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Are African current accounts on a sustainable path? A tale of two components

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Abstract

This paper investigates the sustainability of current account imbalances in a sample of 45 African countries for the period 1980-2019. To do so, we apply Reese and Westerlund's PANICCA test (PANICCA: Panic on Cross‐Section Averages. Journal of Applied Econometrics 2016; 31(6), 961-981) that disentangles common and idiosyncratic components of current account. This approach allows us to investigate whether current account sustainability or lack thereof is pervasive on the African continent, country specific or both. Key to our findings is that overall, current accounts of African countries are on a sustainable path. This sustainability is mainly driven by the common component and 70% of country-specific components.

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1. Introduction

The proneness of developing countries to external and environmental shocks that tend to be permanent (e.g., Aguiar and Gopinath, 2007) and whose frequency is higher than that of developed countries, has been documented in the literature (e.g., Álvarez et al., 2018; Barrot et al. 2018; Dabla-Norris and Gündüz, 2014; Guillaumont, 2009; Essers, 2013; IMF, 2011). These shocks weigh significantly on the dynamics of fiscal variables (e.g., Böwer et al. 2007; Strawczynski and Zeira, 2013; Solimano and Calderon, 2017; Talvi and Végh, 2005). The present study aims to examine the relationship between export product diversification - which as we see later, helps to cushion the adverse economic effect of external shocks - on fiscal space volatility.

On the one hand, much work has shown that fiscal policy volatility can have adverse economic effects. For example, some studies have found that the positive public expenditure volatility effect of higher public revenue instability (e.g., Bleaney et al. 1995; Ebeke and Ehrhart, 2012; Lim, 1983) translates into greater instability of public investment and lower public investment levels. In turn, both the instability of public investment and the fall in the public investment level can hamper economic growth (e.g., Afonso and Furceri, 2010; Barro, 1990; Furceri, 2007; Easterly and Rebelo, 1993; Gong and Zou, 2002; Pindyck and Solimano, 1993). Other studies have reported that greater volatility of public expenditure results in lower economic growth and welfare (e.g., Afonso and Furceri, 2010; Fatás and Mihov, 2003; Furceri, 2007; Gong and Zou, 2002; Loayza et al., 2007).

On the other hand, while the determinants of fiscal space have recently received attention in the literature (e.g., Aizenman and Jinjarak, 2010, 2011; Aizenman et al. 2019; Gnangnon, 2018, 2019a, 2020; and Gnangnon and Brun, 2020; Nerlich and Reuter, 2013), we are not aware of any study that has considered the determinants of fiscal space volatility. Nonetheless, some works have been devoted to the determinants of fiscal policy volatility (e.g., Agnello and Sousa, 2014; Bleaney et al., 1995; Gnangnon and Brun, 2019a; Ebeke and Ehrhart, 2012; Ebeke, 2014; Furceri and Ribeiro, 2009; Lim, 1983). Fiscal space has been defined in various ways in the literature (see Botev et al. 2016; Cheng and Pitterle, 2018; Gnangnon, 2018, 2019a; Gnangnon and Brun, 2020; Haley, 2018 for a literature review on the definition and measurement of fiscal space). For example, one of the earlier definitions of fiscal space has been provided by Heller (2005). According to Heller (2005), fiscal space is the room in a government's budget that allows it to provide resources for a desired purpose without jeopardizing the sustainability of its financial position or the stability of the economy. The present analysis uses a definition of fiscal space, which draws on the work by Aizenman and Jinjarak (2010; 2011) - and the subsequent studies by Aizenman et al. (2019), Gnangnon (2018, 2019a, 2020) and Gnangnon and Brun (2019). In these studies, fiscal space has been defined as the ratio of public debt to public revenue. In particular, Aizenman and Jinjarak (2010; 2011) have defined the indicator of "de facto fiscal space" measured by the ratio of the outstanding public debt to the de facto tax base, and where fiscal space refers to the number of years of tax revenues that are necessary for a country to repay its debt. Thus, the present analysis defines fiscal space as the ratio of total public debt to total public revenue.

In the meantime, a large number of studies have emphasized the need for developing countries to diversify their export product baskets away from primary commodities, towards more sophisticated products, i.e., with greater value addition (e.g., Gozgor and Can, 2017; Hausman et al., 2007; Herzer and Nowak-Lehmann, 2006; Naudé et al. 2010). For example, it has been argued that export product diversification reduces the instability of export earnings (e.g., Athukorola, 2000; Osakwe, 2007; Ghosh and Ostry, 1994; Stanley and Bunnag, 2001). Export product diversification also helps to reduce aggregate output volatility, notably by mitigating countries' exposure to external shocks (e.g., Balavac and Pugh, 2016; Haddad et al.

2013; Joya, 2015; Neto and Romeu, 2011). Likewise, at the microeconomic level, export product diversification helps reduce the volatility of firms' output and export earnings (e.g., Hirsch and Lev, 1971; Juvenal and Monteiro, 2013; Kramarz et al. 2020; Maggioni et al. 2016; Vannoorenberghe et al. 2016).

The present paper investigates the effect of export product diversification on fiscal space volatility in developing countries. This topic is particularly relevant in light of the high proneness of developing countries to external shocks, which significantly affect the dynamics of fiscal policy, and hence eventually the variability of fiscal space. In light of the foregoing, we postulate the following. Export product diversification can help reduce countries' exposure to shocks (and hence the size of these shocks), including by dampening economic growth volatility. On the other hand, economic growth volatility can induce greater volatility of fiscal space, through the enhancement of public revenue instability (e.g., Gnangnon and Brun, 2019a), and consequently generate a rise in public spending instability (in light of the afore-mentioned link between tax revenue instability and public expenditure instability). In turn, greater instability of public expenditure can translate into higher public debt variability. Hence, we can expect greater export product concentration to lead to higher volatility of fiscal space, with this effect passing through the economic growth volatility channel. In other words, the magnitude of the positive effect of export product concentration on fiscal space volatility would rise as countries experience a higher economic growth volatility. Incidentally, as noted above, through its negative effect on exposure to external shocks, export product diversification can reduce the instability of firms' export earnings, and therefore, the variability of the tax base. These would contribute to lowering the instability of tax revenue, and consequently the instability of public expenditure - and hence the variability of public debt.

The empirical exercise has been performed using a sample of 117 developing countries over the period 1980-2014, and the feasible generalized squares (FGLS) estimator. Results have shown that greater export product concentration (or export product diversification) increases (reduces) the volatility of fiscal space, although the magnitude of this positive effect is higher in NonLDCs (countries that are not least developed countries - LDCs) than in LDCs. Additionally, the enhancing fiscal space volatility effect of export product concentration rises as countries' degree of economic growth volatility increases. Put differently, export product diversification helps to mitigate the positive effect of economic growth volatility on fiscal space volatility. Overall, the empirical findings confirm our hypothesis that export product concentration affects fiscal space volatility through the economic growth volatility channel. Finally, we have obtained that there exists a non-linear relationship between export product concentration and fiscal space volatility, whereby an additional rise in the degree of export product concentration further amplifies the enhancing effect of export product concentration on fiscal space volatility.

The rest of the analysis is structured as follows. Section 2 presents the model specification that helps address the issue under investigation, and discusses the econometric approach to estimate this model. Section 3 interprets empirical results, and Section 4 concludes.

2. Model specification

There is no theoretical framework on the determinants of fiscal space volatility. Therefore, we adopt a pragmatic approach by relying on the one hand, on the literature on fiscal policy volatility (e.g., Agnello and Sousa, 2014; Bleaney et al., 1995; Gnangnon and Brun, 2019a; Ebeke and Ehrhart, 2012; Ebeke, 2014; Furceri and Ribeiro, 2009; Lim, 1983), and on the other hand, on recent studies on the determinants of fiscal space (e.g., Aizenman and Jinjarak, 2010, 2011; Aizenman et al. 2019; Gnangnon, 2018, 2019a, 2020; and Gnangnon and Brun, 2020; Nerlich and Reuter, 2013).

We investigate the effect of export product diversification on fiscal space volatility by postulating a model specification where the indicator of fiscal space depends not only on the index of export product concentration (or diversification), but also on many control variables. The latter include the inflation volatility, terms of trade volatility, trade openness, and real per capita income (which is a proxy for countries' size of development level). It is important to note that we have included in model (1) the lagged values at time t-4 of a proxy for institutional quality (i.e., the level of democratization measured by the "POLITY2" indicator - see Marshall et al. 2018). However, the coefficient of this variable was not significant in the different regressions run, while it additionally reduces the size of the sample. Therefore, we have decided to remove it from the analysis.

The model postulated is as follows:

$$Log(FSVOL)_{it} = \alpha_0 + \alpha_1 Log(FSVOL)_{it-1} + \alpha_2 Log(ECI)_{it-4} + \alpha_3 Log(INFLVOL)_{it-4} + \alpha_4 Log(TERMSVOL)_{it} + \alpha_5 Log(OPEN)_{it-4} + \alpha_6 Log(GDPC)_{it-4} + \mu_i + \lambda_t + \omega_{it} \quad (1)$$

where i represents the subscript associated with a given country; t denotes the time-period. The panel dataset is unbalanced and contains 115 countries over the period 1980-2014. α_0 to α_6 are coefficients to be estimated. μ_i are time invariant specific effects associated with each country. γ_t are time dummies, and ω_{it} is the error-term.

The variable "FSVOL" stands for the indicator of fiscal space volatility. The other volatility variables include the inflation volatility ("INFLVOL") and the terms of trade instability ("TERMSVOL"). To compute the volatility variables (that is, volatility of fiscal space, terms of trade, and inflation), we adopt the approach used by Bekaert et al. (2006) and Ebeke and Ehrhart (2012). This approach involves computing the volatility of variables as the standard deviation (of the growth rate of the relevant variable when the latter is not expressed in terms of growth) over 5-year rolling windows (that is, from t-4, …., t-1, t). Thus, the volatility of fiscal space has been computed as the standard deviation of the growth rate of fiscal space over 5-year rolling windows (that is, from t-4, …., t-1, t). As noted above, the fiscal space indicator has been measured by the ratio of total public debt to total public revenue. The inflation volatility has been calculated as the standard deviation of the inflation rate over 5-year rolling windows (that is, from t-4, …., t-1, t). Terms of trade volatility is computed as the standard deviation of the growth rate of the terms of trade over 5-year rolling windows. The natural logarithm has been applied to all variables so as to reduce their high skewness.

"ECI" is the index of the level of overall export product concentration (and inversely, overall export product diversification). It has been computed by the International Monetary Fund (IMF) using the Theil index, and following the definitions and methods adopted in Cadot et al. (2011). The computation[1] of this indicator has used classification of products into "Traditional", "New", or "Non-Traded" products categories. Higher values of ECI indicate a rise in the degree of overall export product concentration, while lower values in the index shows an increase in the degree of overall export product diversification. "OPEN" and "GDPC" are respective the indicators of trade openness, and the real per capita income.

All variables (except the terms of trade volatility) have been lagged at t-4 with a view to mitigating their endogeneity arising particularly from the reverse causality between the dependent variable and those variables (see also Bekaert et al., 2006 and Ebeke and Ehrhart, 2012). The one-period lag of the dependent variable has been introduced as a regressor in model (1) in order to take account of the likely persistence of fiscal space volatility over time.

[1] Details on the methodology used to calculate this index could be found online at: https://www.imf.org/external/datamapper/Technical%20Appendix%20for%20Export%20Diversification%20database.pdf

Expected effects of control variables on fiscal space volatility

The introduction of the real per capita income in model (1) aims to capture the extent to which the degree of fiscal space volatility varies across countries, depending on their development level, proxied by their real per capita income. On another note, we expect inflation volatility and terms of trade volatility to be associated with greater fiscal space volatility. Similarly, we expect greater trade openness to influence fiscal space volatility through its effect on economic growth volatility. In fact, while greater trade openness could generate substantial benefits to countries, including through specialization, it can also expose a country to external shocks, which could translate into the volatility of its public revenue and public expenditure, and hence the volatility of fiscal space. For example, Calderon et al. (2006) have found that trade openness can dampen output volatility through higher sectoral specialization. In such a case, trade openness would be associated with lower volatility of fiscal space. On the other hand, Abubaker (2015), Mireku et al. (2017) and Razin et al. (2003) have obtained empirically that higher trade openness induces higher economic growth volatility. In this case, higher trade openness would lead to greater volatility of fiscal space.

We present in Figure 1 the correlation pattern between the indicators of fiscal space volatility and export product concentration, over the full sample, as well as over the sub-samples of least developed countries[2] (LDCs) and NonLDCs (countries in the full sample that are not included in the category of LDCs). We have considered these two sub-samples because LDCs are particularly known to exhibit a high degree of export product concentration, including on primary commodities, compared to NonLDCs. Figure 1 shows a positive correlation between export product concentration and fiscal space volatility over the full sample, as well as the two sub-samples, although the slope of the correlation pattern is higher for NonLDCs than for LDCs. Incidentally, when looking at Figure 1, one may suspect that there exist a non-linear correlation pattern between export product concentration and fiscal space volatility over the full sample. This is particularly reflected in Figure 2, which shows a non-linear correlation pattern in the form of a U-curve, between export product concentration and fiscal space volatility. As a consequence, in the empirical analysis, we test the existence of both a linear relationship, and a non-linear relationship between export product concentration and fiscal space volatility.

In terms of econometric strategy, the empirical analysis uses the Feasible Generalized Least Squares[3] (FGLS) with panel-specific AR(1) (i.e., autocorrelation of order 1 for each panel), which allows to obtain heteroskedastic and autocorrelation (HAC)-consistent standard errors (see for example, Meinhard and Portrafke 2012; and Can and Gozgor, 2018 who have used the FGLS estimator in their analysis).

The empirical analysis proceeds as follows. We present in column [1] of Table 1 the estimations' outcomes of model (1) over the full sample. Columns [2] and [3] of the same Table report the results of the estimation of model (1) over the sub-samples of LDCs and NonLDCs, respectively. Column [1] of Table 2 reports the results of the estimation of another specification of model (1) that allows testing whether the effect of export product concentration on fiscal space volatility translates through the economic growth rate channel. This specification of model (1) contains the economic growth volatility variable, denoted

[2] The category of LDCs has been defined by the United Nations, which consider countries in this category as the poorest and most vulnerable to external and environmental shocks. For further information on this category, see online at: http://unohrlls.org/about-ldcs/

[3] It is worth noting that the standard Hausman test of fixed versus random effects suggests that the random effects estimator is preferable to the fixed effects approach. However, we use the FGLS estimator allows to obtain much more consistent estimates and reliable standard errors than the random effects estimator.

"GRVOL" as well as its interaction with the variable "ECI". The economic growth volatility has been calculated as the standard deviation of the growth rate of real GDP (constant 2010 US$) over 5-year rolling windows (that is, from t-4, …., t-1, t). It is important to note that to mitigate the endogeneity (in particular the reverse causality problem) associated with the economic growth volatility variable, the latter has been introduced in model (1) at t-4 (like for many other regressors). In column [2] of Table 2, we present the outcomes of the estimation of model (1) that allows investigating the existence of a non-linear relationship between export product concentration and fiscal space volatility.

3. Empirical results

We note across Tables 1 and 2 that the coefficient of the fiscal space volatility variable is positive and significant at the 1% level. This suggests that fiscal space volatility exhibits a state dependence path. Results in the three columns of Table 1 suggest that the coefficients of the variable "ECI" are all positive and significant at the 1% level. Thus, over the full sample, as well as over LDCs and NonLDCs, export product concentration induces a higher volatility of fiscal space. Over the full sample, a 1 percentage increase in the index of export product concentration is associated with a 0.22 percentage increase in the indicator of fiscal space volatility. The magnitude of the positive effect of export product concentration on fiscal space volatility is higher in NonLDCs than in LDCs. Specially, a 1 percentage increase in the index of export product concentration leads to a 0.115 percentage increase in fiscal space volatility in LDCs, and 0.264 percentage rise in fiscal space volatility in NonLDCs. Thus, despite having a higher degree of export product concentration notably on primary commodities than NonLDCs, LDCs enjoy a lower fiscal space volatility effect of export product concentration than NonLDCs. This outcome may be explained by the debt relief and higher development aid in form of grants that accrue to LDCs (compared to NonLDCs) when they experience greater size of external and environmental shocks.

Results concerning control variables in the three columns of Table 1 show similar signs of relevant coefficients, although the latter do not exhibit the same magnitude, and similar level of statistical significance across the three columns of the Table. Over the full sample, and at the 5% level, fiscal space volatility is positively driven by higher inflation volatility and greater terms of trade instability. There is no significant effect of the real per capita income on fiscal space volatility at the 5% level. Trade openness does not influence fiscal space volatility at the conventional levels. At the 5% level, we obtain for LDCs that the coefficients of control variables are not significant (the terms of trade instability influences positively fiscal space volatility only at the 10% level). These signify that fiscal space volatility is essentially driven (positively) by export product concentration in LDCs. Results for NonLDCs show similar patterns to those obtained over the full sample. In particular, higher inflation volatility and greater terms of trade instability exerts a positive and significant effect (at the 1% level) on fiscal space volatility in NonLDCs. Additionally, the coefficient of the real per capita income variable is significant at the 5% level, thereby suggesting that advanced countries among NonLDCs tend to experience a greater magnitude of fiscal space volatility than relatively less developed economies among NonLDCs. Here also, trade openness does not exert a significant effect on fiscal space volatility.

Turning to results in Table 2, we find in column [1] that the coefficients of the variables "$[Log(ECI)_{t-4}]$" and "$[Log(ECI)_{t-4}]$*$[Log(GRVOL)_{t-4}]$" are both positive and significant at the 5% level. These suggest that export product concentration induces a greater volatility of fiscal space, and the magnitude of this positive effect rises as countries experience a higher economic growth rate volatility. These clearly confirm our expectation that the effect of export product

concentration on fiscal space volatility translates through the economic growth volatility channel.

The outcomes displayed in column [2] of Table 2 show a positive and significant coefficient (at the 5% level) of the variable $[Log(ECI)_{t-4}]^2$, while the coefficient of $[Log(ECI)_{t-4}]$ is negative, but significant only at the 10% level. Therefore, we can conclude that at the 5% level, there exists a non-linear relationship between export product concentration and fiscal space volatility, whereby an increase in countries' level of export product concentration consistently induces greater fiscal space volatility: a further rise in countries' degree of export product concentration amplifies the positive fiscal space volatility effect of export product concentration.

4. Conclusion

This paper has analysed the effect of export product concentration on fiscal space volatility, including through the economic growth volatility channel. The analysis has been performed using a sample of 117 developing countries over the period 1980-2014. Results have shown for the full sample as well as for sub-samples LDCs and NonLDCs, that export product concentration has exerted a positive effect on fiscal space volatility. However, the magnitude of this positive effect is higher in NonLDCs than in LDCs. Interestingly, the findings also suggest that export product concentration induces greater fiscal space volatility in countries that experience higher economic volatility. This, therefore, confirms our hypothesis that the effect of export product concentration on fiscal space volatility translates through the economic growth volatility channel. In other words, greater export product diversification dampens the positive fiscal space volatility effect of economic growth volatility. Finally, there exists a non-linear relationship between export product concentration and fiscal space volatility, as a higher degree of export product concentration is consistently positively associated with fiscal space volatility, and its additional rise further amplifies fiscal space volatility.

Overall, this analysis has shown that export product diversification does not only promote economic growth, reduce output volatility or firms' export income instability (as found by many studies), but it also helps countries to mitigate the volatility of fiscal space, notably when countries experience a rise in economic growth volatility.

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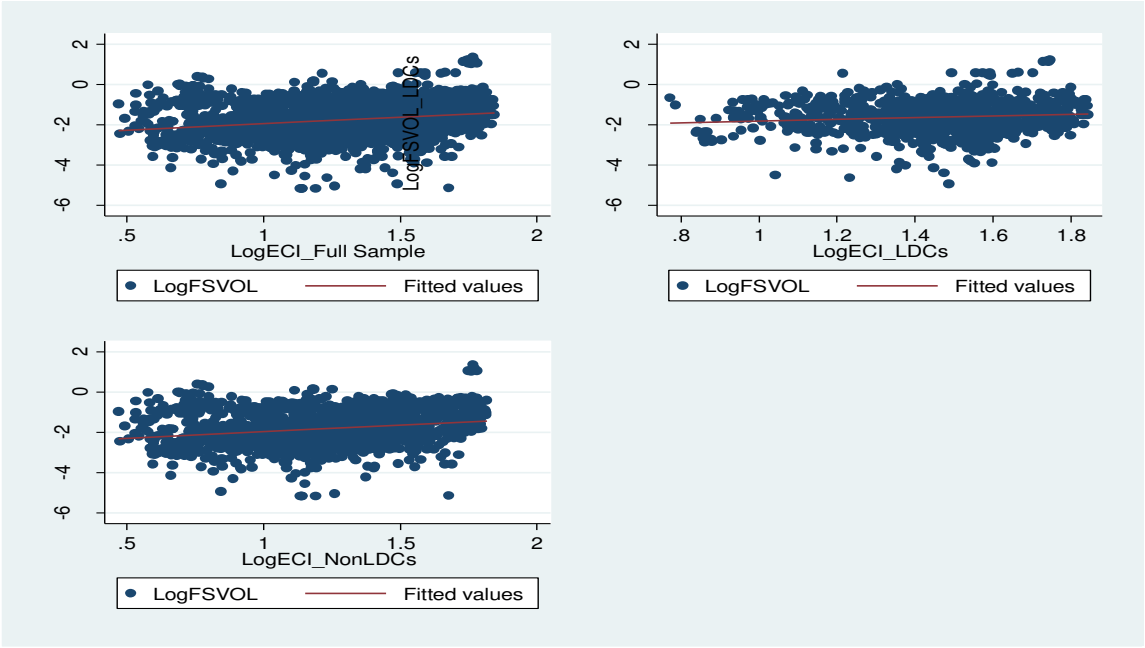
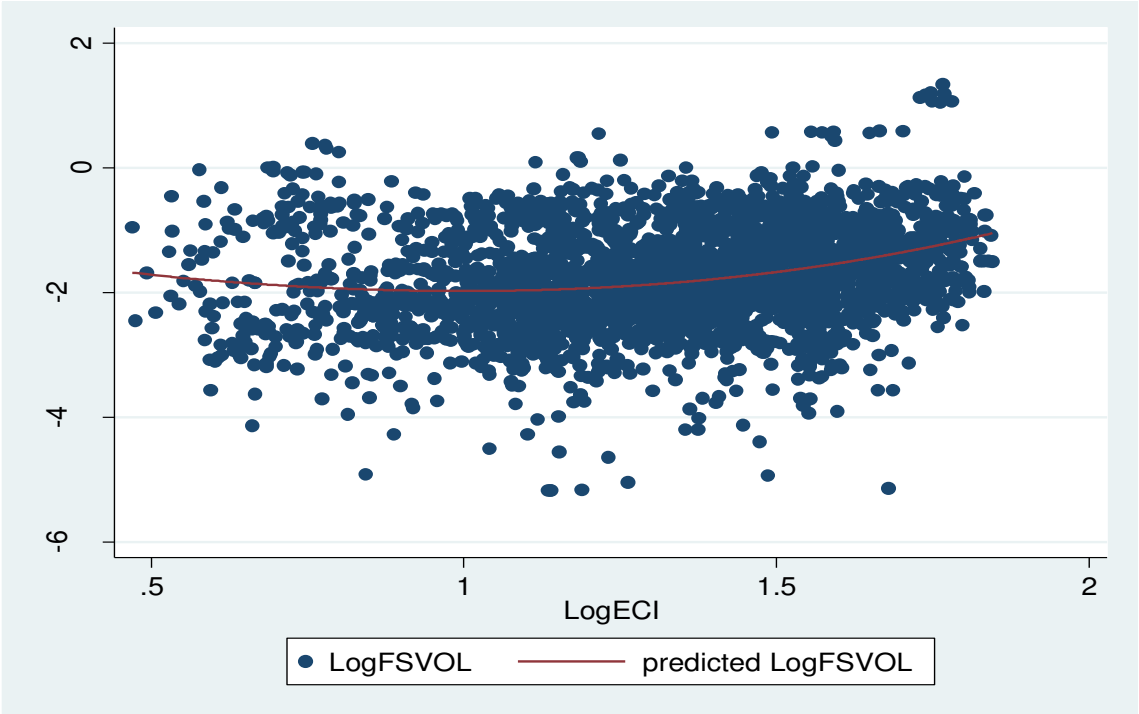
FIGURES

Figure 1: Scatter plot between export product concentration and fiscal space volatility (Linear relationship)



Source: Author

Figure 2: Scatter plot between export product concentration and fiscal space volatility (Non-linear relationship)



Source: Author

TABLES and APPENDICES

Table 1: Impact of export product concentration on fiscal space volatility
Estimator: FGLS with panel-specific AR1 autocorrelation structure

	Full sample	**LDCs**	**NonLDCs**
Variables	**Log(FSVOL)**	**Log(FSVOL)**	**Log(FSVOL)**
	(1)	**(2)**	**(3)**
$Log(FSVOL)_{t-1}$	0.746***	0.783***	0.713***
	(0.0132)	(0.0203)	(0.0176)
$Log(ECI)_{t-4}$	0.216***	0.115**	0.264***
	(0.0334)	(0.0554)	(0.0474)
$Log(INFLVOL)_{t-4}$	0.0117**	-0.00161	0.0209***
	(0.00575)	(0.00966)	(0.00795)
Log(TERMSVOL)	0.0442***	0.0264*	0.0556***
	(0.0105)	(0.0140)	(0.0164)
$Log(OPEN)_{t-4}$	-0.0129	0.00635	-0.0142
	(0.0160)	(0.0226)	(0.0245)
$Log(GDPC)_{t-4}$	0.0158*	0.0104	0.0357**
	(0.00877)	(0.0240)	(0.0156)
Constant	-0.751***	-0.579***	-1.019***
	(0.107)	(0.151)	(0.193)
Observations - Countries	2,434 - 115	881 - 39	1,553 - 76
Pseudo R-squared	0.7997	0.8146	0.7892

*Note: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust Standard Errors are in parenthesis. The Pseudo R^2 has been calculated as the correlation coefficient between the dependent variable and its predicted values.*

Table 2: Impact of export product concentration on fiscal space volatility for varying levels of economic volatility/Non-linear impact of export product concentration on fiscal space volatility
Estimator: FGLS with panel-specific AR1 autocorrelation structure

Variables	Log(FSVOL)	Log(FSVOL)
	(1)	(2)
$Log(FSVOL)_{t-1}$	0.747***	0.741***
	(0.0134)	(0.0133)
$Log(ECI)_{t-4}$	0.107**	-0.383*
	(0.0534)	(0.202)
$[Log(ECI)_{t-4}]*[Log(GRVOL)_{t-4}]$	0.0919**	
	(0.0358)	
$[Log(ECI)_{t-4}]^2$		0.243***
		(0.0791)
$Log(GRVOL)_{t-4}$	-0.117**	
	(0.0497)	
$Log(INFLVOL)_{t-4}$	0.0141**	0.00984*
	(0.00649)	(0.00566)
Log(TERMSVOL)	0.0412***	0.0440***
	(0.0109)	(0.0105)
$Log(OPEN)_{t-4}$	-0.0135	-0.00844
	(0.0174)	(0.0149)
$Log(GDPC)_{t-4}$	0.0114	0.0149*
	(0.00932)	(0.00857)
Constant	-0.587***	-0.420***
	(0.122)	(0.162)
Observations - Countries	2,426 - 115	2,434 - 115
Pseudo R-squared	0.8007	0.8004

***Note**: *p-value<0.1; **p-value<0.05; ***p-value<0.01. Robust Standard Errors are in parenthesis. The Pseudo R^2 has been calculated as the correlation coefficient between the dependent variable and its predicted values.*

Appendix 1: Definition and Source of variables

Variables	Definition	Sources
FSVOL	This is the measure of the volatility of fiscal space. Fiscal space is measured by the ratio of public debt to public revenue. The volatility of fiscal space has been computed as the standard deviation of the growth rate of fiscal space over 5-year rolling windows (that is, from t-4 to t).	Author's calculation based on data on Total Government Public Debt, compiled by the Author using the International Monetary Fund (IMF) Public Finance Databases. For the public revenue data, ICTD (International Centre for Tax and Development) revenue database has been used, although data collected from the IMF database has been used to complete some missing data, where necessary.
ECI	This is the first variable capturing export product upgrading. This is the index of overall export product concentration. It is calculated using the Theil Index and following the definitions and methods used in Cadot et al. (2011). The overall Theil index of export product concentration is the sum of the intensive and extensive components of the "ECI" variable. Indeed, export product concentration can occur over either product narrowly defined or trading partners. It can be broken down into the extensive and intensive margins of diversification. Extensive export product diversification reflects an increase in the number of export products or trading partners, while intensive export product diversification considers the shares of export volumes across active products or trading partners. The computation of the index has been based on a classification of products into "Traditional", "New", or "Non-Traded" products categories. A rise in the values of "ECI" index signifies an increase in the degree of overall export product concentration, while lower values of this index indicates a rise in the degree of overall export product concentration (that is, greater export product diversification).	Details on the calculation of this Index could be found online: International Monetary Fund's Diversification Toolkit – See data online at: https://data.imf.org/?sk=3567E911-4282-4427-98F9-2B8A6F83C3B6
GRVOL	This is the measure of the volatility of economic growth rate. It has been calculated as the standard deviation of the growth rate of real GDP (constant 2010 US$) over 5-year rolling windows (that is, over t-4, …., t-1, t).	Author's calculation based on economic growth rate data extracted from the World Development Indicators (WDI) of the World Bank.

INFLVOL	Inflation volatility calculated as the standard deviation of inflation rate over 5-year rolling windows (that is, over t-4, …., t-1, t).	Author's calculation based on inflation based on CPI data extracted from the WDI
OPEN	This is the sum of exports and imports of goods and services, as a share (%) of GDP.	WDI
TERMSVOL	This is the measure of terms of trade instability. Terms of trade represent the ratio of the export price index to import price index. Terms of trade volatility has been calculated as the standard deviation of the growth rate of terms of trade over 5-year rolling windows (that is, over t-4, …., t-1, t).	Authors' calculation based on terms of trade data extracted from WDI.
GDPC	GDP per capita (constant 2010 US$)	WDI