West African Economies and Post Colonial Growth Convergence

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Abstract:

We tested the neoclassical growth convergence assumption on the ECOWAS member countries towards the former colonizing countries' income growth rates over the period 1960-2020. We set each country's target income to be the shares of the colonizing country's post-colonial annual incomes equivalent to the ratio of their independence year incomes. Empirical results and growth convergence figures reveal that none of the member countries' income reached the common steady state level. Comparatively, there have been more income growth rate convergences between the member countries and their former colonial countries in the last four decades of the period. There was higher intra growth convergence among former French colonies than between former British colonies and between former Portuguese colonies. As a group they converged more towards their income targets than others did. The results suggest that, in the post-colonial period, former colonizing powers transferred inadequate levels of capital and technology to allow the reach of the common steady state level by all.

Key words: colonial ties, growth convergence, regional integration, ECOWAS,

JEL Codes: E31, E52, H30, F45, O42

I. INTRODUCTION

Findings that inherited post-colonial economic and monetary ties influence the integration process of the Economic Community of West African States (ECOWAS) [Lare-Lantone and Anoruo (2022)] triggered our interest in testing the convergence of member countries' incomes growth rates using the former colonizing countries as targets. The underlying neo-classical convergence assumption is that countries with initial low per capita income grow faster than rich countries, but their income levels converge over time to a common steady state. Testing that assumption, the literature uses the US growth rate as the target rate towards which countries' income levels should converge. It is used as the standard target rate even in the cases of regional groupings [Carmignani (2007)]. But results from targeting the US income growth rate for the convergence of the ECOWAS economies, built out of European colonial exploitation and trade, may be misleading. Besides, in the post-colonial era, their economic structures and growths are more influenced by the former colonizing countries than the US. For a long time, the former colonizing powers have been their main sources of foreign capital inflows and technology transfer [Jones (2002)] and as a result, significantly influence their economic orientations and policy strategies. According to the theory, these transfers should have, overtime, closed the investment and technological gaps between them and allow their incomes to reach a common steady state. The question is whether that theoretical assumption is confirmed in the case of the ECOWAS member countries and their former colonizing powers.

In response, we tested the convergence of the ECOWAS member countries' income growth rates towards those of their former colonizing countries over the post-colonial era. Specifically, we tested a growth convergence model on a panel of West African countries income per capita data over the period 1960-2022 and its 10-year sub-periods. The results indicate no income growth rate convergence between member countries and the former colonizing countries in the post-colonial era. Isolated, only 2 former French colonies, Niger and Senegal, tended to converge towards the growth rates of their reference (1960) income relative ratio of France's income. Ghana is the only former British colony which tended to converge towards the growth rate of its reference income relative ratio of the UK's income. Cape Verde is the only former Portuguese colonial colony which tended to converge towards the growth rate of its reference income relative ratio of Portugal's income. There was, however, more intra income growth convergence among former French colonies than among former British colonies and former Portuguese colonies.

As for convergence in sub-periods, the beta coefficient only came negative but weakly significant for 1981-1990. It was in that same sub-period that member countries' income growth rates converged most towards their former colonizers'. Results lead to the conclusion that former colonizing powers transferred inadequate levels of capital and technology to assure the reach of the common steady state level by all.

The rest of the paper is structured in five sections. Section II reviews the literature, Section III elaborates the theoretical framework, Section IV presents empirical estimations, Section V discusses findings, and Section VI concludes.

II. REVIEW OF LITERATURE

The neoclassical assumption is that countries with initial low per capita income grow faster than rich ones but, overtime their income levels converge to a common steady state. Critics judge the assumption unrealistic as developed countries and developing countries acquire and absorb new technologies at different rates [Jones (2002).] Besides, testing the convergence of developing countries targeting the growth rate of a developed country did not provided strong evidence of converge towards a common steady state. But, testing for growth convergence among countries of the same region or with similar economic structure, technology, tastes, institutions, and broad-based policies did. As a result, evidence is offered that unconditional income convergence arises among the wealthiest countries as well as among the poorest countries [Quah (1993), Ben-David (1995), and Carmignani (2007)]. Barro and Sala-i-Martin (1992) found convergence across US States with the gap between rich and poor states decreasing at about 2 per cent per year. They also found convergence across regions in Europe. There also exists evidence of conditional convergence within groups of countries linked by factors such as trade [Ben- David (1993)] and regional proximity [Martin (2019)] But no emphasis has been put to the testing of growth convergence among countries and their former colonizing power. Testing growth convergence, with the US income growth rate as target, has rather served the purpose of comparing income convergence between regions [De Gregorio and Lee (2003), Maasoumi et al (2007)] or detecting the middle-income trap [Bulman et al. (2017), Ito (2017).] As for the West African regions, several studies tested for growth convergence among the ECOWAS countries but ignored to test for convergence between them and their former colonizing countries. Jones (2002), for example, investigated whether there has been a robust and systematic tendency for income levels to converge among ECOWAS member countries. He tested for β-convergence and δ-convergence for the period 1960–90 and its sub-periods 1960–70, 1970–80, and 1980–90 using the Summers and Heston data set. The cross-section results reveal that, for the full sample period, the estimated coefficient of β (speed of convergence) is significantly positive, indicating convergence at a rate of 1.7 per cent per annum, approximately the standard 2 per cent convergence rates in the literature. For the sub-periods, the β coefficients carry the positive sign and are statistically significant, indicating unconditional convergence. The time series results reveal that, over time, each country's income differential exhibits convergence in 20 per cent of all possible cases, resulting in a large degree of pair wise cointegration. They also reveal that countries with equality in long-term forecasts of log per capita output share some common characteristics: they are either (i) landlocked countries with a significant share of their trade with other ECOWAS countries; (ii) members of a common monetary policy and currency union sharing the Communauté Financière Africaine (CFA) Franc; or (iii) share common borders and exposed to neighborhood spillover effects. There has also been a diminution in the standard deviation of the logarithm of real per capita GDP (δ-convergence) across ECOWAS economies during the period 1960–90. Globally, the results are consistent with previous findings on convergence within groups of countries with similar endowments.

Holmes (2005) tested for economic convergence among 23 African countries, participants of a sample of groupings, based on key agreements on trade liberalization and monetary cooperation. Using annual data on real per capita GDP of member countries of the CFA zone, South African Customs Union (SACU), and the ECOWAS for the period 1960-2000, he tested whether the first largest principal component (LPC), based on benchmark deviations from base country output, is stationary or not. Further, using a two-stage testing procedure, he assessed whether the countries have achieved long-run income convergence. Results reveal that the CFA countries were characterized by low income and negative growth but exhibited some degree of stability in terms of standard deviations of income and growth. By contrast, the ECOWAS countries and the SACU countries exhibited high volatility of income and growth. Specifically, the ECOWAS countries had a better growth performance while the SACU countries had the highest average real per capita GDP. Searching for long-run relationships among the real per capita incomes, he excluded Burkina Faso, Gabon, Gambia, Ghana, Guinea-Bissau, Nigeria, the Republic of Congo and Senegal from the sample and obtained mixed evidence of convergence clubs based on monetary or trade agreements. While there was no long-run convergence for the ECOWAS, it was strong for SACU countries and stronger for the CFA countries. Because of the presence of both stationary and non-stationary series, convergence clubs can be identified within each group. He concluded that, monetary union among African countries appears to be more effective at promoting long-run convergence in output movements than trade agreements. Carmignani (2007) tested for intra-regional income convergence in a wide sample of Regional Integration Arrangements (RIAs) including the ECOWAS. He adopted a one period autoregressive (AR) model to test for convergence in 28

arrangements which regrouped more than 100 countries, based on a panel unit root test. The sample period for each RIA spans from the year of its founding to 2004. The results offer evidence that per-capita income converges across countries in North-North integration, including the EU as well as in South-South integration. But, in some cases of South-South integration, cross-country convergence appears to be taking place while the regional average fails to catch up with industrial countries' incomes. Conversely, there are RIAs whose average income is catching-up with industrial economies, but member-states fail to converge to the regional mean. The author concluded that South-South integration does not necessarily imply widening intra-regional disparities; however it might lead to a form of convergence to the bottom.

Udah and Nyong (2011) tested for stochastic convergence among the ECOWAS member countries for the period 1969-2010 using Zivot and Andrews unit root test with endogenous structural breaks. They obtained cross sectional estimates of β-convergence using the OLS estimation method for three sub-periods: 1969-1990, 1969-2000, and 1969-2010. For all sub-periods, the estimates of β-coefficient are negative but statistically insignificant for either absolute convergence or conditional convergence in per capita income. However, the unit root tests indicate that four countries, the Gambia, Liberia, Niger, and Nigeria are stochastically converging and form a convergent club. The results also reveal no σ-convergence and no systematic diminution of income inequality across the countries. The authors concluded that, in general, divergence rather than convergence suggests that factors such as technology, preferences and natural resources are the major sources of discrepancies in steady-state growth rates in the region. Saka and al, (2015) examined the structure and trend in monetary union formation as it concerns the ECOWAS and the appropriateness of the convergence criteria. Assuming member countries are identical in terms of references, technologies, and economic policies, they estimated their conditional β-convergence to detect the feasibility of the formation of a single currency by 2020. They set income growth to be dependent on the steady state growth and a set of state variables and tested the model on panel data. They found the partial effect of the initial income on the income growth rate to be negative but not significant, signifying the likeliness of convergence among member countries. The lower income countries of the ECOWAS are likely to grow faster than the higher income ones but in the long run reach approximately the same income level.

The speed of convergence is 0.2% per year bringing the time for member countries to make up for half of the distance that separates them from their stationary state to 346.92 years. Among the variables introduced in the model to capture the State, central bank deficit financing, fiscal deficit, and external reserves impact income growth negatively. The authors suggested that integrating through the monetary union is a pointer towards achieving a steadier growth. Anoruo (2019) tested for convergence within the ECOWAS using the panel convergence procedure proposed by Phillips and Sul (2007). It allowed him to examine the existence of both full and club convergence in per capita income within member countries over the period 1960-2014 and sub-periods: the pre-ECOWAS period 1960-1974 and the post-ECOWAS period 1976-2014. The results indicate that, the per capita incomes of the 15 countries have not converged to a single equilibrium state over the full period but revealed the presence of three convergent clubs. The first one includes Benin, Cape Verde, Ghana, Liberia, Mali, Niger, Nigeria and Senegal. The second one includes Burkina Faso and Cote d'Ivoire and the third one the Gambia, Guinea, Guinea Bissau, Sierra Leone and Togo. Likewise, the per capita incomes of the 15 countries did not converge during the pre-ECOWAS sub-period but two convergent clubs emerged. The first one includes Burkina Faso, Cape Verde, Cote d'Ivoire, Guinea, Guinea Bissau, Liberia, Niger, Nigeria, Sierra Leone and Togo. The second one includes Benin, Ghana, the Gambia, Mali and Senegal. They have not converged during the post-ECOWAS sub-period neither, but three convergent clubs emerged. The first one includes Benin, Cape Verde, Cote d'Ivoire, Ghana, Liberia, Mali, Niger, Nigeria and Sierra Leone. The second one includes Burkina Faso, Senegal and Togo and the third one the Gambia, Guinea and Guinea Bissau. Globally, the results indicate that the per capita incomes of the 15 countries have not converged to a common steady state.

III. METHODOLOGY

The model

The neoclassical convergence theory assumes that overtime, low-income countries and high-income countries' income levels converge to a common steady state [Lee (2017)]. Following, the convergence equation can be written as:

$$\Delta Y_{i,t} = \alpha + \beta[\ln Y_{i,t} - \ln Y_{i,t}^{*}] \qquad (1)$$

$\Delta Y_{i,t}$ is country *i*'s per capita output growth rate at time *t*, $Y_{i,t}$ is its per capita output at time *t*, and $Y_{i,t}^{*}$ is the steady state level per capita output at time *t*. Growth convergence implies that $\beta<0$. The steady state is reached when the country fills up the initial labor, capital, and technology gap for a constant growth. In practice, the steady state (or the goal of the catch-up process) is set to be the income growth rate of the US, estimated at 2%.

Most ECOWAS countries are currently poor with inherited colonial economic and political ties, while their colonizers on the other hand are rich industrialized countries. Before their independence, ECOWAS member states

were directly or indirectly governed by their colonizers simply making them extensions of the colonialists' economies.

In these reclusive relationships, the colonizers willingly supplied them with capital and technology for maximum exploitation of their natural resources. While they are still easily flown through pre-established channels, these transfers continue in the post-colonial eras as the marginal returns of capital are higher in the now independent ECOWAS member countries.

This fact supports the neoclassical assumption of diminishing marginal returns which suggests that countries with low initial income per capita have low ratios of capital to labor, hence a higher marginal product of capital (Jones 2002). On that basis, one may assume that those transfers have been filling the investment and technology gaps between the former colonizing country and its former colony for them to reach the common steady state. The first condition for that prospect is for the former colonized country to sustain, in the post-colonial era, at least its income growth rate of the independence year. In other words, in each post-independence year, the member country's income should represent the same proportion of the former colonizing country's income as in the independence year. In that sense, if the member country's income represented 10% of the colonizing country's income in the independence year, its subsequent annual incomes should be at least equal to 10% of the former colonial country's annual incomes. We termed that ratio the reference incomes relative ratio or referenced ratio. On that basis, the convergence equation can be rewritten as:

$$\Delta Y_{i,t} = \alpha + \beta[\ln Y_{i,t} - \ln \frac{Y^*_{j,t}}{\overline{Y_{i,0}}}] \quad (2), \quad \overline{\gamma_{i,0}} = \frac{Y_{i,0}}{Y_{j,0}}$$

$Y_{i,0}$ is country *i*'s per capita output in its independence year, $Y_{j,0}$ is the colonial country *j*'s per capita output in country *i*'s independence year, and $Y^*_{j,t}$ is the colonial country *j*'s per capita output at time *t*. Thus, $\ln \frac{Y^*_{j,t}}{\overline{Y_{i,0}}}$ is the steady state growth rate and $\overline{\gamma_{i,0}} = \frac{Y_{i,0}}{Y_{j,0}}$ is the reference incomes relative ratio or referenced ratio.

IV. DATA AND EMPIRICAL ESTIMATIONS

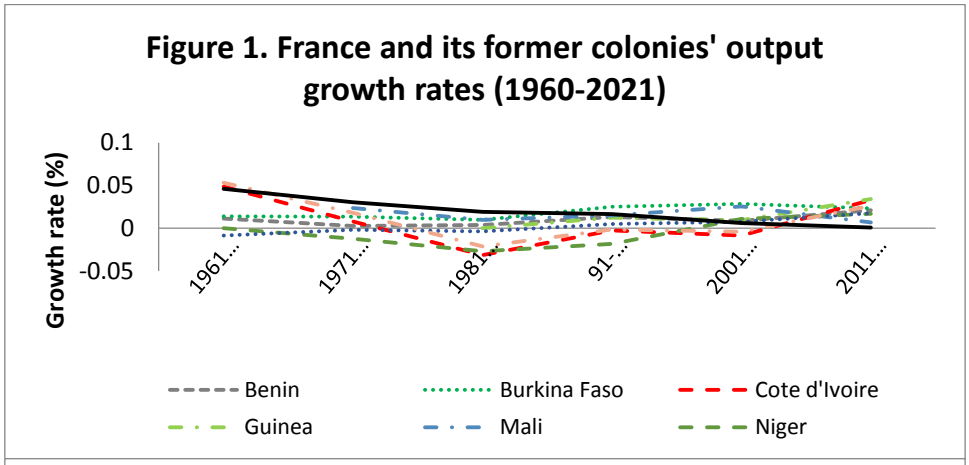
Data

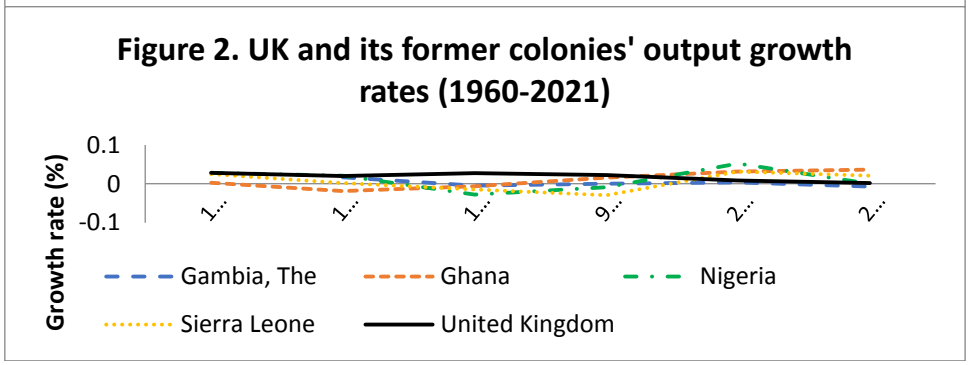
We estimated the model using annual data from the World Development Indicators (WDIs) of the World Bank and the International Financial Statistics (IFS) and Directions of Trade of the International Monetary Fund (IMF) for the period from 1960 to 2021. We used annual data to circumvent the inconsistent availability of monthly data for all member countries over the targeted period. The former French colonies are Benin, Burkina Faso, Cote d'Ivoire, Guinea, Mali, Niger, Senegal, and Togo. The former British colonies are Gambia, Ghana, Nigeria, and Sierra Leone while Cape Verde and Bissau Guinea are the former Portuguese colonies. Though Liberia has been an independent country since its establishment, for convenience we considered it as a former British Colony.

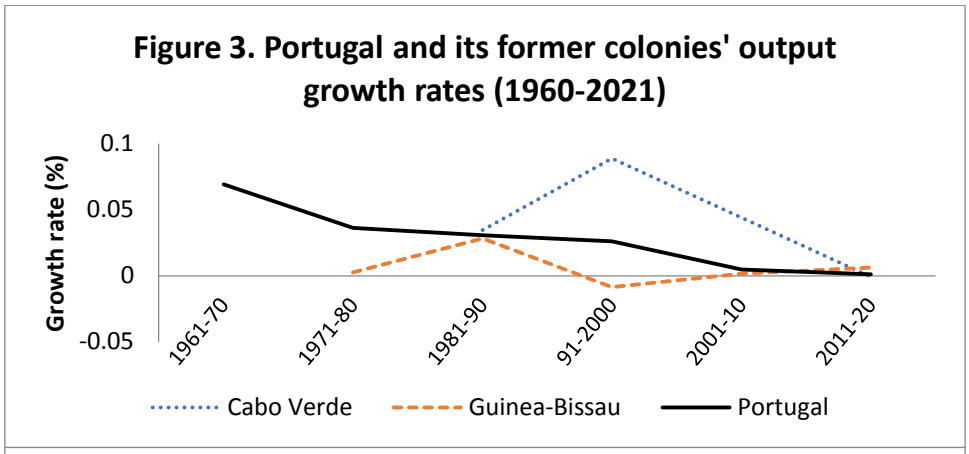
We computed the referenced ratio for each member country. The referenced ratio of Benin and France was 6.07% in 1960. Thus, the target income for Benin's is 6.07% of France post-colonial annual income from 1961 on. The target incomes for Burkina Faso, Cote d'Ivoire, Niger, Senegal, and Togo are respectively 2.16%, 14.16%, 6.87%, 10.73%, and 3.03% of France's post-colonial annual incomes based on referenced ratios of 1960. The target incomes for Guinea and Mali are 2.08% and 2.32% of France's post-colonial annual incomes, based on referenced ratios of 1986 and 1967 respectively. The target incomes for Ghana and Nigeria are 7.74% and 9.61% of the UK's post-colonial annual incomes based on referenced ratios of 1960. For the Gambia and Liberia, it is 2.08% and 1.98% of the UK's post-colonial annual incomes based on referenced ratios of 1966 and 2000 respectively. For Cape Verde and Guinea Bissau, its 5.61% and 6.75% of Portugal's post-colonial annual incomes based on referenced ratios of 1970 and 1980 respectively. Subsequently, we derived the time series of each member country's target income by multiplying its former colonizing country's annual incomes by the referenced ratio.

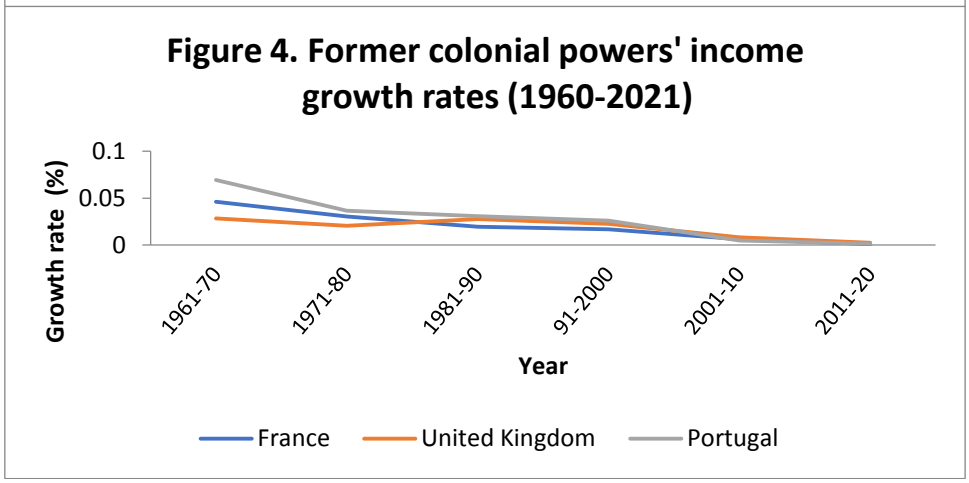
4.1.1 Colonizing countries and their former colonies' income growth patterns

To compare each individual member country and its former colonial country's income performance after independence, we compared their growth patterns. Figures 1, 2, 3 and 4 show that, at the beginning of the post-colonial era and for a long time, France, Portugal, and the UK enjoyed higher income per capita growth rates than the former colonies. The exceptions are Cote d'Ivoire and Togo which, in the early 1960s, enjoyed higher income growth rates than France. At the same time, Nigeria and the Gambia enjoyed almost the same growth rates as the UK. But, in the subsequent years, the former colonial countries' incomes started to grow less while those of most member countries started to rise. From the mid-1990s, some member countries' income growth rates surpassed those of the former colonial countries. Specifically, all former French colonies' income growth rates were higher than France's in the sub-periods 2001-2010 and 2011-2020. In the same sub-periods, only the Gambia's income growth rate was lower than that of the UK.





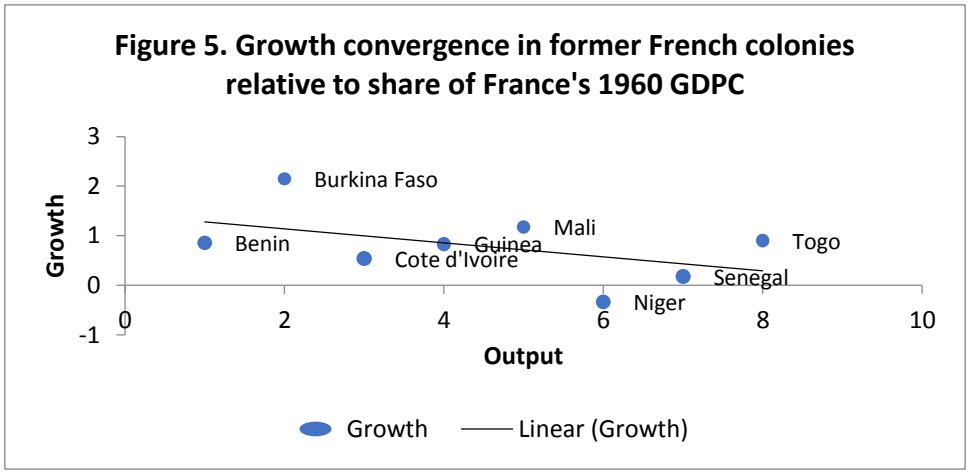


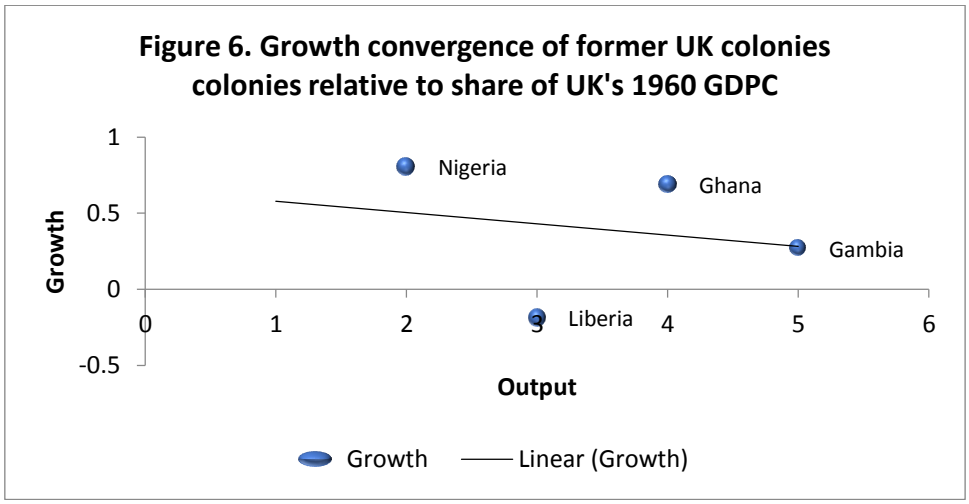


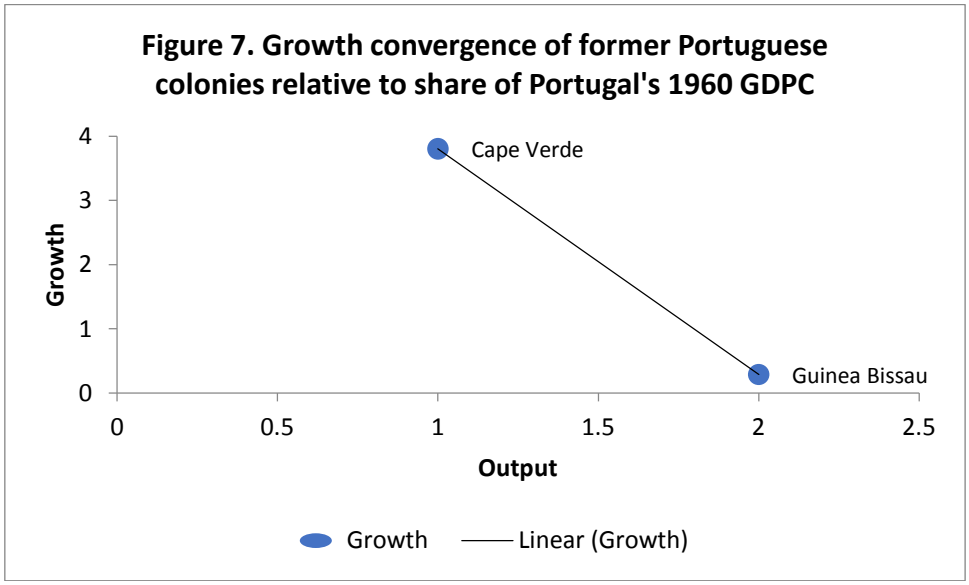
4.1.2 Convergence of member countries and former colonizers growth rates

Given the convergence hypothesis, each of the low-income ECOWAS member countries should normally converge to its former colonizing countries' income levels in the post-colonial period. In other words, each member country's income growth rate should converge to its target income level which is equivalent to the referenced ratio

(%) share of the former colonizing country's post-colonial incomes. We plotted growth convergence figures with income level, measured by log of income (GDPC) per capita, on the horizontal axis and growth rate of income per capita on the vertical axis. Member countries' income growth rates converging towards their target income growth rates should cluster around the trend line and be moving towards the vertical axis where the growth rate is zero, the common steady state income level. Unfortunately, Figures 5, 6, and 7 indicate that none of the member countries had reached the vertical axis, the growth rate of its target income in the post-colonial period. Figure 5 shows that former French colonies did not cluster around the trend line, and none is positioned on the vertical axis, the zero line. Only Senegal is closer to the convergence line and close to the zero line while Niger and Togo are far from it. Among former British colonies, the Gambia and Ghana had converged more towards their target incomes or referenced ratio shares of the UK's post-independence incomes. Also, Guinea-Bissau had converged closer towards its target income or referenced ratio share of Portugal's post-colonial incomes. A comparison of member countries' performances across time reveals that, among former British colonies, only the Gambia's income growth rate tended to converge towards the 1960 referenced ratio of the UK's incomes. Ghana also converged more towards the 1960 referenced ratio of the UK's incomes. Cape Verde and Guinea Bissau are on the convergence line but only Guinea Bissau's income growth rate converged to the 1970 referenced ratio of Portugal's incomes.







Empirical Results

We estimated Equation (2) on annual panel data using the Panel Generalized Method of Moments (GMM) and subsequently on individual countries' data using the GMM. In all cases, we tested the model on the period 1961-2021 and on each of its 10-year sub-periods. Table 1 indicates no income growth convergence among member countries and between them and the former colonizing countries over the whole period and in the sub-periods, except in 1981-1990. Results on individual countries in Table 2 show only Senegal and Niger's income growth rates to have converged towards their income targets growth rates. While the beta coefficient is negative for both, it is significant for Senegal and not significant for Niger. As for sub-period convergences, it is only for 1991-2000 that Senegal exhibits a negative but significant beta while in no single sub-period Niger exhibits a negative beta. Ghana is the only former British colony which income growth rate converged towards that of its income target, the referenced ratio share of the UK's incomes over the whole period and in the sub-periods 1981-1990 and 2011-2020. Also, only Cape Verde's income growth rate converged towards that of its income target, the referenced ratio share of Portugal's incomes, but exhibits no sub-period convergence.

While some countries' income growth rates didn't converge at all towards target income over the whole post-colonial period, they, however, experienced it in sub-periods. Specifically, Benin's income growth rate didn't converge towards that of its referenced ratio share of France's incomes over the whole period, but its beta coefficients for the sub-periods 1971-1980, 1981-1990, and 2001-2010 are negative but non-significant, signifying the likeliness of convergence. Burkina Faso's income growth rate didn't converge with that of its target income over the whole period but it did in the sub-period 2011-2020. Cote d'Ivoire's income growth rate didn't converge with that of its target income over the whole income but in did in the sub-period 2001-2010. Likewise, Togo's income growth only converged towards that of its target income in the sub-periods 1981-1990 and 2011-2020 with a negative and very significant beta coefficient. None of the former British colonies' income growth rates converged to its target income over the whole post-colonial period. Nevertheless, the Gambia's income growth rate converged towards its target income in the sub-periods 1991-2000 and 2011-2020. It is also the case of Nigeria in the sub-periods 1981-1990, 1991-2000 and 2001-2020 and Sierra Leone in the sub-period 1991-2000. As for Guinea, Liberia, and Mali their income growth rates didn't converge towards those of their income targets neither over the whole post-colonial period nor in the sub-periods.

Comparatively, there have been more convergences among member countries' income growth rates given their target incomes in the last four sub-periods. Most importantly, it is in the sub-period 1981-1990 that the beta coefficient for the whole region is negative but insignificant signifying the likeliness of growth convergence of member countries towards their target incomes. In that same sub-period, the beta coefficients for Ghana, Nigeria, and Togo are also negative but significant. The sub-period 2011-2020 is also noticeable as Burkina Faso, Ghana, and Togo's income growth rates converged towards their target incomes.

Table 1. Growth convergence of the ECOWAS reference income relative ratio to their former colonizing countries over the period 1960-2020

Coefficient	1960-2021	1961-1970	1971-1980	1981-1990	1991-2000	2001-2010	2011-2020
Constant	0.05	0.03	0.01	0.00	0.11	0.05	0.02
	(4.30)	(1.08)	(0.16)	(-0.03)	(3.44)	(2.44)	(0.64)
Beta	0.01	0.01	0.00	0.00	0.02	0.01	0.00
	(3.45)	(0.87)	(0.30)	(-0.26)	(2.90)	(1.66)	(0.05)
R-squared	0.00	0.01	0.00	-0.01	0.03	0.03	-0.00
Adj. R- squared	0.00	-0.00	-0.01	-0.01	0.03	0.03	-0.01
S.E. regression	0.05	0.06	0.06	0.04	0.05	0.04	0.05
D-W stat	1.72	2.03	2.10	2.00	1.24	1.82	1.64
Instrument rank	3	3	3	3	3	3	3

Source: Authors estimations based on data from the WDI

Table 2. Convergence of member countries' reference income relative ratio to the former colonizer's income

Period	1960 -2021	1961 -1970	1971 -1980	1981 -1990	1991 -2000	2001 -2010	2011 -2020
Benin	0.00	0.06	-0.05	0.30	-0.10	-0.28	0.07
	(0.26)	(2.83)	(-0.49)	(2.30)	(-0.50)	(-1.16)	(0.96)
Burkina Faso	0.03	0.14	0.27	0.50	0.54	0.01	-0.13
	(1.77)	(4.01)	(1.19)	(3.47)	(4.10)	(0.08)	(-2.07)
Cape Verde	-0.02	¨	¨	0.12	0.12	0.04	1.38
	(-0.84)	¨	¨	(1.41)	(3.15)	(0.35)	(2.00)
Cote d'Ivoire	0.03	1.46	0.86	0.02	0.16	-0.24	0.10
	(1.93)	(12.5)	(9.73)	(0.51)	(0.57)	(-2.34)	(0.73)
The Gambia	0.02	-0.13	0.34	0.02	-0.09	0.29	-0.21
	(1.29)	(-0.11)	(2.24)	(0.30)	(-2.06)	(2.28)	(-1.04)
Ghana	-0.02	0.03	0.05	-0.31	0.00	0.09	-0.39
	(-1.84)	(0.29)	(0.74)	(-6.13)	(0.06)	(2.98)	(-2.73)
Guinea	0.07	¨	¨	¨	0.33	0.34	0.05
	(1.34)	¨	¨	¨	(3.67)	(1.48)	(0.74)
Guinea-Bissau	0.03	¨	0.81	0.13	0.25	-0.02	0.42
	(1.23)	¨	(3.44)	(0.86)	(1.22)	(-0.14)	(1.49)
Liberia	0.16	¨	¨	¨	¨	0.02	0.42
	(1.75)	¨	¨	¨	¨	(0.21)	(4.51)
Mali	0.15	¨	0.63	0.75	1.08	0.04	0.16
	(1.83)	¨	(5.72)	(6.28)	(8.74)	(0.12)	(0.59)
Niger	0.00	0.22	0.02	0.01	0.00	0.42	0.05
	(-0.01)	(3.41)	(0.30)	(0.36)	(0.05)	(3.48)	(0.38)
Nigeria	0.03	0.25	0.55	-0.36	-0.05	-0.01	0.40
	(1.03)	(2.98)	(3.65)	(-13.8)	(-1.11)	(-0.19)	(3.43)
Senegal	-0.02	0.00	0.05	0.22	-0.27	0.26	0.15
	(-2.51)	(0.08)	(0.41)	(3.41)	(-2.65)	(0.68)	(1.16)
Sierra Leone	0.01	0.25	0.02	0.08	-0.04	0.19	0.43

	(0.59)	(2.31)	(0.31)	(1.74)	(-0.48)	(0.85)	(3.09)
Togo	0.02	0.12	0.38	-0.23	0.57	0.10	-0.12
	(1.14)	(0.90)	(1.57)	(-5.52)	(2.68)	(1.29)	(-3.39)
Source: Authors estimations based on data from the WDI							

V. DISCUSSIONS

Empirical results and growth convergence figures show that none of the ECOWAS member countries converge to its target income or referenced ratio share of the former colonizing country's post-colonial income growth rate except in the sub-period 1981-1990. They however experienced very unstable but downward fluctuations in their income growths in the first half of the period. It was especially the cases of Cote d'Ivoire, Niger and Togo which income growth plunged due, probably, to significant falls in the prices of primary export products. In that sub-period, the beta coefficient for the whole region is negative and insignificant, an indication of the likeliness of convergence. At the same time, the beta coefficients for Ghana, Nigeria, and Togo are also negative but significant.

Gaps between member countries' income growth rates and those of the former colonizing countries started to shrink in the mid-90s. Following, member countries rates surpassed those of the former colonizers during the sub-period 2001-2010. Comparatively, former French colonies converged more among themselves and more towards their income targets than former British colonies and former Portuguese colonies. It remains that the initial gap between France's and its former colonies' income growth rates was lower than those between the UK and its former colonies and between Portugal and its former colonies. While France experienced a constant decline in its income growth rate along, that of the UK increased from the sub-period 1971-1980 before dropping back to its initial position in the sub-period 2001-2010. As a result, the gap between the UK and its former colonies income growth rates widened, forcing them to converge to a comparatively higher rate than former French colonies. It explains why former British colonies enjoyed higher rates but converged less towards their target incomes than former French colonies did.

The fact that none of the member countries' income growth rate actually converged to the growth rate of the referenced ratio share of its former colonizer's incomes offers no support to the neoclassical hypothesis of convergence to a common steady state level of income. It may be due to the fact that, in the post-colonial period, the rich former colonizing countries transferred less than adequate capital and technology to the ECOWAS member countries. Nevertheless, the hypothesis that low-income countries offer more opportunities for higher return margin happen to be confirmed, as these countries' income growth rates were the highest at the beginning and towards the end of the period. The mid-period declines in their income growth rates were essentially due to plunges in the prices of their primary export products, the imposed Structural Adjustment Programs (SAP) and the negative but permanent influences of inherited colonial economic, monetary, and political ties.

VI. CONCLUSION

We tested the neoclassical convergence assumption on the ECOWAS member countries targeting their former colonial countries' income growth rates. We set each country's target income to be the referenced ratio share of the former colonizing country's post-colonial annual incomes. Empirical results reveal that none of them reached the common steady state income level. There have been more income growth convergences between member countries and their former colonial countries in the last four sub-periods. More importantly, only the sub-period 1981-1990 exhibits the likeliness of growth convergence between regional countries and their former colonial countries. Comparatively, former French colonies incomes growth rates converged more towards the growth rates of their target incomes. Globally, the results suggest that, in the post-colonial period, former colonizing powers transferred inadequate levels of capital and technology to allow the reach of the common steady state level by all. Yet, they maintained economic, monetary, and political influences on the countries, crippling their growth opportunities and regional integration efforts.

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