| Poplulation_i    | -0.525              | -0.514                  |
|                  | (0.441)             | (0.411)                 |
| Population_j     | 0.199               | 0.103                   |
|                  | (0.351)             | (0.289)                 |
| Distance_ij      | -0.804***           | -0.814***               |
|                  | (0.122)             | (0.103)                 |
| Common border    | 0.822***            | 0.955***                |
|                  | (0.189)             | (0.206)                 |
| Common language  | 0.407**             | 0.389**                 |
|                  | (0.180)             | (0.181)                 |
| Common colonizer | 0.295               | 0.258                   |
|                  | (0.226)             | (0.222)                 |
| Constant         | 20.77***            | 21.87***                |
|                  | (5.607)             | (4.672)                 |
| Observations     | 54,462              | 58,361                  |
| Wald chi2        | 8656.17             | 673.09                  |
| Prob > chi2      | 0.0000              | 0.0000                  |
| Pseudo R2        | 0.8417              | 0.8337                  |
| O and D FE       | Yes                 | Yes                     |
| Time FE          | Yes                 | Yes                     |
| Source: Authors. |                     |                         |

**Table A4: Continuation of Table 1**