Impact of foreign financial flows on poverty in middle-income countries and the BRICS

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Abstract

As globalization becomes more grounded in recent times, we explore whether the poor benefit from increased financial flows. There has been debate as to how much the world benefits from the economic growth resulting from greater openness to foreign trade and foreign investment.

We employ a dynamic panel data estimation technique (the System generalised method of moments) to determine the relative impact of foreign financial flows on poverty reduction (using three different measures of poverty) in middle-income countries including the BRICS countries from 1991 to 2015. We observed that both foreign aid (ODA) and portfolio equity showed a positive but not statistically significant relationship with poverty while both foreign direct investment and remittances showed a negative relationship to poverty with only the latter being significant in middle-income countries. However, when a dummy for the BRICS countries was introduced, we noticed both foreign direct investment and remittances indicated having a reducing effect on poverty and statistically significant.

Keywords: Foreign financial flows; Poverty; Inequality; Middle-income countries; BRICS.

JEL Classification: F65, O19

1. Introduction

The debate on the effects of foreign financial flows on economic growth persists to date, with some claiming that foreign capital flows have a positive effect on economic growth in the literature (King and Levine, 1993a; Bailliu, 2000; Edison, Levine, Ricci and Sløk, 2002; Aizenman et al., 2013). There is, however, evidence from research that they have negative impacts on the economic growth of the receiving country (Murshid and Mody, 2011). To date, there is no consensus as to the effect of capital flows on growth as it has been proven that different capital flows contribute differently to growth depending on the type of capital flow and kind of economy (Aizenman, Jinjarak, and Park, 2013: 373-374; Adeola and Aziakpono, 2017).

There is much research on the effect of foreign capital flows on economic growth. While the importance of foreign capital flows on an economy, in general, is recognised, the impact on the citizens is of great concern as the world moves towards inclusive growth. As much as foreign capital flows lead to increases in economic growth, it is imperative to determine if this economic growth leads to poverty reduction and closing the inequality gap in developing countries as developing countries attract much of these capital flows and most of them are plagued with poverty and higher inequality ratios.

In recent years, greater concerns about globalization question as to whether economic growth is all-inclusive. According to Ravallion (2001), there has been debate as to how much the world benefits from the economic growth resulting from greater openness to foreign trade and foreign investment. There are two main schools of thought with irreconcilable views on this issue as identified by Ravallion:

> "Growth does help the poor: in fact, it raises their incomes by about as much it raises the incomes of everybody else…...In short, globalization raises incomes, and the poor participate fully (The Economist, May 27, 2000, p.94)"
>
> "There is plenty of evidence that current patterns of growth and globalization are widening income disparities and hence acting as a brake on poverty reduction (Justin Forsyth, Oxfam Policy Director, Letter to the Economist, June 20, 2000, p.6)"

One of the eight aims of the Millennium Development Goals (MDGs) of 2015 was to end extreme poverty. The post-2015 Sustainable Development Goals (SDGs) adopted by the United Nations also aim to end poverty and hunger as well as ensure equality for all among other goals.

These poverty and inequality issues are dominant in the middle-income countries, which are home to 75% of the world's population, and account for over 5.5billion of the world's 7.4 billion people and represent about one-third of global GDP. (World Bank, 2018).

Among the middle-income countries are the BRICS[1] countries, which are becoming increasingly important in the world and are growing faster than the developed countries. The

[1] BRICS countries are a group of five fast-growing and largest emerging markets economies of the world namely Brazil, Russia, India, China, and South Africa. Leaders of these countries meet periodically and have summits to discuss ways of having stronger partnerships for improving global governance, strengthening institutional mechanism and improving cooperation platform among others.

total GDP (PPP International US$) of these five countries as at end of 2016 stood at 31.14% of the world with their combined population of 41.8% of the world (WDI, 2017).

BRICS is an acronym for the association of five large emerging markets economies. It originated as BRIC with four countries coined by Jim O'Neill, the then Chief Economist of Goldman Sachs in 2001 in his paper titled "Building Better Global Economic BRICs" (Narender, 2015). These four countries were grouped as the largest emerging markets economies with the prediction that in 2001 and 2002, their real GDP growths have prospects of exceeding that of the G7[2] and therefore world policymaking forums should be re-organised; suggesting that the G7 should be adjusted to incorporate BRIC representatives with higher GDP (O'Neill, 2001). South Africa was later added to this group in 2010 after the consideration to include an African country and the acronym became BRICS.

These countries have seen increases in foreign direct investment (FDI) over the years with FDI net inflow as at 2015 standing at US$ 360.133 trillion and amounting to 16.48% of the total world FDI net inflows. This illustrates the importance of the BRICS countries in the world economy and they should be given attention.

Capital is essential for growth and to achieve desired growth, external sources of capital are required to supplement inadequate domestic capital. Foreign capital flows range from private capital flows (foreign direct investment and foreign portfolio equity) to foreign aid (usually in the form of official development assistance, ODA) and remittances. These financial flows are expected to spur economic growth and the middle-income countries receive a large and growing percentage of these especially the BRICS countries (Figure 1).

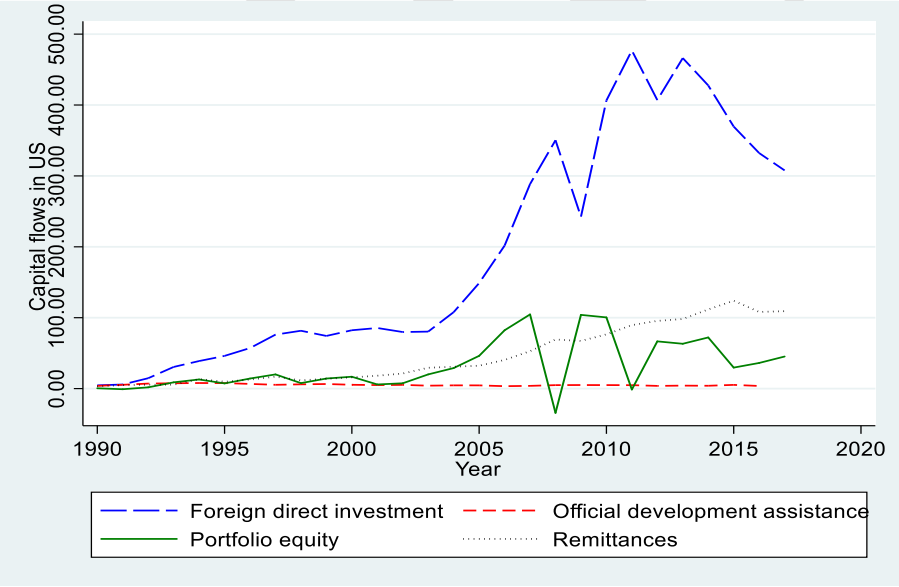

Figure 1: Aggregate Financial flows in Middle-income countries in US$billion

Source: World Bank WDI, 2018

[2] The G7 (group of seven) are an informal bloc of seven industrialized and developed democratic countries of the world namely Canada, France, Germany, Italy, Japan, United Kingdom (UK) and the United States of America (USA). They meet annually to deliberate on issues comprising global economic governance, international security, and energy policy.

Foreign capital flows are important in BRICS countries for their continued growth and development. With the availability of relatively cheap labour existing in countries such as India and China, they have been favoured destinations of foreign capital flows in recent years.

In recognition of the need to attract foreign capital, most emerging countries in the global context have liberalised their external accounts, which enables ease of capital inflows. These inflows of capital are expected to stimulate and promote economic growth. There is an observed positive impact of FDI on growth in emerging economies particularly the BRICS countries. (Nistor, 2015).

In the years following the formation of BRICS in 2001, it was observed that the GDP growth of these countries rose and continued to rise significantly until the global financial crisis of 2008 which hurt most of the countries in 2009 (Figure 2). The effect of the financial crisis was aggravated in the developing countries through financial integration and volatile capital flows (Reinhart and Rogoff, 2008, Macias and Massa, 2010); which suggests that capital flows have an impact on economic growth.

The GDP growth, however, picked up after then but in recent years, the GDP growths of the BRICS countries have been on the decline except for India which has been rising in previous years except for 2016 (Figure 2).

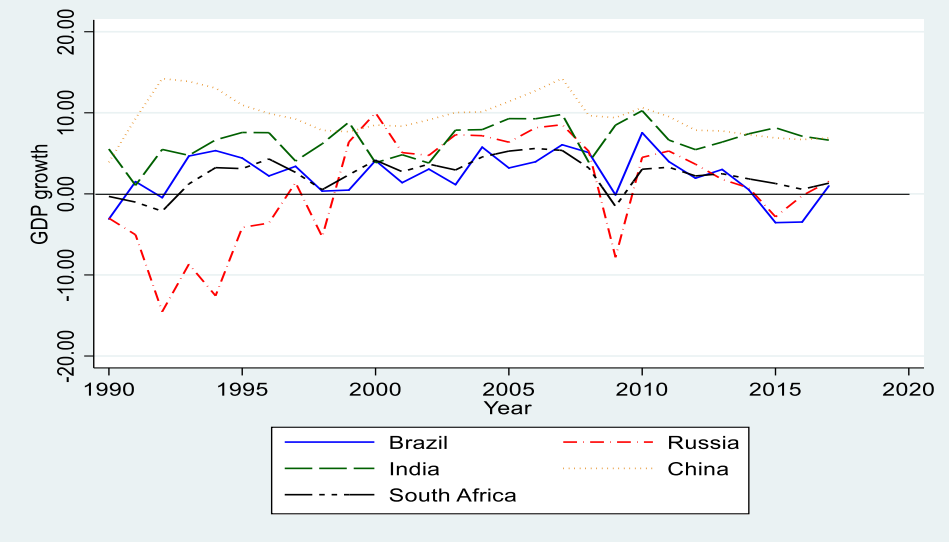

Figure 2: GDP growth (annual %) from 1990 to 2016 for the BRICS countries

Source: Authors computation based on World Bank WDI, 2017

Different countries have adopted different policies to attract foreign capital flows, for instance, the China "open-door" policy was initiated in late 1978 and has led to increased foreign capital flows into China since then (Zhang, 2014). Consequently, as may be expected, foreign capital flows in the forms of foreign direct investment and foreign portfolio investment out and into the BRICS, have been on the increase over the years. The levels of financial integration of these countries have increased. It has been argued in the literature that increases in foreign capital flows lead to an increase in economic growth in most cases (Bailliu, 2000; Edison, Levine, Ricci and Sløk, 2002; Aizenman et al., 2013), although some capital flows may have negative effects on economic growth. This has led to several controversies in the theory.

Besides the growth in the gross domestic product (GDP), it would be interesting to know if these capital flows lead to a reduction in poverty and reduce the inequality gaps in middle-income countries and more specifically, the BRICS countries.

There is a vast number of poverty studies especially on the micro-level; however, there has not been much concentration on the macro level. Few studies exist on the impact of financial flows on poverty with most concentrating on one at each time. An examination of the available literature reveals that most of them have devoted attention to one particular form of foreign capital inflow rather than comparing the impact of the alternative flows on poverty. For instance, studies on the effects of remittances on poverty include (Adams and Page, 2005; Acosta, Calderon, Fajnzylber and Lopez, 2008; Gupta, Patillo and Wagh, 2009; Ratha, 2013; Imai, Gaiha, Ali, and Kaicker, 2014; Pekovic, 2017; Inoue, 2018). Similarly, the following researchers have studied the effects of financial development on poverty (Boukhatem, 2016; Seven and Coskun, 2016; Donou-Adonsou and Sylwester, 2016; Rewilak, 2017). Fewer studies have focused on FDI (Tambunan, 2005; Gohou and Soumare, 2012; Ogunniyi and Igberi, 2014; Agarwal, Atri and Kundu, 2017) and ODA (Ugwuanyi, Ezeaku, and Ibe, 2017).

In light of the 2030 Agenda in which poverty reduction is the first goal, a spin-off from the millennium development goals of 2015, it is imperative to understand if these financial flows contribute to poverty reduction in middle-income countries. This study, therefore, seeks to determine the impact of these various foreign capital flows on poverty in middle-income countries and the BRICS countries. Moreover, the above studies looked at developing countries in general, without focusing on the BRICS. This paper allows for comparison among the BRICS countries. To the best of our knowledge, there is no study so far that has compared the relative contribution of all the foreign capital inflows in the BRICS countries, and no study has yet compared private capital flows in addition to official capital flow and remittances for these economies. Understanding the type of foreign capital that contributes mostly to poverty reduction would help to channel efforts to attract such capital flows that would contribute most positively to poverty reduction and shrinking the inequality gap in these emerging economies especially the BRICS.

This study goes further to focus on other private capital flows such as portfolio equity in addition to foreign direct investment. This study also includes remittances as well as foreign aid (ODA) to determine which of the financial flows contributes most to poverty reduction. This study covers more range of countries focusing on all the middle-income countries for which data is available as against concentration on a selected group of countries such as Africa (Gohou and Soumare, 2012); sub-Saharan Africa (Gupta et al., 2009); Latin America and Caribbean (Acosta et al., 2008).

It is conventional wisdom that economic growth is vital to poverty reduction. For the economy to grow rapidly, capital outside the domestic economy is usually required. Foreign capital is therefore believed to be an important contribution to economic growth and hence, a valuable contribution to poverty reduction. The various foreign capital flows, however, contribute to economic growth differently; therefore, their impact on poverty reduction is expected to differ.

Despite the rising importance of financial flows, there have been limited empirical studies on the macroeconomic impact of the identified financial flows on poverty in developing countries, which is the purpose of this study. This study examines the impact of four major foreign capital flows (foreign direct investment, foreign portfolio investment, official development assistance,

and remittances) on poverty reduction in a panel of middle-income countries. It is interesting to note the capital flows that contribute positively to economic growth especially for the BRICS countries, but it is more remarkable to determine which of these foreign capital flows trickle down to the masses and more importantly, translates to poverty reduction.

2. Literature review

2.1.Theoretical framework

Various financial flows have different channels through which they affect the poor, leading to poverty reduction (Figure 3). In short, increased availability of financing increases investment, which increases growth, which reduces poverty.

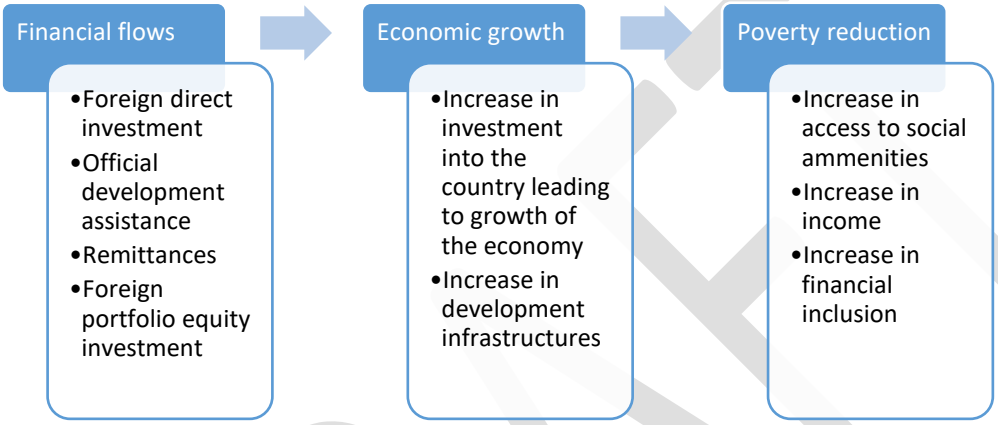

Figure 3. The flow process from financial flows to poverty reduction

Source: Author's compilation.

2.2.Theoretical literature review

2.2.1. Foreign aid and poverty reduction

There is vast literature on the effect of foreign aid on poverty reduction. Guillaumont and Wagner (2014) have highlighted three main channels through which foreign aid could affect poverty reduction in the literature. The first channel is through the popular aid-growth channel and from growth to poverty reduction. This channel is popular in the aid-growth nexus literature on the effectiveness of aid where aid supplements savings and investments leading to an increase in economic growth and thereby economic growth leads to a reduction in poverty (Mosley, 1987; Collier and Dollar, 2002; Easterly, 2003). Different researchers have however stood on opposite poles of positive and negative effects. For aid to be effective, this is subject to various parameters such as the type of aid involved, and the institutional environment of the country receiving it.

The second channel is from aid to the volume and composition of social public expenditures and then through corresponding poverty indicators. Mahembe and Odhiambo (2017) referred to this as the "pro-poor public expenditure channel". These public expenditures are government spending on social amenities such as health, education, rural roads, water, sanitation, and agriculture.

The third channel relates to the macroeconomic stabilizing effect of aid. The argument is that the macroeconomic stability of foreign aid leads to a positive impact on economic growth, and therefore the contribution of economic growth to poverty reduction. If growth were less volatile, aid would both increase economic growth and the growth would be more pro-poor.

2.2.2. Foreign direct investment and poverty reduction

The main channel through which FDI reduces poverty is through increases in economic growth. According to Agarwal et al (2017), increases in FDI through financial liberalisation could affect poverty levels. With the increase in technological expertise though FDI, an increase in the technological spread would occur as this raises supply and increases employment leading to a reduction in poverty. On the other hand, FDI might increase poverty levels where only skilled and semi-skilled workers are affected by the labour increase and demand for unskilled labour reduces not making FDI reach the extreme poor. Invariably, this would lead to higher income inequality leading to an increase in poverty.

2.2.3. Remittances and poverty reduction

Remittances generally have a direct effect on poverty reduction in developing countries by supplementing the income and consumption of the recipient of remittances. According to Adams and Page (2005), there are two main opposing views in the literature on who, on the spectrum of poverty, benefits from international remittances.

One faction believes the "better-off" households are more in positions to produce international migrants. To be able to migrate at all, the migrant must have some skills and income thereby leading to search for better job opportunities and living conditions. The extremely poor might not be able to afford this move and so they remain in poverty.

The other faction believes that the "relatively deprived" households are the ones that are more likely to engage in international migration than the "better-off" households are. Adams (1991) show that through remittances, there is a reduction in the number of poor households.

2.2.4. Portfolio equity and poverty reduction

The literature does not provide a particularly clear argument on the mechanism in which foreign portfolio equity would reduce poverty. One might, however, deduce that foreign investment in government stocks and bonds would increase the capital available to the government and when spent on social amenities in which the poor benefits, thereby closing the inequality gap and poverty incidences.

2.3.Empirical literature review

Most poverty studies are very micro oriented and use single country household surveys. (Adams, Cuecuecha and Page, 2008; Gubert, Lassord and Simple-Somps, 2010; Adams and Cuecuecha, 2013; Bouoiyour and Miftah, 2014; Beyene, 2014; Bang, Mitra, and Wunnava, 2016).

Adams, Cuecuecha and Page (2008) used the 2005 – 2006 Ghana Living Standard Survey (GLSS), a nationally representative household survey for Ghana to estimate a two-staged multinomial logit model with instrumental variables to determine the impact of internal

remittances (from within the country) and international remittances (from African and other countries) on poverty and inequality in Ghana. Gubert, Lassord and Simple-Somps, 2010 used the 2006 household survey for Mali to determine the effect of remittances on poverty and inequality in Mali. Beyene, 2014 studied the effect of international remittances on poverty and inequality in Ethiopia using an Urban household survey from 2004. Bouoiyour and Miftah, 2014 adopted OLS regression using probit model specification for Morocco using the 2009 Household survey. In the case of Bang, Mitra, and Wunnava (2016), the 2009 Kenyan Migration household survey data were employed in their study to test the impact of remittances on household expenditures.

Other studies on poverty and inequality have adopted cross-sectional or panel estimation techniques on a micro-level analysis. Ravallion (1997) used data of 41 spells from two household surveys for 23 developing countries. Ravallion (2001) studied 50 developing countries using 120 spells from two or more successive household surveys over time in each of the countries. Adams and Page (2005) studied 71 low- and middle-income developing countries using unbalanced panel data with countries having household surveys.

More studies with particular focus on macro-level data include Adams and Page (2005), Gupta et al. (2009), Aggarwal, Demirguc-Kunt, and Peria (2011), Fosu (2017), and Rewilak (2017), Inoue, 2018.

Adams and Page (2005) used the OLS estimation technique and Instrumental variable to estimate the relationship between remittances and poverty. Their data comprised of unbalanced panel data. Gupta et al., 2009 used the PovcalNet database by the World Bank to analyse a cross-country analysis of remittances. Their study was divided into two parts, one analysing a three-stage least square estimation of poverty and remittances of 76 countries with 233 observations starting from 1980. The second part estimated the effect of remittances on financial development in sub-Saharan Africa using an unbalanced panel of 44 countries and six-time periods composed of five-year averages from 1975 to 2004.

Aggarwal, Demirguc-Kunt and Peria, (2011) used data from 1975 to 2007 for which countries have at least five years of data as there was no availability of data for the complete period as a way of overcoming the data problem, they, therefore, estimated an unbalanced panel data. They found a positive and significant relationship between remittances and financial development in poverty reduction in developing countries.

Seven and Coskun (2016) examined whether bank and stock market development contribute to reducing income inequality and poverty in emerging countries. The study employed a panel analysis with data averaged over six 4-year non-overlapping intervals from 1987 to 2011 to smooth out short-term fluctuations in growth rates. They found that for the finance-poverty link, neither banks nor stock markets play a significant role in poverty reduction.

Rewilak (2017) investigated whether financial development is favourable and beneficial in poverty reduction and found that both financial deepening and increased physical access is beneficial in reducing the percentage of those below the poverty line. The study used data averaged from 2004 to 2015 to form a cross-section analysis due to the limitation of the dependent variable, poverty headcount ratio.

Fosu (2017), used data from the World Bank PovcalNet database and presents comparative global evidence on the transformation of economic growth to poverty reduction in developing

countries. He found higher income inequality in most regions limits the effects of economic growth in reducing poverty.

Inoue (2018) analysed the interaction effects of financial development and remittances on poverty conditions in developing countries using the generalised method of moments estimation technique. Their sample period from 1980 to 2013 was divided into 6 non-overlapping five-year panels, with the 7th panel consisting of 4 years. Estimates were run with the averages for the study of remittances and poverty in 120 developing countries. This approach was used due to the incomplete data points of the dependent variable (poverty headcount). Their results reveal that remittances replace financial development in the poverty-relieving process and they both improve poverty conditions in developing countries.

Our study, therefore, focuses on the effects of four capital flows on poverty reduction in middle-income countries and by extension, BRICS.

3. Data and Methodology

3.1.Data

This present study focuses on the macro-economic aspect using macro-level data to determine the effect of various financial flows on poverty reduction in middle-income countries and determining if the BRICS countries, as leading emerging economies, are different.

Data used in the analysis were obtained from World Bank databases: The World development indicators (WDI), Global financial development database (GFDD), and PovcalNet; Lane and Milesi-Ferretti database (LMF) known as the External Wealth of Nations (Appendix 1). We analysed data for middle-income countries for a period of 25 years from 1991 to 2015. This period was chosen due to the non-availability of data as some of the countries, for example, Russia did not have data for most of the variables before 1990.

Due to the limited number of poverty observations in some of the BRICS countries such as South Africa and India, we used 5 years non-overlapping average data for the period 1991 to 2015 to cater for missing values for the poverty measures. Various studies such as Aggarwal et al., (2011); Seven and Coskun (2016); and Inoue (2018) have employed this strategy to cater for missing poverty data. Berk et al., 2018, also employed this 5-year span in their study.

3.1.1. Variables and A-priori expectations

Three measures of poverty are used in our analysis which are poverty headcount, poverty gap, and squared poverty gap.

Poverty headcount - Poverty headcount ratio (% of the population) at $1.90 a day (2011 PPP). This is one of our dependent variables which was sourced from the World Bank PovcalNet database. This is the percentage of the population living on less than $1.90 a day at 2011 international prices. This measures the **incidence** of poverty in a country and it is the most widely used variable in poverty econometric studies (Adams and Page, 2005; Gupta et al., 2009; Ferreira, Leite, and Ravallion, 2010; Donou-Adonsou and Sylwester, 2016; Rewilak, 2017; Inoue, 2018; Tsaurai, 2018).

Poverty gap - The poverty gap at $1.90 a day (2011 PPP) is the mean shortfall in income or consumption from the poverty line $1.90 a day (counting the non-poor as having zero shortfall),

expressed as a percentage of the poverty line. The poverty gap index measures the poverty **depth** in a country. This measure reflects the depth of poverty as well as its incidence. This measure of poverty takes into account the distribution of the poor.

Squared poverty gap – This measure the **severity** of poverty in a country. This measure of poverty attributes more weight to the extremely poor, thereby showing how far from the poverty line the poorest are and allows for non-linearisation in the relationship.

3.1.2. Financial flow variables

The financial flow variables used in this study are foreign direct investment, foreign portfolio equity investment, official development assistance, and remittances. They are all expressed as a percentage of GDP and in their log form.

Foreign direct investment – The stock of foreign direct investment in each country was used which was obtained from the Lane and Milesi-Ferretti (LMF) updated database, External Wealth of Nations II. FDI can be measured as stock or flow, however since we are concerned about the contribution of FDI to poverty reduction in these countries, we use the stock variable which is more appropriate to determine the relationship over a long-time period. FDI is generally expected to reduce poverty, as this is a form of investment, which is expected to increase growth thereby reducing poverty.

Official development assistance – Net official development assistance and official aid received (current US$). This variable was obtained from the World Bank World Development Indicators (WDI) and it is the combination of net official development assistance and official aid received in current US$ as a percentage of GDP. Net official development assistance is disbursement flows (net of repayment of principal) that meet the DAC definition of ODA and are made to countries and territories on the DAC list of aid recipients. Net official aid refers to aid flows (net of repayments) from official donors to countries and territories. Official aid is provided under terms and conditions similar to those for ODA. ODA is expected to have a significant reducing effect on poverty.

Remittances – Remittance inflows to GDP (%) - Workers' remittances and compensation of employees comprise current transfers by migrant workers and wages and salaries earned by non-resident workers. Data are the sum of three items: workers' remittances, compensation of employees, and migrants' transfers. The remittances variable was obtained from the World Bank Global Development Finance Database (GFDD). Remittances are expected to have a reducing effect on poverty if substantial enough as it is believed remittances mainly go to the poor and low-income earners to alleviate their living conditions. Studies on remittances have increased over the years in the Development Finance circle and therefore this variable is commonly used in the literature (Adams and Page, 2005; Acosta et al., 2008; Gupta et al., 2009; Aggarwal et al., 2011; Adams and Cuecuecha, 2013; Imai et al., 2014; Inoue, 2018; Tsaurai, 2018). We expect remittances to have a reducing effect on poverty headcount.

Foreign portfolio equity investment – Portfolio equity liabilities (stock) current US $ million. The stock of foreign portfolio equity investment was used which was obtained from the Lane and Milesi-Ferretti (LMF) updated database, External Wealth of Nations II. This is expected to contribute to the growth and lead to poverty reduction however, foreign portfolio equity is expected to be effective in countries with well-developed financial system. Aggarwal et al.,

2011, used this variable. We expect this variable to have either a positive or negative effect on poverty levels depending on if it widens the inequality gap or otherwise.

3.1.3. Control / Explanatory variables

Based on most of the poverty studies, the following control variables have been selected as they have been shown to have an impact on poverty.

GDP per capita - GDP per capita (constant 2010 US$) – GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources. GDP per capita is expected to have a significant and poverty-reducing effect with an increase in its value. This variable is one of the main variables used in the Ravallion poverty-growth model (Ravallion, 1997; Ravallion and Chen, 1997; Ferreira, Leite and Ravallion, 2010; Montalvo and Ravallion, 2010) and other studies (Gupta et al., 2009; Aggarwal et al., 2011; Boukhatem, 2016; Rewilak, 2017). We expect an increase in GDP per capita to reduce poverty levels.

Government consumption expenditure - General government final consumption expenditure (% of GDP). General government final consumption expenditure (formerly general government consumption) includes all government current expenditures for purchases of goods and services (including compensation of employees). It also includes most expenditures on national defence and security but excludes government military expenditures that are part of government capital formation. Government expenditure is expected to have a poverty-reducing effect. The more the government spends on basic amenities which the poor can benefit from, the more the reduction in poverty. This variable has been used by Imai et al. (2014), Boukhatem (2016), Rewilak (2017). An increase in government expenditure, if spent on social amenities are expected to reduce the incidence of poverty.

Income inequality – This is measured using the Income inequality, Gini coefficient index. This was obtained from the Human development data of the United Nations Development Programme (UNDP). This measures the level of inequality in a country. Gini index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. A high index indicates a high level of inequality in a country while a low index indicates a low level of inequality in a country. Hence, a Gini index of 0 represents perfect equality (where everyone has the same income), while an index of 100 implies perfect inequality (where the richest person has all the income). We expect that the higher the inequality, the higher the poverty level and vice versa, therefore, we expect income inequality to be positively correlated with poverty.

Inflation rate – consumer prices (annual %). This variable is obtained from the World Bank World Development Indicators. Inflation, as measured by the consumer price index, reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. This variable is used to capture the macroeconomic (in)-stability of a country. Unstable inflation rates reflect macroeconomic instability of a country which may hurt the poor whereas a less volatile inflation rate may indicate some form of stability in the economy. High inflation rates are

expected to have a negative effect on the poor by worsening their present state. This variable is commonly used in the literature (Imai et al., 2014; Seven and Coskun, 2016; Rewilak, 2017). An increase in inflation is expected to have a positive effect on poverty headcount.

Trade openness – Trade (% of GDP). Trade is the sum of exports and imports of goods and services measured as a share of gross domestic product. This is a commonly used variable to measure the level of openness of a country (Chinn and Ito, 2006; Ndikumana and Verick, 2008; Aizenmann et al., 2013; Imai et al., 2014; Rewilak, 2017; Tsaurai, 2018). This variable is expected to have either a positive or negative effect on poverty depending on the degree of openness of a country. If it is dominated by exports, a positive effect on growth is expected thereby reducing poverty whereas if dominated by imports, a negative effect is expected on growth thereby increasing poverty.

Financial development – Liquid liabilities to GDP (%). The variable used as a proxy for the level of financial development is the ratio of liquid liabilities to GDP. Liquid liabilities are also known as broad money or M3. They are the sum of currency and deposits in the central bank (M0), plus transferable deposits and electronic currency (M1), plus time and savings deposits, foreign currency transferable deposits, certificates of deposit, and securities repurchase agreements (M2), plus traveller's checks, foreign currency time deposits, commercial paper, and shares of mutual funds or market funds held by residents. This variable has been used in finance-growth literature to measure the level of financial development (Chowdhury, 2011; 2012; Imai et al., 2014; Boukhatem, 2016). The more the financial development of a country, if inclusive, is expected to have a reducing effect on poverty.

3.2.Model specification

In evaluating the relationship between financial flows, inequality, and poverty, we build on the basic growth-poverty model suggested by Ravillion and Chen (1997). We expand upon previous work to include income inequality and financial flows following the empirical works of Adams and Page (2003) and Gupta, Pattillo, and Wagh (2009) and testing for the significance of the different financial flows on poverty relative to each other. The model is represented as:

$$log(Pov\pi^*_{it}) = \alpha_i + \beta_1 log(y_{it}) + \beta_2 log(g_{it}) + \beta_3 log(f_{it}) + \beta_4 log(x_{it}) + \mu_t + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where Povπ* represents a measure of poverty (poverty headcount, poverty gap or squared poverty gap) in country *i* at time *t*; α_i captures country fixed effects. β_1 is the growth elasticity of poverty with respect to income, y; β_2 is the elasticity of poverty with respect to income inequality, g; and β_3 is the elasticity of poverty with respect to foreign capital flows, f. β_4 is the elasticity of poverty with respect to the control variables, x while ε is an error term capturing errors in the poverty measure used.

In equation (1), β_3 identifies the impact of foreign capital flows on poverty after controlling for income and inequality. However, aside from these financial flows, other variables might also influence poverty, so this study expands upon previous work by testing the effects of other control variables such as trade and financial development, which may have an impact on poverty.

We expect that countries with an abundance of unskilled labour should have a comparative advantage in products that are labour intensive, therefore considering the view that most middle-income countries have large unskilled labour forces relative to a shortage of capital, increased demand for unskilled labour would increase employment prospects and wages. In theory, there should be an opportunity for a direct poverty reduction from positive trade. Also, an increase in financial development in middle-income countries should reduce poverty.

The study seeks to determine whether foreign financial flows have a significant effect on poverty or whether the effect of each financial flow is unique. This will help in informing policies for middle-income countries' sources of financing for development. In addition to the variables above, our model includes dummy variables for the BRICS countries to test if BRICS are different. Integrating the additional dummy variable, our fully specified model becomes:

$$log(Pov\pi^*_{it}) = \alpha_i + \beta_1 log(y_{it}) + \beta_2 log(g_{it}) + \beta_3 log(f_{it}) + \beta_4 log(x_{it}) + \beta_5 D + \mu_t + \varepsilon_{it} \quad \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Where $Pov\pi^*$, α, β_1, β_2, β_3, β_4, and ε are as previously defined; and β_5 is the coefficient for the BRICS dummy variable while D represents the BRICS countries.

To control for income differences between countries, per capita GDP is used as a control variable. The underlying control model assumes that poverty is reduced as per capita income rises (Gupta, Pattillo, and Wagh, 2009), therefore β_1 is expected to be negative ($\beta_1<0$). In theory, higher poverty levels are associated with greater income inequality (Gupta et al., 2009), thus β_2 is expected to be positive ($\beta_2>0$).

Controlling for income and its distribution, we estimate the signs and magnitudes of the coefficients for the four financial flows. A priori, we expect that a negative coefficient for the financial flows would indicate that they have a positive impact on poverty reduction while a positive coefficient would represent a negative impact on poverty reduction. Given that middle-income countries generally have higher poverty rates, the coefficients of the BRICS dummy variable, β_5 is expected to be negative ($\beta_5<0$).

3.3.Estimation Technique

We use the System generalised method of moment (GMM) estimation technique proposed by Arellano and Bover (1995) and Blundell and Bond (1998) to address endogeneity concerns in our model. System GMM estimation technique is often used to control for the endogeneity of the lagged dependent variable in a dynamic panel model where there is a correlation between the explanatory variable and the error term. GMM is preferred as it controls for omitted variable bias, unobserved panel heterogeneity, and measurement errors. The System GMM is used for situations with few periods, t and a large number of individuals, N. It is known to produce consistent and efficient parameters where the explanatory variables are correlated with past and possibly current realizations of the error (Roodman, 2009). As long as some persistency exists in the series, the System GMM estimator has been shown to have a lower bias and higher efficiency than all other estimators such as the ordinary least square (OLS), fixed-effects, difference GMM, and level GMM (Soto, 2009).

Since our data is constructed as averages of 5-year non-overlapping data points from 1991 to 2015 for 65 middle-income countries (Appendix 2), our number of countries is greater than the

period, therefore; system GMM is a good solution for our model. We estimate a dynamic panel data with one-step System GMM. The Gini coefficient index, remittances, and government expenditure are believed to be endogenous and therefore they are treated as such along with the lag of the dependent variable. We instrumented for our model with the other exogenous variables (Roodman, 2009).

To determine if our instruments are valid, we make sure the number of our instruments is less than the number of groups in our regression model to prevent overfitting because of finite sample bias. We also look at the validity of our model by ensuring the insignificance of the Hansen test of over-identification restrictions, which should indicate that the instruments' variables are not correlated with the residuals. We then ensure that our Arellano-Bond test, AR (2) satisfies the null hypothesis of no second-order serial correlation in first differenced residuals.

We introduce a dummy variable for the BRICS countries to determine if the capital flows into the BRICS countries have a significantly different impact on poverty reduction compared to the other middle-income countries. To determine if the impact of the significant models also have a long-run impact on poverty, we test for the long-run impact of the significant variables in our model.

4. Estimation results and discussions

We begin by presenting the descriptive statistics of all the variables used in the estimation (Table 1). The detailed summary statistics showing both the between and within statistics are presented in Appendix 3. From the correlation matrix presented in appendix 4, most of the variables did not show a high correlation with the dependent variable.

We estimate a dynamic panel-data estimation with a one-step System GMM. To ensure the validity of our instruments, and the consistency of the System GMM estimators, we make sure that the assumption that the error term does not have serial correlation problem is met. In line with Roodman (2009), we verify these assumptions by using the Arellano-Bond test for no serial correlation in the error term. The Arellano-Bond test, AR (2) satisfies the null hypothesis of no second-order serial correlation in the first differenced residuals. We report both AR (1) and AR (2) tests. We ensure that the Hansen p-value test of over-identification is not significant. We also make sure the number of our instruments is less than the number of groups. The F-statistics is reported in the table and significant for all our models. We included time dummies in all our models to cater for time-specific effects; however, their coefficients are not reported herein in Table 2, as most of them did not indicate any significant relationship to poverty. With all these satisfied, we believe our results capture the dynamics within the countries.

Table 1: Descriptive summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
poverty headcount	278	14.97107	16.11366	0	63.5
poverty gap	278	5.184719	6.770562	0	31.99
poverty gap squared	278	2.677289	4.091012	0	22.225
gdp per capita	323	3465.245	2752.823	12.5867	14136.88
gini index	266	42.04668	9.43245	24.668	64.76
foreign direct investment	307	3.46E+08	2.51E+09	0.1872748	3.04E+10
remittances	294	5.525441	10.54566	0	128.3152
portfolio equity	304	4.033919	7.489815	0	51.00237
foreign aid	316	4.371735	7.128975	-0.088848	45.82871
government expenditure	307	14.99754	8.577747	2.099659	111.2972
trade openness	318	74.42746	33.92259	2.427066	202.9801
inflation	289	31.36221	153.7971	-1.067426	1774.855
financial development	285	39.40296	27.22624	0.0741487	175.1308

Source: Authors computation

The results of our estimation are presented in table 2 below. The first three columns consist of all the middle-income countries for which data is available for each of the measures of poverty used. We observe a growing persistence of poverty in middle-income countries as captured by the lagged poverty measures (headcount, gap, and squared gap) being significant at the 1% level. This indicates a high persistence of poverty. The income inequality represented by the Gini index shows a positive and significant effect at the 1% on poverty when poverty headcount was used as the dependent variable. This means that an increase in income inequality leads to an increase in poverty headcount widening the inequality gap. This is consistent with the results obtained by Inoue (2018) on the study of 120 developing countries from 1980 to 2013. Inoue (2018) looked at the interaction effects of financial development and remittances on poverty conditions in developing countries and found poverty to be persistent in these countries. From their results, remittances and financial development were shown to have a significantly negative effect on poverty as well as trade openness, while inflation and the Gini coefficient showed a significantly positive effect indicating an increase in these variables leads to increases in poverty. However, in our study, government expenditure and financial development show negative effects on poverty as expected while trade openness and inflation exert positive effects on poverty, but they were not significant for middle-income countries and the BRICS. Also, Fosu, 2017 reported that income inequality reduces the effect of economic growth on poverty reduction.

Our results are also consistent with Seven and Coskun (2016) where they analysed a sample of 45 emerging countries for the period 1987 to 2011. They reported a positive relationship between inflation rate and poverty headcount however, not significant whereas both government consumption and trade openness indicated a negative effect on poverty with only government expenditure being significant.

Out of the four capital flows included in our estimation, two of them (portfolio equity and foreign aid) indicate a positive effect on poverty headcount although not statistically significant while the other two variables, foreign direct investment, and remittances exerted a negative effect on the poverty measures with only remittances being significant at the 10% level. This

implies that FDI and remittances in the middle-income countries did not appear to have strong additional impacts on poverty beyond what they accomplished through GDP growth, therefore, they are not enough to change the course of poverty. Remittances are slightly significant where the squared poverty gap was the dependent variable, which can be interpreted that remittances may draw people out of extreme poverty but not adequate to draw people out of total poverty.

Table 2: Estimation results
Financial flows and poverty [dependent variable: poverty headcount]

				With BRICS dummy		
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	**Poverty headcount**	**Poverty gap**	**Poverty gap squared**	**Poverty headcount**	**Poverty gap**	**Poverty gap squared**
log of lagged dependent variable	0.587***	0.687***	0.682***	0.604***	0.673***	0.666***
	(0.168)	(0.156)	(0.158)	(0.155)	(0.141)	(0.146)
gdp per capita	-0.0343*	-0.0122	-0.00969*	-0.0357*	-0.0148	-0.0111*
	(0.0205)	(0.00834)	(0.00553)	(0.0212)	(0.00897)	(0.00612)
gini index	0.712***	0.248*	0.107	0.752***	0.293**	0.142
	(0.230)	(0.132)	(0.0940)	(0.230)	(0.136)	(0.0893)
foreign direct investment	-0.00909	-0.00244	-0.00166	-0.00975*	-0.00340	-0.00232*
	(0.00561)	(0.00206)	(0.00120)	(0.00545)	(0.00213)	(0.00134)
remittances	-0.00619	-0.00384	-0.00497*	-0.00913	-0.00605	-0.00624**
	(0.00801)	(0.00364)	(0.00266)	(0.00799)	(0.00404)	(0.00296)
portfolio equity	0.00406	0.00123	0.000299	0.00529	0.00223	0.00109
	(0.00334)	(0.00135)	(0.000894)	(0.00341)	(0.00142)	(0.000943)
Foreign aid	0.00655	0.00224	0.000999	0.00578	0.00182	0.000696
	(0.00570)	(0.00257)	(0.00164)	(0.00590)	(0.00272)	(0.00176)
government expenditure	-0.0172	0.00796	0.0157	-0.00786	0.0143	0.0193
	(0.0427)	(0.0215)	(0.0166)	(0.0456)	(0.0240)	(0.0176)
trade openness	0.0146	0.00562	0.00320	0.00944	0.00169	0.000101
	(0.0133)	(0.00590)	(0.00388)	(0.0158)	(0.00662)	(0.00401)
inflation	0.0105	0.00465	0.000576	0.0111	0.00497	0.00106
	(0.00725)	(0.00346)	(0.00263)	(0.00752)	(0.00389)	(0.00262)
liquid liabilities	-0.0167	-0.00478	-0.00301	-0.0128	-0.00257	-0.00121
	(0.0131)	(0.00626)	(0.00415)	(0.0133)	(0.00694)	(0.00469)
brics				-0.0439	-0.0332**	-0.0252**
				(0.0274)	(0.0136)	(0.00976)
Constant	0.108	-0.00854	0.00134	0.0930	-0.00392	0.00306
	(0.204)	(0.0751)	(0.0423)	(0.176)	(0.0728)	(0.0436)
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	137	137	137	137	137	137
Number of groups	55	55	55	55	55	55
Number of instruments	38	38	38	39	39	39
AR1	0.008	0.012	0.036	0.008	0.011	0.031
AR2	0.263	0.303	0.342	0.271	0.363	0.515
Hansen test	0.130	0.267	0.291	0.105	0.228	0.255
F statistics	27.9	12.75	6.31	30.12	18.15	7.32

Source: Authors computations
Note: All variables are in their log forms. Robust standard errors in parentheses. ***, ** and * denotes statistical significance at 1%, 5% and 10% levels respectively.

We incorporate dummy variables for the BRICS countries in our last three columns in table 2 to identify if the BRICS countries' foreign capital flows exert a different impact on poverty reduction. Again, we observe persistence in poverty and a positive and significant influence of income inequality on poverty. Remittance increased in significance from 10% to 5% level in poverty reduction only where the squared poverty gap was the dependent variable. We observed that with the introduction of the BRICS dummy variable, foreign direct investment became significant both with poverty headcount and poverty squared gap as the dependent variables at the 10% level. A possible explanation for this might be the result of foreign direct investment-driven by labour-seeking motives where cheap/un-skilled labour is targeted especially in countries like India and China among the BRICS countries due to the availability of cheap labour from the high population. As a result, the poor benefit more from foreign direct investment, which affects poverty reduction. This implies that remittances and foreign direct investment have a reducing effect on poverty in BRICS countries.

4.1.Long-run estimates

Since GMM only produce short-run estimates of elasticities because it has a lagged dependent variable, we can also estimate the long-run estimates of the significant variables (the Gini index used as a measure of inequality, GDP per capita as a measure of economic growth, foreign direct investment and remittances) in our model. It was observed that the Gini and GDP per capita were significant at the 5% level while remittance was not significant in the long-run. With the introduction of the BRICS dummy, foreign direct investment became significant at the 5% level in the long-run along with the Gini and GDP per capita. Remittances, however, remained insignificant (Table 3). Contrary to the general belief that remittances lead to positive economic growth and poverty reduction, we find no significant relationship in middle-income countries especially with the BRICS beyond the effects of including GDP per capita and the Gini. This can be attributed to the fact that remittances mainly go to various individuals and might not have an impact on a larger scale on the economy over time in these countries due to the high population. One can see from the table that in the long-run, economic growth reduces poverty as well as foreign direct investment as the only foreign financial flow whereas income inequality has a negative impact on poverty in the long-run. These correspond to the same effects the variables have on poverty in the short-run but with a greater magnitude in the long-run. A one percent change in the Gini leads to a 1.7 percent increase in poverty probably because the change in Gini happens at the bottom.

Table 3: Long-run estimates

						With BRICS dummy
Variables	**Poverty headcount**	**Poverty gap**	**Poverty gap squared**	**Poverty headcount**	**Poverty gap**	**Poverty gap squared**
Gini index	1.7231**	0.7909		1.8974***	0.8970*	
	(0.7267)	(0.5168)		(0.6357)	(0.4635)	
GDP per capita	-0.0831**		-0.0305	-0.0902**		-0.0333
	(0.0348)		(0.0215)	(0.0382)		(0.0217)
foreign direct investment				-0.0246**		-0.0069
				(0.0098)		(0.0046)
remittances			-0.0157			-0.0187
			(0.0125)			(0.0129

Source: Authors computations

5. Conclusion, recommendations and policy implications

We analysed the impact of four major foreign financial flows on poverty reduction in 65 middle-income countries using 5-year averages from 1991 to 2015. We tested the effect in the BRICS countries to determine if the BRICS countries are significantly different from all the other middle-income countries. Our results show that the lag of the dependent variables in all three measures of poverty was constantly significant all through the estimations. This indicates the persistence of poverty in middle-income countries.

We observed that foreign capital flows do not significantly reduce poverty in middle-income countries on average beyond the effects captured by GDP and the Gini. When the dummy for the BRICS countries was included in the estimations, we observed foreign direct investment and remittances having a significant effect on poverty reduction in middle-income countries. The BRICS dummies were significant at 5% when both the poverty gap and squared poverty gap were used as dependent variables. In the long run, however, foreign direct investment became more significant while remittances lost its significance. This shows that remittances in the middle-income countries are not enough to change the persistence of poverty and are not significant enough to draw people out of total poverty.

Another important observation from the results was the high significance of the Gini index indicating a strong relationship between poverty and inequality. This shows income inequality in middle-income countries worsens poverty. In the long run, income inequality remained highly significant and increased in magnitude. This means that as income inequality increases, it probably occurs at the bottom to impact on those living below the poverty line.

The importance of inequality on poverty may argue for greater government involvement to redistribute income through welfare transfers. There is, therefore, the recommendation of re-distribution of income by the government in middle-income countries. The government needs to take a strong step in income redistribution, which can be done through the tax system by aggressively taxing the upper class and increasing welfare payments for the poor. An increase in social grants for the poor could be used in alleviating poverty incidences. For instance, taking the case of South Africa, the South African Social Security Agency (SASSA), is mandated to ensure the provision of comprehensive social security services against vulnerability and poverty within the constitutional and legislative framework and helps reduce the incidence of poverty. This agency is in charge of administering various kinds of social grants like child support for the benefit of the marginalised citizens among which are pensioners and young children. This might not bridge the inequality gap significantly but would assist in reducing the poverty gap.

The main message from our analysis points to the fact that the contribution of foreign financial flows is somewhat insignificant and where they are significant, they seem limited in their contribution to poverty reduction. Therefore, we do not see cross-border financial flows as effective in poverty reduction in middle-income countries, and the BRICS, although they may be beneficial in raising GDP. Since the standard errors and the coefficients of our results in columns 1, 2 and 3 compared to their respective columns 4, 5 and 6 (where BRICS countries are included as dummy) are within the same range, we conclude that the BRICS countries are not particularly different from the other middle-income countries in terms of poverty reduction through foreign financial flows.

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Appendix 1: Variable description and sources

Variables	Abbreviations	Description	Sources
Poverty headcount	povh	Poverty headcount ratio (% of population) at $1.90 a day (2011 PPP)	PovcalNet Database
Poverty gap	povg	Poverty gap at $1.90 a day (2011 PPP) (%)	PovcalNet Database
Poverty gap squared	povgs	Squared poverty gap at $1.90 a day (2011 PPP) (%)	PovcalNet Database
Foreign direct investment	FDI	FDI liabilities (stock) current US $ million (% of GDP)	Lane and Milesi-Ferretti database
Official development assistance (foreign aid)	oda	Net official development assistance and official aid received (current US$) (% of GDP)	World Development Indicators
Portfolio equity	pes	Portfolio equity liabilities (stock) current US $ million (% of GDP)	Lane and Milesi-Ferretti database
Remittances	rem	Remittance inflows to GDP (%)	Global Financial Development
GDP per capita	gdppc	GDP per capita (constant 2010 US$)	World Development Indicators
Gini index	giniwb	Income inequality, Gini coefficient (%)	PovcalNet Database
Trade openness	trade	Trade (% of GDP)	World Development Indicators
Private credit	pc	Private credit by deposit money banks and other financial institutions to GDP (%)	Global Financial Development
Liquid liabilities	ll	Liquid liabilities to GDP (%)	Global Financial Development
Government expenditure	GCE	General government final consumption expenditure (% of GDP)	World Development Indicators
Inflation	inf	Inflation, consumer prices (annual %)	World Development Indicators

Appendix 2: List of countries

Albania
Armenia
Bangladesh
Belarus
Bhutan
Bolivia
Bosnia and Herzegovina
Botswana
Brazil
Bulgaria
Cameroon
China
Colombia
Costa Rica
Cote d'Ivoire
Dominican Republic
Ecuador
Egypt
El Salvador
Fiji
Georgia
Ghana
Guatemala
Honduras
India
Indonesia
Iran
Jamaica
Jordan
Kazakhstan
Kenya
Kyrgyz Republic
Lao PDR
Lesotho
Macedonia
Malaysia
Mauritania
Mexico
Micronesia
Moldova
Mongolia
Montenegro
Morocco
Namibia
Nicaragua
Nigeria
Pakistan
Paraguay
Peru
Philippines
Romania
Russian Federation
Serbia
South Africa
Sri Lanka
Thailand
Timor-Leste
Tunisia
Turkey
Ukraine
Uzbekistan
Venezuela
Vietnam
West Bank and Gaza
Zambia

Appendix 3: Detailed descriptive statistics

Variables	Mean	Std. Dev.	Min	Max	Observations		
poverty headcount	overall	14.97107	16.11366	0	63.5		N = 278
	between		15.20296	0.145	57.02333		n = 65
	within		7.328343	-9.53493	43.92667	T	bar = 4.27692
poverty gap	overall	5.184719	6.770562	0	31.99		N = 278
	between		6.423405	0.05	30.73667		n = 65
	within		3.10692	-4.55328	19.39972	T	bar = 4.27692
squared poverty gap	overall	2.677289	4.091012	0	22.225		N = 278
	between		3.870855	0.024	20.53667		n = 65
	within		1.917784	-4.91471	12.65396	T	bar = 4.27692
gdp per capita	overall	3465.245	2752.823	12.5867	14136.88		N = 323
	between		2615.039	13.49571	12830.3		n = 65
	within		896.4921	772.4349	7005.07	T	bar = 4.96923
gini index	overall	42.04668	9.43245	24.668	64.76		N = 266
	between		8.950343	28.16147	61.99333		n = 64
	within		3.031195	33.54668	56.74668	T	bar = 4.15625
foreign direct investment	overall	3.46E+08	2.51E+09	0.187275	3.04E+10		N = 307
	between		2.27E+09	2.91868	1.79E+10		n = 64
	within		9.91E+08	-7.17E+09	1.29E+10	T	bar = 4.79688
remittances	overall	5.525441	10.54566	0	128.3152		N = 294
	between		8.645982	0.041945	59.11099		n = 63
	within		5.82088	-35.1557	74.72965	T	bar = 4.66667
portfolio equity	overall	4.033919	7.489815	0	51.00237		N = 304
	between		6.532851	0	26.98536		n = 62
	within		3.657891	-18.5139	28.05093	T	bar = 4.90323
foreign aid	overall	4.371735	7.128975	-0.08885	45.82871		N = 316
	between		6.407554	0.02993	38.82185		n = 65
	within		3.097357	-7.67568	22.54238	T	bar = 4.86154
government expenditure	overall	14.99754	8.577747	2.099659	111.2972		N = 307
	between		7.649759	2.691882	57.75058		n = 64
	within		4.975501	-22.8607	68.54418	T	bar = 4.79688
trade openness	overall	74.42746	33.92259	2.427066	202.9801		N = 318
	between		31.85328	5.166142	179.0204		n = 65
	within		13.0783	24.57663	145.976	T	bar = 4.89231
inflation	overall	31.36221	153.7971	-1.06743	1774.855		N = 289
	between		65.73849	1.675398	359.3008		n = 64
	within		137.7856	-324.633	1446.917	T	bar = 4.51563
financial development	overall	39.40296	27.22624	0.074149	175.1308		N = 285
	between		25.28991	1.054585	129.4493		n = 64
	within		10.63827	-8.91571	85.08449	T	bar = 4.45313

Appendix 4: Correlation results

	povh	povg	povgs	gdppc	giniwb	fdi	rem	pes	oda	gce	trade	inf	ll
povh	1												
povg	0.945	1											
povgs	0.853	0.975	1										
gdppc	-0.4	-0.28	-0.201	1									
giniwb	0.369	0.445	0.468	0.242	1								
fdi	0.092	0.058	0.031	-0.8	-0.11	1							
rem	-0.21	-0.17	-0.126	-0.01	-0.21	-0.16	1						
pes	-0.06	-0.05	-0.055	-0.1	0.13	0.378	-0.24	1					
oda	0.315	0.26	0.207	-0.35	-0.25	-0.04	0.456	-0.317	1				
gce	-0.25	-0.14	-0.062	0.63	0.142	-0.53	0.094	-0.02	0.012	1			
trade	-0.21	-0.13	-0.08	0.569	-0.08	-0.66	0.331	-0.257	0.266	0.574	1		
inf	0.119	0.129	0.135	-0.08	-0.05	0.035	-0.31	-0.145	-0.15	-0.15	-0.21	1	
ll	-0.4	-0.34	-0.28	0.561	-0	-0.55	0.222	0.095	-0.05	0.515	0.564	-0.34	1

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