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Analyzing Current Account Sustainability through the Saving-Investment Correlation

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Abstract

This article examines the sustainability of current account for three regions, namely, Europe & Central Asia (ECA), Latin America & Caribbean (LAC), and Sub-Saharan Africa (SSA) for the period 1981-2014. To this end, we apply the Pooled Mean Group estimator to test for the existence of cointegration between saving and investment. Our results suggest existence of long-run relationship between investment and savings. However, while the current account deficit is weakly sustainable in LAC and SSA, it is strongly sustainable in ECA. The adjustment coefficient is low, suggesting slower rate of convergence to the long-run equilibrium.

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1. Introduction

From an international macroeconomic perspective, current account balance is a measure of strength of an economy. Persistent current account deficit (CAD) may become an obstacle to growth, huge and sudden capital outflow, rising interest rate, currency crises, and rising debt service – the so called "hard landing". This led economists to estimate the optimal or threshold level of deficit as a percent of GDP that an economy can sustain and beyond which it becomes unsustainable. However, the concept of optimal CAD may not always work since historical episodes of high deficit suggests that it was sustainable for countries like Australia, Ireland, Israel, and the US for a long period while countries like Chile, India, Thailand, Malaysia, Mexico and Philippines could not sustain large deficits and have suffered severe external crisis. Therefore, economists shifted from finding the optimal CAD to test whether international debt or CAD is sustainable in the long-run. A sustainable CAD implies that current account is stationary. This has two advantages. First, this implies that external debt is sustainable and hence, a government need not undertake drastic policy changes. Further, it also indicates that the government has no incentive to default on its international borrowing. Second, Obstfeld and Rogoff (1996) and Wu (2000) argued that the stationarity of the current account satisfies the modern inter-temporal model.

Given its importance, a large number of studies have examined the current account sustainability for individual countries and panel of countries. However, most of the extant literature focus on developed countries such as the US and OECD countries (Trehan & Walsh 1991; Wu, 2000; Wu et al., 2001; Edwards, 2006; Chen, 2011a, 2011b), and developing countries (Arize, 2002; Baharumshah et al., 2003, Lau & Baharumshah, 2005; Lau et el., 2006; Holmes, 2003, 2006a). However, there are few studies on current account sustainability in Latin American countries (Chortareas et al., 2004, Holmes, 2006b, Kalyoncu & Ozturk, 2010; Donoso & Martin, 2013) and Sub-Saharan African countries (Chu et al., 2007; Osakwe & Verick, 2007; Hamori & Hashiguchi, 2012; Gnimassoun & Coulibaly, 2014) and rarely any panel study is available on combined Europe and Central Asian countries, although studies are available for Europe and Asian countries separately. This study attempts to

Chortareas et al. (2004) used nonlinear unit root test to analyse the external debt sustainability for a sample of 12 Latin American countries for the period 1970 – 2000. Their results show sustainability of the current account is supported in all countries. Similarly, Holmes (2006b) examines the sustainability of external debts for a sample of 16 Latin American countries for the period 1979-2001. He used seemingly unrelated regression ADF test (SURADF) to test for the stationarity of CAD. He found strong evidence in favour of mean-reversion of the current account for at least 12 Latin American countries. Using quarterly time series data from 1980:Q1 to 2006:Q2, Kalyoncu and Ozturk (2010) recently examined sustainability of current account for 6 Latin American countries applying Johansen cointegration techniques to exports and imports variables. Their cointegration results suggest that except Peru, current account is not sustainable in the long run. Donoso and Martin (2013) also examined sustainability of the current account by testing stationary properties of the data for 18 Latin American countries for the period 1970s – 2010. They employ various unit roots tests, namely, plain vanilla ADF test, unit root test with structural breaks, and nonlinear unit root test. They found support for the sustainability in 14 out of 18 Latin American countries. Using annual data spanning 1960-2000, Holmes (2003) set out to investigate the sustainability of the current account for a sample of 26 African countries by using the SURADF test in a panel data framework. The author found strong evidence in favour of mean-reverting behaviour of the CAD for 21 countries. Similarly, Chu et al. (2007) used the same methodology to test stationary of the current account in 48 countries over the 1980-2004 period. They found that current account follows stationary path for 37 countries and concluded that African nations in general has no incentive to default on their international debt. In their analysis of current account sustainability in a sample of 38 Sub-Saharan African (SSA) countries for the period 1970-2005, Osakwe and Verick (2007) used several *qualitative* indicators of current account sustainability, namely, trade imbalance, low domestic savings, low FDI, low economic growth, high external debt and debt service, and poor governance to gauge the sustainability. They concluded that although most African economies have high CAD (i.e., the average for 15 countries exceeding 5% threshold is 9.6% of GDP), yet it is unsustainable only in 5 countries, namely, Burundi, Burkina Faso, Rwanda, and Togo. Hamori and Hashiguchi (2012), on the other hand, reported contradicting findings when they analysed unit root property of the 37 SSA countries. They found when simple panel unit root test of Im et al. (2003) is conducted, trade balance is sustainable whereas CIPS test of Pesaran (2007) - which takes in to account the cross-section dependence - rejects the sustainability of current account. Recently, Gnimassoun and Coulibaly (2014) examined whether current account displays mean-reverting behaviour and whether sustainability is dependent on exchange rate regime: fixed or flexible. Using recent panel unit root tests that allows for cross-section dependence and structural breaks and panel cointegration tests, they found current account is sustainable in Sub-Saharan African countries over the period 1980-2011. Further, they found weaker sustainability if a country belongs to a monetary union or has fixed exchange rate regime. This shows that use of appropriate methodology will lead to current inference about the current account sustainability.

One major shortcoming of the existing literature is that it pays less attention to the dynamics of current account adjustment. This is important for two reasons. First, only studying the stationary property of the CAD does not help us understand the causes of external imbalance and factors affecting it. Most of the above mentioned studies on Latin American countries and SSA are individual-country based, employing mainly individual unit root tests to infer about sustainability. Few studies such as Hamori and Hashiguchi (2012) and Gnimassoun and Coulibaly (2014) employ panel unit root tests and panel cointegration. Investigating the long-run relationship between saving and investment or exports and imports will enrich our understanding of the sustainably and what measures can be taken to prevent it from becoming unsustainable. Second, these studies does not inform us the error-correction behavior of the current account. Following Gnimassoun and Coulibaly (2014), we also assessed the degree of sustainability from the magnitude of the estimated β coefficient, known as the "sustainability coefficient"[1].

Our work is different from the existing studies in four major respects. First, the existing literature either uses (panel) unit root tests of current account deficit and/or (panel) cointegration test between exports and imports. We instead study the long-run relationship between investment and savings. Second, this study uses recently developed heterogeneous panel unit root test of Peseran (2007) which allows for cross-sectional dependence in the error structure and recently developed Pooled Mean Group (PMG) estimators (Pesaran et al., 1999) to test the long-run relationship between investment and savings. In an error-correction model framework, the PMG estimator estimates both the long- and short-run estimates along with the adjustment coefficient. Third,

[1] We are thankful to the anonymous referee for bringing this point to our notice.

following Gnimassoun and Coulibaly (2014), we not only examine the sustainability, but also the degree of sustainability: weakly or strongly. Furthermore, we also estimate the speed of adjustment coefficient should they diverge from each other in the short-run. Fourth, we provide empirical evidence on sustainability of the current account for the three regions, namely, Latin America & Caribbean (LAC), Sub-Saharan Africa (SSA), and Europe & Central Asia (ECA).

The remainder of this paper is organized as follows. Section 2 briefly discusses empirical analysis of the current account sustainability. Section 3 outlines the empirical strategy for testing cointegration based on panel ARDL technique and then discuses data used in this study. Section 4 reports unit root test results and empirical results and interpretation of it. Section 5 concludes the paper with a discussion on policy implication of our findings.

2. Empirical Analysis of Current Account Suitability

The term "sustainability" refers to stationarity of the current-account balance over time whereas nonstationary behaviour of the current account implies that the country has violated its intertemporal budget constraint (Taylor, 2002). Trehan and Walsh (1991) showed that the stationarity of the current account is a sufficient condition for the intertemporal budget constraint to hold. There are three ways through which we can test the sustainability. First, by performing unit root tests on the current account balance (Trehan & Walsh, 1991, Wu et al., 2001; Rinaldi & Pistoresi, 2014). Second, CAD is nothing but the excess of imports over exports. Thus, second approach involves testing the cointegration between exports and imports (Wu et al., 2001; Baharumshah et al., 2005; Holmes, 2006a; Kalyoncu and Ozturk, 2010). It is to be noted here that literature on current account sustainability employs both these methods. In this paper, we focus on an alternative definition of the current account imbalance which is the difference between investment and savings. Thus, establishing long-run relationship between savings and investment ensures that CAD is sustainable in the long run (Jansen, 1996; Coakley et al., 1996). The idea behind cointegration is that to test the restriction of the cointegrating vector being (1, -1). If long-run relationship is established it implies that the two series would never drift too far apart. CAD is sustainable if savings and investment are cointegrated with the cointegrating vector being (1, -1). We argue that the supplementing cointegration in addition to unit roots test approach is better than inference based on only unit root test for two reasons. First, unit rate test only tells whether CAD is sustainable. It does not tell the "degree" of sustainability: weak or strong. Thus, we go further than previous studies by examining the level of sustainability. Second, simple unit root tests do not inform us the speed of adjustment in case of a short-run disequilibrium. This is important since the savings and investment are dynamically related.

In this paper, we assess the sustainability of the current account by estimating following regression:

$$I_i = \alpha + \beta S_i + \mu_i, \qquad i = 1, 2, \dots, N \qquad (1)$$

where I_i and S_i respectively denote investment and savings as percent of GDP in country i, β is the slope coefficient (also known as the "sustainability coefficient"), and μ is the error term. For the intertemporal budget constraint to be satisfied, it is necessary that that $\beta = 1$ and μ is stationary. This long-run solvency constraint does not allow cumulated balance of payments or national debt to explode. This implies that investment and savings move together in the long run and thus, it ensures sustainability of the CAD. Jansen (1996) and Coakley et al (1996) argued that the intertemporal budget constraint implies that the current account deficit is stationary and thus that investment and saving are cointegrated with vector (1, -1). If $\beta = 0$, the current account is unsustainable since there is no cointegration. If $0 < \beta < 1$, current account is "weakly" or "moderately" sustainable. Finally, if $\beta = 1$, current account is "strongly" sustainable.

There is also another interpretation proposed by Feldstein and Horioka (1980)[2]. They estimated equation (1) to test the hypothesis of capital mobility across countries. They reasoned that savings and investment should be uncorrelated for an open economy since borrowers have access to international capital market, whereas domestic residents can invest their money where it yields them highest rate of return. However, to their surprise, their findings from cross-sectional regression of 16 OECD countries suggests that domestic savings and investment in advanced countries are highly correlated. This finding of tight correlation between the two variables is known as Feldstein-Horioka puzzle in international macroeconomics. Although a large body of literature supports their findings, yet their interpretation of the β coefficient in Equation (1) as an indicator of capital mobility has been contested (see Frankel et al., 1986). Moreover, Frankel et al. (1986), Sinn (1992), Jansen (1996), and Coakley et al (1996) argued that the β coefficient rather measures whether intertemporal budget constraint is satisfied or not. Although Feldstein and Horioka (1980)'s interpretation is plausible, yet in this paper, we restrict the interpretation to assess the sustainability of the current account balance.

3. Econometric Methodology and Data

3.1. Methodology

Our empirical strategy follows two steps. First, we test the time series property of variables used in this study. We use both "first-generation" panel unit root tests (PURT) that do not account for cross-sectional dependence (CSD) such as tests proposed by Hadri (2000) and Levin et al. (2002) [denoted as LLC], Im et al. (2003) [denoted as IPS], and "second-generation" CIPS test of Pesaran (2007) that accounts for it. It is worth noting here that conventional unit root tests suffer from lack of power since these tests do not allow for possibility of structural break in the data (see Perron, 1989). However, the literature on PURT with structural breaks is evolving and the tests proposed by Carrion-i-Silvestre et al. (2005) and Hadri and Rao (2008) require time series dimension T should be very large. Given the restriction on T, we do not conduct such tests since it might result in serious size distortion and power reduction (Harris and Tzavalis, 1999). The next step is to test the presence of long-run relationship between the two variables and estimate the size of β. Literature on current account sustainability via the relationship between exports and imports basically employs the Pedroni (1999, 2004) and Kao (1999) tests to test for the existence of cointegration and panel DOLS and panel FMOLS to estimate the coefficients of long-run relationship (Wu et al., 2001; Baharumshah et al., 2005). In this article, we employ the recently developed dynamic heterogeneous panel cointegration method, namely, the pooled mean group (PMG) estimation technique of Pesaran et al. (1999). Use of panel ARDL avoids pretesting of variables which may result in misclassification of variables as I(0) or I(1). Further, Panel ARDL methods allow for short-run dynamics which other panel cointegration estimators proposed by Pedroni (2000) and Kao and Chiang (1998) do not allow for it. Jansen (1996) and Mamingi (1997) argued that error correction model (ECM), being consistent with the inter-temporal general equilibrium models, is the appropriate methodology since savings and investment is

[2] We are grateful to the anonymous referee for his/her suggestion to include this interpretation of β coefficient.

primarily a long-run relationship while they also demonstrate temporary dynamics. It concurrently estimates the long-run relation between saving and investment and the short-run dynamics.

We adopt the error-correction model version of the panel autoregressive distributive lag (ARDL) (*p*, *q*) of Loayza and Ranciere (2006) which is given below:

$$\Delta(I_i)_t = \sum_{j=1}^{p-1} \gamma_j^i \, \Delta(I_i)_{t-j} + \sum_{j=0}^{q-1} \delta_j^i \, \Delta(S_i)_{t-j} + \varphi^i \left[(I_i)_{t-1} - \{\beta_0^i + \beta_1^i (S_i)_{t-1}\}\right] + \varepsilon_{it} \quad (1)$$

where index $i = 1, 2, ..., N$ is the number of groups; $t = 1, 2, \ldots, T$ is the number of periods; I is the investment, and S is savings, γ and δ represent the short-run coefficients, β is the long-run coefficient, and the φ is error-correction coefficient (ECC), and ε is a time-varying disturbance. The ECC is expected to be negative and significant. The model requires that the time-dimension T must be large enough such that the model can be fitted for each group separately. The term in square bracket contains the long-run relationships between the variables.

$$(y_i)_t = \beta_0^i + \beta_1^i (X_i)_t + \mu_{i,t} \qquad \text{where } \mu_{i,t} \sim I(0) \qquad (2)$$

Equation (1) can be estimated in several ways depending upon the restriction one imposes on parameters. If all the parameters are allowed to be heterogeneous, this is called as mean group (MG) estimator, proposed by Pesaran and Smith (1995). This estimator first estimates Equation (1) for all countries and then takes average of the coefficients. On the other hand, if intercept is allowed to vary across the cross-sectional units, while imposing homogenous slope coefficients, this is called as the dynamic fixed effects (DFE) model. Pesaran et al. (1999) proposed an alternative estimator which combines features of both the MG and the DFE estimator in that it imposes restrictions on long-run slope parameter, while it allows for heterogeneity in the short-run coefficients including the adjustment coefficients. This feature is noteworthy since each country will have different short-run coefficients while long-run coefficient is expected to be same (see Pesaran et al. 1999; Loayza & Ranciere, 2006).

3.2. Data Description

Annual data spanning 1981-2014 has been collected from the World Bank's World Development Indicator (WDI). Gross capital formation (GCF) and gross domestic savings (GDS) are taken as measures of investment and savings, both defined as percentage of GDP. Following the World Bank classification of countries according to geographical area, we estimate the model for three regions, namely, Europe & Central Asia (ECA), Latin America & Caribbean (LAC), and Sub-Saharan Africa (SSA). The objective is to see how the findings vary with the geographical regions and whether current account is sustainable or unsustainable. Further, since literature on current account sustainability is sparse for these country-groups, this study fill in the gap in literature.

4. Results

4.1. Panel Unit Root Test Results

Unit root test results at various lags are reported in Table 1. We have reported test results for both the "constant" and "constant and trend" version of the test equation, estimated in level. As expected, test results depend on number of lags, the test itself (i.e., IPS/LLC/Hadri/CIPS test) null hypothesis of the test and finally, whether trend is added to the test equation. Within the "first-generation" test, we find Hadri test consistently rejects the hypothesis of panel trend stationary, whereas findings of both IPS (Im, Pesaran and Shin) and LLC (Levin, Lin and Chu) test differ across lags. For example, in case of Europe & Central Asia (ECA), the variable GCF at lag 1 is I(1) according to Hadri test, and CIPS test, whereas it is I(0) according to IPS and LLC test, with or without the inclusion of the trend term in the test equation. However, at lag order 3, all the four tests indicate that GCF is $I(1)$. When test results are not conclusive with regard to the order of integration of variables, we conclude it as $I(1)$ for the following reason: The loss structure is somewhat asymmetric - the "costs" of failing to detect a unit root are generally higher than those associated with "detecting" one when really the data are stationary. Thus, as we can see the mixed evidence, we consider all variables to be $I(1)$ for all the region categories.

Table 1: Panel Unit Test Results (At Level)

		Constant				Constant and Trend			
Variable	Lag	Hadri	IPS	LLC	CIPS	Hadri	IPS	LLC	CIPS
				Europe & Central Asia (ECA)					
GCF	1	10.44***	-3.26***	-3.69***	-1.18	16.16***	-2.80***	-3.99***	-2.03
	2	6.40***	-1.28*	-0.54	-2.07*	10.29***	-0.69	-0.14	-2.38
	3	4.46***	-1.19	0.11	-1.99	7.56***	-0.85	0.87	-2.36
GDS	1	15.29***	-2.91***	-4.28***	-1.76	17.34***	-2.03**	-4.60***	-2.01
	2	10.11***	-2.05**	-3.46***	-1.76	11.67***	-0.89	-2.73***	-2.01
	3	7.58***	-1.03	-2.19**	-1.76	9.08***	-0.31	-1.26	-2.01
				Latin America & Caribbean (LAC)					
GCF	1	19.39***	-5.76***	-5.68***	-2.20**	16.32***	-5.36***	-6.96***	-2.52
	2	13.39***	-3.55***	-2.35***	-2.21**	11.52***	-2.72***	-2.58***	-2.65**
	3	10.48***	-3.02***	-1.31*	-2.23***	9.48***	-1.72**	-0.53	-2.51
GDS	1	20.01***	-2.45***	-2.35***	-1.90	26.54***	-1.66**	-3.81***	-2.50
	2	13.06***	-1.56*	-1.54*	-1.90	18.03***	-1.07	-2.55***	-2.55*
	3	9.61***	-0.87	-0.27	-1.90	13.85***	-1.23	-2.18**	-2.62**
				Sub-Saharan Africa (SSA)					
GCF	1	16.39***	-3.02***	-2.24**	-2.36***	26.75***	-2.90***	-4.21	-2.85***
	2	10.35***	-1.93**	-0.08*	-2.35***	17.72***	-1.37*	-1.12	-2.94***
	3	7.26***	-1.18	0.67	-2.32***	13.10***	0.00	0.94	-2.84***
GDS	1	40.15***	-2.43***	-2.12**	-2.60***	5.12***	-2.26**	-3.87***	-2.99***
	2	29.04***	-1.72**	-0.93	-2.60***	3.64***	-1.57*	-2.05**	-3.00***
	3	22.75***	-1.92**	-0.92	-2.66***	2.98***	-2.10**	-1.86**	-3.06***

Note: *** p<0.01, ** p<0.05, * p<0.1. All the variables when tested at first-difference are $I(0)$.

1.1.Panel ECM Results

Results of PMG model are reported in Table 2 for all the three country groups. In addition to the PMG estimates, we have also reported estimates of the MG and the DFE estimator for comparison purpose. However, since PMG estimator gives consistent and efficient estimates, we restrict our interpretation to the PMG estimates only. A cursory look at the estimates of three estimators indicate that results vary significantly with respect to the estimation method.

Panel A in Table 2 reports results for the Europe & Central Asia region. Long-run estimate of the saving coefficient (i.e., GDS) is positive and significant at the 1% level of significance. This implies presence of long-run relationship between savings and investment. Recall that current account deficit is nothing but excess of investment over savings. The implication of finding of cointegration is that current account is sustainable in the long run. The estimate of the long-run savings coefficient (LRSC) indicates that if saving rises by 1 percentage point, investment also rises by 1 percentage point.

Table 2: Region-wise Estimation Results

	PMG		MG		DFE	
Variable	Coefficient	S.E.	Coefficient	S.E.	Coefficient	S.E.
Panel A: Europe & Central Asia						
Long-run Coefficient						
GDS	1.03***	0.12	1.69**	0.85	0.34***	0.07
GDS=1?	0.10		0.66		86.34***	
Error-Correction term	-0.15***	0.02	-0.21***	0.03	-0.20***	0.02
Short-run Coefficient						
ΔGDS	0.42***	0.07	0.41***	0.07	-0.21***	0.02
Constant	-0.22	0.19	1.65***	1.22	2.86***	0.49
Hausman Test			0.50ǂ			
p-value			(0.48)			
No of Countries	22		22		22	
Panel B: Latin America & Caribbean						
Long-run Coefficient						
GDS	0.53***	0.05	0.45***	0.09	0.51***	0.05
GDS=1?	79.68***		34.28***		82.40***	
Error-Correction term	-0.30***	0.03	-0.36***	0.03	-0.32***	0.02
Short-run Coefficient						
ΔGDS	0.08	0.06	0.08	0.05	0.09***	0.02
Constant	4.13***	0.52	5.52***	0.64	4.33***	0.49
Hausman Test			0.97ǂ			
p-value			(0. 33)			
No of Countries	30		30		30	
Panel C: Sub-Saharan Africa						
Long-run Coefficient						
GDS	0.27***	0.05	0.58***	0.16	-0.55***	0.06
GDS=1?	176.86***		6.47***		562.26***	
Error-Correction term	-0.27***	0.03	-0.32***	0.03	-0.31***	0.02
Short-run Coefficient						
ΔGDS	0.20***	0.05	0.16***	0.06	0.02	0.02
Constant	4.67***	0.55	5.84***	1.21	8.35***	0.58
Hausman Test			2.02			
p-value			(0.16)			
No of Countries	34		34		34	

Note: * p<0.10, *** p<0.05, & *** p<0.01. All the estimators control for state and time effects. We estimate the model using *xtpmg* routine in Stata. All the estimators control for the country and time effects. The lag structure is ARDL (1, 1). ǂ The null hypothesis is that the PMG estimator is more efficient than the MG estimator. *Source*: Author's own estimation.

As we have noted earlier, we are not only interested in finding whether current account is sustainable or not, but also interested in the degree of sustainability. That is to say, whether β

lies between 0 and 1 (i.e., weak sustainability) or $\beta = 1$ (i.e., strong sustainability). Hence, we perform a Wald test to test the hypothesis that long-run $\beta = 1$. Since the χ^2 test statistic associated with the Wald test is very low (0.10) the null hypothesis could not be rejected at the conventional significance levels, suggesting "strong" sustainability of the current account in the ECA region.

The PMG model imposes equality of long-run slope coefficient for all countries, whereas the MG model does not require such assumption. Whether this assumption of homogeneity of long-run slope coefficient is reasonable or not can be inferred from the Hausman test. The Hausman test statistic is 0.50 and is distributed $\chi^2(1)$ with a p-value of 0.48. The Hausman test indicates that this restriction of homogenous long-run coefficients cannot be rejected at 1% significant level. This implies that PMG estimates are consistent and efficient. As expected, the error correction coefficient (ECC), which measures the speed of convergence to the long-run equilibrium, is negative and statistically significant at the 1% level of significance. The magnitude of the ECC indicates slower rate of adjustment. In particular, it approximately takes six years to return to the long-run steady-state equilibrium following a short-run disturbance. The short-run coefficient is also found to be positive and significant.

The middle panel (i.e., Panel B) reports estimation results for the LAC. The long-run savinsg coefficient (LRSC) is positive and significant. The magnitude of the LRSC indicates that current account deficit is sustainable. Holmes (2003) and Chu et al. (2007) report similar results. However, since the Wald test rejects the hypothesis that LRSC is equal to 1, it implies "weak" sustainability of the current account in the LAC. Unlike the ECA, long-run estimates of the three estimators in LAC are similar. It might be due to the fact that countries in the LAC are similar in terms of income distribution. The Hausman test does not reject the validity of the equality of long-run coefficients since χ^2 statistic is 0.97 with the corresponding p-value of 0.33. The adjustment coefficient (ECC) of the PMG model is -0.30, which implies that it takes roughly three years for the disequilibrium between the two variables to even out and to return to the long-run equilibrium relationship. Although the short-run coefficient is positive, it is insignificant.

Next, we examine the long-run relationship between savings and investment for the Sub-Saharan African countries (SSA). All the estimators in Panel C of Table 2 indicate sustainability of the CAD. Our finding of sustainable current account is in agreement with that of Chortareas et al. (2004), Holmes (2006b), Donoso and Martin (2013), and Gnimassoun and Coulibaly (2014). The PMG estimate of the saving coefficient suggests that if saving rises by 1 percentage point, investment rises by 0.27 percentage point in the long run. Wald test indicates that CAD is "weakly" sustainable since it rejects the hypothesis that the LRSC is equal to 1. Again, the Hausman test cannot reject the homogeneity assumption imposed on the long-run parameters. This indicates that the PMG estimator is efficient compared to the MG estimator. The ECC (-0.27) is negative and significant which again confirms the presence of cointegrating relationship between savings and investment. It indicates slower rate of adjustment to the long-run equilibrium relationship. The short-run coefficient is also positive and significant.

2. Conclusion

The objective of this paper is to analyze the sustainability of current account through the apparatus of relationship between savings and investment. Most of the studies on current account sustainability focus on either current account balance itself or investigating the cointegrating relationship between exports and imports. However, since current account is the difference between savings and investment, this paper takes a different route to study the sustainability by analyzing the relationship between savings and investment in an error-correction framework. We aim to address two questions relating to current account sustainability. First, whether the current account balance is sustainable over a period of time. Second, more importantly, to measure the degree of sustainability. We use panel ARDL method of Pesaran et al (1999) to study the long-run relationship between the two variables. Our findings suggest the following. We find that there exists a cointegrating relationship between savings and investment for all the regions. This ensures that the CAD is sustainable in all the country groups. However, the degree of sustainability differs across regions. While the CAD is weakly sustainable in LAC and SSA, it is strongly sustainable in ECA. One stylized fact emerged from the PMG estimate of the long-run coefficients is that if the region is richer, the long-run savings coefficient is also higher. The PMG estimate of the LRSC is 1.03 for ECA, 0.53 for LAC, and 0.27 for SSA (all statistically significant). While the ECA comprises of richer European countries, the other two regions have large number of poor countries. Least developed and developing countries are basically primary economies and tend to import more than they export to developed countries. As a consequence, they run a current account deficit.

The policy implication of our findings for the LAC and SSA is that the countries cannot afford to neglect the current account deficit for long period. The reason is that even if CAD poses no immediate threat to a country, it might cause serious trouble in future. This is because the long-run savings coefficient is 0.53 for LAC and 0.27 for SSA, implying that the speed at which inter-temporal borrowing constraint is satisfied is rather low and would like to result in higher level of CAD. This would have serious repercussions on a country's exchange rate, capital flight, stock market crisis, downgrade in sovereign rating, and other macroeconomic implications. Furthermore, this problem is accentuated by small size of the error-correction coefficient which hovers around -0.20 in most of the estimated models. This implies that the speed of adjustment mechanism is rather slow.

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