

Economic Globalisation, Democracy and Income in Sub-Saharan Africa: Panel Cointegration Analysis

Daniel Sakyi*

Sub-Saharan Africa has been characterised by low-income levels for decades. This paper analyses the impact of economic globalisation and democracy on income in sub-Saharan Africa using panel cointegration techniques. The paper considers a composite indicator for economic globalisation and several indicators of democracy and highlights the essence of the simultaneous adoption of economic globalisation and democracy for sub-Saharan African countries. The empirical results based on a sample of 31 countries over the 1980-2005 period, clearly indicate that, whilst the total impact of economic globalisation on income has been beneficial, the total impact of democracy has been the bane of income in sub-Saharan Africa. The paper concludes that policy reforms should aim to improve democratic institutions in sub-Saharan Africa for its potential benefits to be realised.

Field of Research: Economic Development, Globalisation, Democracy, Panel Data Econometrics

JEL classification: P0, E0, O1, O55, C23

1. Introduction

The past few decades have seen a resurgence of research on the impact of economic globalisation and democracy on economic performance of developing countries. Does economic globalisation and democracy go hand in hand to impact positive on economic performance of developing countries in the long run? For sub-Saharan Africa (SSA), most governments prior to the 1980s were very skeptical on the success of opening their economies to international competition. However, this perception changed in the early 1980s and the result has been the adoption of trade and financial liberalisation policies for many of these countries (Rudra, 2005). Democracy, on the other hand, was virtually not in existence in SSA prior to the 1990s as many impediments¹ existed that undermined democratisation (Ndulu and O'Connell, 1999; Brown, 2005). Fosu (2008), for example, note that democracy became important in SSA beginning in the early 1990s as it was expected would help improve the dismal economic performance that had existed for decades.

Notwithstanding this, many countries in SSA are not only characterised by low-income - based on World Bank (2011) classification of economies January 2011² -, but that they still remain nondemocracies (Acemoglu et al., 2008). Moreover, although many empirical studies test the impact of specific dimensions of economic globalisation on income, a comprehensive study on SSA that considers a composite indicator for economic globalisation as well as the interaction of economic

* Department of Economics, University of Pisa, Via Ridolfi 10, 56124 Pisa, Italy. Email: d.sakyi@ec.unipi.it

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globalisation and democracy is rare. The results of many of the existing studies are also plagued by estimation problems. For example, the problem of unit root, cross-section dependence, cross-country heterogeneity and potential endogeneity of regressors are often not addressed.

We overcome some of these problems in this paper. We use a composite indicator for economic globalisation and several indicators of democracy³ to analyse the relationship between economic globalisation, democracy and income for SSA countries. Specifically, the study aim to determine whether economic globalisation, democracy and their interaction have any implications for the level of income in SSA countries. We adopt panel cointegration techniques that allow us to deal with problems of non-stationarity, cross-section dependence, cross-country heterogeneity and potential endogeneity of regressors. Moreover, we address the issue of whether the link between economic globalisation, democracy and income can be considered a long run relationship for SSA countries. The empirical results we obtain is encouraging, providing support for the adoption of both economic globalisation and democracy, and that these effects would be more beneficial if policy makers aim to improve democratic institutions in SSA countries.

The rest of the paper is organised as follows. In section 2, we provide a brief review of the literature on the relationships between economic globalisation, democracy, and economic performance. Section 3 specifies the empirical model to be estimated, a description of the data used, and a discussion of econometric issues. In section 4 we present and discuss the empirical results. Section 5 concludes the paper with some policy implications of the empirical findings.

2. Literature Review

To analyse the relationship between economic globalisation, democracy and income in SSA countries, we provide a brief review of the literature that demonstrate both theoretical and empirical link between these variables. In particular, we demonstrate not only a link between economic globalisation, democracy and economic performance, but most importantly that there exists a complementary role for these variables and economic performance.

The theoretical and empirical arguments in favour of economic globalisation as a determinant of economic performance are well documented in the literature (see Grossman and Helpman, 1991; Ben-David and Loewy, 1998, 2000, 2003; Perera-Tallo, 2003; Dreher, 2006; Chang and Lee, 2010; Villaverde and Maza, 2011). For example, Dreher (2006) and Villaverde and Maza (2011) argue that economic globalisation is conducive for economic performance, although this effect is small in magnitude. For many developing countries, economic globalisation (in particular trade liberalisation) became important, due to the perceived ineffectiveness of foreign aid as an “engine” of development. Trade liberalisation makes possible to import intermediate inputs to augment domestic savings, as well as the exploitation of economics of scale and technological/knowledge spillovers (Grossman and Helpman, 1991; Marin, 1992; Prasad et al., 2003). Financial liberalisation on the other hand has the potential to stimulate the development of the domestic financial sector for long-term growth (Levine, 1996; Henry, 2000). Therefore, economic globalisation would in general play a critical role as a catalyst for economic prosperity in the developing world.

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Aside the empirical works of Dreher (2006), Chang and Lee (2010) and Villaverde and Maza (2011), many empirical studies on the relationship between economic globalisation and economic performance have focused on specific dimensions of economic globalisation (mainly trade and financial liberalisation). The most interesting discussion on the link between economic globalisation and economic performance is the contrast between empirical papers on trade and financial liberalisation. For example, trade liberalisation has often reported statistically significant positive relationship with income and/or growth (see Sachs and Warner, 1995; Harrison, 1996, Thornton, 1996; Dollar and Kraay, 2001; Ibrahim and MacPhee, 2003; Yanikkaya, 2003; Brunner, 2003; Abual-Foul, 2004; Freund and Bolaky, 2008; chang et al, 2009). However, the result of a positive impact of financial liberalisation especially for developing countries has been limited, although the financial integration of developing countries to the global economy has increased in recent decades (Prasad et al., 2003)⁴. For example, Edwards (2001) notes that financial liberalisation is conducive for economic performance in high-income countries but not in low-income countries. Moreover, not all developing countries have benefited adequately from capital flows as the inflows of capital have only been confined to a few developing countries, with the majority left behind (Mishkin, 2007). One reason being that many developing countries are characterised by low institutional quality (Alfaro et al., 2005). For these reasons, the predictions of theoretical models on the benefits of financial liberalisation for developing countries are not evident so far.

The accession of SSA countries to the global economy⁵ has been achieved through trade and financial liberalisation programmes initiated by the IMF, the World Bank and the WTO. However, the choice of trade and/or financial liberalisation policies involves a political component. According to Gordon (1996), “the single most important characteristic of recent political change in sub-Saharan Africa is the diminished ability of the states to monopolize the political, economic, and institutional environments as they had since independence”. Moreover, although the benefits of economic globalisation can fully be realised when combined with improvements in governance and democratic institutions (Gordon, 1996), trade and financial liberalisation have both economic and political consequences. For many developing countries “globalization has provided the best opportunities for political democracies and good governance” (Marquardt, 2007). As Sorensen (2010) notes, an important element associated with democratisation is the support of a market-based economy. Thus, while economic globalisation may pave the way for democracy, this may also have the potential to develop market-oriented policies⁶ that may or may not be conducive for a better economic performance. Moreover, the simultaneous adoption or the interaction of both economic globalisation and democratisation though may also have short-run conflicting impact on economic performance, has the potential for a long run complementary role on economic performance (Gordon, 1996). For this reason, if the concept of “policy trilemma”, as discussed in Rodrik (2002), is what actually explains the relationships between economic globalisation, the nation state and democratic politics, then with the current speed (and it seems irreversible nature) of economic globalisation, democratic politics seem to be the choice alongside economic globalisation with the role of the nation state left at the background (Bairoch, 2000; Nasstrom, 2003). This result is particularly important for SSA countries, as economic globalisation would not impact on income in isolation from democratic institutions⁷.

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Democracy is crucial to economic success (Giavazzi and Tabellini, 2005) and it can affect economic performance through a number of channels. Democratic institutions have the potential to redistribute income from the rich to the poor, reduce corruption and support policies encouraging international trade and investment (Acemoglu, 2009; Aghion and Howitt, 2009). Moreover, in addition to sound macroeconomic policies, democracy can have an important impact on a country's ability to attract less volatile capital inflows (Prasad et al., 2003). It is not surprising that different authors (Barro, 1996; Sala-i-Martin, 1997; Minier, 1998; Roll and Talbott, 2003; Rigobon and Rodrik, 2005) provide empirical evidence in support of a positive relationship between democracy and economic performance. For instance, Roll and Talbott (2003), in a cross-country investigation for between 134 and 157 countries over the period 1995-1999, find highly significant positive impact of political rights and civil liberties on Gross National Income per capita. They further stress that democratic institutions "allow citizens to provide feedback to government leaders about the effectiveness of policies and their impact on general welfare". Rigobon and Rodrik (2005) used identification through heteroskedasticity to study the interrelationship between rule of law, democracy, openness, and income and concluded that democracy is good for economic performance.

Notwithstanding, the potential positive impact that democracy can have on economic performance, this effect may not necessarily be positive and may even be negative (see, for example, Doucouliagos and Ulubasoglu, 2008, Aisen and Veiga, 2011). Moreover, several authors (see Kurzman et al., 2002; Krieckhaus, 2006; Tirunch, 2006; Doucouliagos and Ulubasoglu, 2008) have shown that democracy may have a regional effect and/or that it may not necessarily have a direct impact on economic performance, but rather an indirect impact through many channels. One of such channels devoted to this paper is to determine the extend to which economic globalisation and democracy go hand in hand to impact positive on income in SSA countries. To this end, we take cognisance of the potential regional effect of democracy on economic performance and hypothesise that although economic globalisation, and/or democracy may not necessarily have a direct impact on income it may go hand in hand providing a complementary role to impact positive on income in SSA countries.

3. Empirical Methodology

3.1 Model Specification

To estimate the impact of economic globalisation and democracy on income, we consider the following model specification:

$$y_{it} = \alpha_i + x'_{it} \beta_i + \varepsilon_{it}, \quad i = 1, 2, \dots, N, \quad t = 1, 2, \dots, T \quad (1)$$

where y_{it} is the dependent variable, i is the cross-section dimension for individual countries, t is the time series dimension of the data, α_i denotes country-specific intercept, $\beta_i = (\beta_{1i}, \beta_{2i}, \dots, \beta_{Mi})$, $x_{it} = (x_{1i,t}, x_{2i,t}, \dots, x_{Mi,t})$, $m = 1, 2, \dots, M$ where m is the number of regressors and ε_{it} is the error term⁸. To define m we consider economic globalisation, democracy and their interaction term. Therefore, based on equation (1) the following specific equation is estimated:

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$$\log Y_{it} = \alpha_i + \beta_1 EG_{it} + \beta_2 DM_{it} + \beta_3 (EG * DM)_{it} + \varepsilon_{it} \quad (2)$$

where Y_{it} is real GDP per capita (i.e. income), EG_{it} is economic globalisation, DM_{it} denotes measures of democracy, $EG_{it} * DM_{it}$ is the interaction term between economic globalisation and democracy, \log is the logarithm operator, α_i and ε_{it} are as previously defined and β_1 to β_3 are the parameters of interest to be estimated. The inclusion of interaction term in equation (2), aim to capture any interaction effect that economic globalisation and democracy have on income in SSA countries.

3.2 The Data

The panel data consists of annual observations for 31 SSA countries (i.e. $N=31$) for the period 1980-2005 (i.e. $T=26$). The countries included in our panel dataset are: Benin; Botswana; Burkina Faso; Burundi; Cameroon; Central African Republic; Chad; Congo, Republic of; Cote d'Ivoire; Gabon; Ghana; Guinea; Guinea-Bissau; Kenya; Lesotho; Madagascar; Malawi; Mali; Mauritania; Niger; Nigeria; Rwanda; Senegal; Sierra Leone; South Africa; Swaziland; Tanzania; Togo; Uganda; Zambia; Zimbabwe⁹.

The data have been drawn from various sources. Data for real GDP per capita is taken from the World Bank (2010) - African Development Indicators. Data for economic globalisation is taken from KOF Index of Globalisation 2010¹⁰. KOF's economic globalisation index combines data on trade, foreign direct investment (flows), foreign direct investment (stock), portfolio investment, income payments to foreign nationals, hidden import barriers, mean tariff rate, taxes on international trade and capital account restrictions.

The democracy variable is proxied by three indicators¹¹. The first indicator of democracy is Polity2 obtained from Polity IV Project (Marshall and Jaggers, 2009). Polity2 is a continuous variable that measures the democratic quality of political regimes using polity scores; it ranges from -10 (strongly autocratic) to +10 (strongly democratic). Polity scores (i.e. autocracy score (-10 to 0) and democracy score (+10 to 0) - from which Polity2 is derived - are themselves derived from a combination of measures: competitiveness of executive recruitment, constraint of chief executive, openness of executive recruitment, regulation and competitiveness of participation. The second and third indicators of democracy are political rights and political rights + civil liberties respectively. Data for political rights and civil liberties are obtained from Freedom House (2006). These two measures are based on annual ranking of countries from 1 (the highest rank) to 7 (the lowest rank) for each measure¹². We normalise the three indicators of democracy to range from 0 (full autocracy) to 1 (full democracy). We denote the three normalised democracy indicators as PS (Polity2), PR (political rights) and PC (political rights + civil liberties). It is important to note that, although the three democracy indicators may be highly correlated, they are measuring different dimensions of the political system and we should expect that they have independent implications on income.

3.3 Econometric Issues

Economic globalisation implies strong and increasing interdependencies between countries so it is no wonder that the importance to consider the impact of cross-section dependence in cross-country panels has been emphasised in the literature (see Frees, 1995; Driscoll and Kraay, 1998; Pesaran, 2004, 2007; De Hoyos and Sarafidis, 2006; Sarafidis and Wansbeek, 2010). As De Hoyos and Sarafidis (2006) note, cross-section dependence may be present in cross-country panels due to unobserved common shocks that become part of the error term. For this reason, cross-section dependence if present and not accounted for may result in inconsistent standard errors of the parameters, although the estimated parameters may be consistent (Driscoll and Kraay, 1998). This effect becomes even more important in cross-country panels where $N > T$. In particular, we found that the variables and the error term in equation (2) are plagued by cross-section dependence, based on the two semi-parametric test proposed by Friedman (1937) and Frees (1995), and the parametric test proposed by Pesaran (2004)¹³. In the presence of cross-section dependence Driscoll and Kraay (1998), for example, propose a nonparametric correction for the standard errors in standard panel data estimators such as pooled OLS. Nonetheless, an important limitation of the Driscoll and Kraay pooled OLS estimator is that potential endogeneity problems are not catered for. Moreover, pooled OLS estimates are based on the stationarity assumption (i.e. for panels where T is of moderate size). For these reasons, we resort to panel cointegration techniques to estimate equation (2).

4. Empirical Analysis

The application of panel cointegration techniques to estimate equation (2) implies that the series must exhibit unit root properties and being cointegrated. For this reason, we begin the empirical analysis with the panel unit root and cointegration tests.

4.1 Panel Unit Root Tests

Testing for panel unit roots has become conventional in panel cointegration studies. The argument in favour of panel unit root tests (as against performing individual unit root test for each cross-section of the panel) is the increased power associated with the test especially for $N > T$ panels¹⁴.

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Table 4.1 Panel Unit Root Test Results

Variable	CADF	Δ (CADF)
logY	-2.335	-3.891***
EG	-2.305	-2.721**
PS	-2.254	-4.158***
PR	-2.114	-3.534***
PC	-2.267	-3.878***
EG*PS	-1.583	-2.842***
EG*PR	-2.239	-3.565***
EG*PC	-2.339	-3.737***

Note: Δ is the first-difference operator. The critical values are based on Pesaran (2007). ***(**) denote rejection of the null hypothesis of unit root at the 1%(5%) significance level.

Due to the problem of cross-section dependence in our panel dataset we only rely on unit root tests that allow us to treat this effect. For this reason, the cross-sectionally augmented Dicky-Fuller (CADF) panel unit root test due to Pesaran (2007) is considered. The tests augment the standard ADF regressions with the cross-sectional averages and their first differences to eliminate the impact of cross-section dependence. The null hypothesis assumes that all series are non-stationary versus the alternative hypothesis that only a fraction of the series is stationary. The asymptotic distribution of CADF is non-standard and asymptotic critical values are provided for different values of both N and T . The CADF test results summarised in Table 4.1¹⁵ suggest that all variables can be treated as $I(1)$ or integrated of order one.

4.2 Panel Cointegration Test

We have established that all series in equation (2) exhibits unit root properties. We now employ Pedroni (1999, 2004) panel cointegration test to determine whether the variables included in equation (2) are cointegrated¹⁶. Pedroni (1999, 2004) proposes seven panel cointegration test statistics that correct for bias introduced by potentially endogenous regressors. The test allows “not only the dynamics and fixed effects to differ across members of the panel, but also that they allow the cointegrating vector to differ across members under the alternative” (Pedroni, 1999). For this reason, all the test statistics are robust in the presence of panel data heterogeneity. Moreover, in the presence of cross-section dependence (most importantly in small samples), Pedroni suggest including common time dummies to mitigate this effect. This is important, as Pedroni’s test is only valid on the assumption that any cross-section correlations are captured by an aggregate time effect.

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Table 4.2 Panel Cointegration Test Results

Models	I	II	III
Pedroni's cointegration test statistics			
Panel v	-0.977	-0.881	-0.919
Panel ρ	-1.261	-1.505	-1.783*
Panel pp	-9.487***	-10.162***	-10.913***
Panel adf	-9.674***	-11.165***	-11.124***
Pedroni's group mean cointegration test statistics			
Group ρ	3.011***	2.499**	2.122**
Group pp	-2.689***	-3.998***	-4.416***
Group adf	-3.747***	-5.404***	-4.935***
CADF-based cointegration test			
Test statistic	-2.530***	-2.535***	-2.491***

Note: All Pedroni's test statistics are asymptotically normally distributed. However, for the panel v -statistic only the right tail of the normal distribution is used to reject the null hypothesis as it diverges to positive infinity under the null hypothesis of no cointegration. The critical values of CADF-based tests are based on Pesaran (2007). ***(**)(*) denote rejection of the null hypothesis of no cointegration at 1%(5%)(10%) level.

Four of Pedroni's tests are based on within-dimension of the panel (panel cointegration test statistics): panel v -statistic, panel ρ -statistic, panel t -statistic (non-parametric) and panel t -statistic (parametric). The other three (that allows for potential heterogeneity across individual members of the panel) are based on between-dimension of the panel (group mean panel cointegration test statistics): group ρ -statistic, group t -statistic (non-parametric) and group t -statistic (parametric). These tests are particularly appropriate as they are applied to the estimated regression residuals after the panel statistics have been normalised with correction terms. For robustness issues, we complement Pedroni's test with the panel cointegration test suggested by Holly et al. (2010) which is based on CADF test on the residuals of the mean group (MG) estimator which does not take into consideration the impact of cross-section dependence.

For all tables we report in column I, II and III, the model with PS , PR and PC respectively. The panel cointegration test results summarised in Table 4.2¹⁷ suggest that there is enough evidence to reject the null hypothesis of no cointegration for all estimated models. In other words, the link between economic globalisation, democracy and income can indeed be considered a long run relationship.

4.3 Estimation of Panel Cointegration Regression

Given that we find panel cointegration, we need to estimate the associated long run cointegration parameters. The OLS estimator is known to yield biased and inconsistent estimates. For this reason, several estimators have been proposed. For example, Kao and Chiang (2000) argue that their parametric panel Dynamic OLS (DOLS) estimator (that pools the data along the within-dimension of the panel) is promising in small samples and performs well in general in cointegrated panels. However, the panel DOLS due to Kao and Chiang (2000) does not consider the importance of cross-country heterogeneity in the alternative hypothesis. To allow for cross-country heterogeneity in the alternative hypothesis, endogeneity and serial

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correlation problems to obtain consistent and asymptotically unbiased estimates of the cointegrating vectors, Pedroni (2000; 2001) proposed the group mean Fully Modified OLS (FMOLS) estimator for cointegrated panels.

The group mean FMOLS estimator (which is based on the between-dimension of the panel) applies a semi-parametric correction to the OLS estimator and it produces t -statistic that allows for more flexibility in the alternative hypothesis. Pedroni (2001) argues that pooling the data along the between-dimension of the panel have a more useful interpretation as the mean value of the cointegrating vectors in heterogeneous panels. Moreover, the group mean FMOLS estimator generates consistent estimates in small samples and does not suffer from large size distortions, in the presence of endogeneity and heterogeneous dynamics (as it allows for heterogeneity in the fixed effects and in the short run dynamics). In the presence of cross-section dependence, Pedroni (2001) suggest estimating the model with common time dummies to mitigate this effect. We employ the group mean FMOLS estimator to estimate the long run cointegration parameters in equation (2). However, we complement the group mean FMOLS results with the within-dimension panel DOLS (WDOLS) estimates due to Kao and Chiang (2000) as well as the between-dimension group mean panel DOLS (BDOLS) estimates due to Pedroni (2001) to check the robustness of FMOLS result. All estimators are asymptotically normally distributed¹⁸. The estimated long run estimates from the FMOLS, WDOLS and the BDOLS results are summarised in Tables 4.3.

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Table 4.3 Long Run Panel Estimate

Variable	I	II	III
Panel FMOLS Results			
<i>EG</i>	0.003***(3.712)	0.002*(1.937)	-0.0004(-0.435)
<i>PS</i>	-0.310***(-4.911)		
<i>PR</i>		-0.446***(-6.669)	
<i>PC</i>			-0.542***(-7.399)
<i>EG*PS</i>	0.007***(3.918)		
<i>EG*PR</i>		0.015***(8.209)	
<i>EG*PC</i>			0.019***(9.392)
Panel WDOLS Results			
<i>EG</i>	0.020***(7.84)	0.025***(9.86)	0.022***(7.88)
<i>PS</i>	-1.839***(-12.40)		
<i>PR</i>		-0.894***(-5.91)	
<i>PC</i>			-0.923***(-4.88)
<i>EG*PS</i>	0.041***(10.33)		
<i>EG*PR</i>		0.027***(6.60)	
<i>EG*PC</i>			0.030***(6.10)
Panel BDOLS Results			
<i>EG</i>	0.003***(5.744)	0.004***(6.282)	-0.001(-1.117)
<i>PS</i>	-0.247***(-6.379)		
<i>PR</i>		-0.517***(-11.86)	
<i>PC</i>			-0.745***(-14.14)
<i>EG*PS</i>	0.005***(5.568)		
<i>EG*PR</i>		0.018***(16.264)	
<i>EG*PC</i>			0.021***(15.295)

Note: Dependent variable log Y. In parenthesis are t-ratios. ***(**) denote rejection of the null hypothesis at the 1%(10%) level.

The coefficient on *EG* enters positive and statistically significant in the panel WDOLS estimates for all indicators of democracy and positive and statistically significant in the panel FMOLS and BDOLS estimates when we consider *PS* and *PR* as indicators of democracy. However, *EG* enters negative in the panel FMOLS and BDOLS estimates when we consider *PC* as an indicator of democracy, but insignificant at any conventional error level. The results clearly indicate that, the impact of economic globalisation on income in SSA countries is positive (though marginal in magnitude). The coefficients on all democracy indicators are negative and statistically significant for all estimators. The estimated results clearly indicate that, the impact of democracy on income in SSA countries is negative. Nonetheless, the impact of the interaction of economic globalisation and democracy is positive and statistically significant for all estimators and for all democracy indicators. It is important to note that the impact of economic globalisation (democracy) on income is not only captured by the coefficient on economic globalisation (democracy) but depends also on their respective interaction terms. This positive interaction effect makes the total impact of economic globalisation positive (although still marginal) whilst that of democracy still remains negative. For this reason, the result clearly shows that, the total effect of economic globalisation on income is positive for the alternative indicators of democracy whilst that of democracy is negative.

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The results of a negative impact of democracy on income is not surprising as the level (and quality) of democracy in SSA countries is too low for its potential positive impact to be felt on income. In particular, the mean values of our democracy indicators of 0.3818, 0.3201 and 0.3419 for *PS*, *PR* and *PC* respectively are too low for their potential benefits to be realised. Moreover, one could think of what has happened to the level of income in Cote d'Ivoire, for example, between December 2010 and March 2011. This phenomenon has also characterised many other SSA countries for decades and it is not surprising that the level of our democracy indicators also exhibit high volatility over the study period. The result in this paper calls for improvement in democratic institutions in SSA countries, because as Fosu (2008) notes, greater democratic advancement would be conducive for economic performance in these countries. Overall this paper has shown that the simultaneous adoption of both economic globalisation and democracy is crucial for economic performance. Therefore, both economic globalisation and democracy do matter for the level of income in SSA.

5. Conclusions and Policy Implications

This paper has analysed the long run cointegration relationship between economic globalisation, democracy and income for 31 SSA countries using panel cointegration techniques, over the period 1980-2005. We estimated a model that considered a composite indicator for economic globalisation and several indicators of democracy. The panel unit root test results show that all series are stationary only after first differencing. The panel cointegration test establishes long run cointegration relationship between economic globalisation, democracy and income. The long run coefficients were estimated using several estimators. The empirical results clearly indicate that, whilst the total long run impact of economic globalisation on income has been beneficial, the total long run impact of democracy has been the bane of income in SSA countries.

The empirical result reveals important policy implications. Notwithstanding the fact that the study is limited because we have been able to include only 31 SSA countries due to data availability, and that the results should be interpreted as indicative rather than definitive, the study has been able to show the essence of the simultaneous adoption of both economic globalisation and democracy for SSA countries. This implies that the recent adoption of economic and political liberalisation policies in SSA countries is in the right direction so far as economic performance is concerned. However, due to the negative impact of democracy on income, policy reforms should aim to improve democratic institutions in SSA countries for its potential benefits to be realised.

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Endnotes

¹ As Brown (2005) notes, such impediments mainly constituted lack of formal institutional structures (including rule of law) conducive for sustaining the immediate survival of democracy

² Out of 40 low-income economies, 29 are from SSA. In addition, 11 economies from SSA fall in the lower-middle-income group. Details on World Bank (2011) classification of economies January 2011 is available at URL <<http://data.worldbank.org/about/country-classifications/country-and-lending-groups>>

³ Details on these indicators are discussed under the data in Section 3

⁴ Prasad et al. (2003) further note that for developing countries financial liberalisation is neither a necessary nor sufficient condition for economic performance, as over the period 1970-2000 for example, Botswana relatively closed to capital flows achieved strong growth rates whilst Peru relatively open to capital flows suffered a decline in growth rates.

⁵ SSA countries have been involved in numerous bilateral and multilateral development partnership agreements with the external world for decades. Recent agreements have included the New Partnership for Africa's Development (NEPAD), the Economic Partnership Agreements (EPA), Heavily Indebted Poor Countries (HIPIC) Initiative and Aid for Trade (AFT), all aimed at improving economic performance of the sub-region

⁶ For a discussion on the relationship between economic globalisation and democracy readers are referred to (Giavazzi and Tabellini, 2005; Eichengreen and Leblang, 2008)

⁷ A special case in contrast to this point is China that has chosen economic globalisation (without democracy) and has performed so well in terms of economic performance in recent decades. However, we do not know if China had performed much better than its present state if it was also a democracy

⁸ Where appropriate the intercept/country-specific fixed-effects (α_i) is extended to include deterministic time trends. In addition, the intercept, deterministic time trends and the slope coefficients (β_i) are allowed to vary across individual countries. The inclusion of country-specific fixed-effects and deterministic time trends allow us to capture any omitted variables assumed to be stable in the long run relationship.

⁹ The selection of countries and the time period was influenced by data availability for all variables considered

¹⁰ Details on KOF's Index is available at URL <http://globalization.kof.ethz.ch/>

¹¹ We define democracy in this paper as the extent to which the political system is democratic or nondemocratic

¹² We combine the two measures (i.e. political rights + civil liberties) for our third indicator of democracy such that the annual ranking of countries ranges from 2 (the highest rank) to 14 (the lowest rank). Similar approach was adopted in Burkhart and Lewis-Beck (1994) and Glasure et al. (1999) to measure overall democracy index

¹³ These tests are not reported, but are available from the author upon request

¹⁴ See Levin et al. (2002)

¹⁵ All tests include deterministic time trend. Not reported, we also performed the LLC panel unit root test due to Levin et al. (2002) and the Fisher-type panel unit root test due to Choi (2001) that provides additional support to this result.

¹⁶ Pedroni's panel cointegration test is an extension of the Engle and Granger (1987) two-step procedure applied to panel data

¹⁷ Pedroni's tests include deterministic time trend and common time dummies. Not reported, we also considered the panel cointegration test due to Kao (1999) that assumes slope homogeneity across the cross-section units of the panel. Kao's test result provides additional support to these results.

¹⁸ For more technical details on the panel FMOLS and the panel DOLS estimators, readers are referred to (Pedroni, 2000, 2001) and (Kao and Chiang, 2000) respectively.

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