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THE EFFECTIVENESS OF FOREIGN AID ON POVERTY REDUCTION: THE ROLE OF THE POLITICAL REGIME

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Abstract

The present research aims to analyse the effectiveness of foreign aid in reducing poverty after controlling for the countries' political regime as well as other poverty determinants. Most literature focuses on the relation between aid and growth or political regime and growth. However, studies of the direct impact of foreign aid on poverty reduction are scarce, especially for the recent years and considering the influence of the political regime.

Therefore, after a literature review in which we summarize the main contributions of the literature concerning the determinants of poverty as well as the influence of foreign aid on poverty alleviation, we estimate an econometric model using panel data for 102 countries between 1995 and 2015. In addition, we proceed to the estimation of the same model considering only a subsample of countries that follow the World Bank's classification of low-income economies.

The results obtained allow us to summarize this study in three main conclusions. In the first place, foreign aid is not effective in reducing poverty, neither in the full sample nor when we only consider the low-income countries. Secondly, political regime seems to have an important role in poverty alleviation, suggesting that a more democratic regime contributes directly to a decrease in poverty. Thirdly, in low income countries, only the GDP *per capita* seems to be significant in poverty alleviation, capturing the effects of all the other channels, even the impact of inequality or political regime.

As a result, donor countries and institutions should be aware of the need to create and develop the institutional environment that promotes poverty alleviation and thus improves the living conditions of developing countries. The results suggest that this environment involves a more democratic political regime, where citizens can participate in the selection of their government.

JEL-codes: I30, F35, O19

Key-words: Foreign Aid, Poverty, Political Regime

Resumo

A presente investigação tem como objetivo analisar a eficácia da ajuda externa na redução da pobreza, tendo em conta o regime político dos países considerados assim como outros determinantes da pobreza. A maior parte dos estudos presentes na literatura económica focam-se apenas na relação entre a ajuda externa e o crescimento económico ou o regime político e o crescimento económico.

Desta forma, após uma revisão de literatura em que resumimos os principais contributos da teoria económica sobre os determinantes da pobreza e a influência da ajuda externa na redução deste fenómeno, estimamos um modelo econométrico, com dados em painel para 102 países durante o período de 1995 a 2015. Para além disso, procedemos à estimação do mesmo modelo, considerando apenas uma subamostra de países classificados pelo Banco Mundial como sendo os países de menor rendimento.

Os resultados obtidos permitem-nos resumir este estudo em três principais conclusões. Em primeiro lugar, a ajuda externa não é eficaz na redução da pobreza, nem na amostra completa nem quando consideramos apenas os países de menor rendimento. Em segundo lugar, o regime político parece ter um papel importante na redução da pobreza, sendo que os resultados sugerem que um regime mais democrático contribui de forma direta para uma diminuição da pobreza. Por fim, em terceiro lugar, quanto aos países de menor rendimento observa-se que apenas o PIB *per capita* é eficaz na diminuição da pobreza, absorvendo os efeitos dos outros canais, mesmo o da desigualdade e o do regime político.

Assim, os países e instituições dadores devem estar cientes da necessidade de criar e desenvolver o ambiente institucional que promove a redução da pobreza e, consequentemente, contribui para a melhoria das condições de vida das populações dos países em desenvolvimento. Os resultados sugerem que este ambiente institucional envolve um regime político mais democrático, no qual os cidadãos podem participar na escolha dos seus governos.

Códigos-JEL: I30, F35, O19

Palavras-chave: Ajuda Externa, Pobreza, Regime Político

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Chapter 1. Introduction

Between 1990 and 2015, the First Millennium Development Goal was achieved: the extreme poverty rate halved (United Nations, 2015b). Despite these good results, the United Nations established a new set of goals to achieve a more sustainable world and the first one was even more ambitious: "to end poverty in all its forms everywhere" (United Nations, 2015a, p. 14). The famous economist Atkinson (2009, p. 792) states that "Economics is a moral science", and therefore, it should not just contribute to making the rich richer but should have as its main concern to enhance the life of those who have less and are disadvantaged. Fighting poverty is a global responsibility and it is important to know whether the efforts being made are sufficient and effective.

One of the foremost commitments required to meet the Millennium Development Goals was for rich nations to increase their aid flows toward poor countries (Alvi and Senbeta, 2012). Traditionally, aid has been perceived to raise average income in the receiving country first, which is then followed by poverty reduction (Alvi and Senbeta, 2012). But as stated by the authors, whether aid helps income growth and whether growth translates to poverty reduction are two separate questions. In fact, it is plausible that aid exerts a direct effect on poverty aside from that derived from overall economic growth.

Studies on foreign aid effectiveness frequently point out its disappointing results, which may be explained by aid misallocation (*i.e.* wrong recipients), aid distortion (recipient governments pursue non-developmental agendas), or the fact that GDP growth is not the right measure of aid effectiveness (Yontcheva and Masud, 2005). Nevertheless, these studies typically focus on the impact of aid on economic growth and not on its influence on poverty reduction (Ali and Isse, 2005; Agénor *et al.*, 2008; Pinto Moreira and Bayraktar, 2008). Other authors, although examining the impact of aid on poverty, focus their studies on specific types of aid, like aid for the agricultural sector (Kaya *et al.*, 2013).

The literature that analyses the effectiveness of foreign aid in reducing poverty typically states that the quality of institutions and good economic policies that promote savings and investment are the key factors (Collier and Dollar, 2001; Ali and Isse, 2005). Other authors refer donor coordination and donor quality as factors that also improve aid effectiveness (Bigsten and Tengstam, 2015; Minasyan *et al.*, 2017). In the same way, Mosley *et al.* (2004) state that policy conditionality has positive impacts on the effectiveness of aid.

Bourguignon and Platteau (2017), in turn, warn that aid effectiveness decreases with increasing availability. Focusing on the influence of the political regime on the effectiveness of foreign aid, Boone (1996) concludes that aid does not significantly improve the basic dimensions of human development, *e.g.,* infant mortality.

To the best of our knowledge, studies on the direct impact of foreign aid on poverty reduction are scarce, especially for the recent years and considering the influence of the political regime. In fact, most literature focuses on the relation between aid and growth, or political regime and growth. As far as we know, only Boone (1996) studies the effectiveness of foreign aid on the improvement of human development, conditional on the political regime, using five-year averaged data for the period between 1971 and 1990. Alvi and Senbeta (2012), in turn, analyse the direct impact of foreign aid on poverty using three poverty measures, in 79 developing countries between 1981 and 2004. Although the authors include a democracy score in their model, they do not control for the countries' political regime.

This dissertation aims to analyse the effectiveness of foreign aid in reducing poverty. Particularly, this study intends to answer the following questions: What are the causes of poverty and how does foreign aid influence poverty alleviation? Will the effectiveness of foreign aid depend on the level of income of the recipient countries? What is the role of the political regime on the effectiveness of foreign aid?

In a more comprehensive way, the research aims first to define the main concepts involved – foreign aid, poverty and political regime – and to summarize the main contributions of the literature concerning the influence of foreign aid on poverty alleviation. The second goal is to study the effectiveness of foreign aid on poverty reduction through the estimation of an econometric model using panel data, after controlling for the countries' political regime and other determinants of poverty, as considered in the literature. Using the Official Development Assistance (ODA) to measure foreign aid, Polity IV as an indicator of the countries' political regime and Poverty Headcount Ratio at $1.90 a day as a measure of poverty, we will estimate the model for 102 countries between 1995 and 2015. Then, we will consider a subsample of low-income economies that follow the World Bank's classification.

This topic deserves a particular attention for several reasons. First, for academic purposes, research on the effectiveness of foreign aid on poverty reduction is scarce and mostly outdated. As well, although the literature acknowledges the relevance of institutions and particularly the political regime for the effectiveness of foreign aid on poverty reduction, this topic is almost absent from the literature. Finally, the issue of aid effectiveness on

poverty reduction is a relevant topic not only in the academia but also for social purposes, making this issue crucial in the policymakers' agenda.

The dissertation is organized as follows. Chapter 2 begins by defining the key concepts – poverty, foreign aid and political regime – along with the most common measures. Chapter 3 is a literature review that synthesizes the main determinants of poverty, with a particular emphasis on the studies that analyse the influence of foreign aid on poverty alleviation. Chapter 4 describes the model and data used and discusses the results obtained. Finally, Chapter 5 presents some conclusions and policy implications about the topic under study.

Chapter 2. Foreign Aid, Poverty and Political Regime: the concepts

In order to study the effectiveness of foreign aid on poverty reduction and to analyse the role of the political regime in this relation, we have first to define the main concepts involved. In this chapter, we will start by presenting the main definitions and measures used in literature concerning foreign aid, poverty and the political regime.

2.1. Foreign aid

Foreign aid is regarded as "a contract where the North gives a transfer to the South in return for poverty reduction" (Azam and Laffont, 2003, p. 1). One of the most important measures of aid flows is Official Development Assistance (ODA) from the OECD Development Assistance Committee (DAC). ODA includes all government aid that aims to promote the economic development and welfare of the developing countries, which are included in the DAC list of ODA Recipients (OECD, 2008). This type of aid covers all the concessional flows (flows that are extended at conditions below market rates) provided to developing countries by the official sector, with a developmental purpose. Therefore, other official flows that are non-concessional, private grants, private flows at market terms, remittances and guarantees are not included in ODA's scope.[1]

According to the OECD Statistics, in 2015, the Total Official Flows (ODA and Other Official Flows (OOF)) to Developing Countries was of 133 177.92 million dollars. The largest recipient was the Asian continent (43 118.2 million dollars), followed by African countries, with a total of 31 878.8 million dollars received (OECD, 2017).

Most of the literature on the effectiveness of foreign aid uses ODA as a measure of aid flows (from OECD). However, there are some exceptions. Chong *et al.* (2009), although referring that ODA is their preferred measure, complement their analyses with other two concepts: Effective Development Assistance (EDA) and Aid Commitments (from OECD). EDA concerns the aid excluded from concessional loans that are made at very low interest rates. The second measure refers to country aid commitments that reflect firm obligations. Bigsten and Tengstam (2015, p. 77), in turn, use just Country Programable Aid (CPA) (from OECD), which is part of ODA "that is subject to multi-year programing at the country level". Kaya *et al.* (2013) focus on the part of ODA for the agricultural sector and Alvi and

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[1] http://www.oecd.org/dac/stats/beyond-oda.htm (accessed on 07.03.2018)

Senbeta (2012) disaggregate ODA flows by type (grants *vs.* loans) and source (bilateral *vs.* multilateral) (from OECD). Finally, Yontcheva and Masud (2005) use not only ODA, but also aid from projects led by European non-governmental organizations in developing countries. In what concerns the main goal of foreign aid, several authors refer that there was a change in recent years. The main objectives of aid programs are no longer intensive industrialization programs or GDP growth, but focus on the reduction of poverty (Mosley *et al.*, 2004; Yontcheva and Masud, 2005). Collier and Dollar (2002) also refer that although aid flows can be used to pursue other objectives, like rebuild post-conflict societies or for humanitarian emergencies, the main goal is the reduction of poverty. Boone (1996) have analysed the motives for giving aid and concluded that political, strategic and welfare interest of donors have also a significant impact.

2.2. Poverty

Mabughi and Selim (2006, p. 1) generally define poverty "as social deprivation from a decent quality of life". In their article, these authors describe some of the definitions and measures of the poverty phenomenon, pointing out that it is a broad concept with implications in different social and economic dimensions.

The different definitions of poverty result from the difficulty in defining what quality of life is. Mabughi and Selim (2006) claim that the first definitions of poverty adopted an income or monetary approach and that, after 1970s, a multidimensional approach has been prevalent.

The monetary (or income) approach defines quality of life based on material well-being, often measured by income or consumption (Sen and Anand, 1997; Mabughi and Selim, 2006). Following this concept, the poor are those who are income deprived. The simplest way to identify them is to use poverty lines to define the minimum standard of living based on income or consumption. In 2015, the World Bank defined a threshold of $1.90 per day in 2011 purchasing power parity (PPP) to identify extreme poverty.[2] The Poverty Headcount Ratio is the proportion of the population below the poverty line (Mabughi and Selim, 2006). Many authors use this ratio to measure poverty. In fact, it is one of the poverty measures with more available information in terms of countries and period of time. Furthermore, as mentioned by Mabughi and Selim (2006), the Poverty Headcount Ratio

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[2] http://www.worldbank.org/en/news/video/2017/04/14/what-are-poverty-lines (accessed on 10.11.2017) and http://www.worldbank.org/en/topic/poverty/brief/global-poverty-line-faq (accessed on 29.12.2017)

depends on a poverty line that is known with precision and its computation is very simple. Although its advantages and the fact that it is widely used, the Poverty Headcount Ratio has some limitations. As pointed out by Chong *et al.* (2009), this indicator does not differentiate the poor. A person that is just below the poverty line is in a different situation from someone who does not have income at all. Besides the fact that the Poverty Headcount Ratio does not take into account the short-fall of income from the poverty line (violates the monotonicity axiom),[3] Sen (1976) also refers that this indicator does not translate changes in the distribution of income among the poor (violates the transfer axiom).[4] To overcome this limitation, the Poverty Gap Index is frequently used, defined as "the mean shortfall from the poverty line when counting the non-poor as having zero shortfall, and expressed as a percentage of the poverty line" (Chong *et al.*, 2009, p. 62). In addition, the Squared Poverty Gap is also employed. This index is almost identical to the previous one with the difference that the poverty gaps are squared, revealing information about inequality among the poor. Collier and Dollar (2002) and Alvi and Senbeta (2012) use the same three measures in their studies. Nevertheless, it is noteworthy that although overcoming some of the limitations of the Poverty Headcount Ratio, the Poverty Gap and the Squared Poverty Gap focus more on the asymmetry and inequality among the poor. To identify who are poor the Poverty Headcount Ratio is the best indicator, fulfilling the objective with simplicity and precision.

The multidimensional approach is proposed by Sen and Anand (1997). According to the authors, poverty "can involve not only the lack of necessities of material well-being, but also the denial of opportunities of living a tolerable life" (Sen and Anand, 1997, p. 4). Following this multidimensional view of poverty, the United Nations state that this phenomenon "depends not only on income but also on access to social services" (United Nations, 1996, p. 38). Therefore, the United Nations identify the poor using a Multidimensional Poverty Index that considers not only monetary deprivations but also deprivations in other dimensions such as health and education.[5] Following the multidimensional approach to poverty, Yontcheva and Masud (2005) use some development indicators as poverty measures like infant mortality and illiteracy. As with the previous indicators, the Multidimensional Poverty Index has some limitations. Firstly, as noted by

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[3] The monotonicity axiom postulates that "given other things, a reduction in income of a person below the poverty line must increase the poverty measure" (Sen, 1976, p. 219).
[4] The transfer axiom postulates that "given other things, a pure transfer of income from a person below the poverty line to anyone who is richer must increase the poverty measure" (Sen, 1976, p. 219).
[5] http://hdr.undp.org/en/content/multidimensional-poverty-index-mpi (accessed on 10.11.2017)

Todaro and Smith (2012), its data concerns households rather than individuals and it does not allow to identify differences within households. Secondly, the same authors refer that the proxies used are often input rather than output indicators, such as in Education where it is only considered the year of schooling rather than the literacy rate. In addition, according to Todaro and Smith (2012), also the basic assets chosen to assess the standards of living of the household, such as a bicycle or a radio, are questionable. Finally, using a range of indicators expressed in different units hinders its computation (Mabughi and Selim, 2006). These limitations along with the scarcity of available data on some dimensions of poverty, leads to a preference of income indicators when compared to multidimensional ones.

2.3. Political Regime

In what concerns the political regime, Boone (1996, p. 295) states that it "is determined by the type and breadth of persons that politicians take into account when choosing government policies". Following this definition, Boone (1996) distinguishes in his theoretical framework three categories of political regimes according to the interest group they support: elitist government, egalitarian government and *laissez-faire* government. The author uses an index of political liberties and a *dummy* which identifies if the country under analysis is a liberal democracy.

Durham (1999, p. 81), in turn, defines political regimes as "the methods politicians must use to gain and maintain control of the state". According to Durham (1999) the proxies for regimes used in most of the econometric studies are not correct, because they focus on outcomes of processes rather than institutions. The author defends that the institutional difference of regimes is in the degree of policymaker discretion or freedom of action. Thus, a good measure of political regime according to Durham (1999, p. 84) should "capture the continuous nature of executive discretion and objectively measurable institutions that distinguish the regimes". Therefore, the author proposes an alternative measure that incorporates the number of effective political parties in government and the constitutional framework.

In fact, the political regime is deeply related with institutions. According to North (1992, p. 477) institutions are "the rules of the game in a society; more formally, they are the humanly devised constraints that shape human interaction". Therefore, and given the above definitions, political regime is one of the dimensions for assessing the institutional quality of

a country. More specifically, it is part of the political institutions, along with corruption, for example.

Another way to measure the political regime is to use democracy measures and indicators. Acemoglu *et al.* (2008), for example, use the Freedom House Political Rights Index and Polity IV to analyse the correlation between income and democracy. Högström (2013) presents an overview of the definitions and measures of democracy, referring that both of these indexes (Freedom House Political Rights Index and Polity IV) are the most currently used.

The Freedom House Political Rights Index is divided in two main categories: political rights and civil liberties (Högström, 2013). The political rights category includes ten indicators that cover the evaluation of the electoral process, political pluralism and participation, and the functioning of government. The civil rights category, in turn, includes fifteen indicators about freedom of expression and belief, associational and organizational rights, rule of law and personal autonomy, and individual rights.

The Polity IV index corresponds to the aggregation of two indices: Democracy (DEMOC) and Autocracy (AUTOC) (Högström, 2013). It analyses five dimensions including competitiveness and openness of executive recruitment, competitiveness and regulation of participation and constraints on the chief executive.

Chapter 3. Poverty and Aid: main insights from the literature

After defining the main concepts in the previous chapter, the current chapter intends to summarize the main contributions of the literature on the influence of aid on poverty reduction. To better understand the poverty phenomena, we start by presenting some of the main determinants of poverty. Then, we focus on the relation between aid and poverty, introducing the main studies and conclusions about the topic under analysis.

3.1. On the determinants of poverty

There are several theories that aim to describe and explain the causes of poverty, either with a more orthodox or a more heterodox flavour. In this section, we will follow Blank (2003), who presents several theoretical approaches that discuss the main causes of the poverty phenomena.

The first theory is based on the hypothesis that poverty is caused by the lack of effectively functioning markets. According to this approach, the economic organization is not sufficiently developed to create jobs and increase productivity. Blank (2003) explains that this is typically the case of agricultural subsistence economies, where the farmers have no access to outside markets nor credit and therefore they do not benefit from comparative advantages or long-term investments.

However, Blank (2003) also states that poverty may be caused by the market when it favours that some individuals become rich at the expense of the poverty of others. Therefore, the inequality among individuals requires the limitation and regulation of the markets. This approach is followed by Kaya *et al.* (2013), who emphasize the importance of capturing the impact of inequality on poverty, by adding the Gini coefficient to their model.

At a macroeconomic level, Blank (2003) also refers that this view is often adopted by the opponents of globalisation, who argue that rich countries take advantage of the poor ones to ensure the low-cost imports. However, Dollar and Kraay (2004) have another opinion. In an article where the authors intend to study the impact of globalisation on inequality and poverty, Dollar and Kraay (2004) conclude that the increase in trade allows a more rapid growth of GDP *per capita* and there is no significant evidence that this increase in trade produces changes in the household income distribution. Therefore, in contrast to the opponents' of globalisation opinion, Dollar and Kraay (2004) advocate that greater openness can benefit the poor, increasing their incomes.

In contrast to the previous theory, the second approach advocates that the causes of poverty are not in the market. Actually, poverty is due to social and political problems, such as corruption, wars and social norms that lead to racism or ethnic persecution. In this theory, the market is viewed as "an exogenous transmission device" (Blank, 2003, p. 453) that can perpetuate or even reinforce these social and political processes, which are the real cause of poverty. Following this approach, some economists consider in their studies the impact of corruption on poverty (*e.g.,* Mosley *et al.*, 2004 and Chong *et al.*, 2009), while others use indices of institutional quality (*e.g.,* Collier and Dollar, 2002) or political liberties (*e.g.,* Boone, 1996).

In fact, Ribeiro *et al.* (2015) present institutional environment as a transmission mechanism through which the macroeconomic framework can impact poverty. The authors refer that government transfers and aid programs, for example, may have a limited effect on poverty reduction if the quality of institutions is not improved. In this sense, Blank (2003) refers that sometimes the strategies that intend to reduce poverty result in the increase of poverty instead. This happens because these strategies provide short-term income assistance, creating incentives to be poor.

The third theory attributes the cause of poverty to individual characteristics. According to this approach, poverty exists because some individuals are not able or prepared to participate effectively in the market economy (Blank, 2003). The non-participation can be caused by the lack of ability to do so (this is the case of children and elderly people) or by the lack of productive skills, namely education. In fact, education is often included as a variable to explain poverty, using literacy or school enrolment rates as a proxy (*e.g.,* Ali and Isse, 2005 and Chong *et al.*, 2009).

In addition, Blank (2003) also states that in some cases the individual behaviour influences poverty. Accordingly, poverty is the result of individual choices: the poor are poor because they choose to. This choice, however, may be a free choice – for example, if the individual has the opportunity to have a better job but chooses not to take it – or it may be a forced one – if the individual has limited opportunities. This last scenario is the case, for example, of the social excluded groups that do not have the same incentives to invest in education or job search as the rest.

The fourth explanation for poverty relates with an insufficient public investment in education (quantity and quality), health, and other infrastructures (Fan and Zhang, 2008). Frequently, the public resources in these economies, such as schools, hospitals and transports, are also limited or even absent, making it difficult to develop the country or

region. In fact, public expenditure is a very important force for poverty reduction. Studying the impact of different types of public expenditure on rural poverty in Uganda, Fan and Zhang (2008) explain that public investment increases agricultural productivity, raising farmer's incomes and employment, and also increases agricultural output, which benefits the poor by food prices reduction. The importance of public expenditure is also highlighted by Mosley *et al.* (2004), who propose the construction of a Pro-poor expenditure (PPE) index. The PPE index intends to identify which government expenditure types are more effective in poverty reduction. According to Mosley *et al.* (2004), the sectors that are usually identified are the ones related to health, education and agriculture. Also Ribeiro *et al.* (2015) underline the importance of investment in pro-poor programs and of an efficient distribution of essential public services to the linkages between economic growth and poverty reduction. According to the authors, growth is recognised in the literature as the most important characteristic to reduce poverty. The impact of growth on poverty reduction can be improved with increases in the median income and if growth strategies are targeted to sectors where poor people are typically allocated to.

Other macroeconomic variables also influence poverty. Ames *et al.* (2001), for example, highlight the importance of macroeconomic conditions, and hence the role of, for instance, inflation and the real exchange rate in poverty reduction. In fact, inflation might erode the real wages and assets of the poor, since they typically depend on state-determined income that is not indexed to inflation and most of their financial assets are in the form of cash and, therefore, not protected from inflation (Ames *et al.*, 2001; Easterly and Fischer, 2001). The real exchange rate can also have a direct impact on poverty through changes in the prices of tradable goods, since the income of the poor depends to a great extent on this type of goods, while their consumption is essentially associated with non-tradable goods (Ames *et al.*, 2001).

Finally, the existence of natural resources in a region, such as ore reserves or rich soils, is pointed out by Blank (2005) as a local characteristic that can impact poverty. According to the author, natural resources together with climate influence the type of industries and markets of a region. It can occur that a particular resource has multiple uses and therefore encourages the emergence of many enterprises, contrasting with communities where there are only one-use resources and therefore less potential economic development.

Economic development entails structural change (Matsuyama, 2009). Therefore, variables such as the Gross Domestic Product *per capita*, investment rate, industrialization

and urbanization rates or even demographic indicators influence a country's economic development and the living conditions of its population. Particularly, the literature focus on the gross capital formation and the urbanization phenomena. In what concerns the gross capital formation, Akobeng (2017) refers that the literature so far is inconclusive about the impact of capital formation and growth on poverty reduction. In this way, the author tests if gross capital formation (GCF) had a negative impact on poverty in the sub-Saharan Africa countries between 1981 and 2010, concluding that not only the GCF had a poverty-reducing impact, but also that this impact increased with the level of institutional development.

With respect to urbanization, Ravallion *et al.* (2007) explain that there is not a consensus in the literature about the impact of urbanization on poverty. Some authors advocate that urbanization is good for poverty reduction, while others instead argue that there are negative externalities associated with the geographic concentration of poverty. However, Ravallion *et al.* (2007) conclude in their investigation that the urbanization process had a positive and important effect on poverty reduction between 1993 and 2002 for the 90 developing countries considered. This positive impact is caused by two effects. Firstly, it creates new opportunities to those who migrate to urban areas. Secondly, the urbanization process has also an impact on the welfare of those who remain in rural areas. Calì and Menon (2013) present some of the channels through which this second effect operates. The authors refer, for example, that the expansion of urban areas will increase the demand for rural goods, creating consumption linkages, and increase the demand for agriculture land for residential purposes, raising the prices of this type of land. Likewise, it is also expectable the increment of the remittances sent by the migrants to the rural households of origin. Finally, the growth of cities is associated with the decrease of consumer prices that can also benefit the rural individuals who have access to urban markets.

3.2. Aid and Poverty Reduction: main contributes of the literature

The relation between foreign aid and poverty reduction is a concern of several economists who have studied whether foreign aid is effective in reducing poverty. Some of them have concluded that aid promotes – either directly or indirectly, by affecting indicators closely related to poverty – the reduction of poverty (Alvi and Senbeta, 2012; Kaya *et al.*, 2013), while others state that it does not (Boone, 1996; Yontcheva and Masud, 2005; Leeson, 2008; Chong *et al.*, 2009). A summary table of the literature review can be found in Appendices 1 and 2.

Chong *et al.* (2009), based on a sample of 115 developing countries between 1971 and 2002, conclude that foreign aid does not have a significant impact on poverty nor inequality. According to the authors, the reason for this ineffectiveness is not only in corruption and poor institutions, but also in misallocation of aid, since donor countries often impose to the recipient ones to contract with donor's enterprises, and in the fact that policymakers' motives for giving aid are inconsistent with poverty reduction. Similarly, Boone (1996), in his investigation about the impact of political regimes in the effectiveness of aid programs, in a sample of 96 countries between 1971 and 1990, shows that aid does not contribute significantly to improvements in basic measures of human development, like infant mortality, so it does not benefit the poor. Instead of this, it contributes to increase the size of government and consumption. Yontcheva and Masud (2005) also use human development indicators, such as adult illiteracy and infant mortality rate, to assess the effectiveness of foreign aid on poverty alleviation in approximately 70 developing countries, between 1990 and 2001. The authors distinguish between two measures of foreign aid – aid from non-governmental organizations (NGO) and official bilateral aid (ODA) – concluding that although NGO aid is effective in reducing infant mortality, ODA does not have a significant effect on this indicator. Furthermore, none of the aid measures used influence significantly the illiteracy rate. According to Yontcheva and Masud (2005) the greater proximity to the poor and the fact that bilateral aid is allocated to countries with lower infant mortality rate are reasons that justify the grater effectiveness of NGO aid. Finally, Leeson (2008) evaluates two hypotheses in his literature review: first, that foreign aid does not promote economic development and may even hinder this process; second, that private property rights are the key to achieve economic progress. The author finds support in the literature for both of these premises and explains that aid can have a negative effect on receiving countries because of the transformations it causes in policymakers' and citizens' incentives and information.

However, there are other authors who conclude for the effectiveness of aid in terms of poverty reduction. Alvi and Senbeta (2012) analyse the impact of foreign aid on 79 developing countries between 1981 and 2004, using three measures of poverty: Poverty Headcount ratio, Poverty Gap and Squared Poverty Gap. The authors' findings confirm the existence of a direct poverty-reducing impact of aid, since the aid coefficient appears to be negative and significant for all measures of poverty used. In addition, focusing on aid for agriculture, Kaya *et al.* (2013) use a sample of 46 developing countries between 1980 and

2003 to study whether aid targeted to the agricultural sector has an impact on poverty. The authors choose this type of aid because of its direct aim at enhancing the lives of the poor. They conclude that, in fact, aid oriented to agriculture is effective in reducing poverty, not only in the agricultural sector, but also in other ones as this sector is considered a "engine of growth" (Kaya *et al.*, 2013, p. 593).

There are also some articles that aim to analyse the factors that influence the effectiveness of foreign aid in reducing poverty. In general, there is a consensus among authors that the environment of good economic policies, that is, the combination of quality institutions and good policies that promotes savings and investment, is the key factor (Collier and Dollar, 2001; Ali and Isse, 2005). Collier and Dollar (2001), for example, study, for 62 developing countries between 1974 and 1997, how can policy reform contribute to a better environment that increases the effectiveness of aid in terms of poverty reduction and particularly help in achieving the Millennium Development Goal of halving poverty until 2015. The authors conclude that this goal can be achieved if better policies are implemented together with foreign aid, highlighting the importance of good economic policies for the effectiveness of aid. Therefore, some authors defend that aid should be conditional on policies or political reforms (Boone, 1996; Mosley *et al.*, 2004). Mosley *et al.* (2004), in particular, analyse the benefits of policy conditionality for 34 countries between 1980 and 2000. The authors explain that the composition of public expenditure, which can be easily manipulated by governments, together with corruption and inequality, are strong determinants of aid effectiveness. Hence, with the new conditionality approach, donors can orient public expenditures to the pro-poor sectors, increasing the effectiveness of aid in terms of poverty alleviation.

Others refer donor coordination and donor quality as factors that also improve aid effectiveness. Minasyan *et al.* (2017) investigate how donor policies could improve aid effectiveness in 146 countries between 1999 and 2011. Using a difference-in-difference estimation, they compare the effects of quality-adjusted and unadjusted aid on changes in GDP *per capita*, concluding that cooperation and quality aid have positive income effects, contributing to increase GDP *per capita* in recipient countries. Bigsten and Tengstam (2015) focus, in particular, on the impact of donor coordination on the effectiveness of aid for a large sample of countries in 2009 and reach the same conclusions: coordinated allocation of aid has a positive impact on aid effectiveness. Beyond the increasing possibility to achieve donor objectives in recipient countries, for example poverty reduction, aid coordination can

also decrease donor transactions costs. However, the loss of political control of aid flows is a cost that discourages donors to make efforts towards coordination of aid.

Finally, the composition of aid is also an important determinant of its effectiveness (Alvi and Senbeta, 2012). Disaggregating aid by source (multilateral *vs.* bilateral aid) and by type (grants *vs.* loans), Alvi and Senbeta (2012) find that multilateral aid and grants are better in poverty alleviation than bilateral aid and loans. The authors explain that bilateral aid often has other motivations rather than poverty reduction and that loans are probably used mainly for financial productive projects rather than poverty alleviation because repayment is relevant, unlike grants which do not have repayment conditions. The greater effectiveness of multilateral aid, that is aid from international organizations, is also defended by Yontcheva and Masud (2005), who find that NGO aid is more effective in reducing infant mortality than bilateral aid, as we have referred to previously.

In the opposite way, Bourguignon and Platteau (2017), in a review article that focuses on the analysis of aid supply on aid effectiveness, warn that aid effectiveness decreases with increasing availability. According to the authors, whether the donors follow a needs-based approach[6] or a governance-based approach,[7] when the amount of aid increases, its effectiveness declines due to two mechanisms. Firstly, due to the behaviour of local elites and governments who capture the external funds, resulting in less aid addressed to the poor. Secondly, because the probability that a leader with lower poverty aversion or level of altruism receives aid is higher. In turn, Ali and Isse (2005) investigate the impact of aid on economic growth in 90 countries between 1975 and 2000. The authors also state the negative impact of greater aid availability not directly on poverty but on economic growth, which in turn may compromise poverty reduction. The authors include in the regression the aid squared term to test for nonlinearities between aid and growth and conclude that its coefficient is negative and highly significant. Therefore, they confirm the hypothesis that there is a limit beyond which more and more aid can be prejudicial to economic growth, explaining that this may be due to the limited ability of several countries in absorbing external resources.

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[6] Donors who follow the needs-based approach allocate more funds to the countries who need the most, that is to the poorest (Bourguignon and Platteau, 2017).
[7] According to the governance-based approach, donors should allocate aid to the better governed countries (Bourguignon and Platteau, 2017).

Chapter 4. Does foreign aid reduce poverty?

In this chapter we proceed to the estimation of an econometric regression that aims to analyse the effectiveness of foreign aid on poverty reduction, after controlling for the countries' political regimes, as well as other potential determinants of poverty.

The model is presented in the first part of the chapter. Then, we describe the data and main variables used and finally show the results obtained.

4.1. The model

In order to analyse the influence of foreign aid on poverty reduction, and considering the available data, this study considers the 102 countries that received ODA between 1995 and 2015 and for which we have available information for the main indicators, such as Poverty Headcount Ratio and Polity IV. In addition, we create a subsample of 24 low-income countries according to the World Bank's classification.[8] Due to missing observations regarding some of the variables included in the estimations, the econometric procedure eliminates some countries, which is why the number of countries actually considered varies across the regressions.

Since our data set combines cross-sectional and time-series information, this study uses panel data estimation. The literature (*e.g.*, Greene, 2012) usually considers the fixed effects and the random effects models to deal with panel data. The fixed effects model (FEM) assumes that the individual effect is unobserved and correlated with the explanatory variables. The random effects model (REM), in turn, assumes that the unobserved heterogeneity is not correlated with explanatory variables.

Our econometric model can be described as follows:

$$Y_{it} = \beta_1 X_{it} + \beta_2 Z_{it} + \alpha_i + u_{it}$$

where *i* represents the country ($i = 1, \ldots, 102$) and *t* represents time ($t = 1995, \ldots, 2015$). Y_{it} is the dependent variable and refers to a measure of poverty of country *i* at time *t*; β_1 is a vector of coefficients associated with the explanatory variables; X_{it} is the vector of explanatory variables, defined for each country *i* at time *t*; β_2 is a vector of coefficients

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[8]According to the World Bank, a low-income economy is the one that has a GNI *per capita* of $1,005 or less in 2016, calculated by the World Bank Atlas method (https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups (accessed on 9.05.2018)).

associated with the control variables; Z_{it} is the vector of control variables, defined for each country i at time t; α_i is the unobserved country specific effect (in the case of the FEM this specific effect is constant whereas in the REM it is considered a random element); and u_{it} is the random term for country i at time t.

For the estimation of the model, we used *eViews* software package, version 10.

4.2. Data

The present study uses secondary data collected from several organizations. The data and sources used will be described below.

Dependent variable

The dependent variable corresponds to poverty. Following the literature (*e.g.*, Alvi and Senbeta (2012), Kaya *et al.* (2013) and Mosley *et al.* (2004)), and considering the available data, we select the Poverty Headcount Ratio at $1.90 a day in 2011 PPP (PHR) as a measure of poverty, gathered from the World Development Indicators of the World Bank (World Bank, 2017). The definition of this measure can be found in Section 2.2. Between 1995 and 2015, the Democratic Republic of Congo was the country in our sample with the highest level of extreme poverty, with an average PHR of 85.55%, followed by Burundi and Mozambique with an average of 78.5% and 78.17% of the population living with less than $1.90 a day, respectively (see Appendix 3).

This measure was chosen over the Poverty Gap and the Squared Poverty Gap because it is the simplest measure of poverty and the most used one in the literature, which allows the comparison of results with other studies. Furthermore, it fulfils the purposes of the study, which intends to measure poverty rather than to assess for the inequality among poor individuals. In addition, due to lack of data regarding Multidimensional Poverty Index, the multidimensional approach of poverty was not considered.

Explanatory and control variables

The main explanatory variables are foreign aid and political regime. In addition, other variables are considered, in order to control for the influence of other independent variables on poverty (as discussed in Section 3.1). The considered variables are the following:

- **Foreign Aid**, measured by the Official Development Assistance *per capita*, lagged by one period, at constant prices of 2015 (ODApc$_{(t-1)}$). ODA is taken from OECD

(OECD, 2018) and includes information about destination of ODA for 181 developing countries between 1960 and 2016.[9] According to the data, Israel was the country from our sample that received more foreign aid between 1995 and 2015, with an average of 324.32 million dollars per capita received, followed by the Solomon Islands and Cape Verde, with an average of 278.76 million dollars per capita and 262.32 million dollars per capita received, respectively (see Appendix 3). The variable is lagged by one period in order to account for the lagged effect that foreign aid has on the economy.[10] ODA is the preferred measure of foreign aid for many authors and the most used in the literature (*e.g.*, Boone (1996) and Mosley *et al.* (2004)).

- **Political Regime**, assessed by Polity IV (POLITY), corresponds to the difference between two aggregate indices (Polity's Democracy and Autocracy indices) since 1800 until 2016 for all independent countries with total population greater than 500,000 in 2016, which corresponds to a total of 167 countries. This measure is sourced from Integrated Network for Societal Conflict Research (INSCR, 2017) and it is one of the most currently used indicator (Högström, 2013). It ranges from -10 (strongly autocratic) to 10 (strongly democratic). According to the data, Uruguay, Slovenia, Mauritius, Cyprus and Costa Rica are on average the most democratic countries in our sample. On the other hand, Swaziland has the lowest Polity IV average, suggesting that this is the least democratic country in our sample during the period considered (see Appendix 3). As with the Poverty Headcount Ratio, the fact that it is widely used allows the comparison of the results with other studies. Moreover, while the Freedom House Index is more related to the concept of freedom, the Polity IV concerns directly the identification of the political regime. In Section 4.3.3, we also test for two dimensions of the Worldwide Governance Indicators (WGI) from the World Bank that are linked to the political regime: "Political Stability and Absence of Violence/Terrorism" and "Voice and Accountability". These governance indicators are somehow related to political

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[9] Notice that, since ODA is measured as net flows, it may be negative for some countries at certain moments of time.

[10] As it will be explained in Section 4.3.3, several lags have been tested. However, there was no significant difference in the results. Thus, we chose the one-period lag because it is the same one that was chosen for GDP *per capita.*

regime as they intend to reveal "the traditions and institutions by which authority in a country is exercised".[11]

- Macroeconomic variables:
  - **GDP per capita**, lagged by one period, at 2011 international (PPP) dollars ($GDPpc_{(t-1)}$), from the World Bank's World Development Indicators database (World Bank, 2017). As suggested by the literature, we include the real GDP *per capita* to control for the recipient country's level of economic development (*e.g.,* Chong *et al.*, 2009 and Kaya *et al.*, 2013). We use lagged GDP *per capita* as an instrumental variable, to avoid the simultaneity bias between GDP *per capita* and PHR.
  - **Inflation** (INF), which corresponds to the consumer prices index and is collected from World Bank's World Development Indicators database (World Bank, 2017). It expresses the annual percentage change in the cost of acquiring a basket of goods and services. As it was explained in Section 3.1, Inflation is an indicator of macroeconomic stability, which is pointed out as having an important impact on poverty reduction (Ames *et al.*, 2001).
  - **Public Expenditure in Education and Health** (EXP), which is the sum of the public expenditure in education and the public expenditure in health, both expressed as a percentage of GDP and available from the World Bank's World Development Indicators database (World Bank, 2017). It is expected that an increase in public expenditure in these two sectors contribute to a decrease in poverty (Mosley *et al.*, 2004).
  - **Trade Openness** (OPEN), which is the sum of exports and imports expressed as a share of GDP and is sourced from the World Bank's World Development Indicators database (World Bank, 2017). The impact of trade openness on poverty is not consensual in the literature, as it was explained in Section 3.1. Following Dollar and Kraay (2004), greater openness increases the incomes of the poor. On the other hand, Blank (2003) refers that the globalisation and therefore trade openness may be a way of rich countries taking advantage of poor ones.

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[11] http://info.worldbank.org/governance/wgi/#home (accessed on 10.06.2018)

- Natural Resources:
  - **Oil and Mineral Rents** (RENTS), which is the sum of oil and mineral rents (the difference between the commodities' prices and their cost of production) as a share of GDP. This indicator is gathered from the World Bank's World Development Indicators database (World Bank, 2017). As mentioned in Section 3.1, according to Blank (2005) the access to natural resources increases the economic development of the community, which, in turn, may decrease poverty.

- Structural Transformation:
  - **Gross Capital Formation** (GCF), which is the ratio of investments in fixed assets to GDP, gathered from the World Bank's World Development Indicators database (World Bank, 2017). According to Akobeng (2017), it is expectable that an increase in GCF reduce poverty.
  - **Urban Population** (URB), which indicates the share of population living in urban areas and is available at World Development indicators database from the World Bank (World Bank, 2017). As it is explained in Section 3.1, although Ravallion *et al.* (2007) and Calì and Menon (2013) point out a poverty-reducing effect of the urbanization process, the theoretical literature does not provide a clear-cut view regarding its expectable impact.

- Inequality:
  - **Gini index** (GINI), which measures the inequality of the income distribution among the individuals or households of an economy. It ranges from 0 (perfect equality) to 100 (perfect inequality) and is available at the World Bank's World Development Indicators database (World Bank, 2017). When the Gini index, and consequently inequality, increases, *ceteris paribus*, it is expected that the tails of the income distribution become more stretched out, which translates into a larger mass of individuals with very low and with very high incomes. Therefore, it is expectable that, in the same way, the number of individuals below the poverty line increases. Consequently, we expect that greater inequality leads to an increase in the poverty rate.

In Table 1, we show the summary statistics of the variables considered in the model.

Table 1 – Summary Statistics

	Variable	Mean	Median	Max	Min	Standard Deviation	Source
PHR	Poverty Headcount Ratio (% population)	15.316	8.100	94.000	0.000	19.065	World Bank
GDPpc$_{(t-1)}$	GDP *per capita*, lagged for one period	8144.798	7375.525	24489.34	373.435	5335.330	World Bank
ODApc$_{(t-1)}$	Official Development Assistance *per capita*, lagged for one period	26.337	15.029	561.293	-34.139	39.7105	OECD and World Bank
POLITY	Polity IV	4.672	7.000	10.000	-10.000	5.330	INSCR
INF	Inflation Rate	8.641	6.222	411.760	-3.704	18.346	World Bank
GINI	Gini Index	43.297	43.250	65.800	16.200	9.537	World Bank
EXP	Public Expenditure in Health and Education (% GDP)	5.829	5.468	15.569	0.178	3.046	World Bank
GCF	Gross Capital Formation (% GDP)	24.041	22.747	67.911	4.884	8.274	World Bank
OPEN	Trade Openness (% GDP)	78.277	71.663	311.355	15.636	35.857	World Bank
RENTS	Oil and Mineral Rents (% GDP)	4.326	1.002	57.440	0.000	7.530	World Bank
URB	Urban Population (% of total)	56.065	57.275	95.152	7.830	19.309	World Bank

4.3. Estimation results

In this section we present the results as well as the process of estimation and analysis. As explained before, the estimation was carried out for two samples: the full sample, which includes all of the 102 countries in our dataset, and the low-income sample, which corresponds to the 24 low-income economies in the sample, according to the World Bank classification.

We start by calculating the correlation matrix for all pairs of explanatory variables used. The results for the full sample, reported in Table 2, show that the correlation between the Poverty Headcount Ratio (PHR) and the Official Development Assistance *per capita* (ODA) is positive and statistically significant. This result may suggest, at first sight, that foreign aid is not effective in reducing poverty, since the correlation coefficient expresses a positive relation. From the analysis of the table, it is also possible to conclude that most of the correlation coefficients are low. Except for the pairs PHR and Urban Population, and $GDPpc_{(t-1)}$ and Urban Population, with a correlation of -0.61 and 0.67, respectively, all the other pairs of variables have a correlation coefficient of less than 0.6.

Table 2 – Correlation Matrix

	PHR	ODApc$_{(t-1)}$	POLITY	GDPpc$_{(t-1)}$	INF	EXP	OPEN	GINI	RENTS	GCF	URB
PHR	1.000 -----										
ODApc$_{(t-1)}$	0.0655* (0.0858)	1.000 -----									
POLITY	-0.208*** (0.0000)	0.1232*** (0.0000)	1.000 -----								
GDPpc$_{(t-1)}$	-0.5778*** (0.0000)	-0.1431*** (0.0000)	0.2806*** (0.0000)	1.000 -----							
INF	-0.0068 (0.8539)	-0.0421* (0.0624)	-0.0708*** (0.0014)	-0.0534** (0.0156)	1.000 -----						
EXP	-0.3123*** (0.0000)	0.0555** (0.0143)	0.2571*** (0.0000)	0.2769*** (0.0000)	-0.100*** (0.000)	1.000 -----					
OPEN	-0.1728*** (0.0000)	0.2071*** (0.0000)	0.0269 (0.2285)	0.1543*** (0.0000)	-0.0532** (0.0177)	0.2144*** (0.0000)	1.000 -----				
GINI	0.2020*** (0.0000)	-0.1100*** (0.0040)	0.3483*** (0.0000)	-0.1141*** (0.0020)	-0.0584 (0.1157)	-0.0339 (0.3642)	-0.2971*** (0.0000)	1.000 -----			
RENTS	-0.0228 (0.5346)	0.0448** (0.0443)	-0.2204*** (0.0000)	0.0251 (0.2489)	0.0027 (0.9047)	-0.1829*** (0.0000)	0.1033*** (0.0000)	-0.0999*** (0.0068)	1.000 -----		
GCF	-0.2054*** (0.0000)	0.1154*** (0.0000)	-0.0411* (0.0682)	0.1752*** (0.0000)	-0.0616*** (0.0065)	0.1161*** (0.0000)	0.2862*** (0.0000)	-0.2023*** (0.0000)	0.1152*** (0.0000)	1.000 -----	
URB	-0.6089*** (0.0000)	-0.0567** (0.0104)	0.2737*** (0.0000)	0.6718*** (0.0000)	0.0124 (0.5748)	0.2164*** (0.0000)	0.0614*** (0.0053)	0.2299*** (0.0000)	0.0934*** (0.0000)	0.1214*** (0.0000)	1.000 -----

Note: p-value in parenthesis; significance level at 1% (***), 5% (**) and 10% (*).

In order to go further in this analysis and to study the effectiveness of foreign aid on poverty reduction, controlling for the country's political regime as well as other potential determinants of poverty, we estimate three models (Model I, Model II and Model III) that correspond to different combinations of explanatory and control variables. Model I is the simplest one, where we only consider the effects of GDP *per capita* and ODA *per capita* on poverty. In Model II, we add the effect of political regime, by including the Polity IV indicator. Finally, Model III contains all the explanatory and control variables described in the previous section.

We carry out the Hausman test to choose between the fixed effects and the random effects model. The results for the two samples are presented in Table 3. According to the results, the Hausman test rejects the null hypothesis of no correlation between the effects and regressors, so we use fixed effects in the model estimation.

We also proceed with the Redundant Fixed Effects test to evaluate the significance of the period and cross section effects. According to the results presented in Table 3, we reject the null hypothesis of redundant effects for the two samples. Thus, we proceed to the model estimation using fixed effects for both period and cross section.

Table 3 – Specification and significance group effects tests

		Full sample	Low income
Hausman Test		44.315751*** (0.0000)	16.285910* (0.0917)
Redundant Fixed Effects Test	Cross-section F	39.583804*** (0.0000)	9.818282*** (0.0000)
	Cross-section Chi-square	1347.426139*** (0.0000)	180.293272*** (0.0000)
	Period F	6.006672*** (0.0000)	2.150863* (0.0674)
	Period Chi-square	134.632968*** (0.0000)	90.630261*** (0.0000)
	Cross-Section/Period F	33.464189*** (0.0000)	7.832802*** (0.0000)
	Cross-Section/Period Chi-square	1360.317591*** (0.0000)	208.335969*** (0.0000)

Note: p-value in parenthesis; significance level at 1% (***), 5% (**) and 10% (*).

The estimation results for the full and low-income samples are presented below as well as the robustness analysis, in which we test for different specifications and proxies.

4.3.1. Full sample

Starting with the full sample, the estimation results for the three models are displayed in Table 4. According to the R-Squared, we can conclude that the regressions explain about 93% to 95% of the variation in the poverty measure. In addition, the F-statistics indicates that all regressions present a high global significance, rejecting the null hypothesis that all coefficients are equal to zero.

Table 4 – Foreign Aid and Political Regime on Poverty – Full sample (1995 - 2015)

	Dependent Variable: Poverty Headcount Ratio (PHR)		
	Model I	**Model II**	**Model III**
Constant	12.62783***	15.57179***	-4.785646
	(0.0000)	(0.0000)	(0.4964)
ODApc$_{(t-1)}$	-0.012048*	-0.011850	-0.008271
	(0.0913)	(0.3681)	(0.4795)
POLITY	--	-0.446909***	-0.484384***
		(0.0006)	(0.0000)
GDPpc$_{(t-1)}$	0.000446**	0.000345*	0.000445**
	(0.0237)	(0.0841)	(0.0182)
INF	--	--	-0.003998
			(0.7461)
EXP	--	--	-0.458490***
			(0.0000)
OPEN	--	--	0.005141
			(0.7731)
GINI	--	--	0.324102***
			(0.0000)
RENTS	--	--	-0.154518**
			(0.0167)
GCF	--	--	-0.131908***
			(0.0017)
URB	--	--	0.197436*
			(0.0596)
	Model Summary		
R-Squared	0.932476	0.933587	0.951030
Adjusted R-Squared	0.918235	0.919331	0.938933
F-statistic	65.47978	65.48407	78.61545
Prob(F-statistic)	0.000000	0.000000	0.000000
Observations	690	680	632
Number of countries	99	98	96

Note: p-value in parenthesis; significance level at 1% (***), 5% (**) and 10% (*).

In the first place, it is noteworthy the results concerning foreign aid. In Model I, the simplest one, the results indicate a negative and significant effect of ODA on PHR, therefore overturning the estimated (positive) relationship between PHR and ODA evidenced by the simple correlation between these two variables (see Table 2, above). However, when we include the impact of political regime, measured by the Polity IV indicator (Model II), ODA's coefficient becomes highly insignificant and the same happens in Model III. We can conclude that the negative and significant impact of foreign aid on poverty in Model I results in fact from an effect of missing variables. Actually, our estimates suggest that this negative impact operates through the institutional channel, so that when we consider the political regime separately, measured by the Polity IV indicator, ODA becomes insignificant. Therefore, these results suggest that the political regime has an important role in poverty reduction.

These findings go in line with Boone (1996), who concludes that although aid is not used differently by distinctive political regimes, when compared to more restrictive regimes, liberal ones have a lower infant mortality rate (the indicator used by the author as a proxy of poverty). In addition, the author also concludes that foreign aid has an insignificant impact on poverty, which is also confirmed by our results. However, the above findings do not support the conclusions of Alvi and Senbeta (2012), who advocate the existence of a direct effect of aid on poverty reduction and the insignificance of the institutional environment for poverty alleviation. As far as we know, only Boone (1996) and Alvi and Senbeta studied the effectiveness of aid on poverty, conditional on institutional variables. Nevertheless, of the remaining studies, there are some authors who emphasize the importance of institutional variables for aid effectiveness on GDP *per capita* growth rate (*e.g.*, Collier and Dollar (2001) and Ali and Isse (2005)). With regard to the existing literature concerning the impact of aid on poverty and not controlling for the institutional variables, Chong *et al.* (2009) conclude that ODA by itself does not have a significant impact on poverty reduction. Also Kaya *et al.* (2013) in their study find that only ODA for the agricultural sector is effective in reducing poverty. According to the authors' findings, all the other sector-specific types of aid, such as social infrastructure aid or investment aid for example, have insignificant coefficients. Our results confirm the findings of the previous authors.

Model III includes all the control variables described in Section 4.2. With the exception of Inflation and Trade Openness, all the other control variables have a significant coefficient. In what concerns the macroeconomic variables and starting with public

expenditures, the results reveal that an increase in public expenditures in health or education contributes to a decrease in poverty, as the coefficient of this indicator is negative and highly significant. This result is consistent with the evidence gathered by the existing literature, in particular with the findings by Mosley *et al.* (2004). With regard to the level of GDP *per capita*, the results indicate a positive and significant relation with the poverty rate in the three estimated models. This suggests that countries with higher GDP *per capita* have higher poverty rates, which is the opposite of what should be expected in light of the theory described in Section 3.1. However, as it will be explained in the next section, this may be related to a non-linear effect of GDP *per capita*.

Concerning structural transformation variables and according to the results, the investment rate has a significant and negative impact on poverty. This result supports the findings by Akobeng (2017), who concludes that Gross Capital Formation contributes significantly to poverty reduction. Urbanization, on the other hand, enters the model with a positive coefficient, revealing that countries with a higher share of population living in urban areas tend to have higher poverty levels. This conclusion goes against the findings by Ravallion *et al.* (2007), who conclude in their investigation that the urbanization process has a positive and important effect on poverty reduction. However, it confirms the lack of consensus in the theoretical literature about the impact of urbanization on poverty, which points to the possibility that this is a complex phenomenon that requires further research.

With respect to inequality, the specification provides strong evidence (significant at a 1% level) that inequality contributes to increasing poverty. The results indicate a positive relationship between Gini index and the PHR. This is consistent with other studies present in the literature, such as Kaya *et al.* (2013) and Mosley *et al.* (2004).

Finally, the abundance in natural resources measured by Oil and Mineral Rents seems to contribute to poverty reduction, as this variable shows a negative and significant impact on PHR. This result is consistent with the theory developed by Blank (2005) and presented in Section 3.1.

4.3.2. Subsample: Low-income economies

As previously mentioned, we also estimate the regressions using a subsample that consists of the countries in the full sample that are classified as low-income economies by the World Bank. In Table 5, we present the estimation output of the three models for this subsample.

Table 5 – Foreign Aid and Political Regime on Poverty – Low-income subsample (1995 - 2015)

	Model I	Model II	Model III
Dependent Variable: Poverty Headcount Ratio (PHR)			
Constant	105.2631*** (0.0000)	106.5745*** (0.0000)	80.85687*** (0.0067)
ODApc$_{(t-1)}$	-0.031737 (0.7933)	-0.004172 (0.9684)	0.029838 (0.7697)
POLITY	--	-1.847007*** (0.0033)	-0.925766 (0.1934)
GDPpc$_{(t-1)}$	-0.037357*** (0.0006)	-0.035735*** (0.0002)	-0.045567*** (0.0003)
INF	--	--	-0.194000 (0.3817)
EXP	--	--	-0.040550 (0.9608)
OPEN	--	--	0.041965 (0.5017)
GINI	--	--	0.162803 (0.5122)
RENTS	--	--	-0.092351 (0.7895)
GCF	--	--	-0.369098 (0.1202)
URB	--	--	1.336382 (0.1410)
Model Summary			
R-Squared	0.925946	0.946504	0.975441
Adjusted R-Squared	0.806930	0.855363	0.891942
F-statistic	7.780007	10.38504	11.68200
Prob(F-statistic)	0.000000	0.000000	0.000003
Observations	74	74	67
Number of countries	24	24	22

Note: p-value in parenthesis; significance level at 1% (***), 5% (**) and 10% (*).

The estimation results in Table 5 show that the three models maintain high global significance, since the F-statistic allows us to reject the null hypothesis that all coefficients are equal to zero. The results concerning the R-Squared are also satisfactory, allowing us to conclude that our regressions for this subsample explain about 92% to 97% of the variation in the poverty rate.

When comparing to the previous results in Table 4, the first difference that is noteworthy is that, in this subsample, the GDP *per capita* enters the model with a negative and significant coefficient. Apparently, this sustains the theoretical prediction that higher GDP *per capita* levels have a positive impact on poverty reduction.

In what concerns foreign aid, ODA has a non-significant coefficient in the three models, which confirms the previous results. According to that, we can conclude that foreign aid seems to have no impact on poverty reduction.

The political regime maintains its negative and significant coefficient in Model II but fails to explain poverty in Model III, where the Polity IV's coefficient becomes non-significant.

As we can observe, in Model III, all the other control variables have a non-significant coefficient, so that only the GDP *per capita* allows us to explain the variation in PHR in the subsample of low-income countries.

The intuition behind these results may be as follows: because the low-income countries are in the left tail of the GDP *per capita* distribution, with very low levels of income *per capita*, and also with a lower income variance when compared to the full sample, the average level of GDP *per capita* tends to capture all effects on poverty. That is, in very poor countries, the GDP *per capita* accounts for the effects of all the other channels, even the impact of inequality or political regime, measured by the Gini index and the Polity IV indicator, respectively. However, it is also noteworthy that the latter maintains its negative and significant coefficient in Model II, when the other control variables are absent, thus suggesting that the institutional-quality channel somehow overlaps the impact of the other channels (besides GDP *per capita*) in this subsample of countries.

4.3.3. Robustness analysis

To verify the robustness of the previous results, we proceed to a robustness analysis in which we test some non-linear effects related to $GDPpc_{(t-1)}$ and $ODApc_{(t-1)}$, as well as other proxies for the political regime and the interaction between foreign aid and the political regime. We focus on Model III, considering the full sample.

Table 6 – Robustness Analysis – Non-linear Effects and Interaction Term – Full sample (1995 – 2015)

	Model III – GDP² + GDP³	Model III – ODA²	Model III – ODA*POLITY
Dependent Variable: Poverty Headcount Ratio (PHR)			
Constant	17.01489** (0.0391)	-4.645585 (0.5092)	-4.503958 (0.5232)
ODApc$_{(t-1)}$	-0.000687 (0.9525)	-0.030082 (0.2444)	-0.014401 (0.3553)
ODA²	--	0.000102 (0.3438)	--
ODA*POLITY	--	--	0.001254 (0.5509)
POLITY	-0.425499*** (0.0002)	-0.475725*** (0.0000)	-0.510666*** (0.0000)
GDPpc$_{(t-1)}$	-0.004592*** (0.0000)	0.000458** (0.0153)	0.000433** (0.0224)
GDPpc$_{(t-1)}^2$	0.000000366*** (0.0000)	--	--
GDPpc$_{(t-1)}^3$	-0.00000000000842*** (0.0002)	--	--
INF	-0.008738 (0.4704)	-0.005158 (0.6776)	-0.004686 (0.7057)
EXP	-0.474578*** (0.0000)	-0.466880*** (0.0000)	-0.460267*** (0.0000)
OPEN	0.014299 (0.4147)	0.005848 (0.7432)	0.005268 (0.7678)
GINI	0.381970*** (0.0000)	0.330363*** (0.0000)	0.322834*** (0.0000)
RENTS	-0.145715** (0.0211)	-0.161556** (0.0129)	-0.156107** (0.0157)
GCF	-0.118780*** (0.0038)	-0.129758*** (0.0020)	-0.132959*** (0.0015)
URB	0.051293 (0.6414)	0.193307* (0.0653)	0.197951* (0.0591)
Model Summary			
R-Squared	0.953469	0.951117	0.951065
Adjusted R-Squared	0.941744	0.938921	0.938855
F-statistic	81.31934	77.98293	77.89510
Prob(F-statistic)	0.000000	0.000000	0.000000
Observations	632	632	632
Number of countries	96	96	96

Note: p-value in parenthesis; significance level at 1% (***), 5% (**) and 10% (*).

In the first place, we include in the regression the quadratic and cubic functions of GDPpc$_{(t-1)}$. Given the contrasting results from Table 4 and 5, which suggest that the level of GDP *per capita* has a positive and unexpected impact on poverty when we consider the full sample, but a negative one when we only take into account the low-income countries, we include these variables to test non-linear effects related to GDPpc$_{(t-1)}$. The results in Table 6 show that GDP *per capita* has a negative and significant first order effect on PHR, which dominates when the level of GDP *per capita* is low (thus consistent with the results for the subsample of low-income countries). GDP *per capita* has a positive and significant second-order effect and then again, a negative and significant third-order effect. The second-order effect dominates for the medium and high-income countries, which then drives the overall results reported in Table 4, above.

Secondly, following other authors (*e.g.,* Collier and Dollar (2001), Ali and Isse (2005) and Chong *et al.* (2009)), we include the quadratic function of ODApc$_{(t-1)}$ in Model III. By analysing the results in the second column of Table 6, we conclude that ODApc$_{(t-1)}$ maintains its non-significant coefficient and the other variables preserve the sign and significance as in the previous estimation. Furthermore, ODApc$_{(t-1)}^2$ has a non-significant impact on poverty, which confirms the previous results that indicate that foreign aid has no influence on poverty reduction.

We also include the interaction term between aid and political regime (ODA*POLITY) to test whether the effectiveness of foreign aid varies with the political regime. However, as we can see in the third column of Table 6, the coefficient of this term is not significant, which suggests that foreign aid does not work differently in more democratic regimes. Given the baseline result that foreign aid measured by ODA, *per se*, has no impact on poverty reduction, this is an important result as it also excludes the hypothesis that foreign aid has, however, an impact on poverty conditional on the political regime.

Table 7 – Robustness Analysis – World Government Indicators – Full sample (1995 - 2015)

	Model III – Political Stability	Model III – Voice
Dependent Variable: Poverty Headcount Ratio (PHR)		
Constant	-10.03587 (0.1808)	-9.491971 (0.2032)
ODApc$_{(t-1)}$	-0.004292 (0.4769)	-0.004578 (0.4457)
POL_STAB	-1.238192* (0.0575)	--
VOICE	--	-3.438752*** (0.0037)
GDPpc$_{(t-1)}$	0.000821*** (0.0000)	0.000783*** (0.0000)
INF	-0.009496 (0.7458)	-0.008502 (0.7700)
EXP	-0.389987*** (0.0007)	-0.377083*** (0.0010)
OPEN	-0.003248 (0.8573)	0.002849 (0.8744)
GINI	0.408803*** (0.0000)	0.391979*** (0.0000)
RENTS	-0.175805*** (0.0059)	-0.186388*** (0.0033)
GCF	-0.136362*** (0.0016)	-0.137796*** (0.0012)
URB	0.119925 (0.2930)	0.114245 (0.3111)
Model Summary		
R-Squared	0.959601	0.960042
Adjusted R-Squared	0.948441	0.949004
F-statistic	85.98267	86.97155
Prob(F-statistic)	0.000000	0.000000
Observations	560	560
Number of countries	96	96

Note: p-value in parenthesis; significance level at 1% (***), 5% (**) and 10% (*).

Lastly, we replace Polity IV with some of the Worldwide Governance Indicators (WGI) from the World Bank. As we mention in Section 2.3, institutional variables may refer, among others, to political regime, corruption, political stability or freedom. Therefore, we test for other political institutional variables and their influence on poverty, other than the political regime. The WGI covers six dimensions,[12] but those included in Table 7 are only

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[12] The six dimensions of the WGI are: "Voice and Accountability", "Political Stability and Absence of Violence/Terrorism", "Government Effectiveness", "Regulatory Quality", "Rule of Law" and "Control of Corruption".

"Political Stability and Absence of Violence/Terrorism" and "Voice and Accountability", the ones that showed statistical significance in our regressions. The former indicator refers to the probability of political instability and politically-motivated violence, such as terrorism, while the latter concerns freedom of expression and association and also the ability of the country's citizens to participate in the selection of their government. Both of these indicators range from approximately -2.5 (weak) to 2.5 (strong) governance performance.

According to the results presented in Table 7, we can conclude that both indicators have a significant and negative impact on poverty. These conclusions seem to confirm the previous results that a more democratic political regime contributes to a decrease in poverty.

Finally, besides these estimations, we also test several alternative lags for ODA, given the uncertainty regarding the size of the time lag of the (potential) impact of ODA on poverty. However, the results are very similar and, therefore, we opted to select ODA with a one-period lag, as it is the same lag as the one considered for GDP *per capita*.

Chapter 5. Conclusions

In 2015, the United Nations established, as the first Sustainable Development Goal, that until 2030 all the forms of poverty should end everywhere (United Nations, 2015a). To achieve this goal, United Nations declared that the mobilisation of resources and development cooperation should increase (United Nations, 2015a). Actually, since the Millennium Development Goals, the objectives of donors turn towards poverty reduction (Yontcheva and Masud, 2005). Therefore, it is important to evaluate whether aid can, in fact, contribute to the poverty reduction process.

This dissertation aimed to investigate if foreign aid is effective in reducing poverty as well as to evaluate what is the role of the political regime in the effectiveness of foreign aid.

Firstly, we defined the main concepts and explored the most used measures and indicators of foreign aid, poverty and political regime. Official Development Assistance (ODA) from OECD is the most used measure of foreign aid and therefore it was the one chosen. Regarding poverty, we concluded that it is a broad concept with many definitions that include the income approach and the multidimensional approach. We opted for the Poverty Headcount Ratio at 1$90 a day in 2011 PPP (PHR) as a measure of poverty since it is the one for which more data is available. The Polity IV indicator from Integrated Network for Societal Conflict Research (INSCR) was the chosen indicator for political regime.

Secondly, we proceeded to a literature review about the main determinants of poverty and summarized the most important contributions of the literature about the effectiveness of foreign aid. Most of the existing studies focus on the impact of foreign aid on economic growth or on alternative development indicators (*e.g.*, infant mortality rate) rather than on direct indicators of poverty. The few articles that study the influence of foreign aid on poverty reduction conclude that its effectiveness is not consensual. However, there is a general agreement that the institutional environment is a key determinant of aid effectiveness, with many authors arguing that an environment of good economic policy can enhance the effectiveness of aid, both in terms of growth and in terms of poverty alleviation, and therefore aid should be conditional on policy and political reforms (*e.g.*, Boone (1996), Collier and Dollar (2001), Mosley *et al.* (2004) and Ali and Isse (2005)).

Finally, we estimated an econometric model using panel data to test for the effectiveness of foreign aid on poverty alleviation, after controlling for the countries' political

regime and other determinants of poverty. The institutional environment, often pointed out as an important determinant of aid effectiveness, consists of several dimensions, such as control of corruption, political regime and stability or freedom. In this research, we focused on the political regime because it seems to be the least studied dimension in the aid and poverty literature – most studies use measures of corruption (*e.g.,* Chong *et al.* (2009) and Minasyan *et al.* (2017)) or institutional quality indexes (Ali and Isse (2005) and Yontcheva and Masud (2005)). The estimation was carried out considering 102 developing countries for the period between 1995 and 2015. The results concerning the estimation using the full sample indicate that foreign aid does not contribute to poverty reduction. Although ODA *per capita* has a negative and significant coefficient when we only control for the level of GDP *per capita*, it becomes non-significant when we add Polity IV and other determinants of poverty. This result suggests that the institutional channel – and, in particular, political regime – absorbs all the effects of foreign aid on poverty alleviation. It is also noteworthy that almost all the control variables have the expected signs, in particular the Gini index, which confirms the importance of inequality as a key determinant of poverty. GDP *per capita* is the exception with an unexpected positive coefficient.

In addition, we proceeded to the estimation of the same models considering only a subsample of countries that are classified as low-income economies by the World Bank. The results confirm the ineffectiveness of foreign aid in reducing poverty. Only GDP *per capita* seems to explain the behaviour of poverty, since it is the only variable with a significant coefficient. Furthermore, in opposition to the previous results, when we consider the low-income countries, the impact of GDP *per capita* on poverty becomes negative, as expected. These results suggest that in countries with a lower income, GDP *per capita* operates as a globalizing indicator, accounting for the effects of the remaining channels.

Finally, the empirical research ends with a robustness analysis where we tested for non-linear effects of GDP *per capita* and ODA *per capita*, as well as other proxies for the political regime and the interaction between ODA *per capita* and Polity IV. Once again, we conclude for the ineffectiveness of foreign aid in alleviating poverty even after the introduction of its quadratic function. In what concerns GDP *per capita*, the results regarding the addition of its quadratic and cubic function indicate that the effect of GDP *per capita* on poverty is non-linear, which helps to explain the contradictory behaviour of its coefficient in the two samples. For low-income and high-income countries, GDP *per capita* has a negative impact on poverty. However, there is an income spectrum in which GDP *per capita* increases

poverty. The replacement of Polity IV with two dimensions of the World Government Indicators ("Political Stability and Absence of Violence/Terrorism" and "Voice and Accountability") confirmed that a more democratic political regime has a negative and significant impact on poverty. Finally, the inclusion of the interaction term between foreign aid and political regime suggest that foreign aid does not work differently in more democratic regimes.

This dissertation can be summed up in three main conclusions. In the first place, foreign aid is not effective in reducing poverty. Secondly, the political regime seems to have an important role in poverty alleviation, suggesting that a more democratic regime contributes to a decrease in poverty. Thirdly, in low-income countries, only the GDP *per capita* seems to be significant in poverty alleviation, capturing the effect of all the other channels, even the impact of inequality or political regime. These three conclusions have important political implications. Donor countries and institutions should be aware that helping poor countries is not only about financial support, but also and mainly, as this study confirms, to create and develop the institutional environment that promotes poverty alleviation and thus improves the living conditions of developing countries. The results suggest that this environment involves a more democratic political regime, where citizens can participate in the selection of their government and that promotes political stability.

Nevertheless, we do not intend to justify or support the end of foreign aid but rather to emphasize the relevance of the quality of the political regime *per se*, in parallel with the quality of aid itself as underlined by some authors, such as Collier and Dollar (2001) and Minasyan *et al.* (2017).

Giving the existence of multiple definitions of poverty, it would be interesting for future research to test whether the conclusions of the present study remain unchanged if other measures of poverty were used. In particular, the ones that are related to the multidimensional approach of poverty. However, for this to be possible it is necessary to invest and promote data availability, namely in what concerns the Multidimensional Poverty Index computed by the United Nations. Another relevant topic for future research is to investigate the reasons why there are levels of GDP *per capita* for which the increase of GDP *per capita* seems to lead to more poverty.

References

Acemoglu, D., Johnson, S., Robinson, J. A., and Yared, P. (2008), "Income and Democracy", *The American Economic Review,* Vol. 98, No. 3, pp. 808-842.

Agénor, P. R., Bayraktar, N., and El Aynaoui, K. (2008), "Roads out of poverty? Assessing the links between aid, public investment, growth, and poverty reduction", *Journal of Development Economics,* Vol. 86, No. 2, pp. 277-295.

Akobeng, E. (2017), "Gross Capital Formation, Institutions and Poverty in Sub-Saharan Africa", *Journal of Economic Policy Reform,* Vol. 20, No. 2, pp. 136-164.

Ali, A. M., and Isse, H. S. (2005), "An empirical analysis of the effect of aid on growth", *International Advances in Economic Research,* Vol. 11, No. 1, pp. 1-11.

Alvi, E., and Senbeta, A. (2012), "Does foreign aid reduce poverty?", *Journal of International Development,* Vol. 24, No. 8, pp. 955-976.

Ames, B., Brown, W., Devarajan, S., and Izquierdo, A. (2001), *Macroeconomic Policy and Poverty Reduction*, Washington: International Monetary Fund and World Bank.

Atkinson, A. B. (2009), "Economics as a Moral Science", *Economica*, Vol. 76, pp. 791-804.

Azam, J. P., and Laffont, J. J. (2003), "Contracting for aid", *Journal of Development Economics,* Vol. 70, No. 1, pp. 25-58.

Bigsten, A., and Tengstam, S. (2015), "International coordination and the effectiveness of aid", *World Development,* Vol. 69, pp. 75-85.

Blank, R. M. (2003), "Selecting among Anti-Poverty Policies: Can an Economist be Both Critical and Caring?", *Review of Social Economy,* Vol. 61, No. 4, pp. 447-469.

Blank, R. M. (2005), "Poverty, policy, and place: How poverty and policies to alleviate poverty are shaped by local characteristics", *International Regional Science Review,* Vol. 28, No. 4, pp. 441-464.

Boone, P. (1996), "Politics and the effectiveness of foreign aid", *European Economic Review*, Vol. 40, No. 2, pp. 289-329.

Bourguignon, F., and Platteau, J. P. (2017), "Does Aid Availability Affect Effectiveness in Reducing Poverty? A Review Article", *World Development,* Vol. 90, pp. 6-16.

Calì, M., and Menon, C. (2013), "Does urbanization affect rural poverty? Evidence from indian districts", *World Bank Economic Review,* Vol. 27, No. 2, pp. 171-201.

Chong, A., Gradstein, M., and Calderon, C. (2009), "Can foreign aid reduce income inequality and poverty?", *Public Choice,* Vol. 140, No. 1-2, pp. 59-84.

Collier, P., and Dollar, D. (2001), "Can the world cut poverty in half? How policy reform and effective aid can meet international development goals", *World Development,* Vol. 29, No. 11, pp. 1787-1802.

Collier, P., and Dollar, D. (2002), "Aid allocation and poverty reduction", *European Economic Review,* Vol. 46, No. 8, pp. 1475-1500.

Dollar, D., and Kraay, A. (2004), "Trade, growth, and poverty", *Economic Journal,* Vol. 114, No. 493, pp. F22-F49.

Durham, J. B. (1999), "Economic growth and political regimes", *Journal of Economic Growth*, Vol. 4, No. 1, pp. 81-111.

Easterly, W., and Fischer, S. (2001), "Inflation and the poor", *Journal of Money, Credit and Banking,* Vol. 33, No. 2, pp. 160-178.

Fan, S., and Zhang, X. (2008), "Public expenditure, growth and poverty reduction in rural Uganda", *African Development Review*, Vol. 20, No. 3, pp. 466-496.

Greene, William H. (2012), *Econometric Analysis: International Edition*, (7th edition). Boston; London: Pearson.

Högström, J. (2013), "Does the Choice of Democracy Measure Matter? Comparisons between the Two Leading Democracy Indices, Freedom House and Polity IV", *Government and Opposition*, Vol. 48, No. 2, pp. 201-221.

INSCR (2017), *Polity IV: Regime Authority Characteristics and Transitions Datasets*. Available at http://www.systemicpeace.org/inscrdata.html. Accessed on 15.03.2018.

Kaya, O., Kaya, I., and Gunter, L. (2013), "Foreign aid and the quest for poverty reduction: Is aid to agriculture effective?" *Journal of Agricultural Economics,* Vol. 64, No. 3, pp. 583-596.

Leeson, P. T. (2008), "Escaping poverty: Foreign aid private property and economic development", *Journal of Private Enterprise,* Vol. 23, No. 2, pp. 39-64.

Mabughi, N., and Selim, T. (2006), "Poverty as social deprivation: A survey", *Review of Social Economy,* Vol. 64, No. 2, pp. 181-204.

Matsuyama, K. (2009), "Structural Change in an Interdependent World: A Global View of Manufacturing Decline," *Journal of the European Economic Association*, Vol. 7, No. 2-3, pp. 478-486.

Minasyan, A., Nunnenkamp, P., and Richert, K. (2017), "Does Aid Effectiveness Depend on the Quality of Donors?" *World Development,* Vol. 100, pp. 16-30.

Mosley, P., Hudson, J., and Verschoor, A. (2004), "Aid, poverty reduction and the 'new conditionality'", *Economic Journal,* Vol. 114, No. 496, pp. F217-F243.

North, D. (1992), "Institutions, Ideology, and Economic Performance", *Cato Journal,* Vol. 11, No. 3, pp. 477-496.

OECD (2008), *Is it ODA?* Retrieved from http://www.oecd.org/dac/stats/34086975.pdf. Accessed on 20.10.2017.

OECD (2017), *Detailed aid statistics: Total official flows*: OECD International Development Statistics (database). Available at https://doi.org/10.1787/c16483d0-en. Accessed on 27.11.2017.

OECD (2018), *Detailed aid statistics: ODA Official development assistance: disbursements*: OECD International Development Statistics (database). Available at https://doi.org/10.1787/data-00069-en. Accessed on 7.03.2018.

Pinto Moreira, E., and Bayraktar, N. (2008), "Foreign aid, growth and poverty: A policy framework for Niger", *Journal of Policy Modeling,* Vol. 30, No. 3, pp. 523-539.

Ravallion, M., Chen, S., and Sangraula, P. (2007), "New evidence on the urbanization of global poverty", *Population and Development Review,* Vol. 33, No. 4, pp. 667-701.

Ribeiro, A. P., Silva, S. T., and Guimarães, D. (2015), "Macroeconomic fundamentals of poverty and deprivation: An empirical study for developed countries", *European Journal of Development Research,* Vol. 27, No. 1, pp. 37-66.

Sen, A. (1976), "Poverty: An Ordinal Approach to Measurement", *Econometrica*, Vol. 44, No. 2, pp. 219-231.

Sen, A., and Anand, S. (1997), "Concepts of Human Development and Poverty: A Multidimensional Perspective", in *Poverty and Human Development: Human Development Papers 1997,* New York, United Nations Development Programme, pp. 1-20.

Todaro, M. P., and Smith, S. C. (2012), *Economic Development* (11th edition). Boston: Pearson Education.

United Nations (1996), *Report of the World Summit for Social Development*. United States.

United Nations (2015a), *Resolution adopted by the General Assembly,* Seventieth session 25 September 2015. Available at http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E. Accessed on 12/11/2017.

United Nations (2015b), *The Millennium Development Goals Report 2015*. United States, Statistics Division of the United Nations Department of Economic and Social Affairs.

World Bank (2017), *World Development Indicators*. Available at https://datacatalog.worldbank.org/dataset/world-development-indicators. Accessed on 8.03.2018.

Yontcheva, B. and Masud, N. (2005), "Does Foreign Aid Reduce Poverty? Empirical Evidence from Nongovernmental and Bilateral Aid", *IMF Working Papers,* 05/100, International Monetary Fund.

Appendices

Appendix 1 - Summary table of the literature review on the effectiveness of foreign aid - Qualitative Studies

Author(s)	Main goals	Research Method	Sample	Explained Variable	Explanatory Variable(s) and Estimated Effect	Conclusions
Bourguignon and Platteau (2017)	Examine the impact of aid supply on aid effectiveness.	Literature Review	-	-	-	Greater aid availability decreases aid effectiveness, whether the donor country follows a needs-based approach or a governance-based approach.
Leeson (2008)	Investigate Bauer's hypotheses: foreign aid fails to promote economic progress and retard this process; private property rights are necessary and sufficient for economic development.	Literature Review	-	-	-	Evidence available in the literature supports Bauer's hypotheses: foreign aid does not promote economic development and property rights are the key to this process.

Appendix 2 - Summary table of the literature review on the effectiveness of foreign aid - Quantitative Studies

Author(s)	Main goals	Research Method	Sample	Explained Variable	Explanatory Variable(s) and Estimated Effect			Conclusions
Ali and Isse (2005)	Study the impact of foreign aid on economic growth and test its effectiveness.	Econometric: Method of estimation: OLS and 2SLS	90 countries; period: 1975 - 2000	Growth rate of real GDPpc	Initial level of Income	GDPpc in 1975	(-)	Effect of aid on growth is nonlinear (there is a limit for foreign aid beyond which more aid has a negative impact in economic growth). Aid effectiveness can only be sustained in an environment of good economic policy. Relationship between AID/GDP and economic growth is sequential (more and more aid lead to lower economic growth).
					Level of Physical Capital	Investment/GDP	(+)	
					Level of Human Capital	Secondary School Enrolment Rate	n. s.	
					Measures of Institutional Quality	Institutional Quality Index: rule of law, repudiation of contracts, expropriation risk, bureaucratic quality, corruption	(+)	
					Quality of the Economic Policy	Policy Index: Inflation rate, Total Trade/GDP ratio, ratio of Budget Surplus and Deficit to GDP	(+)	
					Aid	EDA[13]/GDP	n. s.	
						EDA^2	(-)	
						(EDA/GDP)*Policy	(+)	
					Others	Dummy to capture the effects of belonging to Africa, Latin America, Asia	(-)	
Alvi and Senbeta (2012)	Analyse the impact of foreign aid on poverty in recipient developing countries, after controlling for income, income distribution and other determinants of poverty.	Econometric: Method of estimation: GMM (Dynamic panel data)	79 countries; period: 1981 - 2004	Poverty Headcount Ratio | Poverty Gap | Squared Poverty Gap	Aid	ODA/GNI	(-)	Aid has a significant poverty-reducing effect even after controlling for average income and income distribution. Composition of aid matters (multilateral aid and grants are better than bilateral aid and loans in reducing poverty). Financial development has an important role in poverty alleviation.
					Income	Log (GDPpc)	(-)	
					Income Distribution	Log (Gini index)	(+)	
					Lagged Dependent Variable	(Poverty Headcount Ratio) $_{t-1}$	(+)	
						(Poverty Gap) $_{t-1}$	(+)	
						(Squared Poverty Gap) $_{t-1}$	(+)	
					Policies and institutional variables	Openness: Log [(X+M)/GDP]	n.s.	
						Democracy score (Polity IV)	n.s.	
						Log (Domestic credit to private sector/GDP)	(-)	
						Age Dependency ratio (Dependents/Working-age Pop.)	n.s.	

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[13] Effective Development Assistance

Author(s)	Main goals	Research Method	Sample	Explained Variable	Explanatory Variable(s) and Estimated Effect			Conclusions
Bigsten and Tengstam (2015)	Discuss and quantify the effects of improved donor coordination on aid effectiveness.	Statistical descriptive analysis	26 Donor countries; Recipient: Aid orphans (34 developing countries) Aid darlings (32 developing countries); year: 2009		Aid	Administrative Costs		There are gains from reduced fragmentation of aid and gains from coordinated allocation across countries.
						Total amount of Aid		
						Number of recipients		
						ODA		
						Bilateral ODA		
						CPA[14]		
					Poverty	Poverty Headcount Ratio		
					Others	Population		
						GDPpc (PPP)		
Boone (1996)	Examine the determinants of aid. Analyse the importance of political regime of the recipient countries for the effectiveness of aid programs.	Econometric: Method of estimation: OLS, Fixed Effects	96 countries; period: five-year averages from 1971-75 to 1986-90	ODA[15]/GNP	Income pc	Log (GNPpc at start of period)	(-)	Aid flows are largely determined by political factors. Aid does not increase investment nor benefit the poor, but it increases the size of government. Aid increases consumption which does not benefit the poor and it has an insignificant impact on improvements in basic measures of human development. Aid can be effective when it is conditional on policy and/or political reforms.
					Size of country	Log (Population)	(-)	
					Dummies to capture the importance of the country to a particular donor	Friends of US, OPEC and France	(+)	
					Regional effects and external shocks	GNPpc growth rate	n.s.	
						Terms of trade	n.s.	
						Debt rescheduling	n.s.	
						Regional dummies	n.s.	
					Human Development	Infant Mortality	n.s.	
						Life Expectancy at Birth	n.s.	

[14] Country Programmable Aid
[15] Official Development Assistance

Author(s)	Main goals	Research Method	Sample	Explained Variable	Explanatory Variable(s) and Estimated Effect			Conclusions
				Private Consumption		ODA/GNP	(+)	
				Public and Private Investment			(+)	
				Government Consumption			(+)	
				Log (Infant Mortality)			(-)	
				Life expectancy			(-) | (+)	
				Log (Primary Schooling)			(-)	
Chong *et al.* (2009)	Examine the effect of foreign aid on income inequality and poverty reduction.	Econometric: Method of estimation: GMM (Dynamic panel data)	115 developing countries; period: 1971 - 2002	Gini coefficient	Aid[16]	ODA/GDP	n. s.	Foreign aid by itself does not appear to have significant effect on inequality nor poverty reduction. This insignificant impact is explained by corruption and poor institutions, as well as by misallocation of resources and donor countries' preferences inconsistent with reducing poverty and inequality.
						ODA[2]	n. s.	
						ODA*Corruption	n. s.	
					Institutions	Index for corruption from ICRG	n. s.	
					Others	Real GDPpc	n. s.	
						Inflation rate	n. s.	
						Liquid Liabilities	n. s.	
						Literacy rate	n. s.	
						VA of Agricultural sector (% of GDP)	n. s.	
						VA of Industrial sector (% of GDP)	n. s.	
						First lag of Gini	(+)	
				Poverty Headcount Ratio | Poverty Gap | Squared Poverty Gap	Aid[17]	ODA/GDP	n. s.	
						ODA[2]	n. s.	
						ODA*Corruption	n. s.	

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[16] The authors also test others aid proxies such as Effective Development Assistance (EDA) and Aid Commitments. However, the results do not differ much from those obtained when using ODA.

[17] *Idem*

Author(s)	Main goals	Research Method	Sample	Explained Variable	Explanatory Variable(s) and Estimated Effect		Conclusions
Collier and Dollar (2001)	Develop a model of efficient aid and investigate scenarios of policy reform and efficient aid that point the way to how the world can cut poverty in a half.	Econometric: Method of estimation: OLS (panel regressions)	62 developing countries; period: four-year averages from 1974-77 to 1994-97	Growth rate of GNPpc	Aid	(ODA/GDP)	n.s. | (-)	Poverty reduction depends primarily on the quality of economic policy. A combination of good policy and aid produces especially good results on economic growth and poverty reduction. The MDG of halving poverty can be achieved if foreign aid is accompanied with good policies.
						(ODA/GDP)^2	(-)	
					Policy and Institutions	Measure of Institutional Quality (ICRGE)	(+)	
						Level of Policy (CPIA)	(+)	
					Interaction of Policy and Aid	CPIA*ODA/GDP	(+)	
						ICRGE*ODA/GDP	(-)	
					Others	Initial GNP pc	(+)	
						Regional dummies	.	
						Inflation (Log(inflation +1))	(+) | (-)	
						Openness (X+M/GDP)	(-)	
						Gov. Cons./GDP	(-)	
Kaya *et al.* (2013)	Investigate the relationship between aid given to agricultural sector and poverty reduction.	Econometric: Method of estimation: Fixed Effects	46 Developing aid recipient countries; period: 1980 - 2003	Poverty Headcount Ratio	Government Expenditure	Unweighted PPE residual	n.s. | (+)	Aid given to the agricultural sector is effective in reducing poverty both directly and indirectly through growth.
						Military expenditure (% of GDP)	(+) | n.s.	
						Other Government expenditure (% of GDP)	(+)	
					Sector-specific Foreign Aid (ODA only, lagged)	Agriculture aid/GDP	(-)	
						Social infrastructure aid/GDP	n. s.	
						Investment aid /GDP	n. s.	
						Non-investment aid/GDP	n. s.	
					Others	GDPpc lagged	(-)	
						Gini index	(+)	
						Rural population (% of Total)	n. s.	

Author(s)	Main goals	Research Method	Sample	Explained Variable	Explanatory Variable(s) and Estimated Effect			Conclusions
Minasyan *et al.* (2017)	How donor policies could enhance the effectiveness of aid. Compare the effects of quality adjusted aid and unadjusted aid on changes in GDPpc.	Econometric: Method of estimation: Difference-in-differences analysis	146 countries divided in two different groups (<u>treatment group</u> - received higher-quality adjusted aid; <u>control group</u> - did not); period: 1999-2011	Difference in GDPpc between two points in time	Treatment	Dummy 1 if in treatment group, 0 if not	n.s.	Significant and quantitatively important treatment effects for quality-adjusted aid after the introduction of the Paris Declaration on Aid Effectiveness in 2005. Development cooperation can have positive income effects if donors improve the quality of their aid.
					2nd period	Dummy 1 for treatment period, 0 if not	n.s.	
					Interaction	Treatment*2nd period	(+)	
					Control variables for the recipient country	Log (Inflation rate)	n.s.	
						Openness (X+M/GDP)	n.s.	
						Control of Corruption	n.s.	
						Log (Initial GDPpc)	n.s.	
Mosley *et al.* (2004)	Examine the effect of aid on poverty and analyse the benefits of policy conditionality on the effectiveness of aid.	Econometric: Method of estimation: GMM 3SLS estimator	34 countries; period: 1980 - 2000	Ln (Poverty Headcount Ratio) | Ln (Infant Mortality)	Ln (GNPpc)		(-)	The composition of public spending, inequality and corruption are strongly associated with aid effectiveness. Donors through a new conditionality approach can influence the orientation of public expenditures towards poverty reduction.
					Pro-poor expenditure (PPE) index		(-)	
					Gini coefficient		(+)	
					Public Health spending (% GNP)		(-)	
				ODA/GNP	Ln (Population)		(-)	
					Colonialization dummy		n.s.	
					Islam dummy		(+)	
					Macro-Policy		(+)	
					Open		n. s.	
					Ln (Infant mortality)		(+)	
				Pro – Poor Expenditure index	Ln (GNPpc)		(+)	
					Ln (aid) low income		(+)	

Author(s)	Main goals	Research Method	Sample	Explained Variable	Explanatory Variable(s) and Estimated Effect		Conclusions
Yontcheva and Masud (2005)	Evaluate foreign aid effectiveness on poverty reduction through its impact on human development indicators. Test if foreign aid reduces recipient's government efforts in achieving development goals.	Econometric: Method of estimation: Random Effects, Fixed Effects, 2SLS	58 or 76 developing countries; period: 1990 - 2001	Infant Mortality rate	Government Effort in promoting Human Development	Ln(Health Expenditure per capita)	(-)	NGO aid contributes to reduce infant mortality and it is more effective than Bilateral Aid (ODA). In the other hand, neither NGO or Bilateral aid have a significant impact in illiteracy reduction. Finally, Bilateral Aid (ODA) has a substitution effect on public social sector expenditures, while NGO aid does not influence social spending in the recipient country.
					Aid	Ln(ODApc)	n.s.	
						Ln(NGO aid per capita)	(-)	
					Others	Ln(Female Illiteracy)	(+)	
						Ln(Urban Population (% Total))	n.s.	
						Ln(Poverty Headcount Ratio)	(+)	
						Ln(Population Growth Rate)	n.s.	
						ICRG index	(-)	
						IMF Dummy[18]	n.s.	
						Ln(GDPpc)	(-)	
						Ln(VA of Agricultural sector per worker)	(-)	
				Adult illiteracy rate	Government Effort in promoting Human Development	Ln(Education expenditure per capita)	(-)	
					Aid	Ln(ODApc)	n.s.	
						Ln(NGO aid per capita)	n.s.	
					Others	Ln(Urban Population (% Total))	(-)	
						Ln(Poverty Headcount Ratio)	n.s.	
						Ln(Population Growth Rate)	(+)	
						ICRG index	n.s.	
						IMF Dummy	n.s.	
						Ln(GDPpc)	(-)	

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[18] Assumes value 1 if the recipient country has a structural adjustment program supported by the IMF and 0 otherwise.

Appendix 3 - Poverty Headcount Ratio, Official Development Assistance and Polity IV: average by country, 1995-2015

	PHR	ODApc	Polity IV
Albania	1,22	62,67	7
Algeria	3,20	5,32	-1
Argentina	4,79	1,50	8
Armenia	6,16	49,12	4
Azerbaijan	1,50	12,14	-6
Bangladesh	27,95	5,91	4
Belarus	2,01	6,65	-5
Benin	50,50	29,07	6
Bhutan	15,13	83,52	-5
Bolivia	15,71	55,04	8
Bosnia and Herzegovina	0,18	115,43	0
Botswana	24,00	51,01	8
Brazil	9,34	1,76	8
Burkina Faso	59,48	27,01	-1
Burundi	78,50	20,44	1
Cabo Verde	12,05	262,32	9
Cameroon	31,13	29,14	-4
Central African Republic	65,55	23,81	1
Chad	50,65	16,92	-3
Chile	2,66	5,14	9
China	19,50	0,86	-7
Colombia	11,29	14,50	7
Comoros	15,60	32,92	5
Congo, Dem. Rep.	85,55	20,29	2
Congo, Rep.	43,60	63,12	-3
Costa Rica	4,34	6,75	10
Cote d'Ivoire	25,12	28,64	-1
Croatia	0,92	16,42	5
Cyprus	0,04	17,74	10
Djibouti	20,47	85,87	-1
Dominican Republic	4,28	10,13	7
Ecuador	11,28	13,01	7
Egypt, Arab Rep.	3,09	14,51	-5
El Salvador	9,97	34,33	7

Ethiopia	47,90	14,56	-1
Fiji	3,30	57,77	2
Gambia, The	57,90	15,62	-3
Georgia	15,60	59,95	6
Ghana	24,20	27,69	4
Guatemala	11,20	20,88	7
Guinea	52,20	16,01	-1
Guinea-Bissau	60,50	41,52	3
Honduras	22,08	41,59	7
Iran, Islamic Rep.	0,80	1,52	-4
Iraq	2,30	122,93	-4
Israel	0,45	324,32	6
Jamaica	2,60	1,72	9
Jordan	0,56	95,49	-3
Kazakhstan	2,06	8,28	-5
Kenya	27,55	21,22	3
Korea, Rep.	0,30	-1,61	7
Kyrgyz Republic	14,25	24,60	1
Lao PDR	31,23	37,26	-7
Lesotho	60,50	33,20	6
Liberia	53,60	66,08	3
Macedonia, FYR	7,97	58,40	8
Madagascar	71,05	17,08	6
Malawi	69,37	28,62	4
Malaysia	0,68	1,76	4
Mali	52,60	34,41	5
Mauritania	14,26	36,22	-4
Mauritius	0,45	22,89	10
Mexico	6,96	2,01	6
Moldova	10,53	29,18	8
Mongolia	6,84	68,67	9
Montenegro	0,34	62,29	9
Morocco	5,63	16,54	-6
Mozambique	78,17	52,71	3
Namibia	27,05	78,41	6
Nepal	41,00	14,87	4
Nicaragua	12,36	88,86	8

Niger	60,68	17,81	4
Nigeria	56,83	8,69	1
Pakistan	15,31	6,44	3
Panama	9,28	7,69	9
Papua New Guinea	45,60	63,60	4
Paraguay	7,27	11,03	7
Peru	10,53	13,78	6
Philippines	13,01	5,70	8
Rwanda	66,43	41,10	-4
Senegal	41,90	42,35	4
Serbia	0,40	77,27	8
Sierra Leone	55,40	35,10	2
Slovenia	0,02	3,65	10
Solomon Islands	35,35	278,76	7
South Africa	25,06	13,32	9
Sri Lanka	5,04	16,88	5
Swaziland	45,20	21,40	-9
Tajikistan	20,77	15,11	-3
Tanzania	63,40	29,61	-2
Thailand	0,87	1,88	5
Timor-Leste	43,00	166,16	7
Togo	52,93	18,37	-3
Tunisia	5,33	20,00	-2
Turkey	1,30	2,46	7
Uganda	52,53	26,54	-3
Ukraine	0,90	9,73	6
Uruguay	0,39	6,09	10
Venezuela, RB	13,28	1,39	5
Vietnam	17,93	15,65	-7
Yemen, Rep.	11,87	11,54	-2
Zambia	53,19	51,28	5