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Fiscal policy pro-cyclicality in Sub-Saharan African countries: The role of export concentration

Rasmane Ouedraogo [a,*], Windemanegda Sandrine Sourouema [b]

[a] *International Monetary Fund, 700 19th St NW, Washington, DC 20431, Washington DC, USA*
[b] *University Ouaga II, Ouagadougou, Burkina Faso*

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Sub-Saharan Africa's exports remain dominated by primary commodities, and the need to diversify their production and export base appears as a matter of urgency. This paper investigates the impact of exports concentration on fiscal pro-cyclicality in sub-Saharan Africa. The concentration of exports limits the sources of revenues for governments and restrains the fiscal room for maneuver. Using a sample of 40 countries over the period 1995–2015, we find that export concentration increases the degree of fiscal policy pro-cyclicality, and this result is driven by the behavior of public investment. Our findings highlight the importance of diversifying exports in order to widen the range of revenue sources for governments and pave the way of countercyclical public investment capable of generating sustainable growth.

1. Introduction

Sub-Saharan African countries have historically depended on a narrow range of primary products for the bulk of their export earnings. The fluctuations in commodity prices is a powerful reminder for countries, especially those rich in resources, to diversify their export bases (Kazandjian et al., 2016). The drop in oil and other commodity prices in recent years puts substantial pressure on many resource intensive countries, with economic growth and government expenditures declining in many of them, and significant macroeconomic adjustment needs arising since export and fiscal revenues have declined markedly (IMF, 2016). As a result, reforms to stimulate product and export diversification have gained renewed importance on policy makers' agendas, in particular in sub-Saharan Africa. It is well-documented that changes in export earnings translate into shifts in fiscal performance in less developed countries (Alesina et al., 2008). Indeed, the concentration of exports implies a narrow source of export earnings, thereby limited room for fiscal policy.

Unfortunately, solid empirical work on the impact of exports concentration on fiscal policy pro-cyclicality is non-existent. A general observation that can be made is that in advanced countries exports are diversified, while in developing countries exports are concentrated. The revenues from exports are critical for several countries to the point that fiscal policy in some sub-Saharan African countries depends on the performance in exports. Sub-Saharan African countries are lagging behind in terms of integration in the global trade system and they are mostly price takers. In addition, sub-Saharan African countries are characterized by their strong exports concentration and a large part of their exports is composed by raw agricultural and mining products. In this context, this paper attempts to answer whether or not the narrow base of exports causes the pro-cyclicality of fiscal policy in sub-Saharan Africa.

The consensus in the literature is that in developing countries fiscal policy is highly procyclical, whereas in developed countries it is less so, or is countercyclical (Kaminsky et al., 2004; Ilzetski, and Végh, 2008; Jha et al., 2014). The key explanation for pro-cyclical fiscal policy offered by the literature is based on political economy factors. Developed countries are equipped with strong institutions and political systems, whereas developing countries rarely have strong, healthy and stable political institutions (Gavin and Perotti, 1997; Lane, 2003; Kaminsky et al., 2004; Talvi and Vegh, 2005). Alesina et al. (2008) found that the pro-cyclicality of fiscal policy is more pronounced in corrupt democracies where voters can hold the governments accountable. Another commonly accepted explanation for fiscal policy pro-cyclicality is that developing countries usually face borrowing constraints in the international financial markets (Aizenman et al., 2000; Gavin and Perotti, 1997). During unfavorable times, developing countries may face tighter credit constraints which

* Corresponding author.
E-mail addresses: rouedraogo@imf.org (R. Ouedraogo), sandrinewsourouema@yahoo.fr (W.S. Sourouema).

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may necessitate cuts in their expenditures leading to pro-cyclicality.

The literature on the determinants of fiscal pro-cyclicality in sub-Saharan Africa is still limited. Sub-Saharan African countries have in general run pro-cyclical fiscal policies since 2000 (Konuki and Villafuerte, 2016). This is not surprising in light of the fact that the majority of them are low-income and/or resource-dependent economies. Previous literature revealed that the pro-cyclicality of fiscal policy in sub-Saharan Africa is caused by the fluctuations in foreign aid (Thornton, 2008), poor quality of governance (Diallo, 2009; Mpatswe et al., 2012) and terms of trade shocks (Mpatswe et al., 2012). However, Lledo et al. (2009) found that changes in political institutions have no impact on the behavior of the fiscal policy.

We improve upon the existing literature by examining the impact of exports concentration on fiscal policy behavior in sub-Saharan Africa. Our contribution to the literature relies on the exploration of a novel potential factor of fiscal procyclicality in sub-Saharan Africa. The main feature characterizing sub-Saharan African countries is their reliance on few raw commodities and the lack of exports diversification. The narrow base of exports implies a narrow base of sources of revenues and limited room for fiscal policy. For example, in oil exporting countries where exports are highly concentrated (Algeria, Angola and Nigeria), the recent collapse in export earnings has led to economic recession and a substantial reduction in government spending, raising the prospects of fiscal pro-cyclicality. Furthermore, it is well-documented that commodity products are often subject to very volatile market prices so that countries that are dependent on these commodities may suffer from export instability (Kang and Ratti, 2013; Medina and Soto, 2016; Snudden, 2016). This could discourage necessary investments in the economy by risk-averse firms, increase macroeconomic uncertainty, and be detrimental to longer-term economic growth (Hesse, 2008). Medina and Soto (2014) argued that in many African economies taxes on commodities production and exports are a sizable share of public revenues. When prices of exported commodities increase, the public budget constraint becomes less stringent, providing more space to expand public expenditure. However, when prices are declining, governments may need to adjust their budgets, raising the prospect of fiscal pro-cyclicality. Spatafora and Samake (2012) concluded that the dependence on raw materials may complicate the management of fiscal and debt policy, by increasing budget uncertainty, encouraging a pro-cyclical fiscal policy and threatening debt sustainability. It is well-documented in the literature that procyclical fiscal behavior reinforces output fluctuations, exacerbating booms and aggravating busts. The optimality of fiscal policy pro-cyclicality, particularly public investment with commodity prices, depends on several factors, including the state of the economy, the access to markets, the presence of sovereign wealth funds, and many other factors. In this paper, we also investigate whether the adoption of sovereign wealth fund could help dampen the impact of exports concentration on fiscal policy procyclicality.

Using a sample of 40 sub-Saharan African countries over the period 1995–2015, this paper shows that export concentration increases the degree of fiscal policy pro-cyclicality, and this result is driven by the behavior of public investment. In fact, the results highlight that the concentration of exports results in pro-cyclical public investment, whereas it does not have a significant impact on government consumption behavior. This result remains solid upon controlling for terms of trade shocks. Our findings are robust to the correction of the bias related to the estimated cyclicality coefficients of government spending, alternative measure of the business cycle, different econometric method, and alternative fiscal variables including government revenue, primary spending, total fiscal balance, and primary fiscal balance. Moreover, we find that the impact of exports concentration on fiscal policy cyclicality is dampened in countries with sovereign wealth funds. The paper highlights the importance of diversifying exports in order to pave the way of countercyclical fiscal policy capable of generating sustainable growth. The diversification of exports would help African countries to get access to diverse range of revenue sources.

The rest of the paper is organized as follows. Section 2 reviews briefly the literature on the determinants of the pro-cyclicality of fiscal policy in sub-Saharan Africa. Section 3 describes our data sources and the empirical methodology. Section 4 presents some descriptive statistics and the results from our empirical analysis. Section 5 undertakes some robustness exercises and Section 6 concludes.

2. Brief literature review

The literature on the determinants of the pro-cyclicality of fiscal policy is vast and not clear cut. Previous studies on Sub-Saharan African (SSA) countries established different results depending on the time horizon, the methodology and the sample. Indeed, by using OLS for 37 low-income African countries over the period 1960–2004, Thornton (2008) suggested that government consumption is highly pro-cyclical, with consumption responding more than proportionately to fluctuations in output in many cases. Furthermore, he showed that government consumption is more pro-cyclical in African countries that are more reliant on foreign aid inflows and less corrupted, and less pro-cyclical in countries with unequal income distribution and more democratic.

Diallo (2009) focused on the role of democratization to explain the difference in cross-country fiscal policy pro-cyclicality. After illustrating some stylized facts on Botswana and Nigeria, he employed fiscal Taylor rule and system GMM to explore the implications of political changes on the cyclical properties of fiscal policy. Diallo (2009) highlighted that democratic institutions are associated to countercyclical fiscal policies and restraints on the executive branch are found to be the key factor that explains why democracies can better smooth business cycles than autocracies. Diallo (2009) used OLS over the period 1989–2002 and 47 sub-Saharan African countries.

Contrary to Diallo (2009), Lledo et al. (2009) investigated the cyclical patterns of government expenditures in sub-Saharan Africa since 1970 and showed that changes in political institutions have no impact on the behavior of the fiscal policy. Furthermore, they found that the pro-cyclicality of fiscal policy is obvious in SSA countries, but it has declined in recent years. Lledo et al. (2009) used annual data with an unbalanced panel covering 39 years (1970–2008) and 174 countries (including 44 SSA countries), and employed dynamic GMM techniques.

Using system and difference GMM techniques on a panel of 44 SSA countries over the period of 1980–2008, Mpatswe et al. (2012) found that fiscal policies in SSA are strongly pro-cyclical. Furthermore, they highlighted that government consumption is less pro-cyclical than public investment, meaning that investment is extremely responsive to economic cycles. They further investigated fiscal policy behavior in CEMAC[1] countries by calculating time-varying cyclical coefficients and showed that terms of trade shocks lead to pro-cyclical fiscal policies in this region.

Konuki and Villafuerte (2016) found that more financial depth significantly helps reduce the degree of fiscal policy procyclicality among sub-Saharan African countries. In addition, ample foreign exchange holdings significantly help reduce the degree of fiscal policy procyclicality. Contrary to the general literature with advanced and emerging markets, Konuki and Villafuerte (2016) highlighted that the difference in institutional quality would not play a significant role in explaining the difference in the cyclical behavior of fiscal policy among sub-Saharan African countries. Konuki and Villafuerte (2016) employed dynamic system GMM method over the period 2000–2014 and covering 43 sub-Saharan African countries.

This paper employs the dynamic system GMM method as in Diallo (2009), Lledo et al. (2009), Mpatswe et al. (2012), and Konuki and Villafuerte (2016). The GMM method is used to tackle the potential issue of endogeneity. We also control for the quality of governance, net capital inflows, and terms of trade shocks which have been showed to explain fiscal pro-cyclicality in sub-Saharan African countries.

[1] Central African Economic and Monetary Community.

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