The Devil is in the Details: On the Robust Determinants of Development Aid in G5 Sahel Countries

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Abstract

This paper introduces model uncertainty into the empirical study on the determinants of development aid at the regional level. This is done by adopting a panel Bayesian model averaging approach applied to the data of G5 Sahel countries, spanning the period 1980–2018. Our results suggest that, among the regressors considered, those reflecting terrorist attacks, trade stakes including military expenditure, socio-economic prospects and institutional conditions tend to receive high posterior inclusion probabilities. The study explores the relationship between these regressors and foreign aid by employing the fully

modified ordinary least squares (FMOLS), the continuously updated fully modified (CUP-FM), the dynamic ordinary least squares (DOLS) long-run estimators, and the Dumitrescu and Hurlin (2012) panel causality test. The results highlight three concerns that may justify aid flows towards G5 Sahel countries: (a) peace and security considerations, (b) the economic interest of donors, and (c) recipient economic needs. The paper recommends that Sahel countries should strengthen international cooperation for security and peace, in compliance with goal 16 of the 2030 Agenda for Sustainable Development of the United Nations (UN) and goal 13 of the African Union's (AU) Agenda 2063.

Introduction

For several decades, developing countries have benefited from important flows of international aid with the objective to respond to a conventional dichotomous view: (i) the promotion of economic growth, and (ii) the reduction of poverty and social exclusion (Bayale 2020; Sachs, 2016; Deaton, 2013; Burnside and Dollar, 2000). Nowadays, these international aid flows are consistent with multiple policy considerations that are often dictated by the political, institutional, and socioeconomic environment (Kaufmann et al., 2019; Findley, 2018; Brown, 2005). In the economic literature, it appears that the theoretical determinants of development aid allocation are truly complex and difficult to clarify. These range from donor generosity to selfish interests (Bayale, 2020; Bandyopadhyay and Vermann, 2013; Bandyopadhyay and Wall, 2007; Berthélemy, 2006; Neumayer, 2003). Some empirical studies find that the volume of foreign aid or international aid to a recipient country depends on the intensity with which it supports the interests of its donors, perhaps in international politics or the strengthening of economic interests through trade (Bayale, 2020; Dollar and Levin, 2006; Alesina and Dollar, 2000). Other empirical findings argue that, according to the logic of need, international aid towards developing countries is aimed at improving the standard of living of residents in these countries (Gamso and Yuldashev, 2018; Cardwell and Ghazalian, 2018; Page and Shimeles, 2015; Bandyopadhyay and Vermann, 2013; Collier and Dollar, 2002).

Nevertheless, with the reshaping of foreign aid over the last decade and considering some strategic and geopolitical considerations, other determinants have emerged in the literature. These are, among other factors the: (i) increase in migration flows, and (ii) preservation of global public services or goods (Bayale, 2020). Some studies highlight the fact that an increase in the emigration rate is likely to increase aid to migrants' countries of origin (Dreher et al., 2019; Clemens and Postel, 2018; Sachs, 2016). Therefore, increasing rural development aid, for example, could reduce international migration (Gamso and Yuldashev, 2018). Other studies show that international aid is moving towards the preservation of global public services or goods (Sullivan et al., 2020; Bayale, 2020; Marniesse, 2005; Severino, 2001). These global

public services or goods are shared by both developed and developing countries and include peace and security, a stable environment, health, and education. As such, developed countries cannot expect tangible results in these areas without collaborating with developing countries.

Regarding stability, peace, and security in particular, it should be noted that the G5 Sahel region is a region facing major challenges, the most important of which are terrorism, violence, and transnational organized crime. Additionally, there is the resurgence of armed rebellions and inter-communal conflicts. These two threats are intertwined and create a context of recurring instability in this specific zone (Sullivan et al., 2020; Bayale, 2020; Pannier and Schmitt, 2019).

Data from the Global Terrorism Database (GTD) indicates that there were six international and domestic terrorist attacks in the G5 Sahel zone in 2010. This number increased to 83 in 2015, and 218 in 2018 (GTD, 2020). This situation requires new institutional responses, not only from the countries concerned, but also from the international community. The involvement of the concerned states to stem the phenomenon necessitates the definition of a solid institutional framework with the objective to provide a regional and coordinated response to the security and violence challenges, as well as threats from armed terrorism and violent groups operating in the region. It has also been exemplified by a significant increase in defense and security forces, and military spending in these countries (Laville, 2016). The support of the international community is manifested through international aid flows. For example, according to the World Bank database, foreign aid flows to G5 Sahel countries have experienced unprecedented growth in recent decades. From US$289.85 million in 2000, it rose to US$414.22 million in 2005 and then to US$748.24 million in 2010. In 2018, total foreign aid flows into the Sahel was US$1,322.47 million (WDI, 2020). Average aid flows to sub-Saharan Africa was US$205.273 million in 2000, US$478.694 million in 2005, US$643.871 million in 2010 and US$698.385 million in 2017 (OECD, 2020). Hence, international aid to the G5 Sahel region has risen almost five-fold in less than twenty years and remained above the average for sub-Saharan African countries.

International aid seems to have been a direct, important, and exceptional source of income for these countries, especially in recent years. Given these stylized facts on the one hand, and the current security and peace situation in the G5 Sahel region on the other hand, there are legitimate and relevant concerns that necessitates a holistic look at the main drivers of foreign aid flows towards G5 Sahel countries.

The motivation for this study is to make a significant contribution to the literature in two ways. First, to the best of our knowledge, an empirical analysis on the subject seems to be non-existent in the G5 region that is facing unprecedented security, violence, socio-economic and environmental challenges. Most studies that have been consulted have focused on developing countries. This study seeks to fill this gap in

the existing empirical knowledge by examining the effects and relationships between several socio-economic and institutional characteristics of countries and foreign aid in the G5 Sahel region over the period 1980 to 2018. Second, it contributes to a better and more precise understanding of factors shaping the increase of international in this specific region, by offering novel quantitative evidence. Previous studies have used haphazard approaches in analyzing the determinants of foreign aid, however, the Bayesian model averaging (BMA) approach improves on the earlier approaches by sequentially selecting key determinants based on posterior inclusion probabilities. This is a key methodological contribution of the study. Therefore, findings from the study could enable policymakers in the region and donors to make more informed decisions related to the conduct of international cooperation.

By applying a panel BMA approach, the key determinants reflecting terrorist attacks, trade stakes, military expenditure, socioeconomic prospects, and institutional conditions tend to receive high posterior inclusion probabilities. By exploring the relationship between these regressors and international aid using the fully modified ordinary least squares (FMOLS), the continuously updated fully modified (CUP-FM) and the dynamic ordinary least squares (DOLS) long-run estimators. The BMA results approach is confirmed and valid. Finally, the Dumitrescu and Hurlin (2012) panel causality test, results of the said approaches highlight three concerns that may justify aid flows towards G5 Sahel countries: (a) peace and security considerations, (b) interest of donors (self-interest), and (c) recipient economic needs. Appropriate policy recommendations are based on these results.

Data sources

Our study consists of the G5 Sahel countries that are Burkina Faso, Chad, Mali, Niger, and Mauritania, covering the period 1980–2018, for which data was available. Based on some studies (Bayale, 2020; Furuoka, 2017; Bandyopadhyay and Vermann, 2013; Bandyopadhyay and Wall, 2007; Berthélemy, 2006) that identified broad theoretical and empirical data linking foreign aid with socio-economic prospects, trade stakes and institutional conditions, a set of 22 potential regressors of international aid is considered from several datasets.

Data from the World Development Indicators (WDI) database of the World Bank, the Institute for Employment Research (IAB) brain-drain data, the Stockholm International Peace Research Institute (SIPRI) and the International Country Risk Guide (ICRG) datasets, the Global Terrorism Database (GTD) and the United States Security and Defense Assistance database, as well as the United Nations (UN) and the African Union (AU) websites are used. We extracted data on foreign aid (net Official Development Assistance, ODA) from the WDI database. It also contains data on socioeconomic indicators such as real gross domestic product (GDP) per capita, natural resources

rents and oil rents, GDP growth rate, population, unemployment (labour force), infant mortality rate and fiscal balance, inflation (CPI index), public debt and trade variables. These variables are extracted based on the standard literature (Bayale, 2020; Dreher et al., 2019; Bandyopadhyay and Vermann, 2013; Berthélemy, 2006).

Our dependent variable is net ODA received. It corresponds to disbursements of loans made on concessional terms and grants by official agencies of the members of the Development Assistance Committee (DAC), by multilateral institutions, and by non-DAC countries to promote economic development and welfare in countries and territories in the DAC list of ODA recipients, measured in United States Dollar (US$) for each G5 Sahel country in the study period (WDI, 2020).

Other datasets used are the SIPRI, GTD, IAB brain-drain data and US Security and Defense Assistance database. Based on the literature (Sullivan et al., 2020; Martinez-Zarzoso, 2019; Lanati and Thiele, 2018; Bandyopadhyay and Wall, 2007), we extracted important data series from these databases, such as military expenditure and arms imports, terrorist attacks, emigration rate and US security assistance, respectively, and from the freedom index from Freedom House (FH). Data on regional security initiatives is from desk research on the UN and AU websites.

A last group of variables reflecting institutional and political aspects includes internal conflict, government stability, socioeconomic conditions, and corruption indexes from the ICRG dataset. According to Bayale (2020), Sullivan et al. (2020), Bandyopadhyay and Wall (2007) and Berthélemy (2006), instructional and/or political factors may also generate different incentives to borrow or to benefit from foreign aid.

Conclusion and Policy Implication

In recent years, the G5 Sahel countries have experienced several security challenges that threaten their stability, peace, and security. At the same time, several developed countries and multilateral institutions provide important official development assistance flows to these countries, with a variety of reasons to justify these foreign aid flows. In this study, we investigated the determinants of international aid in G5 Sahel countries for the period 1980–2018, with annual frequency. To do this, we first applied a Bayesian Model Averaging (BMA) approach within a panel data regression framework to identify the most important factors or variables that influence the foreign aid flows, based on the posterior inclusion probabilities (PIPs), the mean and standard deviation coefficients for each variable of the initial model. Second, we checked dependencies across countries and applied a second-generation panel unit root test that controls for cross-sectional dependence. Due to the existence of non-stationary variables, the cointegration relationship is approved by controlling for cross-sectional dependence in the study. Based on the confirmation of a

cointegration relationship, we performed the fully modified ordinary least squares (FMOLS), continuously updated fully modified (CUP-FM) and the dynamic ordinary least squares (DOLS) estimators to produce long-run cointegration parameters for our estimations. Finally, we detected causality direction for these long-run relationships using Dumitrescu and Hurlin's (2012) panel causality test.

The empirical findings strongly support the fact that, among the set of 22 regressors considered, those reflecting terrorist attacks, trade stakes including military expenditure, socio-economic prospects and institutional conditions tend to have high posterior inclusion probabilities. Specifically, terrorist attacks, trade openness, military expenditure, emigration rate, infant mortality and natural resources rents especially seem to attract foreign aid, whereas real GDP per capita and growth, inflation, internal conflict and government stability indexes and population are significantly negative and seem to curb international aid. Therefore, the results highlight three concerns that may determine aid flows towards G5 Sahel countries: (a) peace and security considerations, (b) economic interest of donors, and (c) recipient economic needs.

Based on these important results, some appropriate economic policy implications are offered: (i) although it is difficult to strike a balance between the interests of donors and beneficiaries, it is important that the motivation to provide aid should be in harmony with recipient need considerations, (ii) the establishment of an emergency and specific fund for non-radicalization awareness in Africa's fragile and conflict-affected countries is recommended; this fund will make it possible to set up monitoring and awareness committees in order to improve communication around the issue of terrorism among the population, and (iii) greater involvement of the international community in the development and security of the Sahel in accordance with the 13th goal of the Agenda 2063 of the African Union (AU) and the 16th goal of the 2030 Agenda for Sustainable Development (SDGs), adopted by all United Nations (UN) Member States in 2015.

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Mission

To strengthen local capacity for conducting independent,
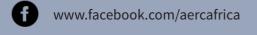rigorous inquiry into the problems facing the management of economies in sub-Saharan Africa.

The mission rests on two basic premises: that development is more likely to occur where there
is sustained sound management of the economy, and that such management is more likely to
happen where there is an active, well-informed group of locally based professional economists
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