

**Development aid and its impact on poverty
reduction in developing countries: A dynamic panel
data approach**

by

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DECLARATION

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Exact wording of the title of the thesis as appearing on the copies submitted for examination:

Development aid and its impact on poverty reduction in developing countries: a dynamic panel data approach

I declare that the above thesis is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.



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ABSTRACT

Foreign aid has been used on the one hand by donors as an important international relations policy tool and on the other hand by developing countries as a source of funds for development. Since its inception in the 1940s, foreign aid has been one of the most researched topics in development economics. This study adds to this growing aid effectiveness literature, with a particular focus on the under-researched relationship between foreign aid and extreme poverty. The main empirical assessment is based on a sample of 120 developing countries from 1981 to 2013. The study had two main objectives, namely: (i) to estimate the impact of foreign aid on poverty reduction and (ii) to examine the direction of causality between foreign aid and poverty in developing countries. From these two broad objectives, there are six specific objectives, which include to: (i) examine the overall impact of foreign aid (total official development assistance) on extreme poverty, (ii) investigate the impact of different proxies of foreign aid on the three proxies of extreme poverty, (iii) assess whether political freedom (democracy) or economic freedom enhances the effectiveness of foreign aid, (iv) compare the impact of foreign aid on extreme poverty by developing country income groups, and (v) examine the direction of causality between extreme poverty and foreign aid. To achieve these objectives, the study employed two main dynamic panel data econometric estimation methods, namely the system-generalised method of moments (SGMM) technique and the panel vector error correction model (VECM) Granger causality framework. While the SGMM was used to assess the impact of foreign aid on extreme poverty, the panel VECM Granger causality was used to examine the direction of causality between foreign aid poverty. The SGMM was used because of its ability to deal with endogeneity by controlling for simultaneity and unobserved heterogeneity, whereas the panel VECM was preferred because the variables were stationary and co-integrated.

The main findings from the system-generalised method of moments analysis can be summarised as follows:

- i. Foreign aid does have a positive impact on poverty reduction in developing countries.
- ii. An analysis of the impact of the different types of aid on the three proxies of extreme poverty reveals that grants, bilateral and multilateral aid reduce the poverty headcount rate, but loans do not; and grants, loans, and bilateral aid reduce both the poverty gap and the squared poverty gap, but multilateral aid does not.

- iii. Almost all foreign aid proxies (total ODA as a percentage of GNI), grants, loans, bilateral and multilateral aid were found to be more likely to be effective in reducing extreme poverty in an environment where there is political and economic freedom, confirming that both political and economic freedom are channels through which foreign aid impacts extreme poverty.
- iv. The study found strong evidence that foreign aid reduces poverty in the lower and upper middle-income countries but not in low-income countries. This implies that foreign aid is less effective in poorer countries, and it becomes more effective as the country graduates to middle-income status.
- v. In all the estimations where GDP per capita was included, it was found that the GDP per capita generally had a higher poverty-reducing effect (higher elasticity) compared to ODA which confirms the importance of GDP growth in the fight against poverty. Furthermore, the inequality coefficient was generally found to be positive and significant, confirming that an increase in income inequality leads to an increase in poverty.

The results from the panel VECM-based Granger causality framework which examined the direction of causality between foreign aid and poverty in a panel trivariate setting revealed the following:

- i. In the short run, there was evidence of unidirectional causal flow from poverty rate to foreign aid. Other results show that there is a bidirectional causal relationship between the GDP per capita and headcount poverty rate and a unidirectional causal flow from GDP per capita to foreign aid.
- ii. In the long-run, the study found that (a) foreign aid tends to converge to its long-term equilibrium path in response to changes in poverty rates and per capita GDP, and (b) both poverty rate and GDP per capita jointly Granger causes foreign aid in the long-run. However, no evidence was found of a long-run relationship or causality when poverty rate and GDP per capita were the dependent variables.
- iii. There was a strong joint causal flow from poverty rate and GDP per capita to foreign aid. This result seems to confirm that the majority of aid is directed towards poor countries.

Based on these results, the main policy implications are that (i) development partners should continue to focus on poverty reduction as the main objective for official development

assistance; (ii) aid allocation should be focused on channels that have a higher poverty-reduction effect, such as per capita income as well as political and economic freedom; and (iii) aid-recipient countries should be encouraged to devise income distributional policies that allow the benefits of growth to accrue to many people and thereby lifting the majority out of extreme poverty.

KEY TERMS

Official development assistance (ODA); foreign aid; extreme poverty; bilateral aid; multilateral aid; grants; loans; poverty headcount rate; poverty gap index (PG); squared poverty gap index (SPG); economic growth; inequality; aid effectiveness literature (AEL); democracy; economic freedom; globalisation; civil conflict; developing countries; dynamic panel data analysis; system-generalised method of moments (SGMM) estimators; vector error correction model (VECM); Granger causality.

DEDICATION

This dissertation is dedicated to my God; the Father, the Son, and the Holy Spirit; my parents Mr Hatinanyika B. Mahembe and Mrs Reya Mahembe (née Mutumwa); my wife Nhlanhla Maria Mahembe; and our children Rachel Rumbidzai Mahembe, Michael Anesu Mahembe, and Tatenda Charis Mahembe.

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ACRONYMS AND ABBREVIATIONS

2SLS	Two-Stage Least Squares
3SLS	Three-Stage Least Squares
ADF	Augmented Dickey-Fuller
AEL	Aid Effectiveness Literature
AIC	Akaike Information Criterion
BNA	Basic Needs Approach
CA	Capabilities Approach
CAR	Central African Republic
CSD	Cross-Sectional Dependency
DAC	Development Assistance Committee
DGMM	Differenced Generalised Method of Moments
DHT	Difference in Hansen test
DPD	Dynamic Panel Data
DRC	Democratic Republic of the Congo
EAP	East Asia and the Pacific
ECA	Eastern Europe and Central Asia
ECM	Error Correction Model
ECT	Error Correction Term
EFW	Economic Freedom of the World
EITC	Earned Income Tax Credit
EPTA	Expanded Programme of Technical Assistance
ESAP	Economic Structural Adjustment Programme
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
KOF	Konjunkturforschungsstelle
GMM	Generalised Method of Moments
GNI	Gross National Income
GNP	Gross National Product
GSE	Graduate School of Economics
HDI	Human Development Index
HIPCs	Heavily Indebted Poor Countries

HIV/AIDS	Human Immunodeficiency Virus Infection and Acquired Immune Deficiency Syndrome
HPI	Human Poverty Index
ICP	International Comparison Project
IDA	International Development Association
ILO	International Labour Organization
IMF	International Monetary Fund
IPS	Im-Pesaran-Shin
IPWLS	Inverse Probability Weighted Least Squares
IV	Instrumental Variable
LAC	Latin America and the Caribbean
LIML	Limited Information Maximum Likelihood
LM	Lagrange Multiplier
LLC	Levin-Lin-Chu
LSDVC	Bias-Corrected Least Squares Dummy Variable
MDGs	Millennium Development Goals
MDRI	Multilateral Debt Relief Initiative
MENA	Middle East and North Africa
MEPVs	Major Episodes of Political Violence
MPA	Macroeconomic Policy Analysis
MPI	Multidimensional Poverty Index
NGOs	Non-Governmental Organisations
OA	Official Aid
ODA	Official Development Assistance
ODF	Official Development Finance
OECD	The Organisation for Economic Co-operation and Development
OIR	Over-Identification Restriction
OLS	Ordinary Least Squares
OOFs	Other Official Flows
PG	Poverty Gap Index
PIC	Poverty Incidence Curve
PPE	Pro-Poor Expenditure
PPP	Purchasing Power Parity

RHS	Right-Hand Side
SA	South Asia
SIC	Schwarz Information Criteria
SDGs	Sustainable Development Goals
SEM	Simultaneous Equations Model
SGMM	System-Generalised Method of Moments
SPG	Squared Poverty Gap Index
SSA	Sub-Saharan Africa
SWIID	Standardized World Income Inequality Database
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Programme
USA	United States of America
VAR	Vector Autoregression
VECM	Vector Error Correction Model
WC	Washington Consensus
WDIs	World Development Indicators
WWI	World War I
WWII	World War II

CHAPTER 1: INTRODUCTION AND OVERVIEW OF THE STUDY

1.1. Introduction and Background to the Study

According to official data collected by the Organisation for Economic Co-operation and Development's (OECD's) Development Assistance Committee (DAC), official development assistance (ODA) or foreign aid from all donors reached a new peak of US\$176 billion (at constant prices) in 2016, up from US\$162 billion in 2015 (OECD, 2017). Compared to the 1960 figure of US\$36 billion per annum, ODA has increased over the years by approximately 390%. By 2013, it was estimated that total foreign aid since 1960 amounted to US\$4.7 trillion in 2013 prices (Ravallion, 2016, p. 518). As a result of these volumes, foreign aid has attracted an unprecedented amount of attention from politicians, scholars, media, and even celebrities (Easterly, 2008; Moyo, 2009). This attention also led to significant and polarising debates on the effectiveness of foreign aid in delivering on developmental goals (sustained economic growth and poverty reduction), with poverty reduction emerging as an explicit objective after the introduction of the Millennium development goals (MDGs) (Sachs, 2005; Ravallion, 2016). In actuality, the first MDG was to halve the global "US\$1 a day" poverty rate by 2015. Furthermore, one of the main targets of the recently promulgated sustainable development goals (SDGs) is to eradicate extreme poverty for all people everywhere by 2030 (United Nations, 2014). To achieve this global poverty reduction goal, rich nations made further commitments to increase aid to poor countries by 0.7% of their gross national income (GNI), a target set during the 1960s. The United Nations has emphasised the importance of foreign aid as "*one of the most powerful weapons in the war against poverty*" (United Nations, 2005, p. 16).

Despite this noble objective of eradicating poverty, debates have been raging on since the 1950s on whether ODA has been or is an effective tool to reduce poverty in developing countries. Many scholars and decision makers have raised the question, "does aid work?" The answer to this seemingly easy question has led to aid being labelled as controversial (Sumner & Glennie, 2015) and containing "bipolarity" (Easterly, 2008).

On the one side of the debate are strong advocates for foreign aid who argue that it is the most effective weapon in the war against poverty and that it helps to reduce poverty by increasing economic growth, improving governance, and increasing access to public services (Easterly, 2008, p. 1). Gates and Gates (2014) argue that “*foreign aid is ... a phenomenal investment. Foreign aid does not simply save lives; it also lays the groundwork for lasting, long-term economic progress*”. Sachs (2005), Stiglitz (2007), and Arndt *et al.* (2010, 2015) are among those who have strongly argued that foreign aid has been effective in reducing poverty and therefore must be increased.

On the other side of the debate are equally strong anti-foreign aid sentiments. Two of the most quoted critics are Moyo (2009, p. 28), who argues that aid “*perpetuates the cycle of poverty and derails sustainable economic development*”, and Deaton (2013, p. 272), who states that “*giving more aid than we currently give will not better the situation*”. Other critics of foreign aid include Bauer (1972), Friedman (1958), Easterly (2003, 2006, 2008), Doucouliagos and Paldam (2009) and Deaton (2013).

A third group has emerged, starting with Burnside and Dollar (1997, 1998, 2000) and the World Bank (1998) which argues that once channels through which foreign aid affects development are distinguished, several degrees of positive impact on development and a diminution of poverty may be observed. This depends on the choice of channel, the recipient country features, and the domestic economic policies. This strand of literature has gained traction over the years and has led to the advent of aid conditionalities (Collier & Dollar, 2002; Collier, 2007; Mosley *et al.*, 2004; Gomanee *et al.*, 2005a, 2005b; Asongu & Nwachukwu, 2017, 2018).

Amid this ongoing debate, the relative importance of ODA compared to other financial flows to developing countries has changed over the last five decades. In the 1960s, ODA constituted around 55% of all net disbursements by DAC countries; however, it has decreased to roughly 30% in recent years. The proportion of private flows, which include foreign direct investment (FDI) and commercial bank loans, has grown from 29% to 57% over the same period. Despite these shifts, Arvin and Lew (2015, p. 1) still believe that “*foreign aid today is one of the most important factors in international relations and in the national economy of many countries*”.

This study aims to make a further contribution to the understanding of the economics of poverty and foreign aid. It delves deeper into the chronology of economic development thoughts on

poverty and the history of foreign aid. Economic development theories are discussed in the context of how they have shaped the allocation of aid over the years. Furthermore, contemporary and sometimes heated debates on the effectiveness of foreign aid are discussed within the framework of the theoretical link between foreign aid and poverty. The dynamics and trends of foreign aid and extreme poverty in developing countries are explored, together with an overview of the possible success of foreign aid. This includes graduation from ODA dependence, meeting of the MDGs, and general improvement in the countries' prosperity.

1.2. Statement of the Problem

Aid effectiveness literature (AEL) is dominated by theoretical and empirical studies on the effectiveness of foreign aid in economic growth. Two main problems exist with this aid-growth nexus. First, it does not directly address the primary goal of foreign aid allocation which is poverty reduction. According to the World Bank (1998), and White (2015), consensus has been reached among donors and recipient countries since the 1990s that the main aim of foreign aid is poverty reduction. This position was further emphasised in the year 2000 by the United Nations General Assembly's promulgation of the MDGs whose primary focus was halving extreme poverty and improving the welfare of the world's poorest by 2015 and achieving recent SDGs (Sachs, 2005).

The second problem with the aid-growth nexus in the AEL is the implicit assumption that aid affects poverty through growth (Burnside & Dollar, 2000; Collier & Dollar, 2001, 2002; White, 2015). Though this might be correct, as sustainable improvements in social outcomes require high and sustained growth rates, there has been a narrow interpretation that if aid does promote economic growth, then it implies poverty reduction. This is not particularly satisfactory, as aid can affect poverty directly or through other channels (Gomanee *et al.*, 2003; Mosley *et al.*, 2004; Guillaumont & Wagner, 2014).

There is a general dearth of empirical literature on the effectiveness of foreign aid in the reduction of extreme poverty which is the central focus of the MDGs and SDGs. According to White (2015, p. 187), the poverty-reducing effects of aid are not well documented, with other critics claiming that this type of aid has been wasted because "*poor countries are still poor*" (Crosswell, 1999). A few studies have, however, investigated the effect of aid on different

socio-economic development indicators such as infant mortality rate, extreme poverty (headcount, gap, and squared poverty gap), the Human Development Index (HDI), and education among others. Other studies explored the channels through which aid affects poverty, with a special focus on social and public spending such as agriculture, health, and education. However, as with the aid-growth literature, evidence on the effectiveness of aid in poverty reduction is mixed. Even though the majority of the studies reviewed seemed to support the view that foreign aid has a positive impact on poverty, the number of studies is still too small to make a general conclusion.

This study consequently adds to the AEL by (i) investigating whether ODA or foreign aid has been effective in reducing extreme poverty; (ii) testing whether the type of aid, geographical region, or country income group aid matters; (iii) examining whether political or economic freedom enhances aid effectiveness; and (iv) assessing the direction of causality between foreign aid and poverty in developing countries. The study uses recent dynamic panel data estimation techniques, including methods that deal with endogeneity by controlling for simultaneity and the unobserved heterogeneity.

1.3. Objectives and Hypotheses of the Study

1.3.1. Objectives of the study

The two main objectives of this study are to (i) assess the impact of foreign aid on extreme poverty and (ii) examine the direction of causality between foreign aid and extreme poverty in developing countries. The specific objectives of this study are to:

- i. Empirically assess the overall impact of foreign aid (total ODA) on extreme poverty (headcount poverty rate) in developing countries;
- ii. Empirically test the impact of different proxies of foreign aid on the three proxies of extreme poverty;
- iii. Empirically investigate whether political freedom (democracy) and economic freedom enhance the effectiveness of foreign aid;

- iv. Compare the impact of foreign aid on extreme poverty according to developing country income groups; and
- v. Examine the causal relationship between foreign aid and extreme poverty in developing countries.

1.3.2. Hypotheses of the study

The following alternative hypotheses are tested in this study:

- i. Foreign aid (total ODA) leads to a reduction in extreme poverty (headcount poverty rate) in developing countries;
- ii. Different types of foreign aid (loans, grants, as well as bilateral and multilateral aid) lead to a reduction in different proxies of extreme poverty (headcount poverty rate, poverty gap, and squared poverty gap index) in developing countries;
- iii. Political and economic freedom enhances the effectiveness of foreign aid in reducing extreme poverty in developing countries;
- iv. The effectiveness of foreign aid in extreme poverty reduction spans across different country income groups; and
- v. Foreign aid Granger causes extreme poverty.

1.4. Significance of the Study

Although this study is an addition to the existing aid effectiveness literature, it differs significantly from most previous studies on the subject in several ways. First, the majority of studies on aid effectiveness focus on the impact of aid on economic growth. This research contributes to the small group of studies that specifically examine the impact of aid on extreme poverty.

Second, this study explores the subject matter further by investigating the effect of the five types of foreign aid. They are total ODA as a percentage of GNI, grants, loans, and both bilateral and multilateral aid on the three proxies of extreme poverty: poverty headcount rate, poverty gap, and squared poverty gap.

Third, the study compares the impact of foreign aid on extreme poverty by country income group. This includes a comparison across three developing country income groups: low-income, lower middle income, and upper middle income.

Fourth, few studies have tested the so-called “Washington Consensus” (WC)¹ model of aid allocation². This study empirically tests whether one of the “aid conditionalities” helps countries to escape poverty – that foreign aid should be allocated to countries which promote political and economic freedom. The study tests whether political or economic freedom enhances the effectiveness of foreign aid in reducing poverty.

Fifth, this study combines the assessment of the impact of foreign aid on extreme poverty with an examination of the direction of causality between the two variables. This enriches the discussion and understanding of the relationship between these two variables. In the impact assessment, the study uses several control variables (to produce unbiased estimates and robust results), and for the causality analysis, a trivariate framework (with an intermittent variable) is estimated.

Sixth, as mentioned earlier, the study uses recent dynamic panel data estimation techniques, including methods that deal with endogeneity by controlling for simultaneity and the unobserved heterogeneity. The majority of studies on aid have been criticised for not considering the potential endogeneity between aid and its possible outcomes, such as poverty and economic growth.

¹The term “Washington Consensus” was first used by an English economist named John Williamson in 1989.

² The term “WC” refers to a set of economic policy prescriptions associated with institutions based in Washington, D.C., such as the IMF, the World Bank, and the U.S. Treasury Department.

1.5. Organisation of the Study

The rest of the study is organised as follows: Chapter 2 presents the dynamics of foreign aid and extreme poverty in developing countries, while Chapter 3 covers the theoretical and empirical literature on the relationship between foreign aid and poverty. Chapter 4 offers a detailed discussion of the econometric estimation techniques used in this thesis, including the theoretical and empirical model specifications, endogeneity, as well as identification and robustness checks. The chapter also discusses the sources of data and the choice of variables used. Chapter 5 contains the econometric analysis, the empirical findings and a discussion of the results. Finally, Chapter 6 summarises and concludes the study and offers policy implications.

CHAPTER 2: THE DYNAMICS OF POVERTY AND FOREIGN AID IN DEVELOPING COUNTRIES

2.1. Introduction

The phrases “economic development” and “development economics” were historically thought of as synonymous with economic growth. In recent years, however, these terms have come to be associated with “poverty reduction” (Deaton, 2006). The World Bank (1990, p. 24) asserts that “*reducing poverty is the fundamental objective of economic development*”. Clunies-Ross *et al.* (2009, p. 595) argue that the promotion of the MDGs led to the shifting of emphasis on the foreign aid motive from increasing economic growth rates to poverty reduction. This emphasis has continued under the SDGs period (United Nations, 2015).

The previous chapter provided an introduction and background to the study. This chapter chronicles the history of global poverty and official aid (OA) in developing countries. It starts by defining developing countries in the first section, and it then proceeds to describe possible causes, definitions, and measurements of poverty before highlighting the global trends in extreme or absolute poverty in the third section. The fourth section provides a global overview of foreign aid in terms of history, volumes, and the main bilateral donors, while section five brings the two main variables together through a discussion of the core movement of extreme poverty and foreign aid. Section six concludes the chapter by highlighting the main findings.

2.2. Characteristics of Developing Countries

The economies of the world are broadly divided into two groups: developed and developing countries. This study focuses on poverty and foreign aid in the latter countries. It follows the World Bank (2017) classification which uses the level of the GNI per capita (calculated using the World Bank Atlas method) as the main criterion for country grouping. According to this classification criterion, low-income economies are those which had a GNI per capita of US\$1 005 or less in 2016. Lower middle-income economies had a GNI per capita of between US\$1 006 and US\$3 955), upper middle-income economies between US\$3 956 and US\$12 235, and

high-income economies had US\$12 236 or more. Therefore, developing countries are those with a per capita GNI below the US\$12 236 threshold.

According to Ravallion (2016, p. 2), in 1820 approximately 80% of the world's population lived in material conditions similar to those of the poorest 20% today. This suggests that the world has made progress in reducing poverty over the years. However, this progress has been uneven over time and space (Ravallion, 2016, p. 2), with poverty now concentrated in developing countries.

Developing countries are typically classified into six geographical regions, namely: EAP, ECA, LAC, MENA, SA, and SSA. According to Atkinson and Bourguignon (2014), developing countries cover almost 75% of the total world land area and constitute around 85% of the total world population.

Table 2.1 summarises changes in some basic demographic, economic, and socio-economic statistics from 1980 to 2015. The table shows that the total population in developing countries has almost doubled over the last 35 years. The poorest region in terms of GNI per capita (Atlas method) is SA, followed by SSA. However, when using the GNI per capita based on the purchasing power parity (PPP) method, SA seems to be marginally richer, with a higher value than that of SSA. Based on both the PPP and Atlas methods, the GNI for ECA is generally higher than that of other regions and has the highest HDI.

Table 2.1: Population, gross national income, and Human Development Index in developing countries by region

Regions	1980				2010					2015			
	GNI per capita				GNI per capita					GNI per capita			
	Population (millions)	PPP Method	Atlas method	HDI	Countries	Population (millions)	PPP Method	Atlas method	HDI	Population (millions)	PPP Method	Atlas method	HDI
Developing countries	3 505				153.00	5 840	7 023	4 291	0.61	6 159			
East Asia and Pacific	1 360		1 273		24.00	1 961	4 911	2 992	0.62	2 035	16 082	9 771	0.72
Eastern Europe and Central Asia	350		5 816		30.00	476	12 558	7 815	0.75	411	30 175	24 275	0.76
Latin America and the Caribbean	345		2 125		31.00	584	9 789	6 433	0.71	605	15 070	8 968	0.75
Middle East and North Africa	167				13.00	331	6 462	3 647	0.64	363	18 846	8 229	0.69
South Asia	900		273		8.00	1 633	3 429	1 704	0.54	1 744	5 661	1 535	0.62
Sub Saharan Africa	383		670		47.00	853	3 288	1 798	0.45	1 001	3 569	1 631	0.52
Developed countries	932				62.00	1 055	37 303	38 818	0.86	1 187			
Total/Average	7 941	0.00	2 031	0.00	368.00	12 733	10 595	8 437	0.65	13 505	14 900	9 068	0.68

Source: Population data is from the United Nations (UN) Demographic Yearbook. Gross national income (GNI) per capita is in international dollars adjusted for purchasing power parity (PPP) and in current US\$ (Atlas Method) are from the World Development Indicators (WDIs). The Human Development Index (HDI) is from the UN Development Programme (UNDP) human development reports. Finally, the GNI and HDI are unweighted averages across countries.

2.3. History, Measurement, and Global Poverty Trends

2.3.1. Causes of poverty

For centuries, various theories have been developed in attempts to explain the main causes of poverty. Depending on the understanding or assumed causes of poverty during those successive years, different policies and programmes were enacted to solve the problem of poverty.

According to Ravallion (2016, p. 4), one of the earlier and influential schools of thought is that the (poor) individuals are responsible for their poverty situation through substandard choices or negative behaviour. Poverty was thus attributed to the poor people themselves, who were deemed to be lazy, not hard-working enough, imprudent, or reluctant to take risks. Some variations of this theory attributed the cause of poverty to low intelligence and genetic issues of the poor. However, Ravallion (2016, p. 4) argues that blaming poor people for their predicament has long afforded an excuse for public inaction against poverty. The argument then was that directly helping the poor would be counterproductive as it would encourage “bad behaviour”. The solutions to combat poverty, based on this “bad behaviours” theory, included initiatives to issue money to the working poor in the form of an earned income tax credit (EITC) as a way of motivating them to work. To address issues of lower intelligence or lower education, development strategies were formulated to help the poor to improve their education (Lipton & Ravallion, 1993).

Another school of thought is that poverty is caused by cultural belief systems that support sub-cultures of poverty. This thinking is mainly attributed to Lewis (1959), an anthropologist who coined the term “culture of poverty”. This theory postulates that a set of beliefs, values, and skills that are socially created but individually held can create poverty. According to Lewis (1998, p. 7), *“people in the culture of poverty have a strong feeling of marginality, of helplessness, of dependency, of not belonging. They are like aliens in their own country, convinced that the existing institutions do not serve their interests and needs”*. People in a certain community, suburb, or region can thus hold the same “culture of poverty” and pass it on to future generations. The solution would be to focus on cultural education programmes or individual families moving out of that neighbourhood.

An understanding of poverty based on these first two theories would lead to four approaches to poverty: acceptance, palliation, insurance, or theft (Lipton & Ravallion, 1993, p. 3). Poverty was accepted based on the belief that it was an unhappy way of life. Those who decided to act against poverty chose the palliative route, whereby the private sector, a charity, or Christians helped through almsgiving which was regarded as a religious duty. Chiefs or landlords collected some insurance fee in the form of grain or labour from the poor in return for military protection. Lastly, in the absence of palliation or insurance, theft was an ethically accepted cure for life-threatening poverty (Lipton & Ravallion, 1993, p. 3).

The third theory of poverty is attributed to Juan Luis Vives (1492-1540)³, who argued that poverty is caused by cumulative and cyclical interdependencies, and that poverty would generate costs for non-poor as well (Ravallion, 2016). These costs include crime, disease, or the problem of having too many beggars (Ravallion, 2016, p. 4). Based on this argument and understanding, the rich and those in leadership positions began to establish anti-poverty policies.

Recent theories of poverty maintain that it is caused by economic, political, and social distortions or discriminations. The World Bank (2000, p. 34) argued that one of the ways in which to explore the causes of poverty is to probe the dimensions highlighted by the poor themselves. These include (i) a lack of income and assets to attain basic necessities; (ii) a sense of voicelessness and powerlessness in the institutions of state and society; and (iii) vulnerability to adverse shocks linked to an inability to cope with them. An understanding now exists that the poor face some socio-economic constraints which limit them from accessing opportunities to improve their well-being. As a result of these constraints, the poor are excluded from the formal economy, institutions of support, markets and services from the government (Ravallion, 2016). This new thinking has placed the goal of poverty reduction at the core of international development and public policy. Domestically, governments are now increasingly measured on their effectiveness in eliminating poverty.

³ Juan Luis Vives is regarded as the founding father of modern psychology (Ravallion, 2016).

2.3.2. Definitions of poverty

When asked to define poverty, a poor man in Kenya said,

“Don’t ask me what poverty is because you have met it outside my house. Look at the house and count the number of holes. Look at the utensils and the clothes I am wearing. Look at everything and write what you see. What you see is poverty” (Todaro & Smith, 2012, p. 6).

Defining poverty in the South African context, Bundy (2016) said the following:

“Poverty is material want, shabbiness, and squalor ... clothes patched beyond repair; shoes literally down-at-heel; bedding stained and worn thin; furniture and fittings that sigh with exhaustion ... housing without basic amenities, comforts or security that home life is supposed to afford” (Bundy, 2016, p. 7).

A blind and poor woman in Moldova explained her experience of poverty, saying,

“For a poor person, everything is terrible – illness, humiliation, shame. We are cripples; we are afraid of everything; we depend on everyone. No one needs us. We are like garbage that everyone wants to get rid of” (Todaro & Smith, 2012, p. 6).

From these three definitions, based on poverty experience, one can conclude that poor people are impoverished and suffer from undernutrition and poor health, have little or no literacy, live in environmentally degraded areas, hardly have any political voice, are excluded socially and economically, and earn meagre incomes. However, these definitions are too general and make poverty challenging to measure, thereby making it difficult to track progress in the fight against poverty.

The World Bank (1990, p. 26) defines poverty as the inability to attain a minimal standard of living. Todaro and Smith (2012, p. 2) qualify poverty and define “absolute poverty” as “*a situation of being unable to meet the minimum levels of income, food, clothing, healthcare, shelter, and other essentials*”. The next sub-section focuses on how to measure the standard of living or well-being, how to identify the poor, and how to determine an overall indicator of international poverty that can be used for global poverty comparisons.

2.3.3. Measurement of poverty

2.3.3.1. *Basic approaches to measuring the prevalence of poverty*

Lok-Dessallien (1999, p. 1) states that the way in which poverty is measured reveals the fundamental assumptions made about the nature and causes of poverty. Broadly, there are three basic approaches to measuring the prevalence of poverty in a household, community, country or region. The first approach is termed the income or expenditure method, which is mainly based on the human basic needs approach (BNA). The BNA sets minimum absolute standards of (primarily material) needs in a number of measurable dimensions (Clunies-Ross *et al.*, 2009, p. 251). It is a consumption-oriented approach as it predominantly focuses on the minimum requirements for a decent life, such as health, nutrition, and literacy. In this approach, poverty is defined as a lack of income or of consumption (Deaton, 2006, p. 9). This approach to poverty measurement assumes that individuals or a group of people are poor if their income or consumption is below a particular level usually defined as a minimum threshold or a “poverty line”. Clunies-Ross *et al.* (2009, p. 251) argue that the MDGs were developed using the BNA by listing the “needs” that had to be met. The BNA leads to several poverty indicators, commonly referred to as monetary measures of poverty such as per capita gross national product (GNP), headcount index, poverty gap index (PG) and SPG. These poverty indices will be discussed in greater detail under the monetary measures of poverty sub-section.

The second method is called the human capabilities approach (CA) and is centred on the pioneering work of Amartya Sen during the 1980s and 1990s. This approach defines poverty as the absence of basic human capabilities to function at a minimally acceptable level within a society (Lok-Dessallien, 1999, p. 11; Deaton, 2006, p. 10). The CA looks at improving people’s well-being by expanding their “capabilities” so that they can look after themselves. The CA notion hypothesises that poverty is a result of a lack of capability to “function” or to “achieve” well-being (Wagle, 2005, p. 302). Well-being is defined as the “ends”, while capability is defined as the “means” to achieve it (United Nations Development Programme [UNDP], 2000).

The CA to poverty measurement tries to measure poverty by looking at poverty outcomes or “ends”, such as individuals’ abilities and opportunities to live long, healthy, and enjoyable lives; to be literate; and to have the freedom to pursue what they value (Sen, 1981, 1992, 1999; Clunies-Ross *et al.*, 2009). Based on this definition, it can be argued that the CA is a more

comprehensive approach to poverty measurement compared to the BNA, as it places poverty within the broader context of human development (Lok-Dessallien, 1999, p. 11). The majority of the CA poverty indicators include non-monetary poverty measures or social indicators such as life expectancy, literacy rates, and malnutrition.

The third approach to poverty measurement is a hybrid method, which recognises that poverty is a multidimensional phenomenon. There has been a realisation that even though income-based measures are simple and widely used, employing these types of measures solely would lead to the neglect of important features of poverty (Deaton, 2006). Furthermore, Schaffner (2014, p. 85) highlights that the choice between income and non-income measures has an effect on policy goals. As such, goals for reducing income poverty are not necessarily the same as those for reducing mortality rates, for example.

2.3.3.2. Non-monetary measures of poverty

As argued above, the human capability approach places emphasis on people's abilities and opportunities to enjoy long, healthy lives and to be literate and participate freely in their society. Therefore, the poverty indicators under the CA would include, inter alia, life expectancy, literacy rates, and malnutrition. These indicators can be described as measures of well-being in terms of final outcomes, and they are normally collected by national statistical agencies. However, the main disadvantage of these indicators is that no perfect aggregates exist for some of them. Some are group measures and cannot be used to gauge household or individual well-being (i.e., life expectancy). Furthermore, some of the indicators are stock variables, which change slowly over time, thereby limiting their usefulness for short- and medium-term poverty monitoring (Lok-Dessallien, 1999, p. 12).

The second group of poverty indicators can be referred to as multidimensional poverty estimates, indices, or composite measures. It can be argued that the HDI of the UNDP is a combination of both the basic needs and the capacities approach. It is a mixed measure of three dimensions of human development, namely (i) a long and healthy life, as measured by life expectancy at birth; (ii) education or knowledge, measured by adult literacy and the gross enrolment ratio for primary, secondary, and tertiary institutions; and (iii) a decent living standard, which is proxied by the gross domestic product (GDP) per capita in PPP in U.S. dollars (UNDP, 2005, p. 214).

Another example is the Human Poverty Index (HPI) which was developed by the UNDP as a complementary measure to the HDI (UNDP, 1997). The HPI combines basic dimensions of poverty, and the variables used are longevity (percentage of the people expected to die before age 40), adult illiteracy, access to health services and to safe water, and under five malnutrition rates (UNDP, 1997, p. 14; Lok-Dessallien, 1999, p. 8). In 2010, the UNDP replaced the HPI with its new Multidimensional Poverty Index (MPI). The new index identifies the poor using dual cut-offs for levels and numbers of deprivations and then multiplies the percentage of people living in poverty by the percentage of weighted indicators for which poor households are deprived (Todaro & Smith, 2012, p. 215). The MPI uses a range of health, education and standard of living indicators, which are considered as important direct household indicators of deprivation (Todaro & Smith, 2012).

2.3.3.3. *Monetary measures of poverty*

As briefly discussed above, the monetary measures, sometimes referred to as income or consumption measures, can also be regarded as an indirect way of measuring poverty (Alkire & Santos, 2014). The income method has been implemented in official poverty measures for most countries of the world, and its indicators include per capita GNP, headcount index, PG, and SPG. Lok-Dessallien (1999) argues that per capita GNP is too gross and misleading, and that per capita personal income is therefore a better aggregate income indicator.

The World Bank (2000, p. 16) traces the history of the monetary or income measures of poverty to Seebom Rowntree's classic study of poverty in the English city of York in 1899. Deaton (2010, p. 5) however, traces the recent World Bank poverty indicators to the work of Ahluwalia *et al.* (1979). The actual calculations of the international poverty indicators in the World Bank's *World Development Report 1990* (World Bank, 1990) are based on the research for that report which was later documented by Ravallion *et al.* (1991)⁴. These poverty measures are founded on the international poverty line, popularly known as the "dollar-a-day poverty line". This was incorporated into international poverty discussions and policymaking through the promulgation of the MDGs (World Bank, 1990; Ravallion *et al.*, 1991; Ravallion *et al.*, 2009; Deaton, 2010). The first goal of the MDGs was to "*halve, between 1990 and 2015, the*

⁴ Please see Ravallion *et al.* (2009) for more details.

proportion of people whose income is less than \$1 a day” (Clunies-Ross *et al.*, 2009, p. 617; Deaton, 2010, p. 5).

The international poverty line measures absolute or extreme poverty below which an individual is unable or barely able to meet the subsistence essentials of food, clothing, and shelter (Ravallion *et al.*, 2009, p. 163; Todaro & Smith, 2012, p. 211). The development of this global poverty line occurred through three major steps, namely (i) collecting poverty lines (mainly based on national household income and expenditure surveys) from a group of developing countries, (ii) converting these poverty lines into international dollars using the PPP exchange rates from the International Comparison Project (ICP), and then (iii) estimating the international poverty line (Ravallion *et al.*, 1991; Ravallion *et al.*, 2009; Ravallion, & Chen, 2010). The main advantages of the international poverty line are that it is simple, transparent, and easier to use when comparing poverty levels across countries and regions (Deaton, 2010, p. 5). However, it faces criticism based on disparities in survey designs, the reliability of the PPP, given economic disparities, and the actual calculation of the international poverty line, which was described by Deaton (2010, p. 17) as a “*simple average*” of poor countries’ poverty lines.

Through successive revisions, the international poverty line of “US\$1 a day” was revised upwards to US\$1.08, US\$1.25, and recently US\$1.90, based on new price surveys by the ICP. The current poverty measures from the World Bank’s PovcalNet Online database⁵ are updates of global poverty rates from 1981 to 2013 based on the 2011 PPP from the ICP. The new poverty estimates combine PPP exchange rates for household consumption with data from more than 1 000 household surveys across 138 countries in 6 regions and 21 other high-income countries. According to the (World Bank, 2016a), over 2 million randomly sampled households were interviewed for the 2013 estimate, representing 87% of the population of the developing world.

Once the international poverty line has been determined, a class of poverty measures could be decomposed following the work of Foster *et al.* (1984), which is illustrated as follows:

⁵ See World Bank (2016b): <http://iresearch.worldbank.org/PovcalNet/home.aspx>

$$P_{\alpha} = \frac{1}{N} \sum_{i=1}^{N^p} \left(\frac{G_i}{Z} \right)^{\alpha} \quad [2.1]$$

where α is the sensitivity of the index to poverty, or a measure of “*poverty aversion*” (Foster, *et al.*, 1984, p. 763); N^p represents the number of poor people; Z is the poverty level; and G_i is the poverty gap⁶. The three poverty measures used in this paper are the poverty headcount index, the PG, and the SPG (Schaffner, 2014).

According to Alvi and Senbeta (2012, p. 960) and Schaffner (2014), when $\alpha = 0$, the expression in Equation 2.1 corresponds to the headcount index; $\alpha = 1$ corresponds to the PG; and $\alpha = 2$ corresponds to the SPG. The headcount index or the poverty rate measures the proportion of households in a population with incomes per person below the poverty line. Therefore, it measures the prevalence of poverty in terms of the spread thereof within the population. Although the headcount index is the most popular measure used by researchers, its main disadvantage is that it does not offer an indication of the depth of poverty (Schaffner, 2014).

The PG measures this depth of poverty, and it considers the dispersal of the poor. It averages the proportional income gaps across everyone in the population against the poverty line. According to Schaffner (2014), the PG can be understood as the cost per person for eliminating poverty in an entire country⁷:

“The PG can be interpreted as the cost per person in the entire economy of eliminating poverty (if money could be targeted perfectly and costlessly), expressed as a share of the poverty line. A PG of 0.05, for example, indicates that bringing the incomes of the poor up to the poverty line would require a per capita expenditure of 5% of the poverty line” (Schaffner, 2014, p. 88).

The SPG, on the other hand, is sensitive to both global prevalence and the average depth of poverty, as well as the occurrence of deep poverty among the poor. Given its wider reach, the index is also referred to as the poverty severity index. It is argued that the squaring of the poverty gap or shortfall magnifies “*the contribution to the overall measure of the income*

⁶ According to Alvi and Senbeta (2012), $G_i = Z - X_i$, where X_i is the per capita income and N is the population size.

⁷ Assuming that money and resources are targeted perfectly and in a costless manner.

deficits experienced by those in deepest poverty” (Schaffner, 2014, p.89; Alvi & Senbeta, 2012).

2.3.4. Global poverty levels

Obtaining reliable measures of poverty that are comparable across countries is one of the main challenges in the understanding of and fight against global poverty (Besley & Burgess, 2003; World Bank, 2015). This section attempts to provide a broad overview of the global and regional trends in the dimensions of poverty such as income (consumption), education, and health. The main focus of this study, however, is on monetary measures of poverty whose trends are discussed in greater detail.

Table 2.2 presents a summary of the well-being of citizens by region in terms of gross GDP per capita, life expectancy, mortality rates, and school enrolment. The GDP per capita offers a measure of the average annual income per person, assuming that the income in the region is distributed equally. As shown in Table 2.2, even though the average income per person has increased over the years, large regional disparities still exist. On average, the world has recorded an increase in GDP per capita of 178% from 1960 to 2015. Over the same period, the EAP region recorded the highest growth of 1 814%, growing from an average of US\$287 to US\$5 500. This is followed by SA (409%), and the least growth was recorded in the SSA region, which witnessed a mere 54% increase (from US\$1 074 to US\$1 659) over more than half a century. It is also important to note that by 1960, SSA was almost four times richer than EAP, whereas now, a complete reversal has taken place, as EAP is currently around three times richer.

Table 2.2: Monetary and non-monetary poverty indicators by region of the world

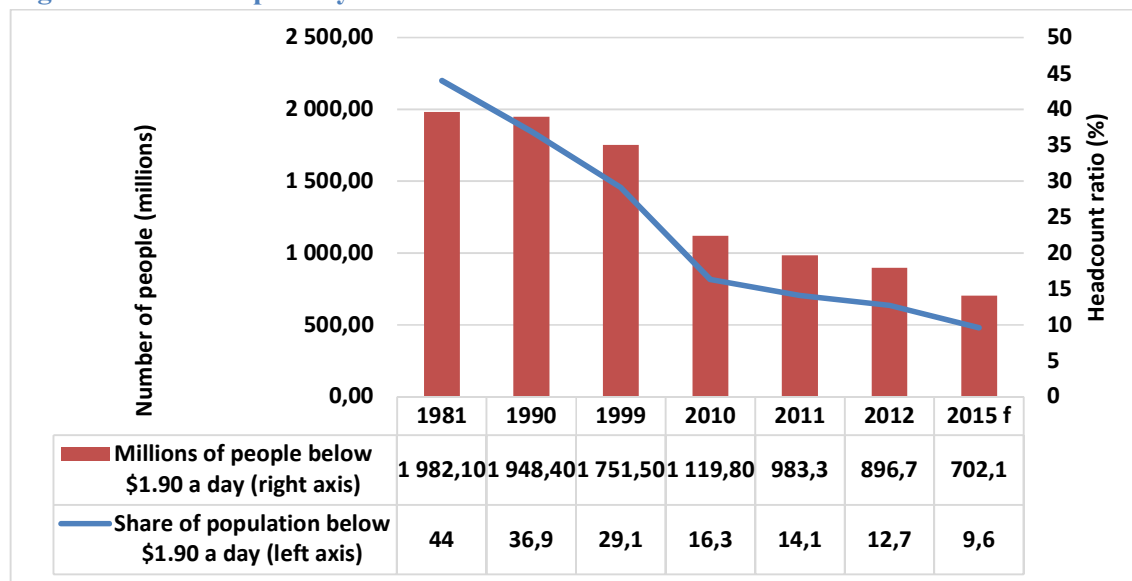
Region	GDP per capita (constant 2010 US\$)			Life expectancy at birth, total (years)			Mortality rate, infant (per 1,000 live births)			School enrolment, secondary (% gross)		
	1960	1990	2015	1960	1990	2015	1960	1990	2015	1970	1990	2014
World	3 690	7 154	10 242	52	65	72	122	63	32	41	51	75
High income	11 750	29 283	41 459	68	75	81	36	10	5	78	92	106
Lower middle income	556	947	2 018	47	63	70	161	83	40			
<i>Developing Countries (excluding high income)</i>												
Europe & Central Asia		6 261	8 333	63	68	72		39	15	81	91	106
Middle East & North Africa		2 724		47	65	72	168	52	21	26	57	79
East Asia & Pacific	287	945	5 500	45	68	74		45	15	35	44	88
Latin America & Caribbean	3 552	6 275	9 027	56	68	75	121	44	15	27	76	94
South Asia	314	553	1 599	42	58	68	168	92	42	23	36	65
Sub-Saharan Africa	1 074	1 252	1 659	40	50	59		108	56	13	23	43

Source: World Bank (2017)

However, though the GDP per capita offers useful and thought-provoking insight into prosperity levels (Schaffner, 2014, p. 2), it does not provide an accurate picture of the level of deprivation and the standard of living. This is complemented by other non-income measures of poverty. Table 2.2 shows that for many people in developing countries, life is short, the probability of a child dying is still high, and school enrolments are still extremely low. On average, SSA ranks lowest in all measures. The life expectancy in SSA is only 59 years, compared to 81 years for high-income countries. Furthermore, 1 out of every 17 babies born in SA dies before the age of 5 years, while only 43% of children attend secondary school.

As illustrated in Figure 2.1 below, the World Bank (2016b) estimated that more than 1 billion people have been lifted out of extreme poverty during the last 3.5 decades (1981 to 2015). However, approximately one-tenth of the global population still lived on less than US\$1.90 a day which was estimated at around 700 million people in 2015 (World Bank, 2016b, p. xv).

Figure 2.1: Global poverty levels

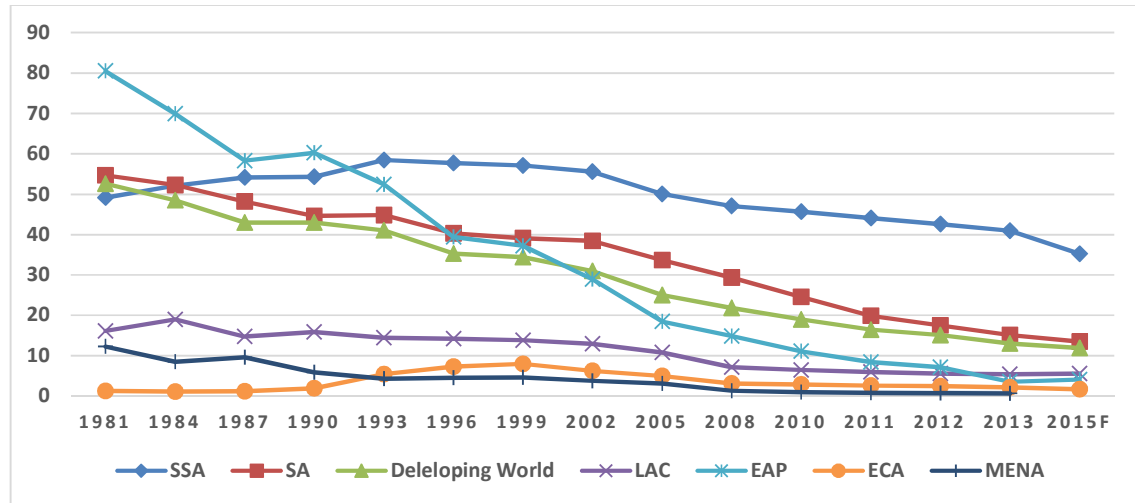


Source: World Bank (2016a; 2016b)

The 2015-year mark is significant in that it signifies the end of the 15-year target for achieving the MDGs. The world target was that the global poverty rate should be halved from the 1990 levels by 2015. In 1990, there were roughly 1.9 billion people living below US\$1.90 a day (constituting 36.9% of the world population), and this number is projected to have reduced to 700 million people with an estimated global poverty rate of 9.6%. The statistics suggest that,

at a global level, the world met the MDG target in 2010, which is 5 years ahead of schedule. However, there are some regional disparities as depicted in Figure 2.2.

Figure 2.2: Regional dynamics of poverty (\$1.90 a day)



Source: Source: World Bank (2016a)

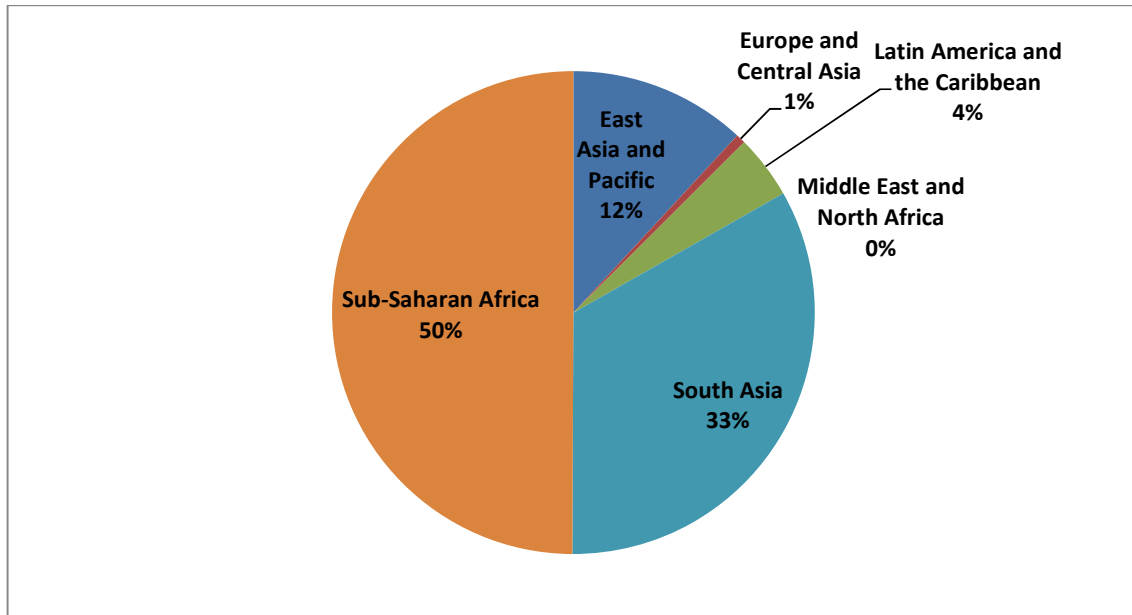
Figure 2.2 plots the US\$1.90 a day poverty rate for the 6 regions and the total for all developing countries. The global poverty rate for all developing countries decreased from around 54.7% in 1981 to 13% in 2013, and it is estimated to have decreased further to 11.9% in 2015. As shown in Figure 2.2, however, there are significant regional disparities in the levels of progress in the fight against global poverty. Ravallion (2011, p. 79) also remarked that progress against poverty has been uneven over time and space. A comparison of progress in poverty reduction between the six regions over this period demonstrates that there has been a striking re-ranking. For example, the poverty rankings of the regions in 1981 indicated that poverty was highest in EAP, followed by SA, SSA, LAC, MENA, and lastly ECA in that order.

As illustrated in Figure 2.2, the EAP region had the greatest number of people in extreme poverty during the 1980s and early 1990s. The marked reversal in fortunes took place within the first two decades. The regions with the highest poverty rate in 1981 were the EAP at 80.5%, SA (54.5%), and SSA (49.2%). However, by the early 1990s, EAP had swapped places with SSA. From then on, SSA remained the poorest region, though its poverty rates have been decreasing from around 2000. East Asia and the Pacific has recorded the sharpest decrease in poverty rates during this period, from 80.5% in 1981 to less than 10% in 2011, and the rate was projected to be less than 5% in 2015.

Both Figure 2.1 and Figure 2.2 also illustrate that the decrease in incidences of poverty was greater in some periods compared to others. Global poverty rates fell by large margins between 1981 and 2010, and the most rapid decline occurred during the 2000s. More than 1 billion people escaped extreme poverty during this period. The estimated figures for 2015 show that global poverty is concentrated in three regions (SSA, SA, and LAC). However, the other 2 regions have reached a US\$1.9-per-day headcount poverty rate of less than 15%, with the exception of SSA, which remained stubbornly high at 35.2% in 2015. This means that there were still around 350 million people who were living on less than US\$1.9 per day, and this figure was roughly half of the world’s poor. It is not a surprise that the top 10 poorest countries of the world are in SSA⁸.

Figure 2.3 depicts the distribution of the estimated 700 million people living below the US\$1.90-a-day poverty line. In the 1980s and early 1990s, EAP had the highest number of poor people followed by SA.

Figure 2.3: Regional distribution of people living below the US\$1.90-a-day poverty line (2013 purchasing power parity), 2015



Source: World Bank (2016a)

⁸ The top 10 poorest countries of the world in terms of 2013 headcount poverty levels are, starting with the poorest, the CAR, Madagascar, the Democratic Republic of Congo, Burundi, South Sudan, Malawi, Guinea-Bissau, Zambia, Rwanda, and Mozambique.

According to the latest estimates by the World Bank (2016a), as illustrated in Figure 2.3, by 2015, SSA and SA accounted for approximately 80% of the global poor. Sub-Saharan Africa, with about 350 people living on less than US\$1.90 per day, had around half of the world's poverty-stricken population.

2.3.5. Progress in meeting the millennium development goals

In the year 2000, the United Nations General Assembly promulgated the MDGs as a set of developmental goals and targets agreed by the international community. The primary focus of the MDG was on halving extreme poverty and improving the welfare of the world's poorest by 2015. There were eight specific and measurable development goals. The first seven of them concentrated on eradicating extreme poverty and hunger; achieving universal primary education; promoting gender equality and empowering women; reducing child mortality; improving maternal health; combating the human immunodeficiency virus infection and acquired immune deficiency syndrome (HIV/AIDS), malaria, and other diseases; and ensuring environmental sustainability. The eighth goal focused on the creation of a global partnership for development, with targets for foreign aid, international trade, and debt relief (IMF, 2015). Clunies-Ross *et al.* (2009, p. 595-6) argue that the promotion of the MDGs marked the shift in “*aid for development*” from increasing economic growth rates to tangible reduction of poverty and general deprivation. This is more pronounced by the first goal, which targeted cutting global poverty by half (Sachs, 2005; Deaton, 2010) – that is, to reduce the proportion of people living in extreme poverty (below US\$1 a day) from close to 30% of the developing world's population in 1990 to 15% by 2015 (Besley & Burgess, 2003, p. 3). To achieve the MDGs, rich nations had to make a commitment to increase OA to poor countries by allocating 0.7% of their GNI, a target set since the 1960s.

Based on the statistics presented in the previous sections, especially Figure 2.1 and Figure 2.2, the world met the MDG target of halving the global poverty rate in 2010, 5 years ahead of schedule (World Bank, 2016b, p. 1). In 1990, there were nearly 1.9 billion people living below US\$1.90 a day (constituting 36.9% of the world population). This number is projected to have reduced to 700 million people by 2015, with an estimated global poverty rate of 9.6%. Based on these statistics, it could be concluded that the world met the above-mentioned MDG

target. However, SSA is the only region that has not met its MDG target (Asongu & Kodila-Tedika, 2017; Asongu & Le Roux, 2018; Mahembe & Odhiambo, 2018)⁹.

The World Bank (2016b, p. 1) further argues that the MDGs were effective in reducing income poverty and in spurring global development progress. They were however less successful in improving non-income deprivations such as access to quality education or to basic health services. The report further asserts that development has advanced more rapidly over the 15-year MDG era than at any other time in human history, and the lessons learnt could hence be used to drive the success of the new SDGs by 2030.

2.4. Foreign Aid History, Allocation, and Global Trends

2.4.1. Definitions and forms of foreign aid

Broadly defined, foreign aid comprises of all resources – physical goods, skills and technical know-how, financial grants (gifts), or concessional loans – which are transferred by donors to recipient countries (Riddell, 2008). Two broad types of foreign aid exist: official development finance (ODF) and ODA. The latter is sometimes used interchangeably with OA. On the one hand, ODA and OA cover (i) grants and (ii) concessional loans that have at least a 25% grant component (World Bank, 1998, p. 6). Both ODA and OA come from official sources and are issued principally for promoting economic development and welfare in developing countries (OECD, 2009, p. 50). The only difference between ODA and OA is that OA involves payments to “*transitional countries*” and some “*advanced*” developing countries, while ODA covers the rest of the developing countries (Clunies-Ross *et al.*, 2009, p. 618). On the other hand, ODA is a subset of ODF (World Bank, 1998). Official development finance also includes non-concessional multilaterals and bilateral developmental loans with less than a 25% grant element (OECD, 2006). The OECD also reports on “other official flows” (OOFs), which show transactions by the official sector with countries on the “*DAC List of ODA Recipients*” that do not meet the conditions for ODA eligibility. This is because they are not primarily aimed at development or because they have a grant element of less than 25% (OECD, 2018b).

⁹ A more detailed discussion on the regional dynamics of poverty can be found in Section 2.5 of this chapter.

Foreign aid can also be classified into two broad groups: bilateral (two-sided) and multilateral (many-sided) aid. The former refers to aid given by one donor government directly to a recipient government, usually administered by agencies of the donor government. The latter is offered by an international institution representing a number of donor governments. International institutions that administer multilateral aid include the UN, the World Bank, the International Monetary Fund (IMF) and other development agencies (Hjertholm & White, 1998). According to the OECD (2009), more than two-thirds of the total ODA from DAC member countries is provided bilaterally, mostly in the form of grants. Furthermore, debt relief grants have been a significant part of ODA in recent years, accounting for around 21% of ODA in 2005 and 18% in 2006 (OECD, 2009, p. 52). In recent years, there has been growth in aid disbursement through non-governmental organisations (NGOs). Traditional NGOs include Oxfam, CARE, Save the Children, and recently the Gates Foundation all of which deliver essential services and public goods to poor countries (Hjertholm & White, 1998).

Another categorisation of aid is in terms of whether it is “tied” or “untied”. Some bilateral aid is “source or donor tied”. This means that the donor provides aid with a condition that the recipient country must acquire products from the donor country (World Bank, 1998 and Clunies-Ross *et al.*, 2009). Untied aid has no such constraints. The World Bank (1998, p. 6) states that “*tied aid reduces the value of assistance by about 25 percent*” and further argues that “*untying bilateral aid would make it more effective*”.

Lastly, foreign aid can be classified according to its intended use. Project aid is granted solely to finance a specific project, such as the construction of a dam or road. Programme aid, on the other hand, is less restrictive. The recipient government has some discretion over the use of programme aid within a sector (for sectoral aid) or for general government support (Clunies-Ross *et al.*, 2009).

This study focuses on official foreign aid (both ODA and OA) as per the OECD’s DAC definitions. The official and operational definition of foreign aid is as follows:

“Flows to developing countries and multilateral institutions provided by official agencies, including state and local governments, or by their executive agencies, each transaction of which meets the following criteria: (1) it is administered with the promotion of the economic development and welfare of developing countries as its main

objective and (2) it is concessional in character and contains a grant element of at least 25 percent (calculated at a rate of discount of 10 percent)” (Riddell, 2008, p. 19).

The World Bank (1998) further affirms that this is the aid aimed at assisting in development and poverty reduction. Furthermore, as explained by Riddell (2008, p. 17), development partners concerned with world poverty would focus on narrower types of foreign aid, often referred to as development assistance or development aid. The empirical analysis of this study disaggregates foreign aid by source, namely (i) bilateral and (ii) multilateral, and by type: (i) grants and (ii) loans.

2.4.2. Purpose and motives for foreign aid allocation

Similar to the foregoing discussed varied types and definitions of foreign aid, many motives exist for donors granting aid. Clunies-Ross *et al.* (2009) grouped these motives into three categories: (i) humanitarian, (ii) political interests, and (iii) commercial considerations. Riddell (2008, p. 18) argues that foreign or development aid has always been defined from the perspective of donors in terms of the “*purpose for which aid is given*”. Over the years, aid has been issued for various purposes, including emergency, humanitarian, and development purposes. In recent years, however, there has been a growth in aid allocation for debt forgiveness (Riddell, 2008). Some of the geopolitical and global security arguments for increasing aid are that a world with higher economic growth and less poverty is more likely to be peaceful. As argued in the next section on aid allocation, the majority of donor governments tend to support international allies. Though not explicit, commercial objectives can play a part in aid allocation. This is a situation where a donor country uses aid to facilitate the procurement of raw materials, energy, and minerals. China and Japan have been accused of pushing their commercial interests through aid allocation, especially in Africa (Clunies-Ross *et al.*, 2009).

Heerde and Hudson (2010) examine factors that motivate people in developed countries to donate towards poverty reduction in developing countries. The study found that individual concern for poverty stems from self-interest, awareness of poverty and assessments of achieving the MDGs (Heerde & Hudson, 2010, p. 389). Dreher *et al.* (2012) argue that official donors are motivated by their own political and economic interests, while NGOs are prompted by the recipient country’s need and use merit as the main allocation criteria. Edwards and Hulme (1996, p. 970) suggest that NGOs have often become “*the implementer of the policy*

agendas” of their own governments, especially if they depend on official financing. Dreher *et al.* (2012, p. 1 449) found a “*herding behaviour*”, whereby German NGOs were following the government as well as NGO peers in their allocation of aid. The same study also found that German NGOs were more active in poorer countries. Empirical studies by Headey (2008) and Alvi and Senbeta (2012) confirm the assertion that bilateral aid is mainly motivated by “geopolitical and strategic” interests, while multilateral aid is focused on development goals, including poverty reduction.

The main focus of this study is on OA for development purposes, which is ODA or OA. This is the aid that is given with the main expectations that it will contribute funds for development. It is, however, also important to note that foreign aid is not the only source of foreign funds. Other sources of developmental funds for developing countries include FDI, loans from international markets and international remittances.

2.4.3. Brief history of foreign aid

As presented in Table 2.3, the history of foreign aid can be traced as far back as the late 1870s and early 1920s when the United Kingdom (UK) began the discussion on how to finance the development of poor countries which were then British colonies. In the United States of America (USA), the government transferred its food surplus to poor countries in 1896 with the intention of developing its agricultural markets. In 1912, the United States Congress officially passed an Act for the Relief of the Citizens of Venezuela. Even during the first period of World War I (WWI), countries were helping one another, but aid allocations (which were treated mainly as gifts) were patchy and temporary (Hjertholm & White, 1998).

According to the World Bank (1998) and McGillivray *et al.* (2006), the provision of development aid started as it is known today after World War II (WWII). In 1947, the USA established and funded the Marshall Plan, which was aimed at rebuilding Europe after the war. As illustrated in Table 2.3, aid has grown to become a global phenomenon with annual disbursements estimated at around US\$176 billion in 2016 (OECD, 2017).

Table 2.3: Chronological history of foreign aid

Decade (Period)	Main Activity (Year)	Main Motive or Purpose of Aid	Types of Aid	Main ODA Trend
1812-1900	<ul style="list-style-type: none"> - First discussions in the UK about official finance for colonies under Chamberlain (1870s) - Transfer of food surplus (under Ministry of Agriculture) begins from the US, with the intention of developing new markets (1896) 	<ul style="list-style-type: none"> - Humanitarian (relief) - Donor commercial or political interest 	<ul style="list-style-type: none"> - Food and humanitarian aid 	<ul style="list-style-type: none"> - Aid allocations were patchy and temporary
1901-1939	<ul style="list-style-type: none"> - The USA Congress passes the Act for the Relief of the Citizens of Venezuela (1912) - The USA ships 6.23 million tonnes of food aid to Europe after WWI (1918) - Formation of the International Labour Organization (ILO) in 1919 - First U.K. Colonial Development Act (1929) - Great Depression (1930s) - The USA passed the Agricultural Adjustment Act, a price support scheme which marked the beginning of systematic shipments outside of emergency situations (1933) 	<ul style="list-style-type: none"> - Humanitarian (relief) - Donor commercial or political interest 	<ul style="list-style-type: none"> - Food and humanitarian aid - Non-administrative aid (through the UK's Colonial Act) 	<ul style="list-style-type: none"> - Aid allocations were patchy and temporary
1940s-1950s	<ul style="list-style-type: none"> - Establishment of the UN in 1942 (formally came into being in 1945, with the signing of the UN Charter). - Formation of UN Relief and Rehabilitation Administration (UNRRA) in 1943 - Bretton Woods conference. Formation of Oxfam and CARE (1944) - Formation of the UN's Food and Agricultural Organisation in 1945 - End of WW II in 1945 - The UK passes the Colonial Development and Welfare Act (1945) - Formation of UNICEF (1946) - France creates its aid agency (FIDES) in 1946 which was eventually superseded by the Ministry of Cooperation - Launching of Marshall Plan (1947/48) - The USA Act of International Development and President Truman's Point Four speech (1949) - Establishment of the Expanded Programme of Technical Assistance (EPTA) by the UN (1949) - Launch of the Colombo Plan (1950) - Growth of the Community Development Movement (CDM) in the 1950s. - The U.S.A. Mutual Security Act (1951) - The U.S.A. Agricultural Trade Development and Assistance Act (1954) 	<ul style="list-style-type: none"> - Humanitarian (relief) - Donor commercial or political interest - Developmental aid, mainly funded through the Marshall Plan and the UN system - Ideology (i) focused on central planning and (ii) was anti-communist - Donor focus on the CDM 	<ul style="list-style-type: none"> - Programme aid (Marshall Plan), mainly towards reconstruction - Humanitarian aid - Projects aid - Technical assistance 	<ul style="list-style-type: none"> - Aid allocations were still patchy and temporary - Proper records began to be kept in the 1950s - Aid started to grow in the mid-1950s, and the USA contributed over half of all the official aid

Decade (Period)	Main Activity (Year)	Main Motive or Purpose of Aid	Types of Aid	Main ODA Trend
	<ul style="list-style-type: none"> - First meeting of non-aligned movement (1955) - Soviet Union, under President 1956 – Khrushchev announces expanded Soviet Union aid programme, which took over funding of the Aswan Dam in Egypt. - Formation of India Aid Consortia by the World Bank and five main donors (1958) - The UN Special Fund starts operations (1959) 			
1960s-1970s	<ul style="list-style-type: none"> - Establishment of the International Development Association (IDA) under the auspices of the World Bank (1960) - The OECD is founded in 1961, with the formation of the DAC - The U.S.A. President (Kennedy) launches the Alliance for Progress (1961) - Creation of the Nordic countries aid agency (1962) - Formation of World Food Programme (WFP) in 1963 - Formation of the United Nations Development Programme (UNDP) through the merging of the UN Special Fund and EPTA (1965) - The DAC agrees on definition of ODA in 1968 - The Pearson Report (1969) proposes 0.7% of GNI target for ODA donors - The World Bank President (and former U.S.A. Defence Secretary) Robert McNamara’s speech launches the World Bank’s reorientation towards poverty (1973) - World oil crisis (1973) - The USA International Development and Food Assistance Act (1975) - The U.K. Government publishes a white paper on aid titled “<i>The Changing Emphasis in British Aid Policies: More Help for the Poorest</i>” (1975) 	<ul style="list-style-type: none"> - Developmental aid, with a special focus on poverty (1970s) - Humanitarian (relief) - Donor commercial or political interest (specially to allies) - Ideology: state intervention in the market - Donor focus is on (i) support for infrastructure development and the productive sectors and (ii) poverty, including support for agriculture and social sectors 	<ul style="list-style-type: none"> - Bilateral aid - Technical assistance - Budget support - Debt relief - Multilateral aid - Infrastructure aid: funding of large-scale industrial projects 	<ul style="list-style-type: none"> - Aid stagnation (mid-1960s to mid-1970s) - Expansion in aid levels (mid-1970s to late 1980s). Official development assistance from DAC donors quadrupled from around US\$6.8bn in 1970 to over US\$27bn by 1980 - The expansion could be due to the escalation of the Cold War - Fall in food aid in the 1970s - World grew to become the largest source of development finance
1980s-1990s	<ul style="list-style-type: none"> - First structural adjustment loans (SAL) in 1980 and the increasing popularisation of the WC (1980s) - Publication of Brandt Reports: “<i>North-South: A Programme for Survival</i>” (1980) and “<i>Common Crisis</i>” (1983) - The World Bank publishes a report titled “<i>Accelerated Development in Sub-Saharan Africa</i>” (1981) - Start of debt crisis (1982) - Launch of Special Programme of Assistance for Africa (SPA) in 1987 	<ul style="list-style-type: none"> - Developmental aid, with more pronounced shifts in donor policy toward poverty reduction - Introduction of neo-liberal orthodoxies, focused on “removing 	<ul style="list-style-type: none"> - Rise of NGO aid - Emergency aid - Sectoral aid - Financial programme aid - New focus on SSA 	<ul style="list-style-type: none"> - Rapid expansion in aid levels, with some volatility in the 1980s - Oil exporters become aid donors - Rise in NGO aid

Decade (Period)	Main Activity (Year)	Main Motive or Purpose of Aid	Types of Aid	Main ODA Trend
	<ul style="list-style-type: none"> - Unicef publishes a study “<i>Adjustment with a Human Face</i>” (1987) - The World Bank launches governance agenda (1989) - The World Bank publishes a report titled “<i>Sub-Saharan Africa: From Crisis to Sustainable Growth</i>” (1989) - End of the Cold War (1990) - First Human Development Report (UNDP) and World Development Report (from the World Bank) on poverty (1990) - Copenhagen Summit, culminating in the 2020 initiative and the formulation of DAC targets (1994) - Helleiner Commission Report emphasising the importance of “local ownership of aid programmes and initiatives” (1995) - The World Bank and the IMF jointly launch a debt relief initiative for heavily indebted poor countries (HIPC) in 1996 - The OECD publishes a report titled “<i>Shaping the 21st Century: The Contribution of Development Co-operation</i>” (1996) - Several donors publish white papers or other policy documents embracing partnership for development initiatives (1997) - The World Bank publishes a report titled “<i>Assessing Aid</i>” (1998) 	<ul style="list-style-type: none"> impediments to growth” - Conditions for aid: adoption of market-oriented policies and trade liberalisation - Ideology: market-based economic structural adjustment programmes (ESAPs), especially in the 1980s - Aid was used as the tool for the implementation of an ESAP in the 1980s - Donor focus on poverty reduction and governance - Aid as a tool to foster democracy and governance in the 1990s 		<ul style="list-style-type: none"> - Japan becomes the largest ODA donor in the 1990s - Fall in aid after the end of the Cold War, regarded as the end of “political aid”
2000s-Present	<ul style="list-style-type: none"> - The World Bank publishes a report titled “<i>Attacking Poverty</i>” (2000) - Adoption of the UN “Millennium Declaration” and the publication of the MDGs in 2000 - 11 September 2001 (9/11) terrorist attack on U.S.A. soil - The World Bank publishes a report titled “<i>A Case for Aid: Building Consensus for Development Assistance</i>” (2002) - Publication of the Zedillo Report (2002) on the funds and strategies needed to achieve the international development goals (IDGs) or MDGs. - The Monterrey Consensus on Financing for Development (2002) - The Rome Declaration on Harmonization (2003) - The Paris Declaration on Aid Effectiveness (2005) - The World Bank publishes a report titled “<i>Annual Review of Development Assistance: The World Bank’s Contribution to Poverty Reduction</i>” (2005) 	<ul style="list-style-type: none"> - Developmental aid, with renewed focus on poverty reduction as per the MDGs - Focus on the role of donor-recipient partnerships for aid effectiveness - Ideology: linking aid effectiveness to governance, transparency, and human rights policies - Donor focus: meeting MDGs by 2015. 	<ul style="list-style-type: none"> - Developmental aid - Humanitarian aid - NGO aid - Emergency aid - Sectoral aid - NGO aid 	

Decade (Period)	Main Activity (Year)	Main Motive or Purpose of Aid	Types of Aid	Main ODA Trend
	<ul style="list-style-type: none"> - Launch of the Millennium Villages Project (2005) - Commission for Africa Report, titled “<i>Our Common Interest</i>” is published (2005) - Accra Agenda for Action (2008) - Busan Partnership Agreement (2011) 			

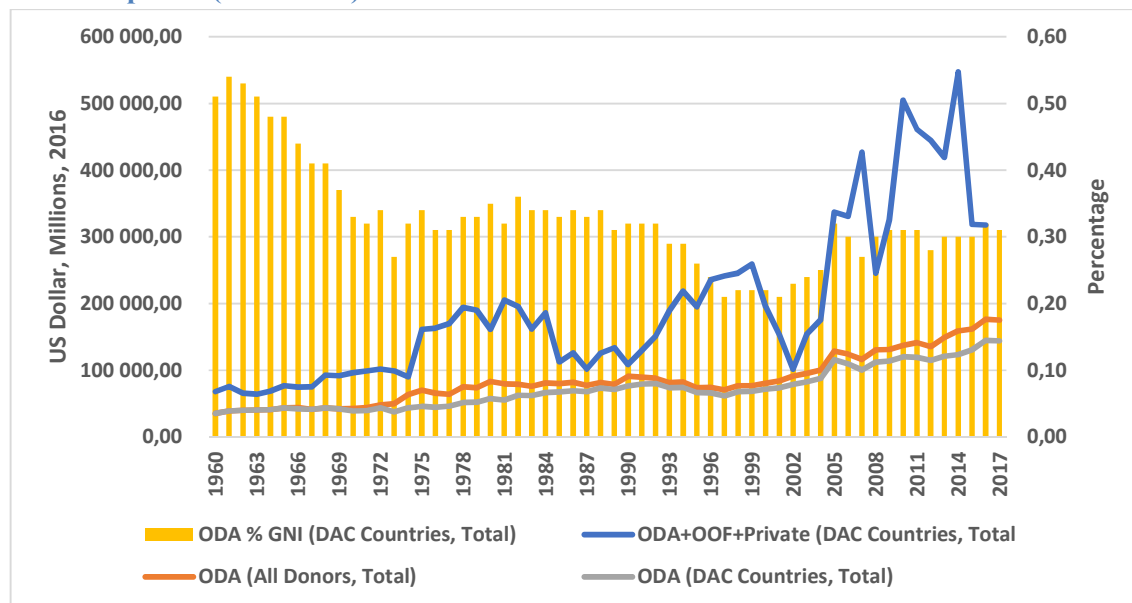
Source: Own Compilation from Moyo (2009), Hjertholm and White (1998), and Riddell (2008)

2.4.4. Global trends in foreign aid

2.4.4.1. Foreign aid volume and its components

According to official data collected by the OECD DAC, development aid at constant prices reached a new peak of US\$176 billion in 2016 (OECD, 2017). At a high level, the main components of development aid include (i) humanitarian aid, (ii) in-donor refugee costs, and (iii) net ODA. Figure 2.4 and Table 2.4 present a historical picture of the official and private flows of funds from developed to developing countries since 1960. Total flows (ODA + OOFs + Private) to developing countries have been increasing over the years but with significant fluctuations. The main drivers of fluctuations are private flows, which are linked to changing market conditions. Compared to total flows, ODA (from all donors) increased almost five-fold – from around US\$36 billion in 1960 to US\$176 billion in 2016.

Figure 2.4: Total official and private flows to developing countries, net disbursements, constant prices (1960-2017)



Source: OECD (2017), DAC statistics

The relative importance of ODA compared to other financial flows to developing countries has decreased over the last five decades (see Table 2.4). In the 1960s, ODA constituted around 55% of all net disbursements by DAC countries; however, it has since decreased to approximately 30% in recent years. Private flows, which include FDI and commercial bank

loans, have grown from 29% to 57% over the same period. As with ODA, OOFs (consisting of export credits and investment transactions) have remained relatively small and have decreased from their peak of 7% in the 1970s to a lowly 1% in the 2010s. These dynamics demonstrate that the main source of funds for development has shifted significantly from ODA to private (mainly FDI) funding. As also shown in Table 2.4, private funds from all DAC donors were averaging at US\$253 billion during the period 2010 to 2016 compared to US\$125 billion in ODA.

Table 2.4: Average official and private flows to developing countries, net disbursements (1960-2016)

Variables	1960s	1970s	1980s	1990s	2000s	2010-16
ODA (All Donors, Total)	41 310.67	59 895.56	80 061.69	80 760.54	108 549.66	151 784.66
ODA (DAC Countries, Total)	41 114.70	44 641.84	65 516.51	71 706.68	94 909.13	125 181.91
Private Flows, DAC	22 178.71	57 834.91	60 797.26	103 759.59	129 762.99	252 998.47
OOFs, DAC	3 395.19	8 426.52	8 604.71	10 155.45	3 498.27	3 948.66
Total ODA + OOFs + Private (DAC Countries)	75 579.80	136 673.96	151 129.65	197 596.63	244 665.76	430 458.43
ODA (DAC) % of Total	55%	35%	46%	40%	44%	31%
Private (DAC) % of Total	29%	39%	38%	48%	47%	57%
OOF (DAC) % of Total	4%	7%	6%	6%	2%	1%

Source: OECD (2017), DAC statistics

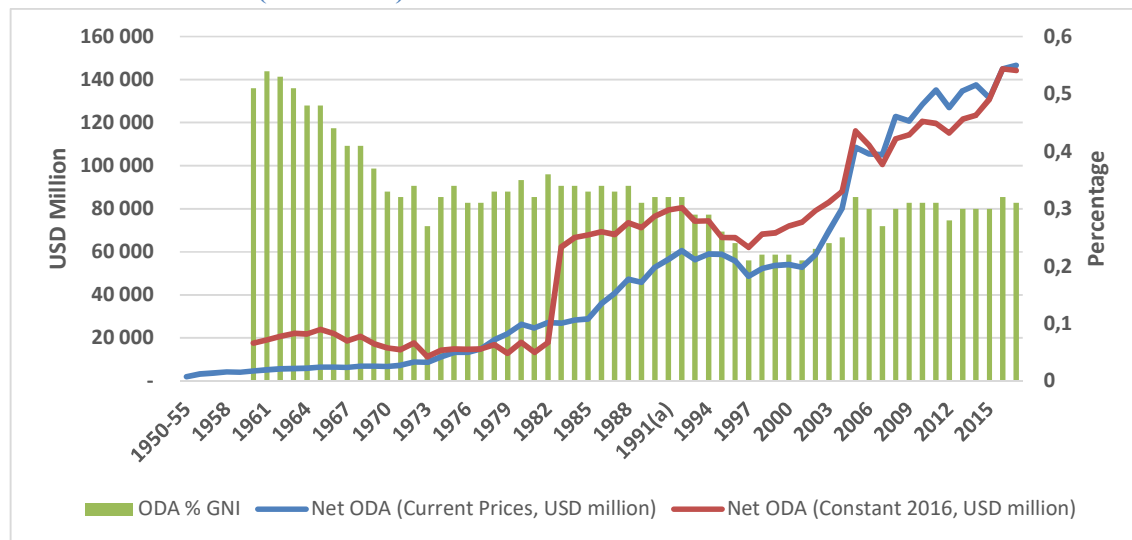
2.4.4.2. Trends in net official development assistance

As illustrated in Figure 2.4, the total ODA from all donors reached a new peak of US\$176 billion (constant prices) in 2016. Figure 2.5 provides a closer analysis of the trends in ODA from DAC countries. For example, when official statistics began to be collected, ODA at current prices averaged at US\$1.9 billion per annum in the early 1950s, reaching a peak of US\$61 billion in 1992 before undergoing a decade of decline. The sharp increase in ODA in both current and constant (2016) prices started in the early 2000s, possibly in response to the call by the international community to meet the MDGs. Figure 2.4 and Figure 2.5 also show that ODA was fairly stagnant from the 1960s to the mid-1970s. Notable events in the aid calendar during this period include the establishment of the International Development Association (IDA) in 1960, the formation of the DAC in the following year, and the merging of the UN Special Fund and the Expanded Programme of Technical Assistance (EPTA) into the UNDP in 1965. During this period, there was a refocusing of aid towards poverty, as highlighted by the World Bank President (and former U.S.A. Defence Secretary Robert

McNamara’s speech in 1973). This aimed to reorient the bank towards poverty reduction. The dip in 1973 could be partly due to the world oil crisis (see Table 2.3).

The late 1970s to the early 1990s witnessed the early resurgence of aid flows to developing countries. This was the era for economic structural adjustment programmes (ESAPs) and the height of the Cold War. The Cold War ended in 1990 and was followed by a sharp fall in aid volumes throughout the 1990s. However, with the exception of the short-term dip in ODA during the global financial crises in 2007 and 2009, aid has recorded the longest period of expansion since 2001.

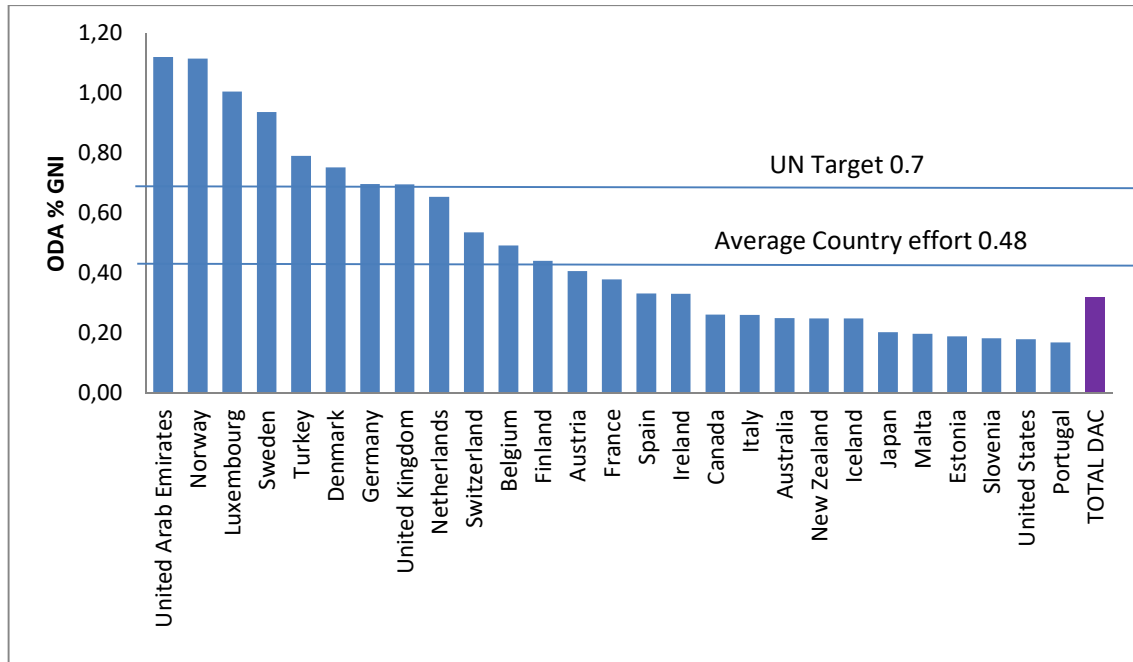
Figure 2.5: Net official development assistance disbursements, Development Assistance Committee donors (1950-2017)



Source: OECD (2017), DAC statistics

From as early as 1969, the Pearson Commission called upon donor countries to allocate aid equivalent to 0.7% of their GNI (Riddell, 2008). However, despite repeated calls, on average, DAC donors have not reached that target except for a few countries. As pictured in Figure 2.5, the ODA/GNI ratio was highest in the early 1960s and has been decreasing apart from some fluctuations. Figure 2.6 shows that only the following 8 donor countries, in ascending order, met or exceeded the 0.7% target in 2016: the UK (0.70%), Germany (0.70%), Denmark (0.75%), Turkey (0.79%), Sweden (0.94%), Luxembourg (1%), Norway (1.11%), and the United Arab Emirates (1.12%).

Figure 2.6: Net official development assistance (ODA) from donor countries (ODA/gross national income [GNI]), 2016

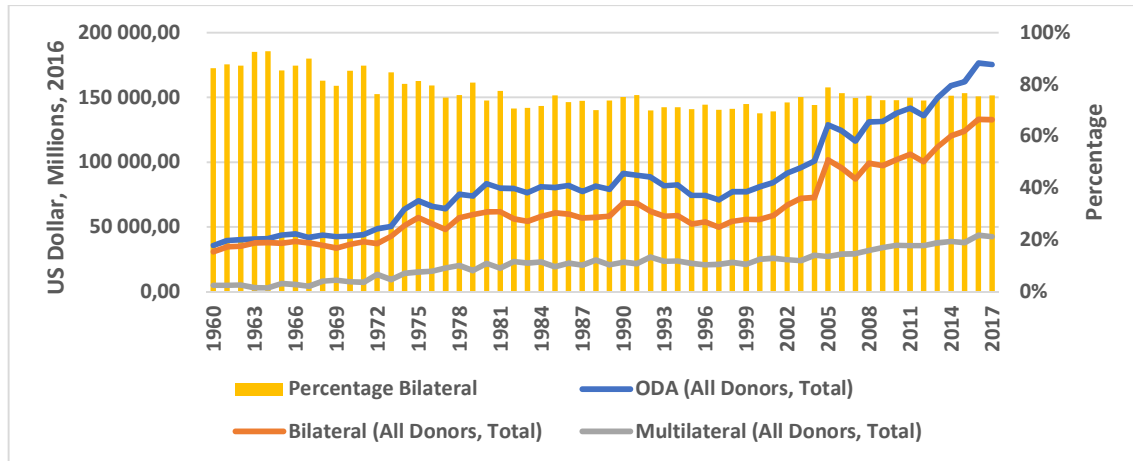


Source: OECD (2017), DAC statistics

Figure 2.7 and Figure 2.8 show aid by main sources (bilateral and multilateral) and types (grant and loan). Since the 1960s, more than 70% of ODA has been disbursed through bilateral channels. In fact, the bilateral aid proportion reached a peak of 93% in the period between 1993 and 1994, and it is now averaging at around 75%.

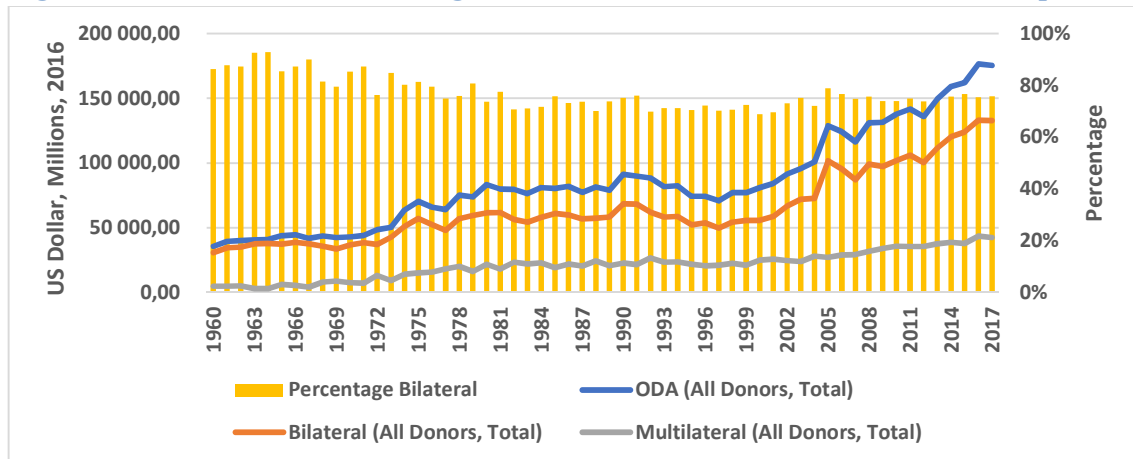
Figure 2.8 illustrates that not only is the greatest component of ODA disbursed as bilateral aid, but it is also distributed most in the form of grants.

Figure 2.7: Bilateral and multilateral official development assistance, net disbursements, constant 2016 prices



Source: OECD (2017), DAC statistics

Figure 2.8: Bilateral, multilateral, grant, and loan disbursements, constant 2016 prices



Source: OECD (2017), DAC statistics

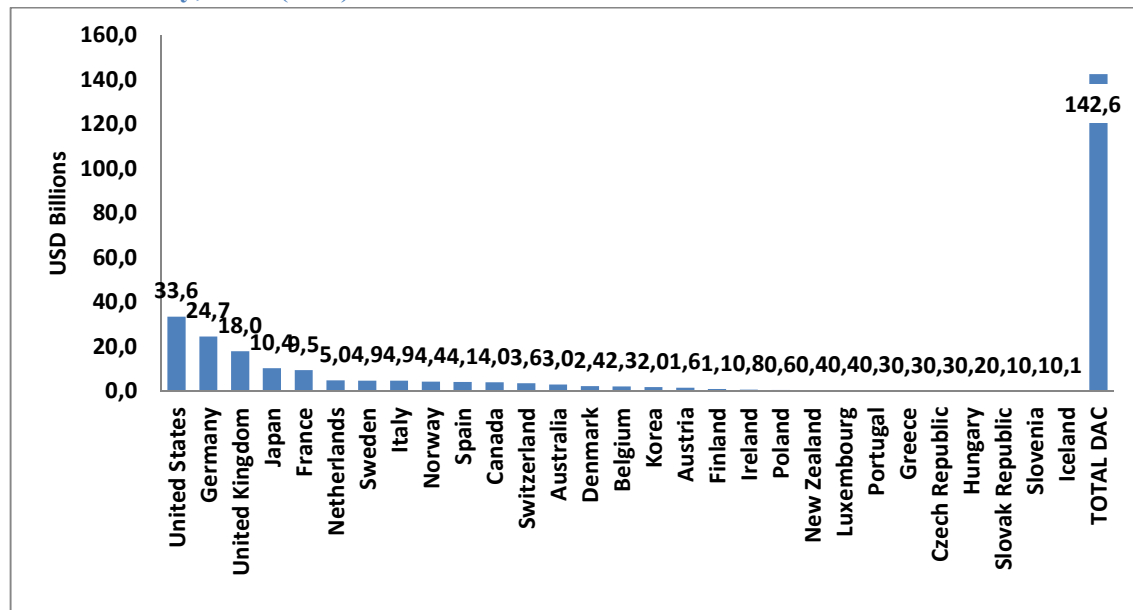
2.4.4.3. Main aid donors

By the year 2016, there were 29 DAC member countries in the OECD, and together they contributed over US\$144 billion in ODA (OECD, 2018a). As depicted in Figure 2.9 and

Table 2.5, the top five bilateral donors are the USA, Germany, the UK, Japan, and France. Riddell (2008) demonstrates that the USA has been the single largest OA donor since the 1950s.

Table 2.5 shows that on aggregate, the USA has disbursed more than US\$1.1 trillion in OA from 1960 to 2017. This constitutes approximately 24% of all the OA recorded during this period. In spite of these high numbers in terms of aid volume, the USA has never reached the UN target of a 0.7% ODA/GNI or the OECD/DAC average. Furthermore, Riddell (2008, p. 55) argues that the main purpose of the USA’s OA is to “*protect America’s interest*” and promote democracy and freedom in the world, as opposed to the World Bank and UN-led poverty reduction and economic development.

Figure 2.9: Net official development assistance by Development Assistance Committee donor country, 2016 (US\$)



Source: OECD (2017), DAC statistics

Table 2.5: Net official development assistance disbursement, top 10 donor countries (1960-2017)

Donor	Total (1960-2017) U.S. Dollar, Millions, 2016	Percentage Share (1960-2017)
The USA	1 170 381.02	24%
Germany	464 940.02	9%
France	438 280.14	9%
Japan	433 198.23	7%
The UK	361 755.05	4%
Saudi Arabia	198 066.34	4%
Netherlands	191 186.64	4%
Canada	160 748.66	3%
Italy	152 672.03	3%
Sweden	131 761.23	3%
Other donors	1 240 608.99	25%
Non-DAC Countries, Total	410 334.64	8%
Multilaterals, Total	333 936.76	7%
EU Institutions	333 936.76	7%
DAC Countries, Total	4 199 326.94	85%
All Donors, Total	4 943 598.33	100%

Source: OECD (2017), DAC statistics

Table 2.6 summarises the donor effort from 1960 to 2017. The latest donor efforts are compared to the UN target and OECD/DAC average in Figure 2.6. The Nordic countries (Denmark, Norway, and Sweden) have been consistently exceeding the UN target of 0.70% from the 1970s. Other countries that have surpassed this objective over the years include the Netherlands and Luxembourg, and Germany and the UK have recently reached it (see Figure 2.6). The ODA/GNI average for DAC countries in 2016 was 0.32%, and the USA was well below this average, at 0.18%. Of note, aid effort for Australia, Belgium, and Canada has been decreasing over the last five decades.

Table 2.6: Net official development assistance disbursements by all donors

Aid type	ODA Net Disbursements (US Dollar, Millions, 2016 Constant Prices)						ODA % GNI (Percentage)					
	1960s	1970s	1980s	1990s	2000s	2010-17	1960s	1970s	1980s	1990s	2000s	2010-17
All Donors, Total	41 310,67	59 895,56	80 061,69	80 760,54	108 549,66	154 727,15	..	..	..	..	..	..
DAC Countries, Total	41 114,70	44 641,84	65 516,51	71 706,68	94 909,13	127 554,79	0,47	0,32	0,34	0,27	0,27	0,30
Australia	991,64	1 564,96	1 846,01	1 838,65	2 340,80	3 482,42	0,51	0,54	0,45	0,32	0,27	0,31
Austria	87,25	250,51	517,41	489,61	1 138,55	1 170,09	0,08	0,16	0,27	0,19	0,35	0,31
Belgium	710,40	1 042,78	1 249,46	1 114,37	1 828,73	2 199,94	0,56	0,52	0,52	0,37	0,46	0,49
Canada	731,63	2 365,02	3 138,48	3 214,08	3 360,90	4 080,95	0,22	0,47	0,46	0,38	0,28	0,29
Czech Republic	..	..	..	42,42	128,03	207,15	..	..	..	0,03	0,10	0,12
Denmark	176,61	731,20	1 352,95	2 070,53	2 384,34	2 452,01	0,17	0,53	0,82	1,00	0,89	0,83
Finland	31,86	140,33	520,83	640,08	837,25	1 218,94	0,05	0,15	0,40	0,44	0,39	0,52
France	5 977,23	4 571,41	7 513,73	9 036,45	8 622,09	10 133,89	0,94	0,44	0,56	0,53	0,40	0,42
Germany	3 816,46	4 996,35	7 475,62	7 939,10	9 312,65	16 192,29	0,40	0,36	0,44	0,33	0,32	0,48
Greece	..	..	..	211,84	390,95	286,17	..	..	..	0,15	0,19	0,14
Hungary	..	122,87	141,49	11,70	88,57	129,92	..	..	..	..	0,08	0,12
Iceland	..	..	..	8,99	29,31	42,46	..	..	..	0,03	0,21	0,24
Ireland	..	50,40	96,33	190,31	682,33	769,72	..	0,13	0,21	0,25	0,45	0,41
Italy	835,74	1 005,36	3 603,76	3 520,03	3 324,04	3 722,85	0,16	0,12	0,28	0,23	0,18	0,20
Japan	2 132,13	4 283,02	8 539,13	10 653,34	9 895,02	9 771,47	0,23	0,23	0,31	0,27	0,22	0,20
Korea	..	..	51,70	185,34	590,05	1 749,74	..	..	0,02	0,03	0,07	0,14
Luxembourg	..	..	24,11	105,52	301,16	368,26	..	..	0,15	0,42	0,85	1,00
Netherlands	749,95	2 023,23	3 431,73	3 825,56	5 033,45	5 068,44	0,41	0,71	0,99	0,83	0,81	0,70
New Zealand	89,37	204,73	197,39	211,69	315,32	416,43	0,19	0,32	0,27	0,25	0,26	0,26
Norway	131,27	673,98	1 588,27	2 088,67	2 764,58	3 717,75	0,18	0,62	1,03	0,98	0,90	1,02
Poland	..	84,96	24,72	15,81	167,55	434,63	..	..	..	0,01	0,06	0,10
Portugal	..	..	79,68	368,45	500,91	440,11	..	..	0,09	0,27	0,28	0,23
Slovak Republic	..	..	..	16,64	44,21	80,10	..	..	..	0,04	0,07	0,10
Slovenia	..	..	..	..	49,63	59,95	..	..	..	..	0,12	0,14
Spain	..	..	529,03	1 768,44	3 364,66	2 715,57	..	..	0,10	0,24	0,31	0,23
Sweden	264,48	1 304,70	1 964,43	2 209,91	3 393,40	5 049,00	0,19	0,68	0,87	0,86	0,90	1,05
Switzerland	187,84	515,49	1 017,79	1 494,73	2 028,22	3 029,44	0,08	0,17	0,29	0,33	0,38	0,47
United Kingdom	3 812,02	4 137,91	3 822,68	4 044,85	8 045,25	15 390,99	0,49	0,42	0,34	0,29	0,39	0,65
United States	20 400,94	14 696,70	16 825,98	14 576,59	23 998,61	33 174,10	0,51	0,26	0,22	0,14	0,16	0,19
Multilaterals, Total	..	2 165,71	4 090,23	6 016,05	9 501,38	14 525,37	..	..	..	..	..	..
EU Institutions	..	2 165,71	4 090,23	6 016,05	9 501,38	14 525,37	..	..	..	..	..	..
Non-DAC Countries, Total	1 959,71	13 088,01	10 454,95	3 037,81	4 139,14	12 646,98	..	..	..	..	..	..
Azerbaijan	..	..	..	..	..	13,53	..	..	..	..	..	0,03
Bulgaria	..	..	..	..	..	46,89	..	..	..	..	..	0,10
Croatia	..	..	..	..	..	44,20	..	..	..	..	..	0,08
Cyprus	..	..	..	..	30,80	26,20	..	..	..	..	0,15	0,13
Estonia	..	..	..	0,57	9,93	29,70	..	..	..	..	0,08	0,14
Israel	..	..	..	139,41	157,15	233,16	..	..	..	..	0,08	0,08
Kazakhstan	..	..	..	..	..	26,18	..	..	..	..	..	0,02
Kuwait	..	1 730,78	1 461,05	573,16	166,30	339,42	..	..	..	..	..	..
Latvia	..	..	..	..	11,93	22,00	..	..	..	..	0,06	0,08
Liechtenstein	..	..	..	..	21,26	25,35	..	..	..	..	0,55	0,64
Lithuania	..	..	..	..	21,10	45,89	..	..	..	..	0,07	0,12
Malta	..	..	..	..	12,97	18,10	..	..	..	..	0,18	0,21
Romania	..	..	..	..	128,50	160,08	..	..	..	..	0,08	0,10
Russia	..	..	..	..	..	656,24	..	..	..	..	..	0,06
Saudi Arabia	1 959,71	6 325,02	6 788,59	1 096,26	2 096,60	5 507,01	..	..	..	..	..	..
Chinese Taipei	..	..	28,08	94,20	465,47	291,86	..	..	..	..	0,13	0,07
Thailand	..	..	..	..	84,80	51,33	..	..	..	..	0,05	0,01
Timor-Leste	..	..	..	..	..	3,50	..	..	..	..	..	..
Turkey	..	..	..	112,26	384,48	3 600,54	..	..	..	0,05	0,09	0,46
United Arab Emirates	..	3 754,24	1 575,19	1 097,98	934,18	3 032,84	..	..	..	..	0,37	0,86
Other donor countries	..	1 277,97	624,51	62,87	..	..	..	..	..	..	..	..

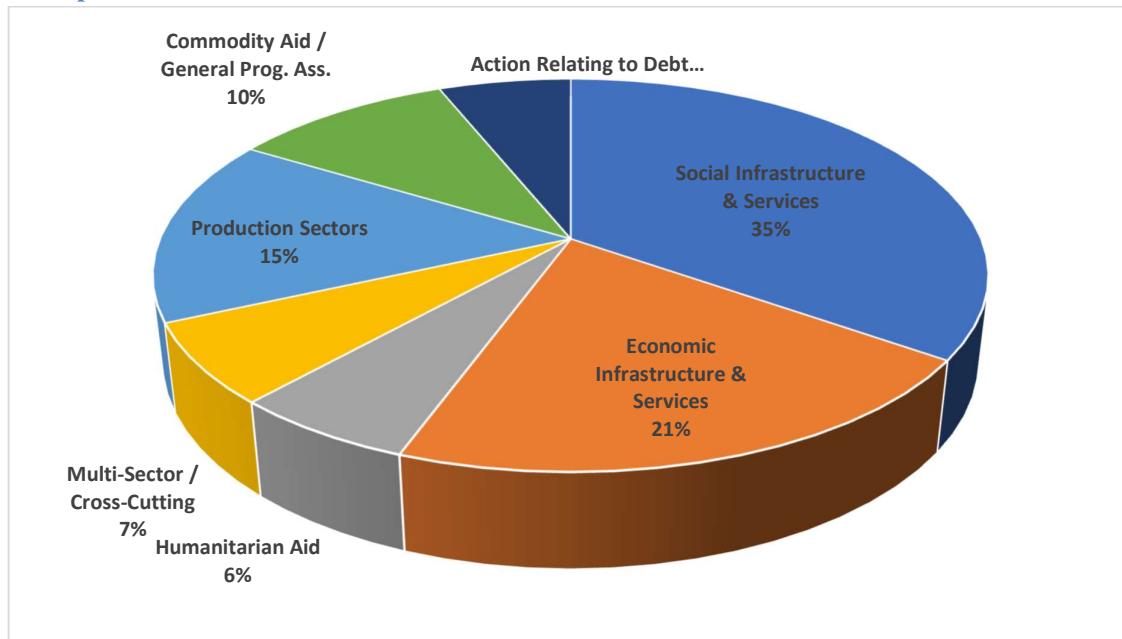
Source: OECD (2017), DAC statistics

2.4.4.4. Sectoral composition of official development assistance

Figure 2.10 illustrates the percentage composition of total sectoral aid in constant 2016 prices. It shows that of all the aid disbursed from 1967 to 2016, 35% has gone toward social infrastructure and services, which include education, health, water and sanitation, and

governance support. The second largest component (21%) was allotted to economic infrastructure and services (e.g. transport, communication, energy, and banking services). The third highest amount (15%) was allocated to production sectors (such as agriculture, mining, construction, and tourism) and the least, at 6% apiece, comprises allocations related to debt and humanitarian aid.

Figure 2.10: Sectoral composition of aid, net disbursement total (1967-2016), constant 2016 prices

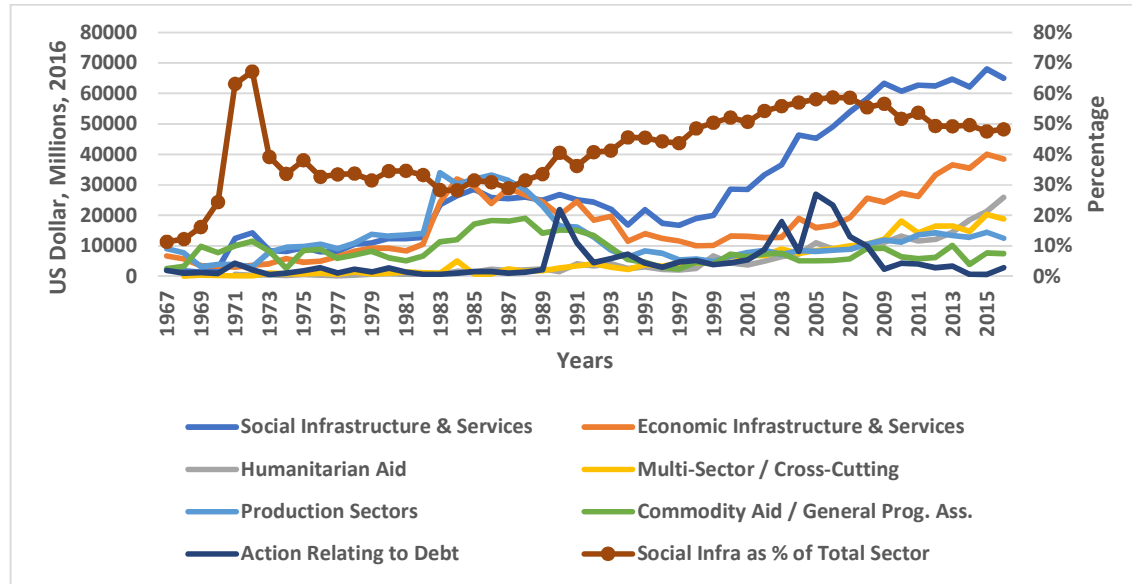


Source: OECD (2017), DAC statistics

Time series data, illustrated in Figure 2.11, demonstrates that the composition of social infrastructure and services aid peaked at almost 70% in 1972, declined to an all-time low of 28% in 1983, and rose again to almost 60% in 2007 before a steady decline to 48% in 2016. The marked relative emphasis on aid for social infrastructure and services could be a reflection of donors' realisations that developing countries need to improve their human capabilities (Hjertholm & White, 1998). The increase in the proportion of aid dispensed for economic infrastructure and services in the 1980s could be because of donors' support for ESAP; while the surge from 2002 to 2016 could be a result of the MDGs and the need to promote economic growth. The first spike in action relating to debt in 1990 could be a response to the debt crisis which started in the early 1980s. The second spike in 2005 is likely a result of the combined debt relief efforts under the Heavily Indebted Poor Countries (HIPC) Initiative and the

Multilateral Debt Relief Initiative (MDRI) in response to the call to accelerate the progress towards the MDGs (IMF, 2018).

Figure 2.11: Official development assistance commitments by sector, all donors, constant 2016 prices (1967-2016)



Source: OECD (2017), DAC statistics

2.4.5. Official development assistance allocation by geographical region and country income group

Table 2.7 and Table 2.8 list the historical levels of ODA received by each of the six geographical regions and developing country income groups as a percentage of GNI and net ODA received per capita respectively. Over the years, SSA has obtained the highest net ODA as a percentage of GNI. Among other things, high levels of poverty and lower per capita incomes could be the reasons for the high volumes of humanitarian relief aid flowing into the region. Though the MENA and ECA regions have been receiving lower levels of net ODA as a percentage of GNI, the high pressure from the oil crisis in the early 1990s could have resulted in a greater increase in the ratio of ODA per capita in the MENA region. The net ODA as a percentage of GNI was generally highest in the 1980s and 1990s. Lastly, least-developed and low-income countries tend to receive net ODA as a percentage of GNI compared to lower- and middle-income countries.

Table 2.7: Net official development assistance received (% of gross national income)

Region	Years					
	1960s	1970s	1980s	1990s	2000s	2010-2014
East Asia and Pacific	0.89	0.97	0.93	0.83	0.29	0.09
Eastern Europe and Central Asia	-	-	-	0.76	0.78	0.56
Latin America and the Caribbean	0.98	0.48	0.54	0.43	0.30	0.23
Middle East and North Africa	-	-	-	1.49	1.80	1.07
South Asia	2.31	1.90	1.65	1.29	0.82	0.66
Sub-Saharan Africa	2.50	2.29	3.96	5.38	4.77	3.12
Least-developed countries	-	-	8.38	10.09	7.95	6.03
Low income	-	-	7.95	12.37	12.68	10.77
Lower-middle income	2.34	2.63	2.24	2.28	1.38	0.89
Middle income	1.44	1.16	1.08	0.93	0.57	0.29
Upper-middle income	0.69	0.35	0.42	0.37	0.27	0.10

Source: World Bank (2017)

Table 2.8: Net official development assistance received per capita (current US\$)

Region	Years					
	1960s	1970s	1990s	1990s	2000s	2010-2014
East Asia and Pacific	0.79	1.63	3.48	4.58	4.41	4.80
Eastern Europe and Central Asia	1.64	0.99	2.57	11.29	22.57	36.42
Latin America and the Caribbean	3.23	4.17	10.53	11.93	13.88	20.02
Middle East and North Africa	6.61	25.08	33.45	23.37	43.62	57.55
South Asia	2.31	3.13	5.50	4.11	5.74	9.07
Sub-Saharan Africa	3.91	8.98	26.44	26.06	37.79	50.23
Least-developed countries	2.62	9.68	26.44	23.08	34.48	50.41
Low income	2.93	8.07	24.88	25.38	40.31	60.59
Lower-middle income	2.66	6.16	10.79	9.71	11.73	16.47
Middle income	1.89	3.70	7.24	7.38	10.02	12.29
Upper-middle income	1.02	1.35	3.62	4.50	7.66	6.70

Source: World Bank (2017)

The net ODA received per capita trend (Table 2.8) shows that over the indicated period, MENA received the highest in per capita net ODA. In the 1960s, the region received \$6.61 per capita, and the second largest recipient was sub-Saharan Africa, acquiring \$3.91 per capita. By 2014, these figures increased by 770% and nearly 1 200% for MENA and SSA, respectively. As can be expected, the highest supply of aid was to less developed, low-income economies, while at occasional times of crisis, more economically developed, high-income countries received aid.

It can also be noted that highly populated regions, such as EAP, have the lowest per capita ODA compared to MENA and SSA, for example. The higher per capita ODA could be because these regions have relatively lower populations but are receiving high volumes of aid. When using the inflation-adjusted figures, a general increase is evident in net ODA per capita across all regions between 1960 and 2014.

2.5. Regional Dynamics of Poverty and Foreign Aid

2.5.1. Poverty and foreign aid dynamics in sub-Saharan Africa

2.5.1.1. *Extreme poverty trends in the sub-Saharan Africa region*

Until recently, data on poverty levels in SSA were scant. Early estimates of poverty for SSA were done by Ravallion *et al.* (1991), Chen *et al.* (1994), Ravallion and Chen (1997), and Ali and Thorbecke (2000, p. 9). Ravallion *et al.* (1991) developed the “absolute poverty line” of around US\$1 per day and then used it to estimate the number of people living in absolute poverty in 1985. According to this measure, the percentage of people living in absolute poverty in SSA was estimated at 46.9%. Chen *et al.* (1994) used a sample of 14 SSA countries (representing approximately 37% of the total population) to estimate the level of poverty between 1985 and 1990. The poverty measurement used was a “poverty incidence curve (PIC)”¹⁰, and the results revealed that poverty increased during this period. Ravallion and Chen (1997) used an international poverty line of US\$1 per person per day in 1985 PPP to estimate the level of poverty in SSA¹¹. They found that poverty increased between 1987 and 1993 based on the following two poverty measures: (i) headcount ratio, which increased from 38.5% in 1987 to 39.1% in 1993, and (ii) the PG, which increased by one percentage point from 14.4% to 15.3% over the same period.

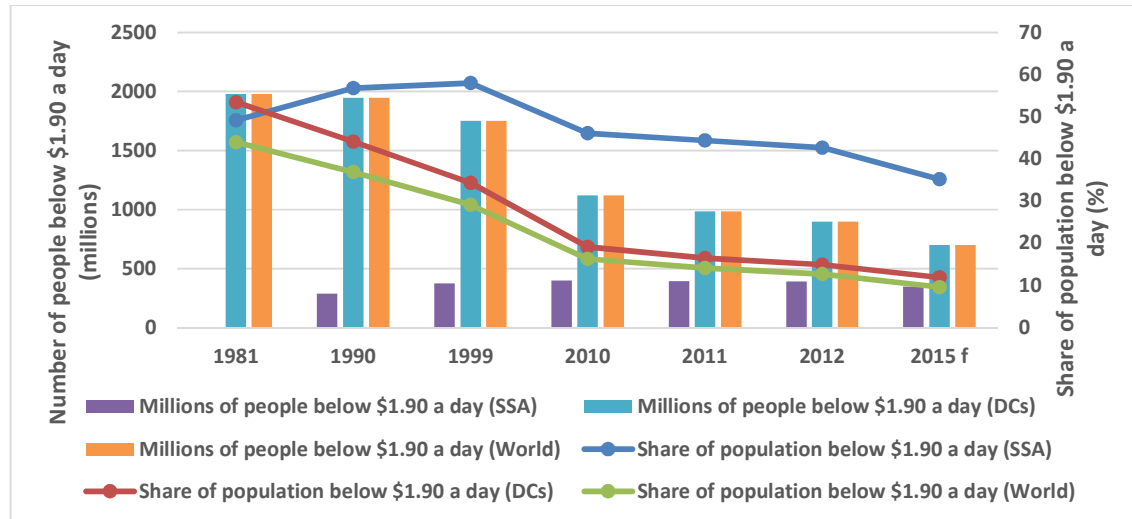
Figure 2.12 illustrates the poverty levels in SSA in comparison to global poverty trends based on recent data from the World Bank. In 1990, SSA had 288 million people who were living below US\$1.90 a day, and this number increased to 347 million by 2015. In percentage terms, SSA used to be home to 15% of the world’s extremely poor people (living below US\$1.90 a day), and this increased to almost 50% between the period 1990 to 2015. This shows that while

¹⁰ According to Ali and Thorbecke (2000, p. 10), a PIC “is generated by plotting the proportion of population (p) - on the vertical axis-consuming less than a given level z - on the horizontal axis; each point on the PIC gives the headcount index of poverty. Poverty deficit curves $O(z)$ and poverty sensitivity curves $S(z)$ can be obtained from the PICs. Using these curves and assuming that the poverty line z is unknown, comparing poverty between two dates is conducted by dates if the PIC for the latter date always lies above that for the former date up to a maximum poverty line. If the PIC for the two dates cross, then the ranking is ambiguous. The poverty deficit $O(z)$ and the poverty sensitivity $S(z)$ curves provide second- and third-order dominance respectively. Dominance tests are nested in the sense that first-order dominance implies second-order dominance, which in turn implies third-order dominance”.

¹¹ The Ravallion and Chen (1997) study included a sub-sample of 19 SSA countries (with 28 surveys) representing 65.9% of the region’s population in 1993.

other regions are witnessing high numbers of people being lifted out of extreme poverty, more families in SSA are being entrapped in poverty.

Figure 2.12: Sub-Saharan Africa poverty levels compared to world trends



Source: World Bank (2016a, 2017)

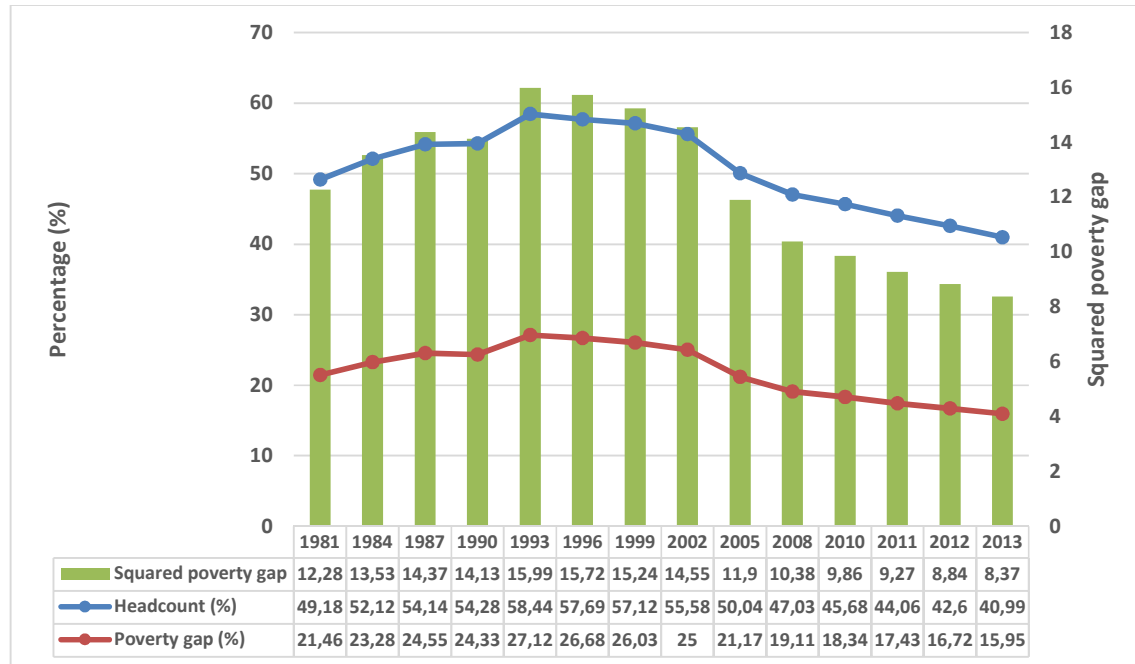
Figure 2.12 also indicates that the headcount index ratio for SSA was 49.1% in 1981, and it peaked at 58% in 1999 before gradually decreasing over the years to an estimated 35.2% in 2015. At this percentage, the poverty rate is still extremely high compared to the developing country average of 11.9% and the world average of 9.6%. It is important to note that the developing country headcount index ratio was 53.5% in 1981, over 4 percentage points higher than the SSA ratio.

According to the World Bank (1990, p. 5), the increase in poverty in SSA during the 1980s and 1990s is mainly because of slow economic growth coupled with rapid population growth. Perkins *et al.* (2013) argue that much of the progress in the fight against global poverty, which saw the reduction of the world’s headcount index ratio from 44% in 1991 to less than 10% in 2015, is due to the strong growth recorded in many regions of the world. They concluded that “*economic growth tends to be good for the poor*” (Perkins *et al.*, 2013, p. 193).

Figure 2.13 shows the headcount index (poverty rate), PG (poverty depth) and SPG (poverty-severity index) for the SSA region over the period 1981 to 2013. The three trend lines are calculated at the US\$1.90 international poverty line, based on 2011 prices. Furthermore, the

headcount index and PG are in percentages, while the SPG, as the name suggests, is a square of the PG.

Figure 2.13: Headcount, poverty gap, and squared gap in sub-Saharan Africa (US\$1.90)



Source: World Bank (2016a)

As illustrated in Figure 2.13, the headcount, poverty gap, and SPG for SSA started off by increasing and peaking in 1993; however, they have been decreasing steadily over the years. As indicated above, though the majority of researchers use the headcount index in poverty analyses, the measure does not provide an indication of the depth of poverty. The analysis in Figure 2.13 is therefore mainly focused on the PG and SPG indices. The higher the PG, the deeper the levels of poverty, and therefore the costlier it would be to eliminate poverty.

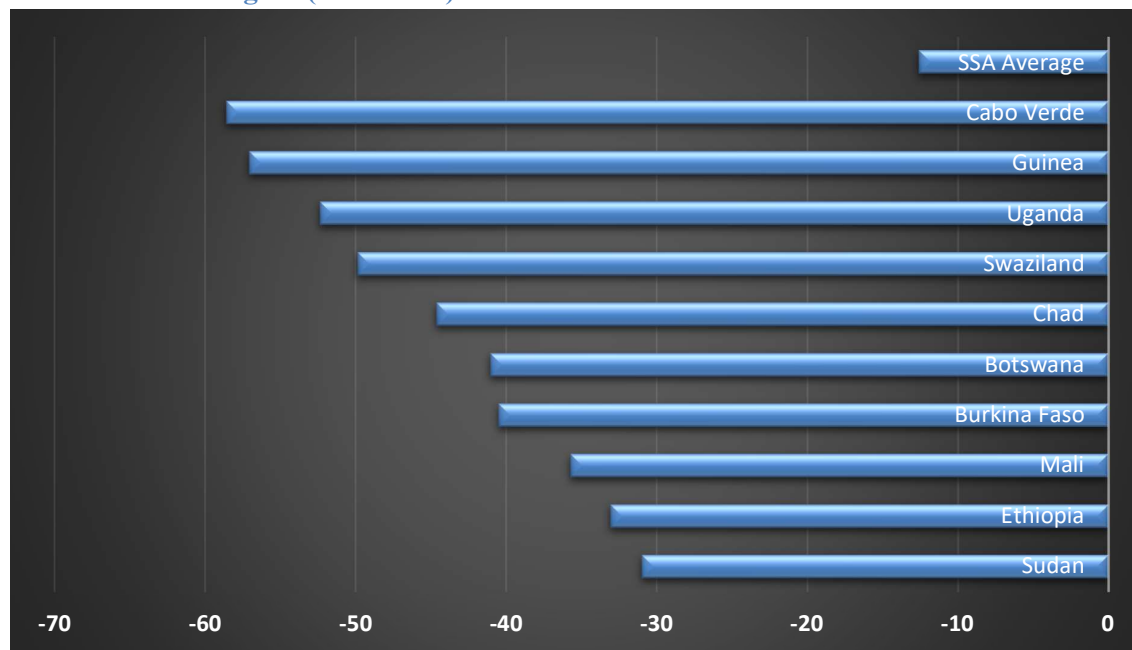
On the one hand, the PG index for US\$1.90 per day increased from 21.46% in 1981 to a high of 27.12% in 1993 before gradually falling over the years to 15.95% in 2013. This suggests that by 2013, bringing the incomes of the people living below US\$1.90 per day to this poverty line required a per capita expenditure of almost 16% of the poverty line (which is roughly US\$0.30). From this analysis, it can be deduced that it now costs less money to eliminate poverty compared to the 1980s and early 1990s.

The SPG, on the other hand, measures the severity of poverty. It takes values between 0 and 1, with higher values indicating severe poverty. As shown in Figure 2.13, the SPG fell from 12.28 to 8.37.

2.5.1.2. Top ten most improved countries in terms of poverty reduction in the sub-Saharan Africa region

The best performing SSA countries in terms of poverty reduction between 1981 and 2013 are illustrated in Figure 2.14. On average, the proportion of people living on less than US\$1.90 per day fell by 12.60 percentage points from 1981 to 2013. The largest decrease in poverty was recorded in Cabo Verde (58.59 percentage points), Guinea (57.07), and Uganda (52.37), in decreasing order. In total, 29 out of 45 SSA countries recorded a decrease in poverty over the study period.

Figure 2.14: Top ten most-improved countries in terms of poverty reduction in the sub-Saharan Africa region (1981-2013)

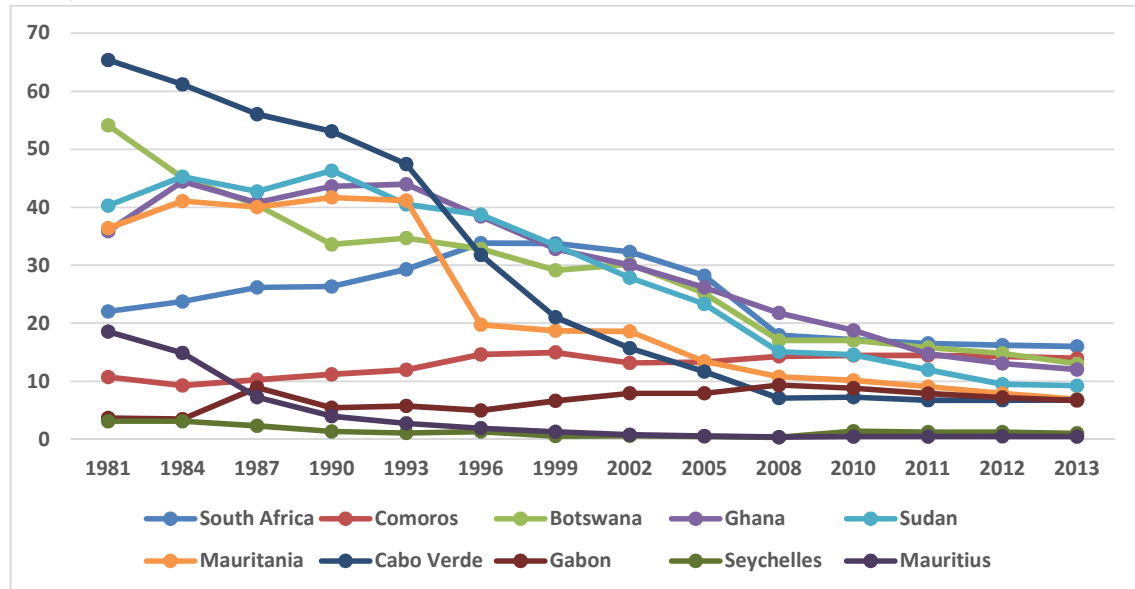


Source: World Bank (2016a)

Figure 2.15 shows 10 countries with the lowest levels of poverty rates as measured by the headcount poverty ratio at US\$1.90 per day. Mauritius had the lowest incidence of poverty (0.5%) in 2015, followed by Seychelles (1.06%), and Gabon (6.7%) in third place. Cabo Verde, which was ranked first in terms of the most improvement in poverty reduction (Figure 2.14),

is number four in terms of the lowest incidence of poverty (6.79%). The country's headcount poverty ratio decreased from a high of 65.38% in 1981 to almost 5% in 2013. Another high mover is Sudan which recorded a 30-percentage point decrease from 40.26% in 1981 to less than 10% in 2013.

Figure 2.15: Ten countries with the lowest poverty levels in sub-Saharan Africa (1981-2013)



Source: World Bank (2016a)

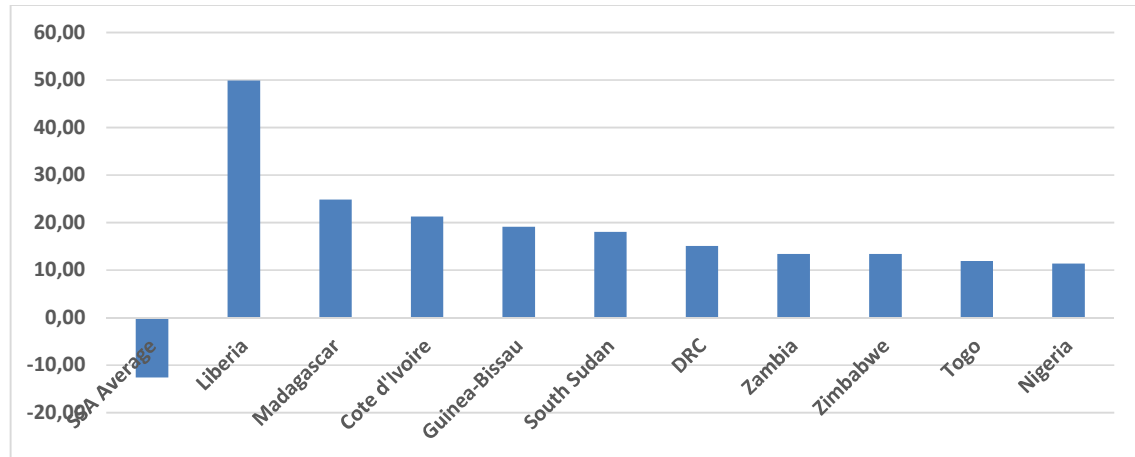
As indicated in Figure 2.15, the South African trend mirrors that of the SSA region (see Figure 2.13). The headcount poverty index for South Africa rose from 22.02% in 1981 to 33.74% in 1999, possibly because of the civil conflicts associated with the liberation struggle, and it decreased over the years to 16.22% in 2013. Overall, out of the 45 SSA countries, the following 6, starting with the highest, had headcount poverty ratios of less than 10% in 2013: Sudan (9.27%), Mauritania (6.92%), Cabo Verde (6.79%), Gabon (6.7%), Seychelles (1.06%), and Mauritius (0.5%).

2.5.1.3. Bottom 10 countries in sub-Saharan Africa in terms of the anti-poverty fight

Figure 2.16 presents the 10 worst-performing countries in SSA in terms of the anti-poverty fight. These countries recorded the highest increase in headcount poverty rates between the years 1981 and 2013. On average, 16 out of 45 countries recorded an increase in headcount

poverty rates. This means that the proportion of the number of people living below US\$1.90 a day has increased in these countries¹².

Figure 2.16: Ten worst-performing countries in sub-Saharan Africa (1981-2013)

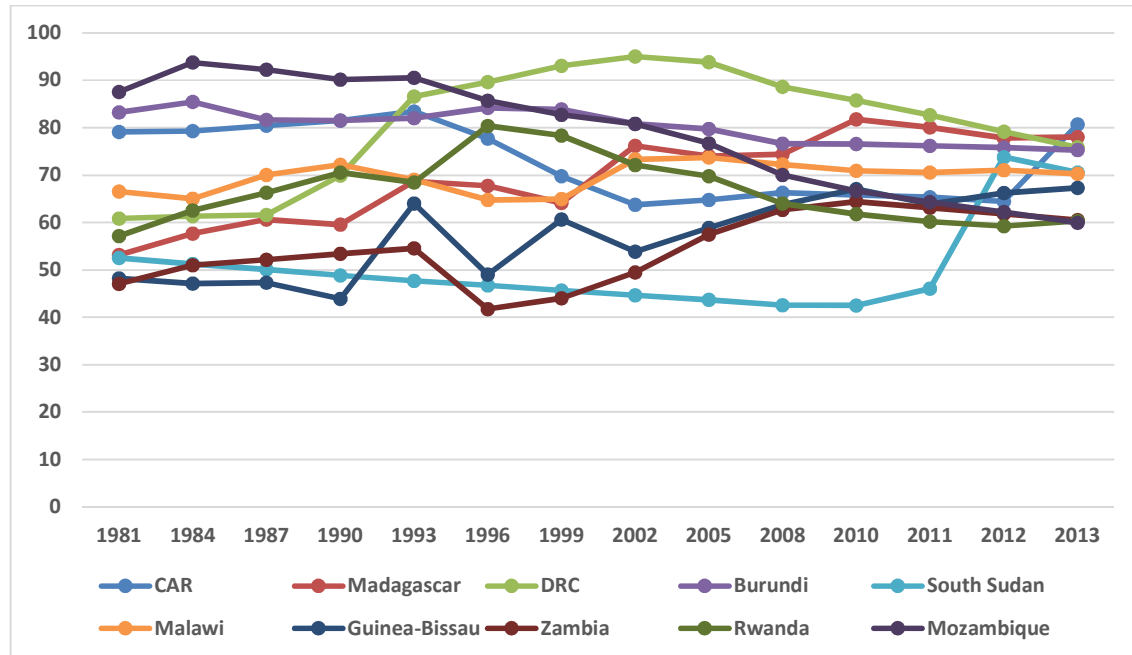


Source: World Bank (2016a)

As shown in Figure 2.16, the top three worst-performing countries are Liberia (with a 49.91 percentage point increase in headcount poverty rate), Madagascar (24.85), and Cote d'Ivoire (21.26). The main commonality among these three countries is that they have experienced civil conflicts and wars during this period. South Sudan, the Democratic Republic of the Congo (DRC), and Zimbabwe have also experienced similar challenges to varying degrees. Most of these countries are also ranked as the poorest in SSA, as illustrated in Figure 2.17.

¹² The 16 countries are Liberia, Madagascar, Cote d'Ivoire, Guinea-Bissau, South Sudan, the DRC, Zambia, Zimbabwe, Togo, Nigeria, Malawi, Rwanda, Comoros, Gabon, Kenya, and the CAR.

Figure 2.17: Top 10 poorest countries in sub-Saharan Africa (1981-2013)



Source: World Bank (2016a)

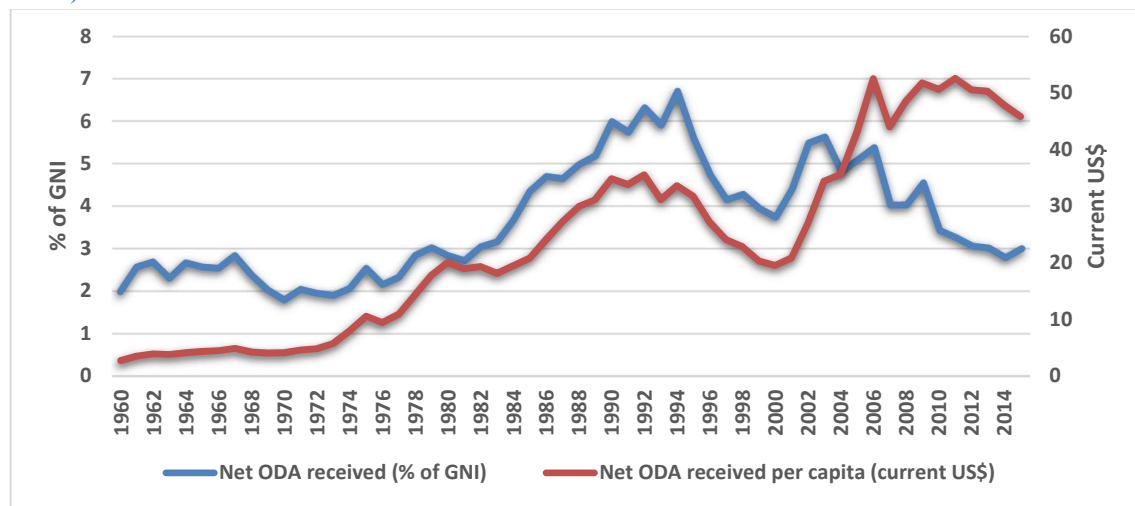
As Figure 2.17 shows, the Central African Republic (CAR) had the highest proportion of people living below US\$1.90 a day, standing at 80.71% in 2013. This was followed by Madagascar (78.02%), the DRC (75.89%), Burundi (75.28%), and South Sudan (70.51%), in descending order. Out of a total of 45 SSA countries, 15 had more than 50% of their citizens living in extreme poverty. As noted above, the majority of the top 10 poorest countries are currently experiencing or have recently had civil conflicts.

The overall analysis of extreme poverty has demonstrated that the majority of the world's 700 million extremely poor in 2015 were residing in the SSA region. Furthermore, SSA was home to most of the deeply poor, and the poverty depth and breadth remain a dominant challenge in the region. Although some countries have recorded impressive decreases in poverty levels, 16 out of 45 countries showed evidence of an increase in the proportion of people living below US\$1.90 a day. Therefore, the number of people living in extreme poverty is increasing in these countries.

2.5.1.4. Overview of foreign aid trends in the sub-Saharan Africa region

As depicted in Figure 2.18, per capita aid to SSA – the region that is furthest off track from the 2015 goals – fell from \$35 in 1992 to \$20 by the year 2000. On average, the SSA region received the highest in aid per capita after MENA over the review period. Both aid per capita and ODA as a percentage of GNI peaked sharply around the year 2000. This could be the result of donors’ responses to the MDGs.

Figure 2.18: Net official development assistance received in sub-Saharan Africa (1960-2015)



Source: World Bank (2017)

Most aid in the SSA region might be coming in response to persistent droughts in the Sahel as well as in other Savanna climate countries such as Zimbabwe, Malawi and the greater part of Namibia (Alfaro-Pelico, 2010). One positive sign for the future is that foreign aid is being increasingly linked to anti-poverty programmes. For example, in 1970, the World Bank spent only 5% of its budget on poverty relief, whereas it now devotes many times that amount to poverty-related projects (Kalirajan & Singh, 2009, p. 695).

2.5.1.5. Foreign aid graduates in the sub-Saharan Africa region

Since 1970, the DAC List of ODA Recipients¹³ has undergone some substantial changes which reflect the general improvement in global prosperity over the last few decades. According to the OECD (2018), from 1970, a total of 17 countries have been added to the list and 60 countries have graduated from it, mainly because of increases in their per capita income. Of the latter countries, 45 graduated between 1991 and 2018, and it is projected that another 24 countries and territories will graduate by 2030 (Sedemund, 2014).

According to the OECD (2018), the Seychelles graduated from the ODA recipient countries in 2018, which makes it the first country to do so in the SSA region. Moreover, recent trends are suggesting a general decline in aid reliance, especially in countries such as Equatorial Guinea, Botswana, and Eritrea. The OECD (2014) estimates that the following countries from the SSA region might graduate from foreign aid by 2030: Gabon, Mauritius, and Equatorial Guinea.

2.5.1.6. Top 10 aid-recipient countries in the sub-Saharan Africa region

The SSA region constitutes around 46 countries, and nearly all of them have been relying on foreign aid over the years to supplement their budgets. Countries bordering the Sahara Desert (the Sahel countries) such as Mali, Burkina Faso, Niger, and Mauritania rely heavily on humanitarian aid for food, because the region's land is fast being claimed by the ever-advancing Sahara Desert sands (University of Maryland, 2018). Elsewhere, southwards in the region, the shift from commercial to subsistence farming has drastically reduced agricultural output from countries such as Zimbabwe and Malawi, meaning that aid is a seasonal pattern to supplement food needs (Chirwa & Matita, 2012). Ethiopia was, by the end of 2015, the highest receiver of aid (\$3.2 billion), while the DRC followed with \$2,6 billion, and Tanzania came third with \$2.5 billion. Kenya and Nigeria occupied the fourth and fifth positions respectively. Other top aid-recipient countries in the region are Mozambique (6th), Ghana (7th), South Sudan (8th, after it attained independence from North Sudan in 2011), Uganda (9th), and South Africa (10th). While these rankings are based on the 2015 aid figures, it is important to note that over

¹³ The list is kept and updated by the OECD: <http://www.oecd.org/development/financing-sustainable-development/development-finance-standards/historyofdaclistsofaidrecipientcountries.htm>

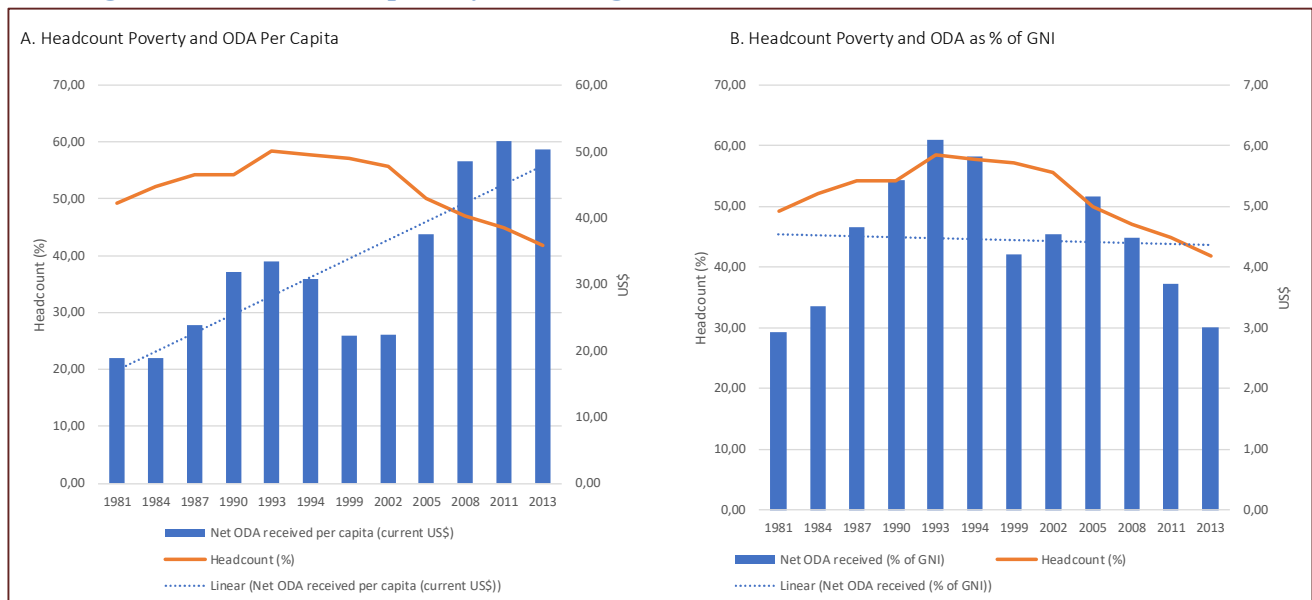
the years, general fluctuations have occurred in the top aid-receiving countries. For example, in 2003, when the Congo war finally ended, the DRC received the highest ODA in the region.

2.5.1.7. Poverty and foreign aid dynamics in the sub-Saharan Africa region

For the majority of countries in SSA, the period from the 1980s to the 1990s was characterised by a change of governance from colonial to independent government regimes (Mahembe, 2014; Tita & Aziakpono, 2016). Most countries adopted the ESAPs which emphasised the liberalisation and opening of the financial sectors, as opposed to government control practised by previous regimes (Tita & Aziakpono, 2016, p. 9).

Chart A in Figure 2.19 shows that the ODA per capita increased from 1981 to the early 1990s before taking a severe knock in the late 1990s to 2002. Thereafter, this value increased, reaching a peak of US\$52 per person in 2011. Compared to the ODA/GNI ratio (Chart B), the latter seems to closely follow the poverty rate levels. Sub-Saharan Africa has been consistently receiving the highest proportion of ODA, as a percentage of own GNI compared to other regions. This could be because of the region's high poverty levels.

Figure 2.19: Headcount poverty and foreign aid trends in sub-Saharan Africa



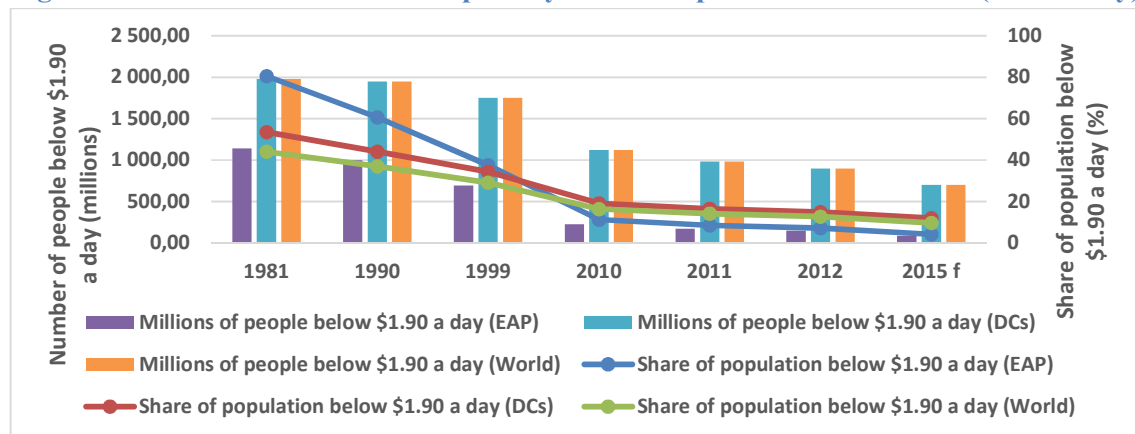
Source: World Bank (2016a, 2017)

2.5.2. Poverty and foreign aid dynamics in East Asia and the Pacific

2.5.2.1. Extreme poverty trends in East Asia and the Pacific

The East Asia and the Pacific (EAP)¹⁴ region has recorded the most dramatic fall in the proportion of people living in extreme poverty in recent history. As displayed in Figure 2.20 and Figure 2.21, EAP had 80.6% of its people (around 1.1 billion) living at less than US\$1.90 a day in 1981, but by 2010, roughly 10% could be regarded as extremely poor. The region transformed itself from being the poorest, with approximately 58% of the world's poorest people in 1981, by lifting more than a billion people out of extreme poverty in three-and-a-half decades. By 2015, only around 12% of the world's poorest were from EAP. The World Bank (2016, p. 4) estimates that close to 65 million people were lifted out of extreme poverty in EAP between 2012 and 2015.

Figure 2.20: East Asian and Pacific poverty levels compared to world trends (\$1.90 a day)

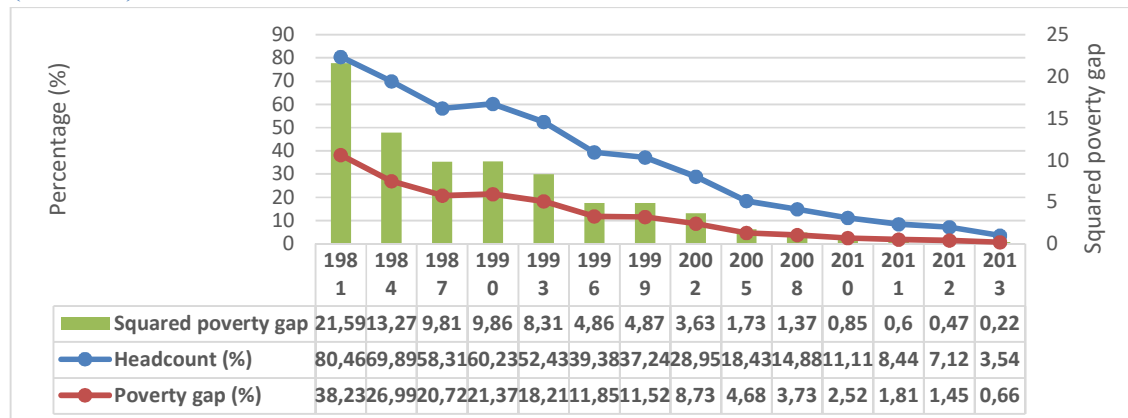


Source: World Bank (2016a, 2017)

Figure 2.21 shows the headcount index, PG and SPG for the EAP region for the period 1981 to 2013 based on the US\$1.90 poverty line. These indices have been decreasing dramatically in EAP over the years. The poverty headcount index fell from 80.46% in 1981 to 3.54% by 2013, and the poverty gap fell from 38.23 to 0.66% over the same period. The SPG, which measures the severity of poverty, decreased from 21.59 to 0.22.

¹⁴ The sample of countries in the EAP region is 19, and it includes the Solomon Islands, Papua New Guinea, Timor-Leste, the Federated States of Micronesia, the Lao People's Democratic Republic, Vanuatu, Kiribati, the Philippines, Indonesia, Fiji, China, Vietnam, Tuvalu, Cambodia, Samoa, Tonga, Mongolia, Malaysia, and Thailand.

Figure 2.21: Headcount, poverty gap, and squared gap in East Asia and the Pacific (US\$1.90)



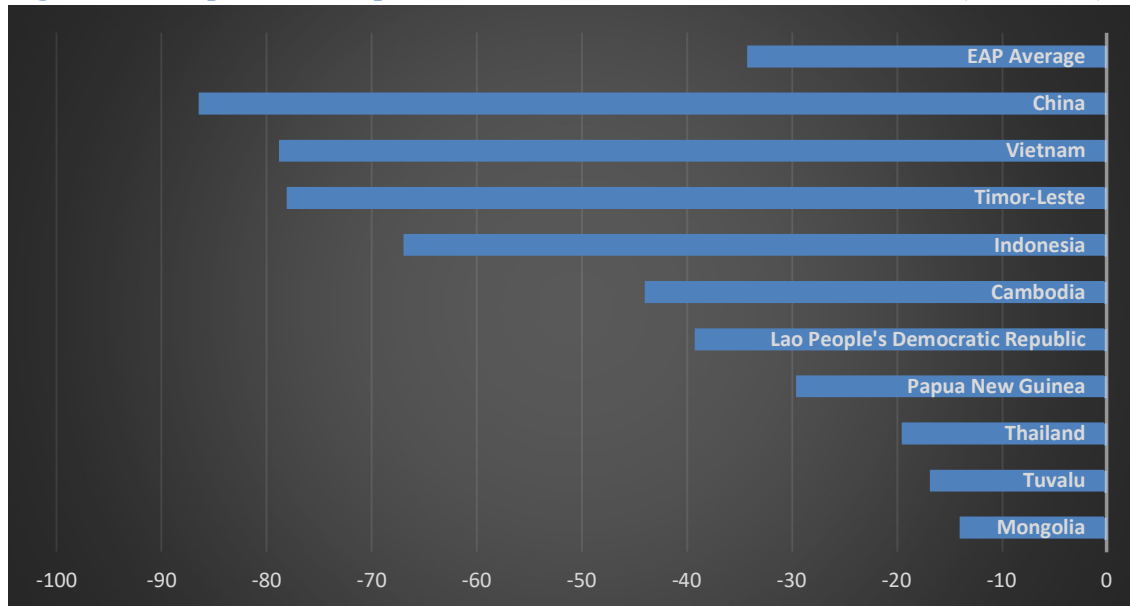
Source: World Bank (2016a)

According to the World Bank and the IMF (2015), the MDGs could have played a part in the fight against poverty in EAP. Their report, titled “*Global Monitoring Report 2015/2016: Development Goals in an Era of Demographic Change*” argues that the MDGs were effective in EAP in influencing local priorities, shaping national budgets, and protecting social expenditures. However, it is important to note that even before the promulgation of the MDGs in 2000, the number of poor people in EAP was already decreasing. The EAP region reached its MDG 25-year target of “halving the proportion of population below US\$1 per day between 1990 and 2015” in 13 years. The region recorded a fall in the headcount index from 60.23% in 1990 to 28.95% in 2002 which is a decrease of more than half.

2.5.2.2. Top 10 most-improved countries in terms of poverty reduction in the East Asia and the Pacific region

The best performing EAP countries in terms of poverty reduction between 1981 and 2013 are illustrated in Figure 2.22. On average, the proportion of people living on less than US\$1.90 per day in EAP decreased by 34.25 percentage points from 1981 to 2013. The largest decrease in poverty, in descending order, was recorded in China (86.47 percentage points), Vietnam (78.82), Timor-Leste (78.11) and Indonesia (67.01). In total, 18 out of 19 countries recorded a decrease in extreme poverty over the study period except for the Federated States of Micronesia.

Figure 2.22: Top 10 most-improved countries in East Asia and the Pacific (1981-2013)



Source: World Bank (2016a)

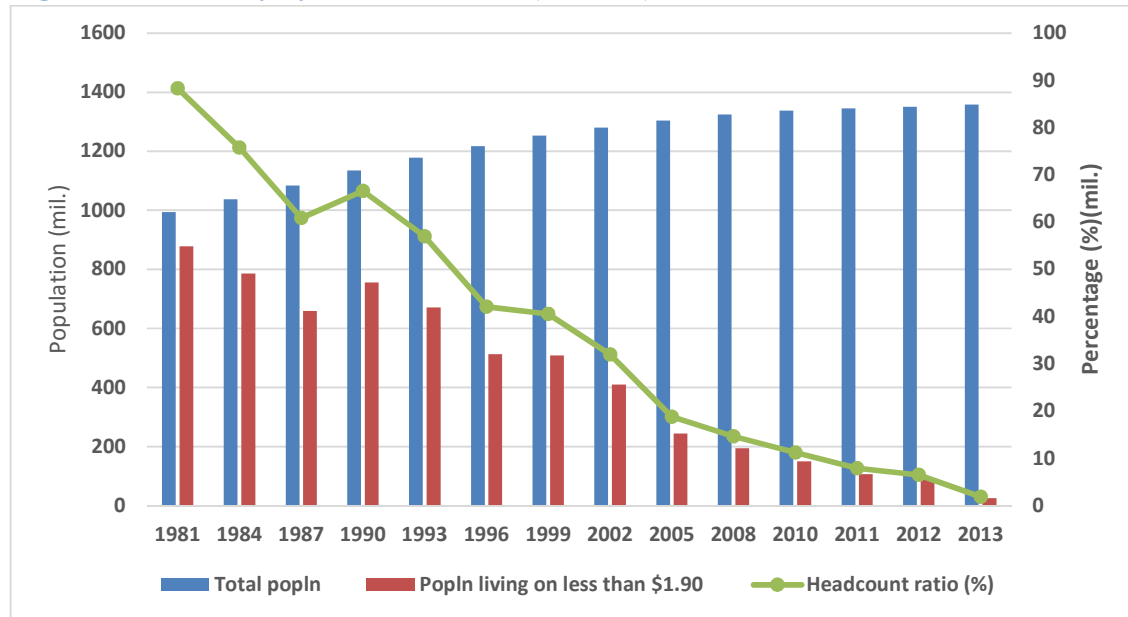
The World Bank and the IMF (2015) argue that the MDGs influenced national development planning frameworks in nine EAP countries, including Timor-Leste, Indonesia, Cambodia, the Lao People’s Democratic Republic, Mongolia, and Vanuatu. However, extreme poverty levels in Vanuatu only decreased by 0.31 percentage points, from 14.62% in 1981 to 14.31% in 2013.

2.5.2.3. The influence of China in East Asia and the Pacific

Given the number of people lifted from poverty and the dramatic decrease in poverty levels, this sub-section attempts to highlight the key trends in China’s poverty reduction journey. The country began its pro-market economic reforms, including market liberalisation from around 1980 onwards (Ravallion, 2011). By this time, national poverty levels were high – roughly 88.32% in 1981. One of the key reforms which is credited for the major reduction in poverty, particularly in rural areas, was the agriculture reform, known as the ‘Household Responsibility System’ (Ravallion, 2011, p. 79). The process included the dismantling of collectives and the equitable allocation of all farmland to individual farmers (Ravallion & van de Walle, 1991; Ravallion, 2011). Perkins *et al.* (2013, p 189) summarised the discourse of the country’s success by stating that “many observers trace the start of China’s success to the economic reforms of the late 1970s, which decollectivized agriculture and encouraged farm households to produce and market more of their output, pulling them out of poverty”.

The results of these policies are demonstrated in Figure 2.23 and Figure 2.24. Figure 2.23 shows that in 1981, around 88% of the Chinese population (approximately 878 million people) was living on less than US\$1 a day, and this has miraculously decreased to 1.85% in just over 3 decades. The total population living in extreme poverty has decreased by more than 850 million to approximately 25 million in 2013. This decrease in poverty levels took place despite the increase in total population over the same period.

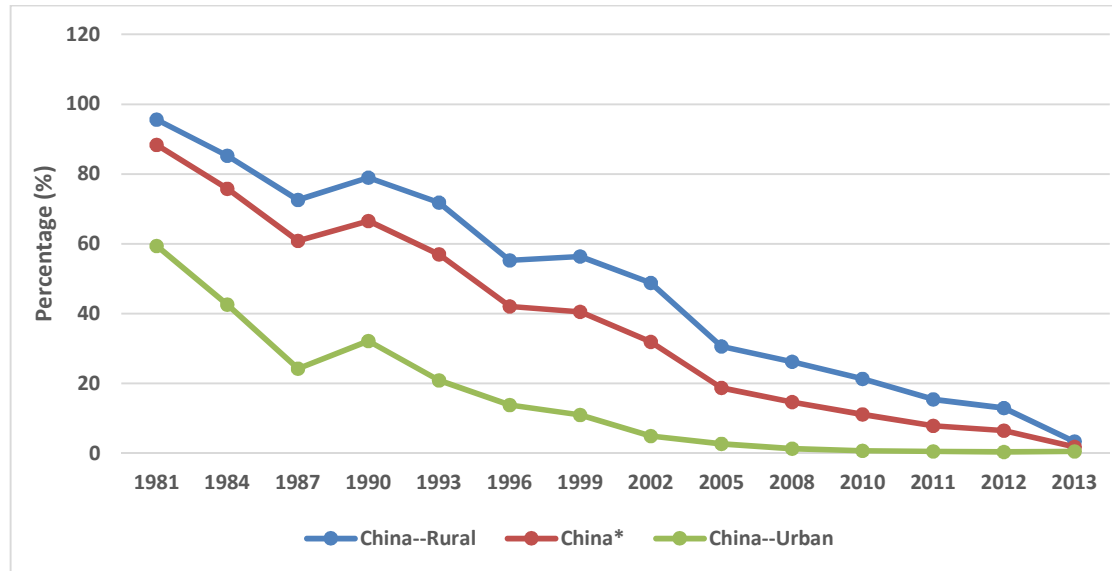
Figure 2.23: Poverty dynamics in China (US\$1.90)



Source: World Bank (2016a)

Figure 2.24 compares the headcount poverty levels between rural and urban China. As the figure illustrates, 96% of the Chinese residing in rural areas were living in extreme poverty in 1981, and this proportion decreased by 92 percentage points to 3.38% in 2013. The proportion of people living in extreme poverty in urban areas decreased from 59.43% to 0.51% over the same period.

Figure 2.24: China's headcount ratio (US\$1.90)

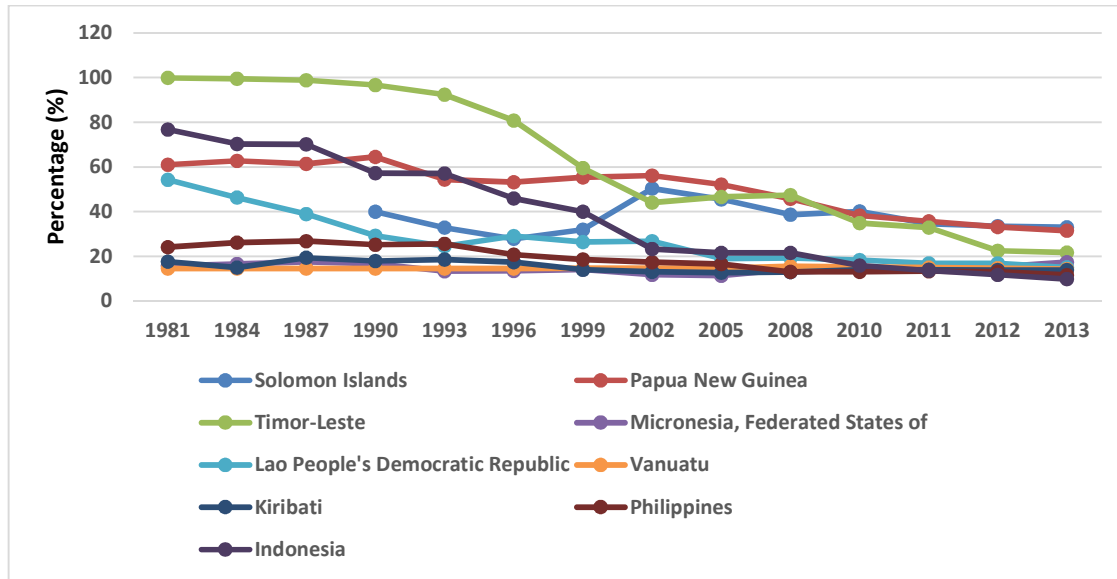


Source: World Bank (2016a)

2.5.2.4. Bottom 10 countries in East Asia and the Pacific in terms of the anti-poverty fight

On average, the bottom 10 poorest countries in the EAP region had around 17% of their population living in extreme poverty by the year 2013. As shown in Figure 2.25 below, the bottom 3 poorest countries in EAP (in terms of proportion of population living in extreme poverty) were the Solomon Islands (33.05%), Papua New Guinea (31.49%), and Timor-Leste (21.76%). For Timor-Leste, its headcount ratio was almost 100% for the greater part of the 1980s, and it began to decrease gradually in the early 1990s before declining sharply from 80.82% in 1996 to 21.76% in 2013. Though Timor-Leste started as the poorest country in the region, it is now ranked third from the bottom after the Solomon Islands and Papua New Guinea which are ranked bottom and second from the bottom, respectively.

Figure 2.25: Bottom 10 poorest countries in East Asia and the Pacific (1981-2013)



Source: World Bank (2016a)

In summary, the EAP region has transformed itself from being the poorest region, with more than 80% of its population living in extreme poverty in 1981, to one of the richest regions in the developing world. By 2015, the proportion of the population living in absolute poverty was estimated at 4.1%, which was lower than the developing world average of 11.9%. The largest decline in the EAP region is because of China which lifted more than 850 million out of extreme poverty between 1981 and 2013. Other large declines were recorded in Vietnam, Timor-Leste, Indonesia, and Cambodia.

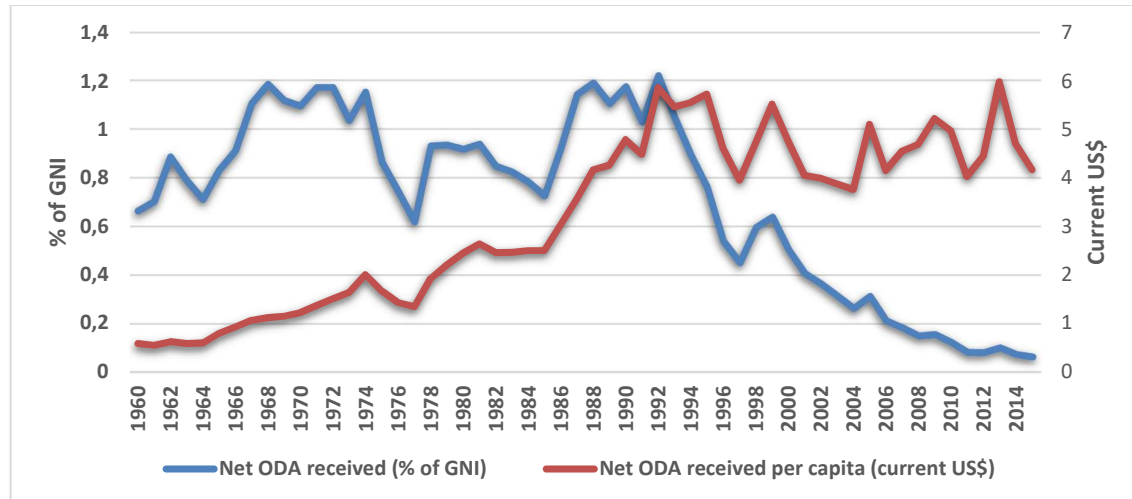
2.5.2.5. Overview of foreign aid trends in East Asia and the Pacific

The ODA figures for the EAP region generally display a lower fluctuation rate, especially when compared to other regions such as ECA. Aid flow seemed to be at its lowest in this region around 1965, but then a sharp increase to almost US\$10 billion occurred. The late 1970s saw another decline in the flow of aid before the figures began to fluctuate over the next three decades. By 2015, the net ODA flow had dropped again to US\$5 billion, which is roughly similar to the 1960 figures.

Figure 2.26 demonstrates that foreign aid to EAP has been increasing from the 1960s; it peaked in the early 1990s and has been generally decreasing since. This decrease in aid receipt

coincides with the sharp drop in extreme poverty rates, as shown in Figure 2.27 in the next subsection.

Figure 2.26: Net official development assistance for East Asia and the Pacific (1960-2015)



Source: World Bank (2017)

2.5.2.6. Foreign aid graduates in East Asia and the Pacific

Several countries in the EAP region have graduated from reliance on aid since the 1960s. By 1996, Hong Kong, Taipei, and Singapore had discontinued their reliance on aid, while China’s Macau and Korea stopped relying on aid just before the turn of the 21st century. The OECD (2014) projects that by 2030, three more countries from the EAP region, namely China, Malaysia, and Thailand, will graduate from the “DAC List of ODA Recipients”.

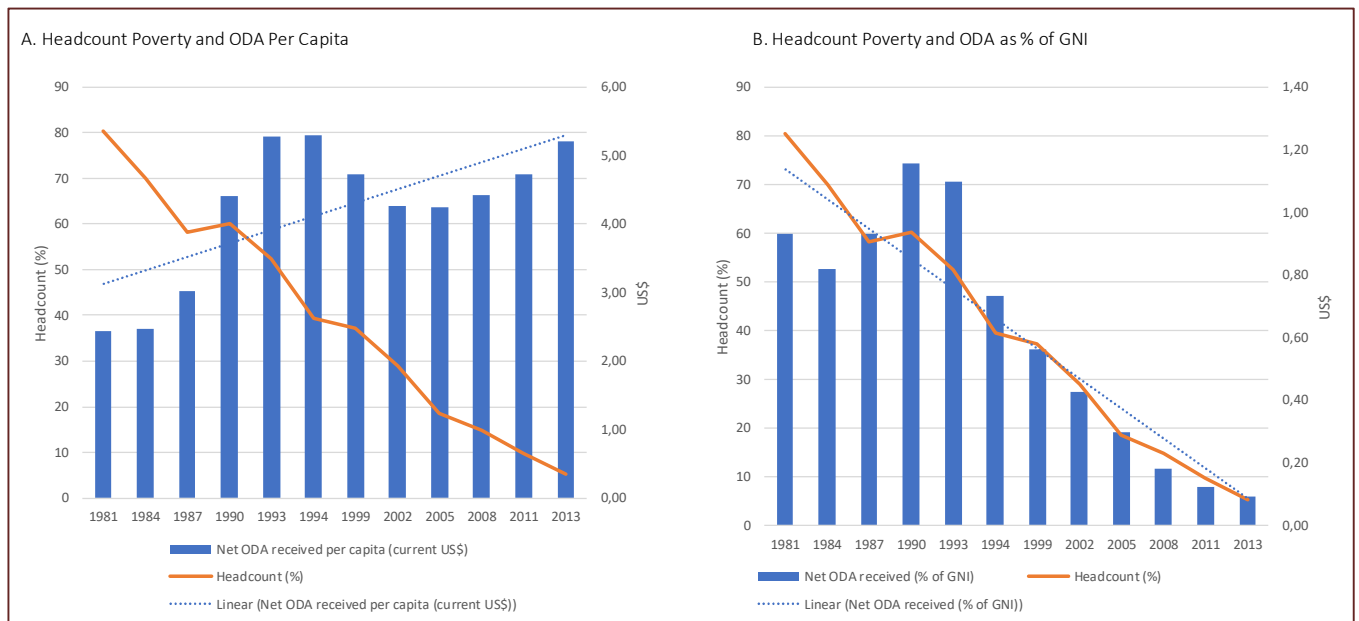
2.5.2.7. Top 10 aid-recipient countries in East Asia and the Pacific

By far, Vietnam has received the highest amount of ODA flows into the EAP region. It received US\$2.5 billion more than the second-highest country in the region (Cambodia with \$677 million). The third highest in ODA flows is the Philippines, while the Lao People’s Democratic Republic came fourth and Mongolia fifth. Other countries on the top 10 list are Timor-Leste (6th); the Democratic People’s Republic of Korea (7th); Thailand (8th); Hong Kong (9th); and Macau, China (10th).

2.5.2.8. Poverty and foreign aid dynamics in East Asia and the Pacific

Figure 2.27 presents the core movement between the headcount poverty rate, ODA per capita, and ODA receipts as a percentage of recipient region GNI in the EAP region. The first chart (Chart A) illustrates that the ODA per capita has increased over the years. However, this increase did not translate to an increase in the ODA/GNI ratio. This could be because of the faster increase in the region's GNI. Using the second chart (Chart B), with the main indicators of poverty and aid in the region, it can be concluded that the dramatic fall in extreme poverty in EAP has been accompanied by a corresponding reduction in relative aid allocation. The net ODA received (% of GNI) rose from 0.93% in 1981 to 1.16% in 1990 before falling sharply to 0.09% in 2013.

Figure 2.27: Poverty and foreign aid dynamics in East Asia and the Pacific



Source: World Bank (2016a, 2017)

2.5.3. Poverty and foreign aid dynamics in Europe and Central Asia

2.5.3.1. Extreme poverty trends in Europe and Central Asia

Table 2.9 and Figure 2.28 show that there was a sharp increase in the poverty measures and the number of people in extreme poverty in ECA¹⁵ in the 1990s. As noted by Ravallion and Chen (1997, p. 10), the ECA countries were undergoing major structural changes during this period – they were transitioning from largely planned to market-based economies (Milanovic, 1995). Milanovic (1995, p. 10) further illustrated that the main causes of the increase in poverty, especially in Poland, were long-term unemployment and low-paying jobs (for those who were employed).

Table 2.9: Europe and Central Asia poverty levels compared to world trends (\$1.90 a day)

	1981	1990	1999	2010	2011	2012	2015
Share of population below \$1.90 a day (ECA)	1.3	1.9	7.8	2.8	2.4	2.1	1.7
Share of population below \$1.90 a day (DCs)	53.5	44.1	34.3	19.1	16.5	14.9	11.9
Share of population below \$1.90 a day (World)	44	36.9	29.1	16.3	14.1	12.7	9.6
Millions of people below \$1.90 a day (ECA)	5.6	8.8	36.8	13.2	11.4	10.1	4.4
Millions of people below \$1.90 a day (DCs)	1 982.10	1 948.40	1 751.50	1 119.80	983.3	896.7	702.1
Millions of people below \$1.90 a day (World)	1 982.10	1 948.40	1 751.50	1 119.80	983.3	896.7	702.1

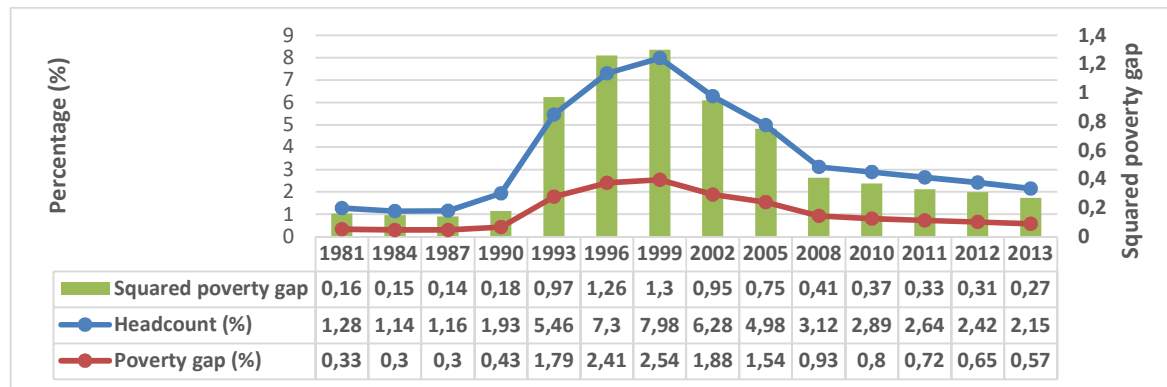
Source: World Bank (2016a, 2017)

Overall, the ECA region's headcount poverty rate was below 2% in the 1980s, rising to almost 10% in the late 1990s before coming down to an estimated 1.7% in 2015. By 2015, around 4.4 million people were estimated to be living in extreme poverty, compared to a peak of 36.8

¹⁵ Our ECA sample consists of 30 countries, namely Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kosovo, the Kyrgyz Republic, Latvia, Lithuania, Macedonia (former Republic of Yugoslav), Moldova, Montenegro, Poland, Romania, the Russian Federation, Serbia, the Slovak Republic, Slovenia, Tajikistan, Turkey, Turkmenistan, Ukraine, and Uzbekistan.

million in 1990. The ECA poverty data for the 1980s should, however, be used with caution, as the developers of the World Bank PovcalNet database warned that only a paucity of regional survey data was available (Ravallion & Chen, 2010).

Figure 2.28: Headcount, poverty gap and squared gap in East Asia and the Pacific (US\$1.90)



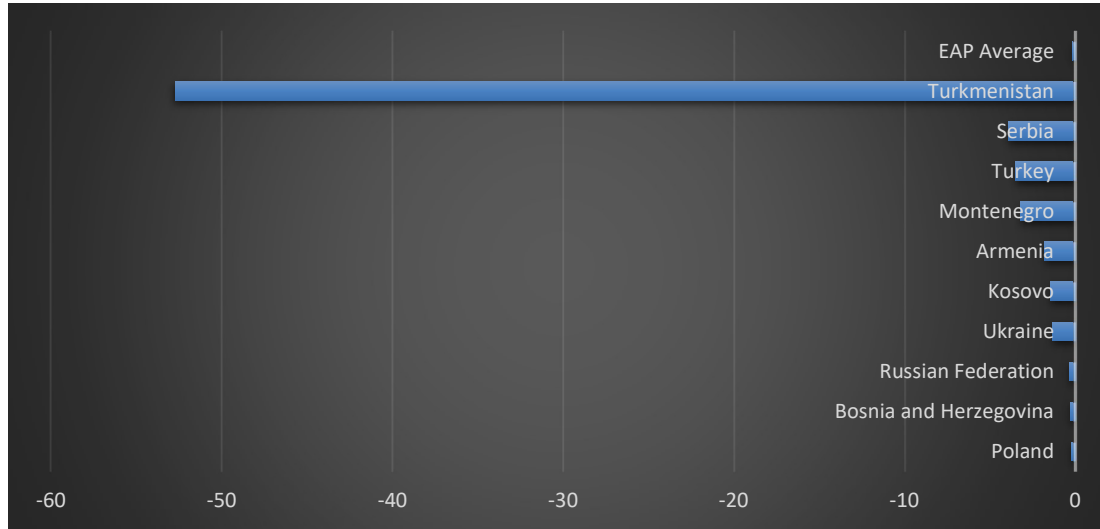
Source: World Bank (2016a)

2.5.3.2. Top 10 most-improved countries in terms of poverty reduction in East Asia and the Pacific

Figure 2.29 presents the best performing ECA countries in terms of poverty reduction between 1981 and 2013. By far, the highest reduction in poverty was recorded in Turkmenistan which reduced headcount poverty rates from 55% in 1981 to 2% in 2013 (a 53-percentage point reduction). For the other countries that reduced poverty rates over this period, the average was 1.36 percentage points). In total, 13¹⁶ out of 30 ECA regional countries recorded a decrease in poverty over the study period.

¹⁶ Please note that only the top 10 countries are illustrated in Figure 2.29.

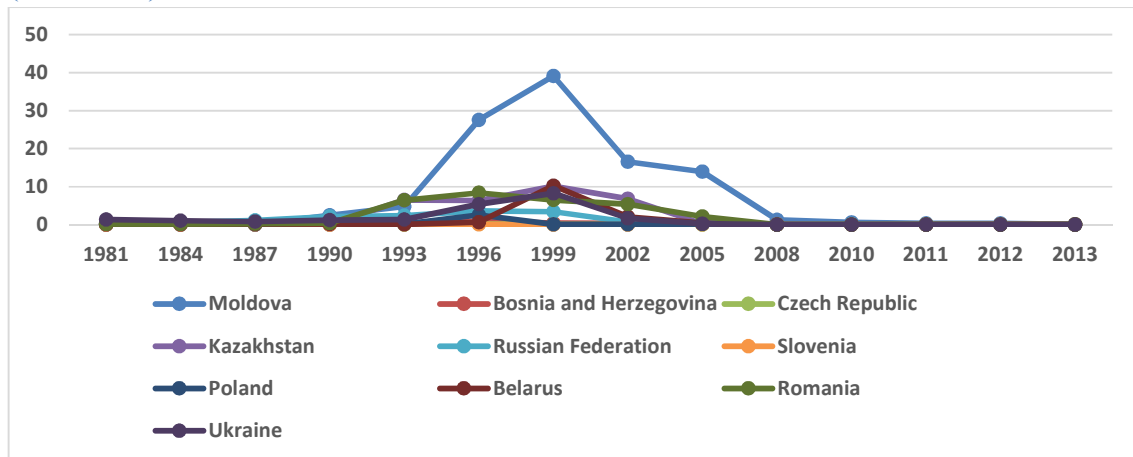
Figure 2.29: Decrease in poverty rates by country in East Asia and the Pacific (1981-2013)



Source: World Bank (2016a)

Figure 2.30 shows the 10 ECA countries with the lowest levels of poverty as measured by the headcount poverty ratio at US\$1.90 per day. First, all the countries generally had poverty ratios of below 5% in the 1980s, the early 1990s, and from 2008 onwards. Second, they all experienced a general increase in poverty during the period from 1993 to around 2000. This temporary increase in poverty rates is largely attributed to the “transition”, which involved the dismantling of the socialist system and a move towards a market economy (Milanovic, 1995; World Bank, 2002; Bezemer, 2006).

Figure 2.30: Ten countries with the lowest poverty levels in East Asia and the Pacific (1981-2013)



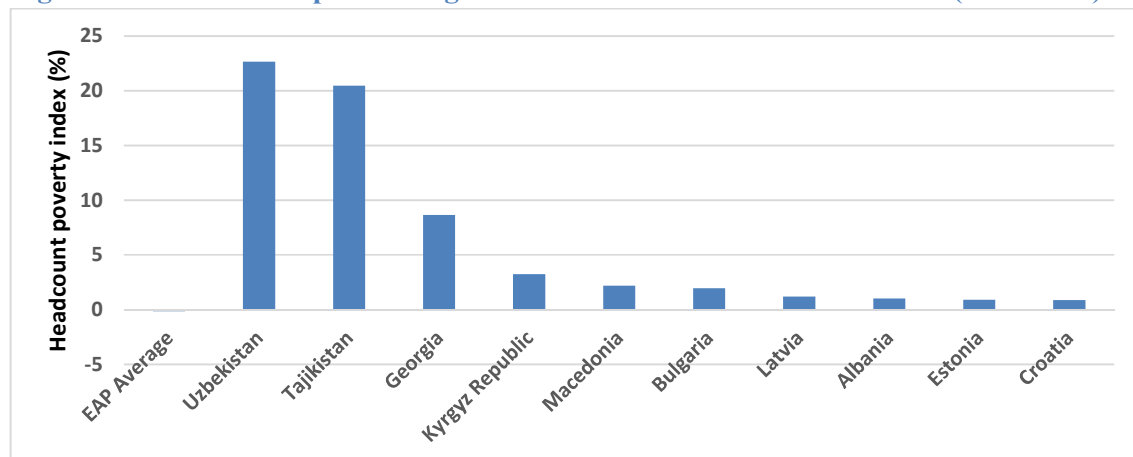
Source: World Bank (2016a)

While all the countries in Figure 2.30 experienced an increase in poverty between 1993 and 2000, Moldova had the sharpest and highest increase. The World Bank (2002) attributes this increase to inequality, lower economic growth, and violence (which also affected parts of Macedonia and Romania).

2.5.3.3. Bottom 10 countries in East Asia and the Pacific in terms of the anti-poverty fight

Figure 2.31 depicts the 10 worst-performing countries in ECA in terms of the anti-poverty fight. These countries recorded the highest increase in headcount poverty rates between the years 1981 and 2013. On average, 16 out of 30 countries recorded an increase in those rates. This means that the proportion of people living below US\$1.90 a day has increased in these countries¹⁷.

Figure 2.31: Ten worst-performing countries in East Asia and the Pacific (1981-2013)

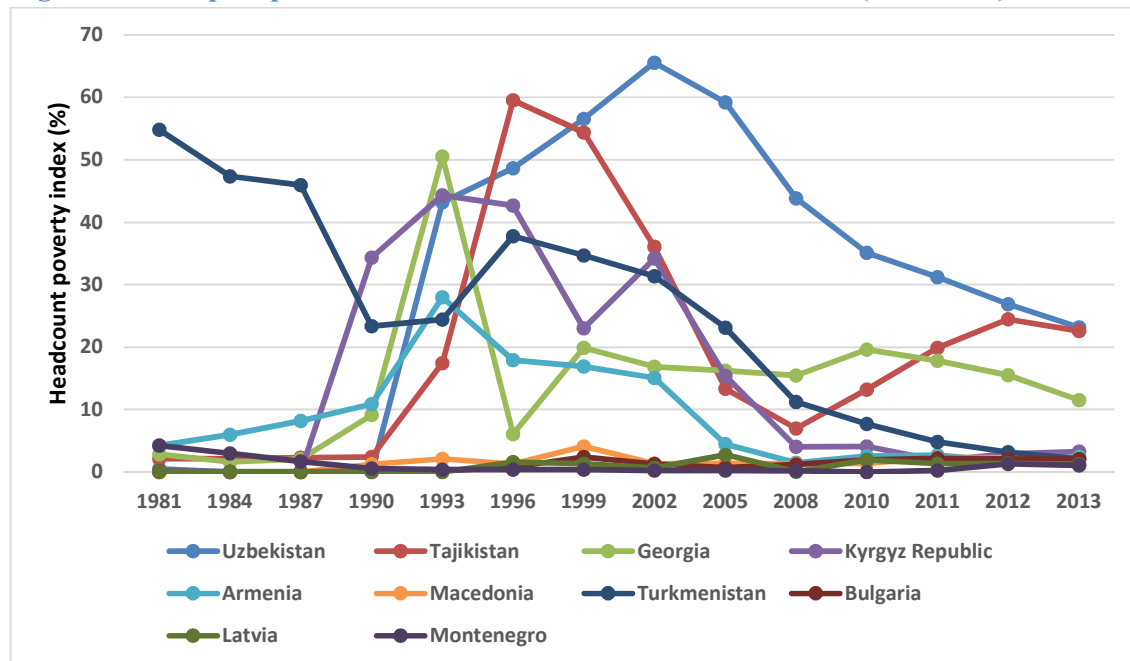


Source: World Bank (2016a)

As shown in Figure 2.31, the highest poverty rates in ECA were recorded in Uzbekistan (a 22.67 percentage point increase), Tajikistan (20.45), and Georgia (8.65). These same countries had the highest levels of poverty rates in 2013 (see Figure 2.32).

¹⁷ The 16 countries are: Uzbekistan, Tajikistan, Georgia, Kyrgyz Republic, Macedonia, Bulgaria, Latvia, Albania, Estonia, Croatia, Lithuania, Slovak Republic, Hungary, Moldova, Czech Republic, Kazakhstan.

Figure 2.32: Top 10 poorest countries in East Asia and the Pacific (1981-2013)



Source: World Bank (2016a)

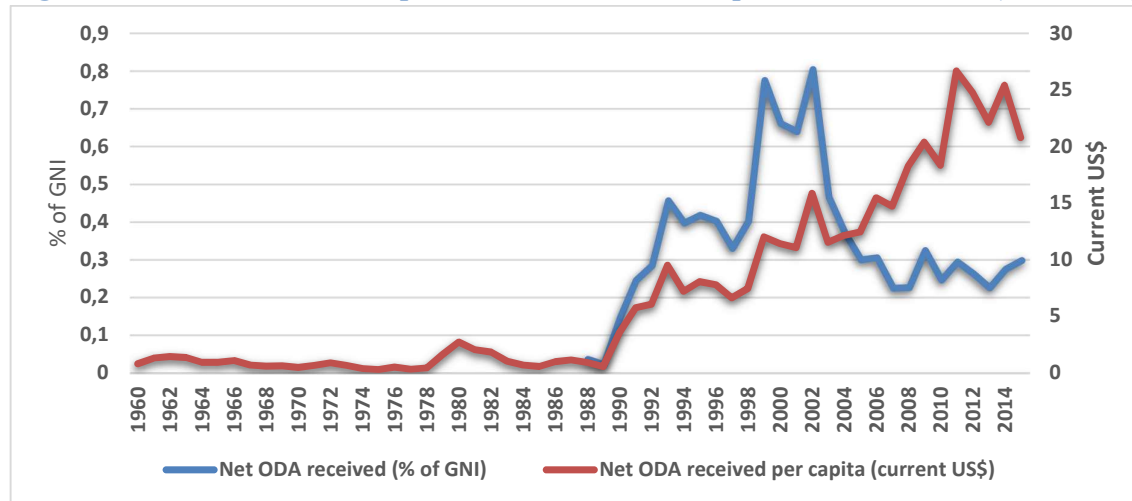
The most common characteristics of the poverty trends in ECA are that poverty levels were lower in the 1980s to early 1990s; they then rose sharply during the late 1990s up to around 2002 before beginning to decrease. As briefly discussed in this sub-section, each country had its own dynamics, but all the countries generally followed the same journey. For example, Turkmenistan was the poorest country in 1981, with over 50% of its citizens living on less than US\$1 a day; however, by 2013, its fortune had completely changed, with only 2% regarded as extremely poor. Uzbekistan, which is considered to be the poorest country in the region according to 2013 headcount poverty rates (Figure 2.32), had its poverty rate peaking at 66% in 2002 before decreasing by more than half to 23% in 2013. Of concern is Tajikistan, which saw its fight from a 60% headcount poverty rate in 1996 to a 7% rate in 2008 reversed to 23% by 2013.

2.5.3.4. Overview of foreign aid trends in East Asia and the Pacific

Figure 2.33 displays the major trends in ODA per capita and as a percentage of regional GNI for the ECA region from 1960 to 2015. The net ODA per capita started fairly low in the 1960s but began to increase sharply in the late 1980s and peaked in the early 2000s. The increase in the late 1970s and early 1980s could be a response to the widespread debt crisis in the region.

From then, major fluctuations occurred in aid receipts over the next two decades. Between 2000 and 2002, there was a major peak in aid flowing into the region mainly fuelled by the need for nations to meet the MDGs.

Figure 2.33: Net official development assistance for Europe and Central Asia (1960-2015)



Source: World Bank (2017)

2.5.3.5. Foreign aid graduates in East Asia and the Pacific

By 1996, Cyprus was no longer depending on foreign aid, while 3 years later, Gibraltar received its last flows of ODA before the turn of the 21st century. Malta also stopped relying on aid by 2000. However, by 2015, all central Asian countries depending on aid were still receiving it.

2.5.3.6. Top aid-recipient countries in East Asia and the Pacific

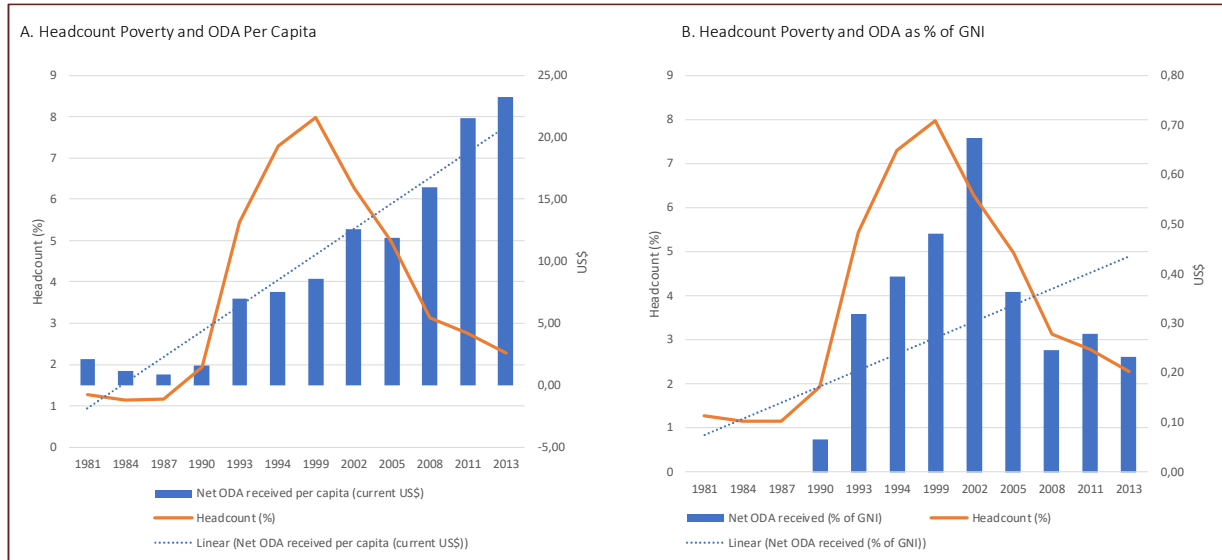
By 2015, the top 10 aid-recipient countries in the ECA region included Kyrgyzstan, Uzbekistan, Kosovo, Tajikistan, Bosnia and Herzegovina, and Albania. It is important to note that of the top 10 countries, only 3 European countries were on the list, while the top 6 were completely dominated by central Asian countries.

2.5.3.7. Poverty and foreign aid dynamics in East Asia and the Pacific

The dynamics of foreign aid and poverty in ECA, as illustrated in Figure 2.34, shows that the ODA per capita has been increasing exponentially, and the ODA/GNI ratio (Chart B) has been

closely following the poverty rate. This suggests that donors disbursed more OA to ECA when the poverty rate was rising, and they began to reduce the allocation amounts when poverty levels decreased.

Figure 2.34: Poverty and foreign aid dynamics in Europe and Central Asia



Source: World Bank (2016a, 2017)

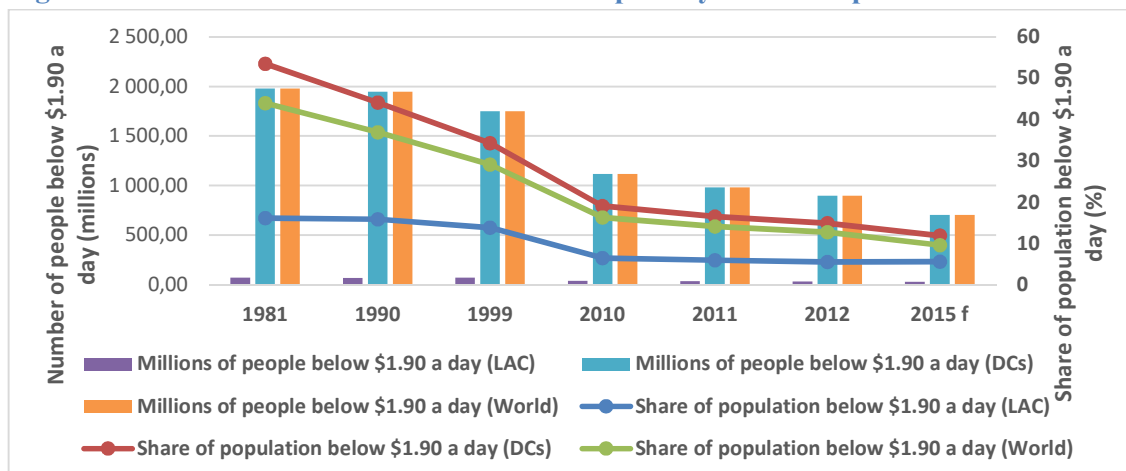
2.5.4. Poverty and foreign aid dynamics in Latin America and the Caribbean

2.5.4.1. Extreme poverty trends in Latin America and the Caribbean

Latin America and the Caribbean¹⁸ was home to approximately 600 million people in 2013, and this is estimated to have increased to 638 million by 2016 (World Bank, 2017). As pictured in Figure 2.35, the incidence of poverty (poverty rates) in LAC has always been lower than the developing world average. The poverty rates fell from 16.15% in 1981 to 5.6% in 2015, and the number of people living in extreme poverty decreased from 72 million to 30 million.

¹⁸ Though there are more than 30 countries in this region, our sample size, based on the availability of poverty data, consist of 25 countries. These countries include Argentina, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, St. Lucia, Suriname, Trinidad and Tobago, Uruguay, Venezuela, and Republica Bolivariana de Venezuela.

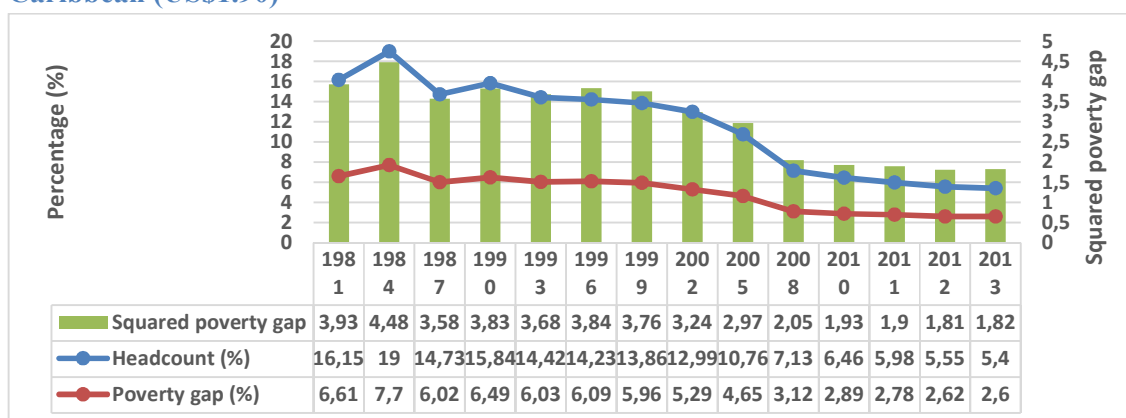
Figure 2.35: Latin America and the Caribbean poverty levels compared to world trends



Source: World Bank (2016a, 2017)

The LAC region's trends in terms of poverty rate, poverty depth, and the poverty-severity index for the period 1981 to 2013 are shown in Figure 2.36. While the three lines indicate a decrease in poverty over the study period, the fall in the LAC region is not as dramatic as in EAP and SA. Perkins *et al.* (2013, p. 189) maintain that LAC had limited success in decreasing its poverty rate.

Figure 2.36: Headcount, poverty gap, and squared gap in Latin America and the Caribbean (US\$1.90)

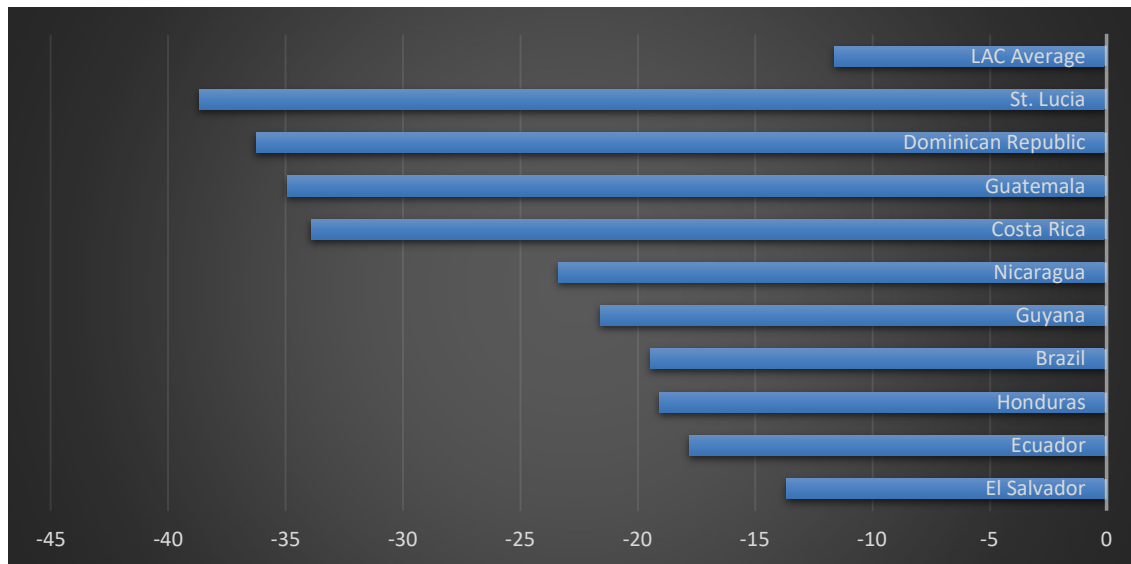


Source: World Bank (2016a)

2.5.4.2. *Top 10 most-improved countries in terms of poverty reduction in Latin America and the Caribbean (LAC)*

Figure 2.37 ranks the top 10 LAC countries in terms of percentage decrease in poverty rates between 1981 and 2013. Costa Rica, Guatemala, the Dominican Republic, and St. Lucia managed to reduce poverty rates by more than 30 percentage points. In total, 19 out of 25 LAC countries recorded a decrease in poverty over the study period, and the regional average decrease was 11.6%.

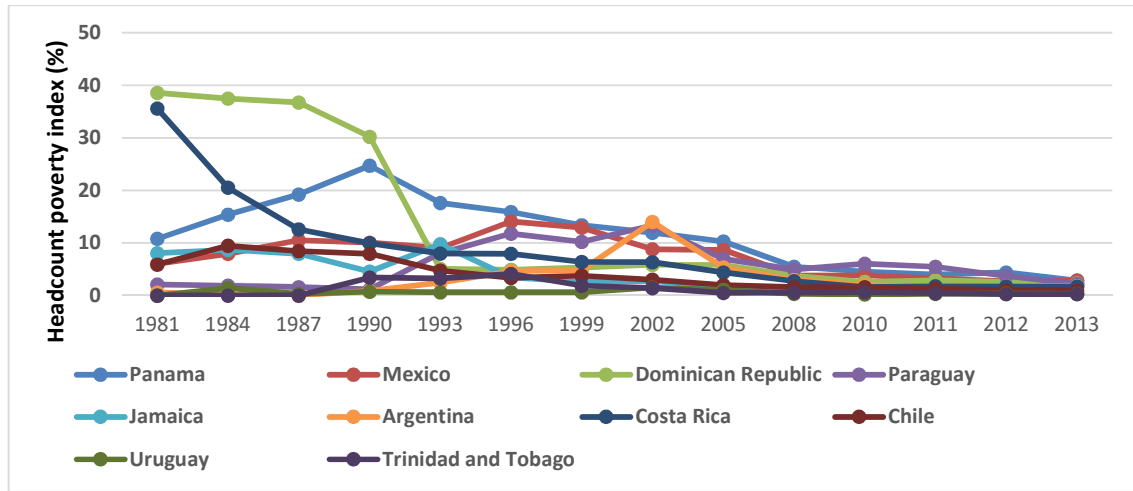
Figure 2.37: Top 10 most-improved countries in Latin America and the Caribbean (1981-2013)



Source: World Bank (2016a)

Figure 2.38 portrays the trends for the 10 LAC countries with the lowest poverty rates by the year 2013. Only the Dominican Republic, Costa Rica, and to a lesser extent Panama show dramatic success in poverty reduction. The Dominican Republic and Costa Rica managed to reduce poverty rates from over 35% in 1981 to around 2% in 2013. The remaining seven countries illustrated in Figure 2.38 display a trend from lower incidences of poverty before 1993 to a gradual increase in the late 1990s up to the early 2000s, before a steady decrease to single-digit levels.

Figure 2.38: Ten countries with the lowest poverty levels in Latin America and the Caribbean (1981-2013)

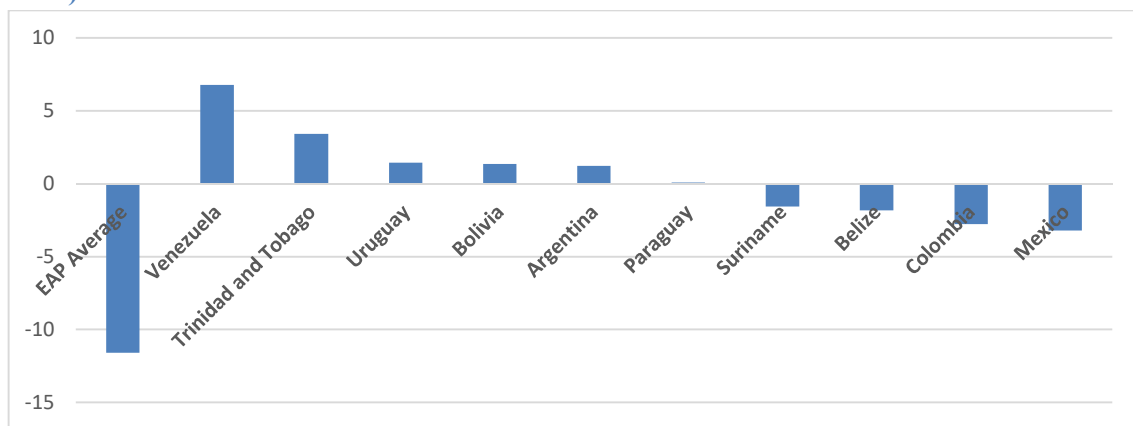


Source: World Bank (2016a)

2.5.4.3. Bottom 10 countries in Latin America and the Caribbean in terms of the anti-poverty fight

Figure 2.39 illustrates that of the 25 LAC countries under review, there was an increase in poverty in 6 countries. These countries are Venezuela (6.78 percentage points), Trinidad and Tobago (3.41), Uruguay (1.44), Bolivia (1.35), Argentina (1.22), and Paraguay (0.1).

Figure 2.39: Ten worst-performing countries in Latin America and the Caribbean (1981-2013)

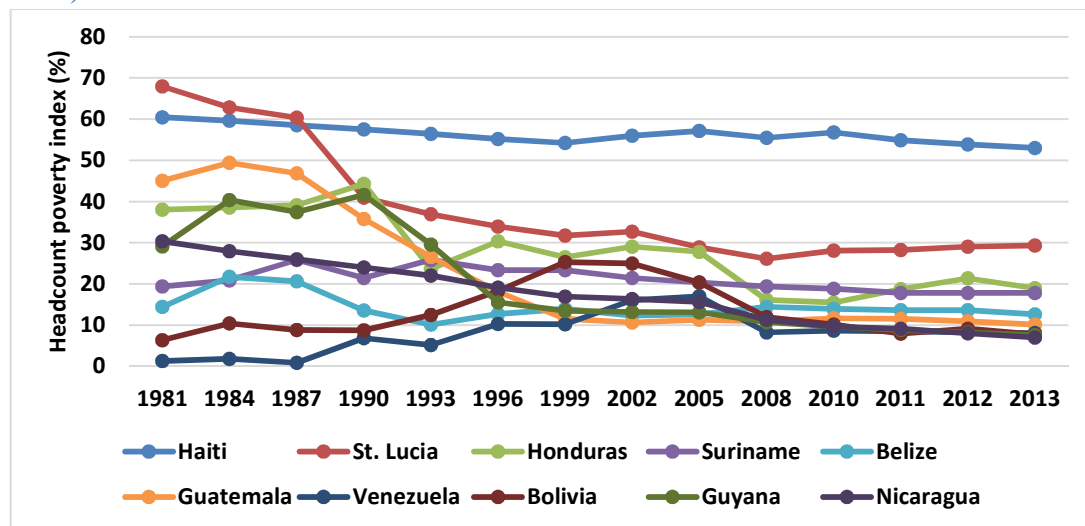


Source: World Bank (2016a)

Figure 2.40 shows the bottom 10 poorest countries in LAC. In 1981, the poorest countries in this region were St. Lucia and Haiti, with poverty rates of 67.97 and 60.49% respectively. More

than three decades later, the poorest countries were still St. Lucia and Haiti, albeit with the two countries having swapped positions. Haiti's record in poverty reduction is similar to SSA countries and is in sharp contrast to its neighbours. It is the only country in LAC out of SSA with more than 50% of its citizens living in extreme poverty. The World Bank attributes the high poverty levels in Haiti to vulnerability to natural disasters; lower economic growth, characterised by high budget deficits and high public expenditures, especially towards reconstruction; and high inequality.

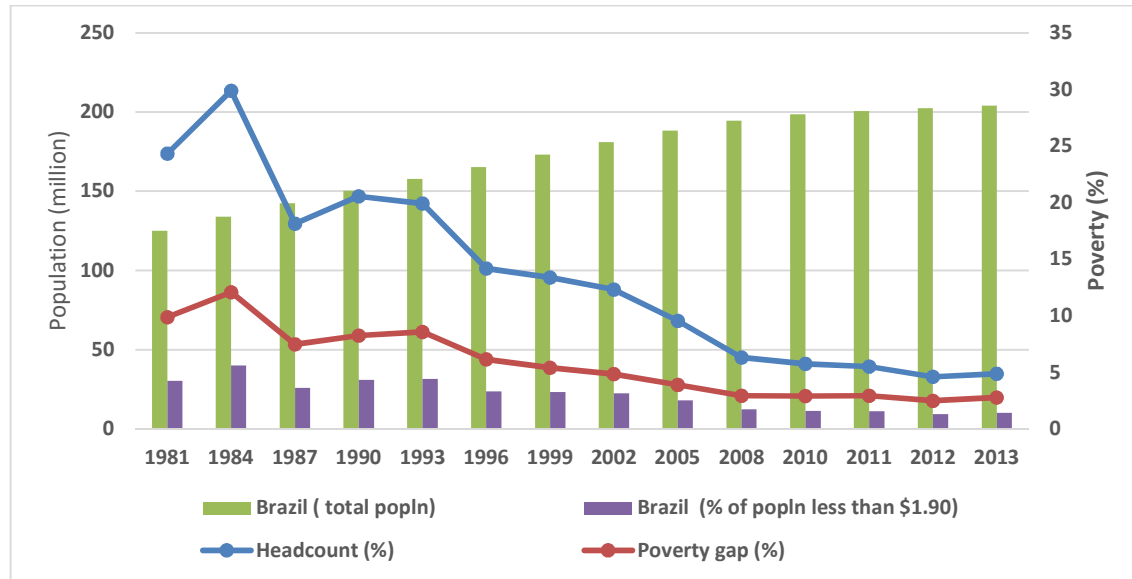
Figure 2.40: Bottom 10 poorest countries in Latin America and the Caribbean (1981-2013)



Source: World Bank (2016a)

Brazil is the largest LAC country, accounting for more than a third of the region's total population. Given Brazil's importance to the region's fight against poverty, the poverty dynamics in the country are briefly discussed next. Figure 2.41 depicts the country's poverty trends. It shows that Brazil's fight against poverty has been impressive, as it managed to reach the MDG target well ahead of schedule.

Figure 2.41: Dynamics of poverty in Brazil (US\$1.90)



Source: World Bank (2016a)

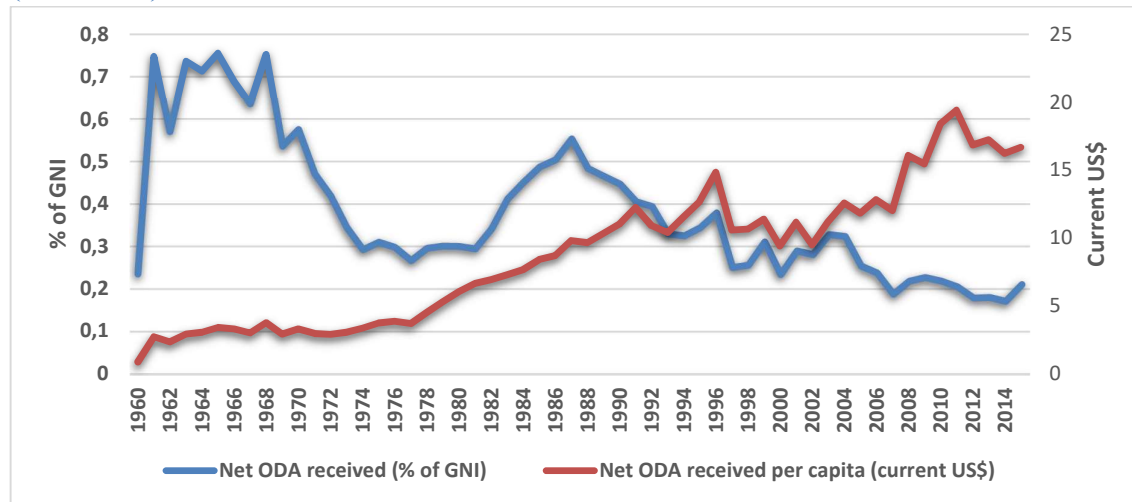
Brazil managed to reduce headcount poverty rates from a high of 30% in 1984 to less than 10% in 2013, and the total population in absolute poverty decreased from 40 million to less than 10 million during the same period. However, the 1980s and early 1990s were not easy, as poverty levels were rising. Ravallion (2011, p. 84) attributes this to the country’s low economic growth; hyperinflation; large fiscal deficits; and general macroeconomic populism which was prevalent in the LAC region. Ravallion (2011) further credits the sharp decreases in poverty from the mid-1990s to the Bretton Woods induced ESAPs which were characterised by the privatisation of state-owned companies, trade liberalisation, fiscal discipline, and macroeconomic stability. The country also introduced cash transfer programmes and reformed its social policies to make them pro-poor (Ravallion, 2011, p. 86).

2.5.4.4. Overview of the foreign aid trends in Latin America and the Caribbean

According to Meyer (2018), the USA has been the largest contributor of foreign aid to a number of LAC countries since the 1940s, contributing a total of around US\$176 billion (in constant 2016 dollars) between 1946 and 2016. Most of the aid from the USA to the LAC region in the 1960s and early 1970s was directed towards anti-poverty initiatives, but with the main aim of countering the Soviet Union and Cuban influence (Meyer, 2018, p. 3). As demonstrated in Figure 2.42, the net ODA as a percentage of GNI was high during this period. Furthermore, it

can be shown that the Soviet Union was important in the allocation of aid, as indicated by the sharp decline in ODA as a percentage of GNI from the early 1990s. This is also at the same time the Central American conflicts ended (Meyer, 2018).

Figure 2.42: Net official development assistance for Latin America and the Caribbean (1960-2015)



Source: World Bank (2017)

Overall, foreign aid inflows have fluctuated; however, as demonstrated in the ODA per capita trend, aid has been generally increasing since the 1990s. Some of the reasons for this increase include the influence of large international relief organisations such as the OECD, IDA, the Alliance for Progress, and the Millennium Challenge Corporation, among others; world debt crisis relief (especially in the late 1980s to the early 1990s); recurring natural disasters (especially in countries such as Puerto Rico and Haiti); and the spread of democracy (Ocampo & Martin, 2003; Meyer, 2018).

2.5.4.5. Foreign aid graduates in Latin America and the Caribbean

Most of the graduates from foreign aid in the LAC region are small island countries, which are former European colonies. For instance, by the early 1990s, the Cayman Islands and Bermuda were already issuing aid instead of receiving it. At the start of the 21st century, the British Virgin Islands and the Netherlands Antilles had also cut reliance on aid. Furthermore, by 2010, Trinidad and Tobago Turks as well as the Caicos Islands also stopped relying on ODA, and Chile and Uruguay recently joined the ODA graduation list (OECD, 2018a). Lastly, it is

projected that by 2030, another 9 LAC countries will graduate from ODA, namely Antigua and Barbuda, Panama, Brazil, Argentina, Costa Rica, Mexico, Suriname, Peru, and St. Vincent and the Grenadines (OECD, 2014). Furthermore, some countries such as Argentina, Brazil, Chile, Colombia, Mexico, and Uruguay have developed to the extent that they are able to offer technical assistance and aid to other poorer countries in the LAC region (Meyer, 2018).

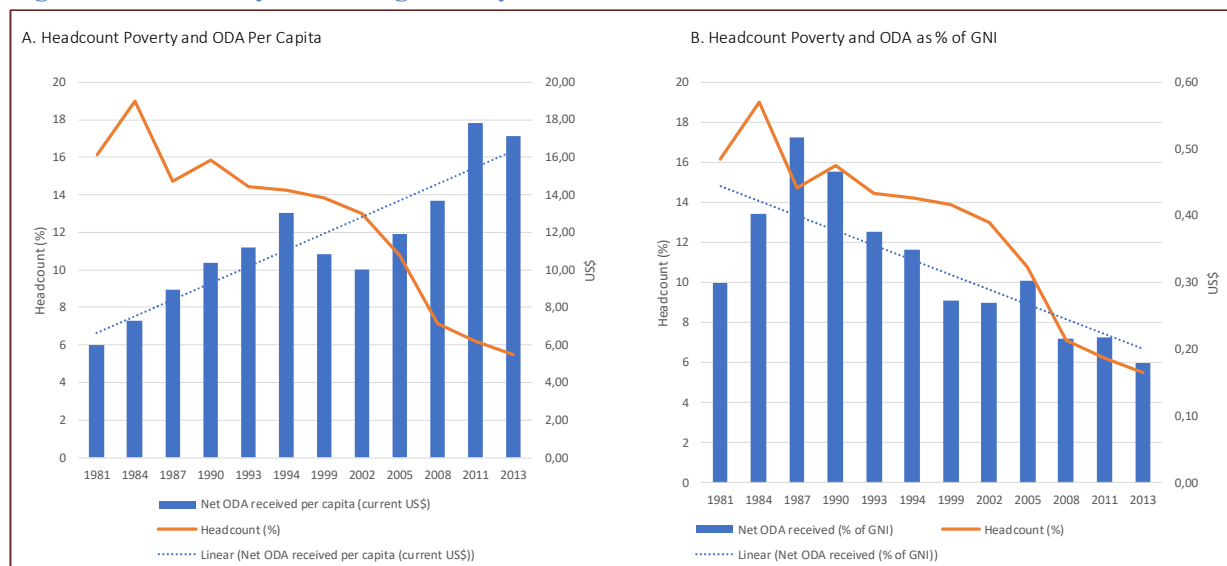
2.5.4.6. *Top 10 aid-recipient countries in Latin America and the Caribbean*

The island of Haiti was at the top of the aid-recipient list in the LAC region, with up to US\$1.042 billion in ODA receipts in 2015. Cuba received the second-highest ODA amount – about half that of the Haiti figure – and Honduras had the third-highest ODA receipts. The other two countries in the top five were Nicaragua (4th) and Guatemala (5th), and the rest of the countries in LAC were Mexico (6th), the Dominican Republic (7th), Costa Rica (8th), El Salvador (9th), and Jamaica (10th).

2.5.4.7. *Poverty and foreign aid dynamics in Latin America and the Caribbean*

Figure 2.43 shows the core movement of the poverty rate and ODA in LAC. Chart B indicates that ODA/GNI increased in the early 1980s until it peaked at 0.52% in 1987, and it then began to decrease, while the poverty rate peaked at 19% in 1984 before decreasing. This demonstrates that poverty and aid in LAC followed the same path over the study period.

Figure 2.43: Poverty and foreign aid dynamics in Latin America and the Caribbean



Source: World Bank (2016a, 2017)

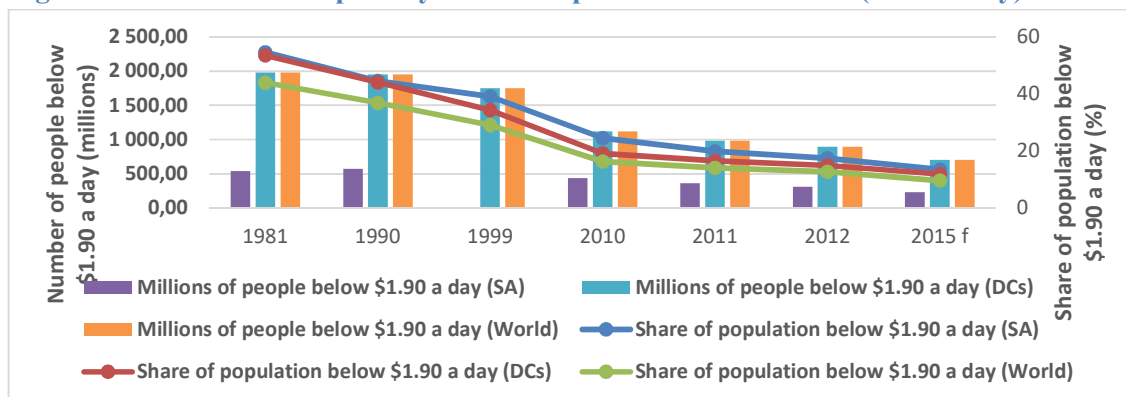
2.5.5. Poverty and foreign aid dynamics in South Asia

2.5.5.1. Extreme poverty trends in the South Asia region

South Asia¹⁹ has achieved more rapid poverty reduction over the past 30 years, even though it is still home to approximately a third of the world's poor. As presented in Figure 2.2 and Figure 2.3, SA had the second highest poverty rate (54.65%) in 1981 after the EAP – even higher than SSA (49.18%) – but it has since managed to reduce this rate to an estimated 13.5% in 2015. The number of people living in extreme poverty fell from 538 million in 1981 to around 230 million in 2015 (see Figure 2.44). However, despite this progress, the region still had roughly a third of the world's extremely poor population in 2015.

¹⁹ The sample of countries in South Asia is seven, including India, Bangladesh, Nepal, Pakistan, the Maldives, Sri Lanka, and Bhutan.

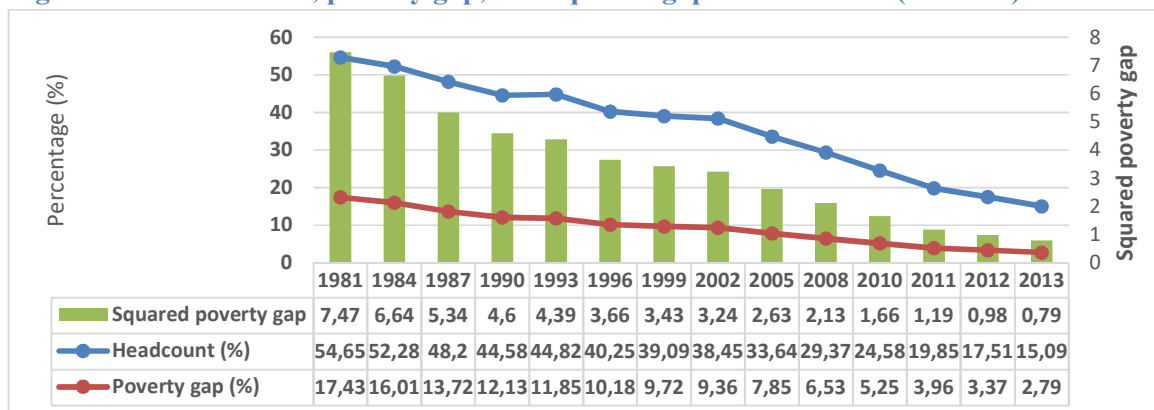
Figure 2.44: South Asian poverty levels compared to world trends (\$1.90 a day)



Source: World Bank (2016a, 2017)

Figure 2.45 shows that the headcount, the poverty gap, and the SPG for SA has been decreasing over the years. The severity of poverty in the region, as the PG indicates, shows that absolute (extreme) poverty was severe in 1981, estimated at almost 20%. By 1999, the PG had fallen to less than 10% and continued to decrease to less than 3% in 2013. The same trend was recorded for the SPG which decreased from 7.47 in 1981 to less than 1 in 2013.

Figure 2.45: Headcount, poverty gap, and squared gap in South Asia (US\$1.90)



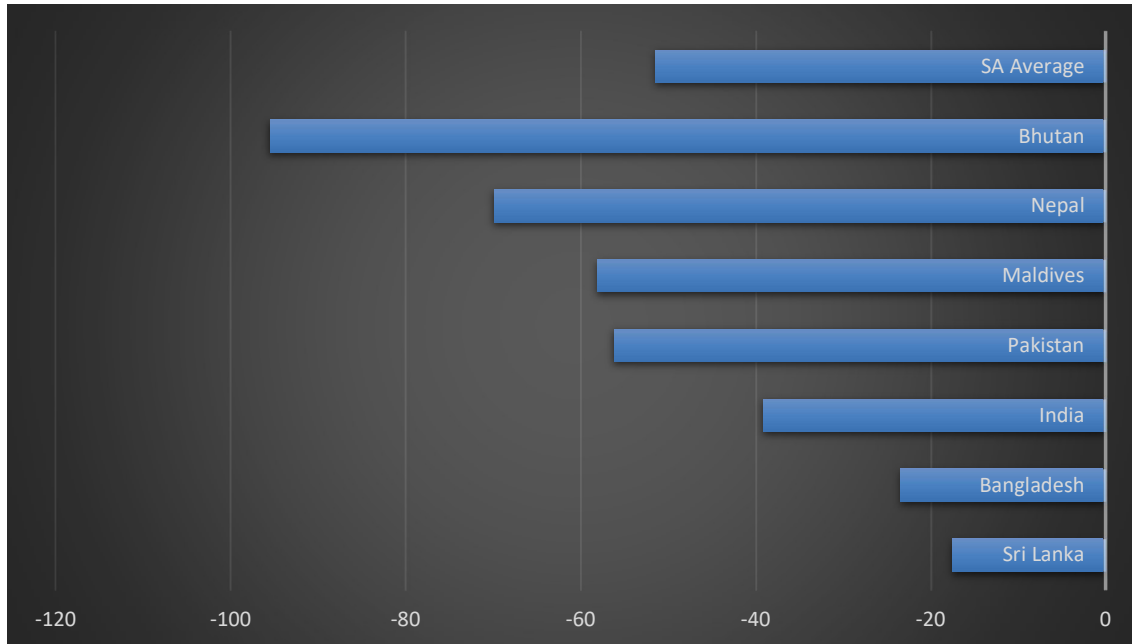
Source: World Bank (2016a)

2.5.5.2. South Asian country poverty dynamics

All seven countries in SA recorded decreases in poverty rates ranging from 17 percentage points to 96 percentage points between 1981 and 2013. As shown in Figure 2.46, Bhutan had the largest decrease in poverty rates from 97% in 1981 to 1% in 2013. This is a remarkable achievement, though its population is less than 1 million people and its impact therefore could

not be felt at a regional level. Approximately 183 million people were lifted from absolute poverty during the same period in India, 38 million in Pakistan, 11 million in Bangladesh, and 10 million in Nepal. For the other smaller countries, the number was less than 2.5 million people per country.

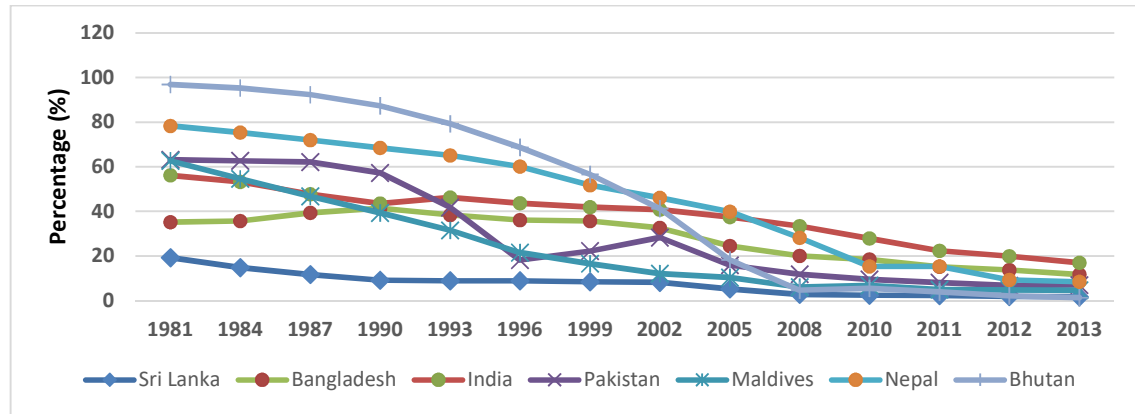
Figure 2.46: Decrease in poverty rates by country in South Asia (1981-2013)



Source: World Bank (2016a)

As depicted in Figure 2.47, the country with the highest poverty rate in 2013 was India (17.03%), followed by Bangladesh (11.7%). All the other countries had single-digit poverty rates, ranging from 1% to 7%. The poverty trends in Figure 2.47 indicate that all the SA countries recorded sharp declines in poverty rates, except for India and Pakistan, which experienced some fluctuations over the years. For example, the poverty rate for Pakistan decreased from 63% in 1981 to 18% before rising to almost 30% in 2002, and it then descended to 7% in 2013.

Figure 2.47: Headcount poverty rate in South Asian countries (US1.90)

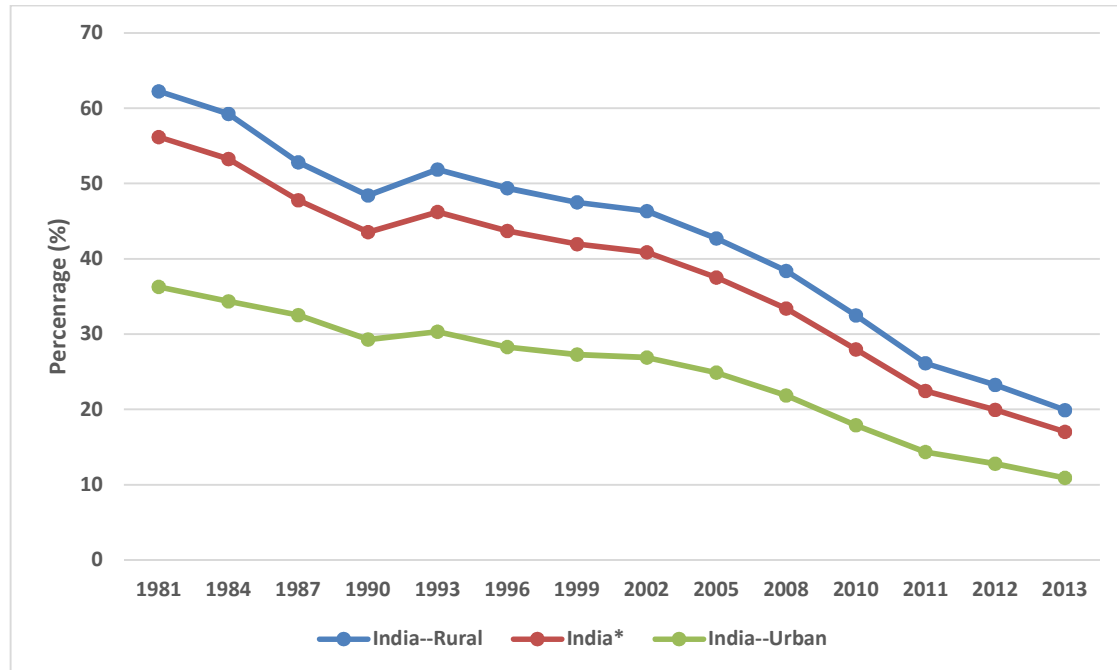


Source: World Bank (2016a)

In their review of the effectiveness of the MDGs, the World Bank and the IMF (2015) argued that MDGs have influenced national development planning frameworks in Bangladesh, India, and Nepal, and they attributed the fall in poverty to these policies. Furthermore, as in EAP, where the region’s success in fighting poverty was mainly driven by China, the SA region is also dominated by India which. India constituted approximately 80% of SA’s total population in 2013.

Figure 2.48 compares the headcount poverty rates for urban and rural areas in India. The figure demonstrates that both rural and urban areas have experienced sharp declines in poverty rates over the years, with steeper declines in rural areas. During this period, India managed to lift more than 180 million people out of extreme poverty. Despite this progress, 218 million people were still living on less than US\$1 a day in 2013.

Figure 2.48: India's headcount ratio (US\$1.90)



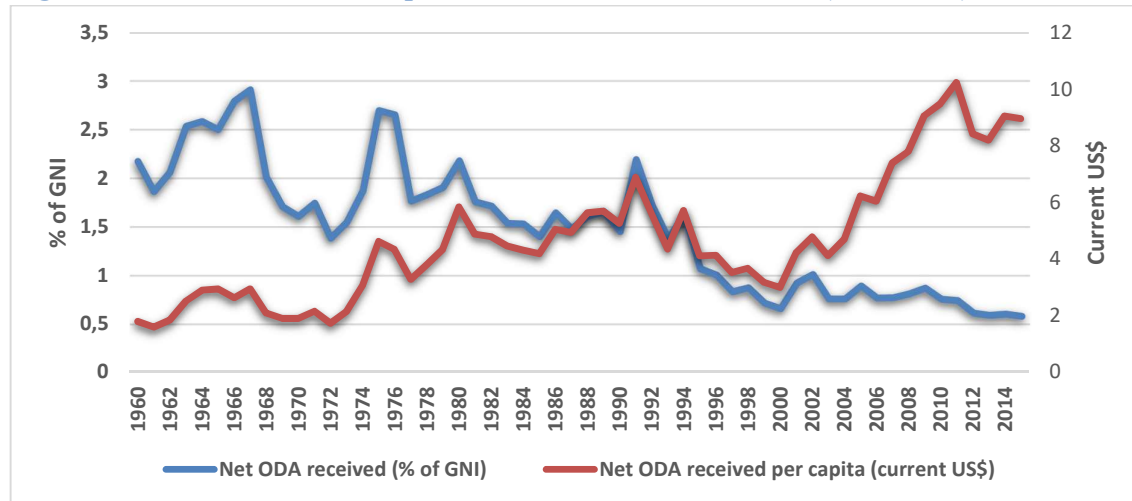
Source: World Bank (2016a)

2.5.5.3. Overview of foreign aid trends in South Asia

Historically, the SA region has not been a major recipient of foreign aid. However, soon after the 9/11 event, the USA and other western countries began to disburse more aid to the region. The main aid motives were generally political, including combating terrorism, advancing bilateral military agreements, combating socio-economic and political instability and trying to reduce extremism (Lum, 2008). This explains the increase in U.S.A. aid disbursements to countries such as Afghanistan and Pakistan. Natural disasters such as earthquakes; tsunamis; and heavy rains in Sri Lanka, Pakistan, India, and Bangladesh have also attracted humanitarian assistance in the SA region.

Overall, foreign aid receipts in the SA region have fluctuated as shown in Figure 2.49. In addition, as indicated above, the main motives for aid in the region have been humanitarian and political in nature. However, terrorism has led to rethinking to include anti-poverty initiatives and developmental aid. This has been cemented by the introduction of the MDGs.

Figure 2.49: Net official development assistance for South Asia (1960-2015)



Source: World Bank (2017)

2.5.5.4. Foreign aid graduates in South Asia

As at 2015, all countries in the region relying on aid have not yet discontinued receiving it. For countries such as Bangladesh, yearly floods and famine make it difficult for them to cut all aid ties. Moreover, Bangladesh, India, and Afghanistan have to deal with the problem of citizens' limited access to basic resources, which are often challenging for governments to address on their own, hence the need for developmental aid to support poor families in becoming self-reliant.

2.5.5.5. Top 10 aid-recipient countries in South Asia

There are only eight SA countries in the present study's sample. Of these countries, Afghanistan was the leading receiver of ODA in 2015 (US\$4.2 billion). In the same year, India was the second-largest receiver (\$3.1 billion). However, India has been the largest receiver, above Afghanistan, since the 1960s into 2003. The other top aid receivers in the region are Bangladesh (3rd at US\$2.6 billion, fuelled by persistent natural disasters), Georgia (4th), Armenia (5th), Bhutan (6th), and Azerbaijan (7th).

2.5.5.6. Poverty and foreign aid dynamics in South Asia

Chart B in Figure 2.50 illustrates that when headcount poverty was approximately 55% in 1981, the region was receiving aid equivalent to 2% of its GNI. As this aid sharply decreased over the years, the ODA/GNI also followed the same path. This suggests that aid in SA was responsive to poverty levels.

Figure 2.50: Poverty and foreign aid dynamics in South Asia



Source: World Bank (2016a) and World Bank (2017)

2.5.6. Poverty and foreign aid dynamics in the Middle East and North Africa

2.5.6.1. Extreme poverty trends in the Middle East and North Africa

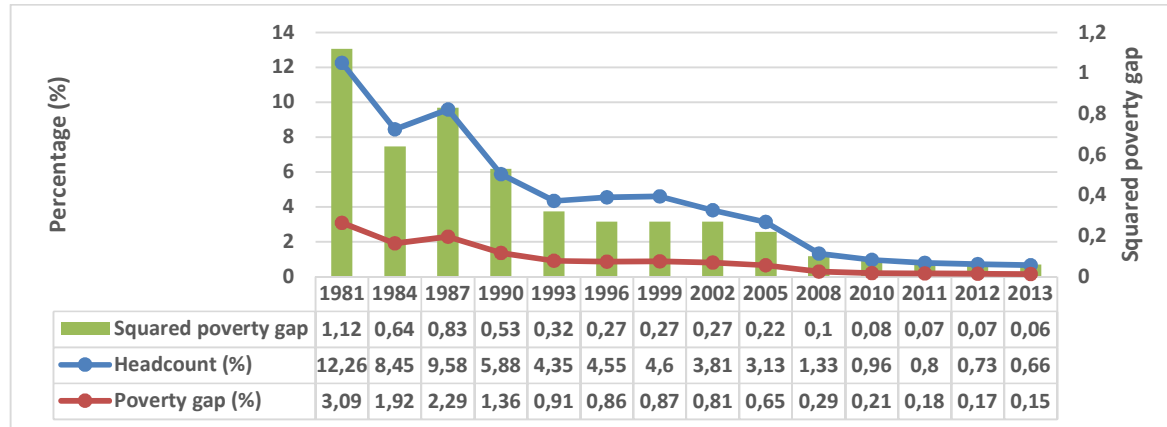
The MENA²⁰ region was estimated to have a population of around 412 million people in 2016 (World Bank, 2017). It is a fairly small region, with only five countries in this study’s sample, namely Djibouti, the Islamic Republic of Iran, Morocco, Tunisia, and the West Bank and Gaza.

As portrayed in Figure 2.51, absolute poverty levels in MENA have generally been low. This is partly because of the abundance of oil in the region. The proportion of people living in

²⁰ North African countries include Algeria, Egypt, Libya, Morocco, and Tunisia. The Middle East countries are Djibouti, Iran, Iraq, Jordan, Lebanon, Malta, Oman, Palestine, Saudi Arabia, Syria, and Yemen.

extreme poverty was 12.26% in 1981 and fell dramatically to 0.66% in 2013. The region managed to reach its MDG target of halving extreme poverty in less than 20 years.

Figure 2.51: Headcount, poverty gap, and squared gap in the Middle East and North Africa (US\$1.90)

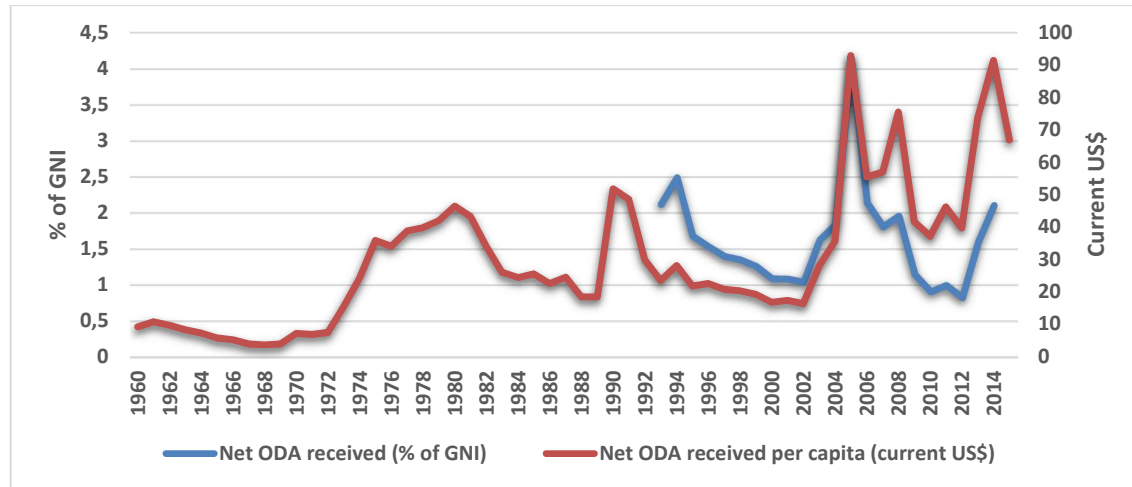


Source: World Bank (2016a)

2.5.6.2. Overview of foreign aid trends in the Middle East and North Africa

The main foreign aid trends and flows to MENA are presented in Figure 2.52. Since the 1970s, the MENA region has been the world’s largest recipient of ODA per capita – the third largest global recipient of total aid after SSA and EAP (Harrigan, 2011). The main drivers of aid to the region are geopolitics, commercial considerations (such as oil), responses to regional conflicts, and anti-terrorism (Yousef, 2004; Harrigan, 2011; Middle East Monitor, 2017).

Figure 2.52: Net official development assistance for the Middle East and North Africa (1960-2015)



Source: World Bank (2017)

Given the importance of this region in geopolitics, it became a battleground between Russia and the USA during the Cold War. The main motives for aid in this region were economic development (poverty reduction), the influence of ideologies in receiving countries, and the furthering of other political interests (Harrigan, 2011). In recent years, in response to the MDGs, ODA to the region has been increasing despite the fact that MENA is generally a rich region. Aid in this territory was mostly targeted at ensuring that all citizens in countries had access to basic human needs such as food, water and sanitation services, education and general well-being such as respect for human rights and freedom.

2.5.6.3. Foreign aid graduates in the Middle East and North Africa

A significant number of foreign aid graduates from aid exist in the MENA region. In the late 90s, countries such as the United Arab Emirates, Israel, and Kuwait hardly relied on aid. However, countries such as Bahrain, Oman, and Saudi Arabia only stopped receiving aid more recently in 2005.

2.5.6.4. Top 10 aid-dependent countries in the Middle East and North Africa

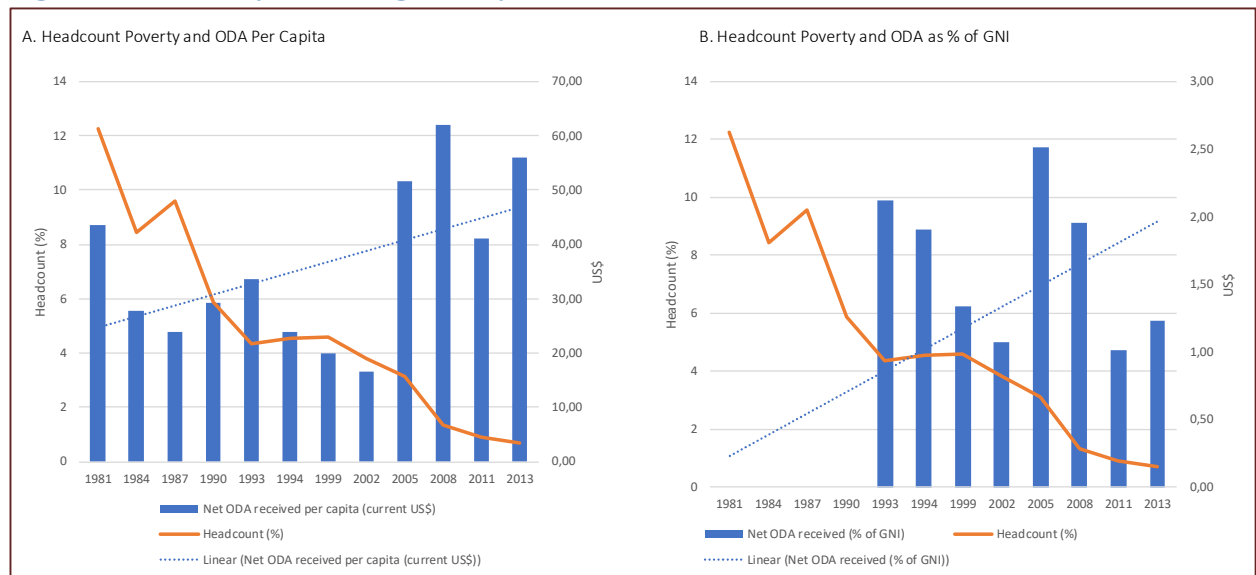
In these regions, Syria had the highest in total aid receipts by 2015 (US\$4.9 billion), while Egypt was second (US\$2.5 billion) and Jordan third, with US\$2.1 billion in aid receipts. The top five are also made up of the West Bank and Gaza strip (fourth) and Yemen (fifth). Other

countries in the top list are Morocco (6th), Iraq (7th), Lebanon (8th), Tunisia (9th), and Libya (10th).

2.5.6.5. Poverty and foreign aid dynamics in the Middle East and North Africa

Though all four countries witnessed dramatic falls in poverty over the study period, Djibouti’s poverty rate increased by 21.46 percentage points. By 2013, almost 23% of the small group of about 820 000 people, were living in conditions described as extreme poverty. Figure 2.53 shows that overall, the MENA region continues to receive a higher proportion of aid compared to its poverty levels.

Figure 2.53: Poverty and foreign aid dynamics in the Middle East and North Africa



Source: World Bank (2016a, 2017)

2.5.7. Poverty and foreign aid dynamics in selected countries

Table 2.10 lists the top countries in terms of poverty rate reduction. Bhutan, China, Vietnam, and Timor-Leste, in ascending order, have recorded the highest poverty rate reductions of above 70 percentage points between the period 1981 and 2013. Bhutan managed to reduce its headcount poverty rate from a high of 95% to around 1% in the same period. Thirty-five per cent of the countries in Table 2.10 are from SSA, 30% from EAP, and 25% from SA. For the SSA region, the largest decreases in poverty were recorded in Cabo Verde (58.59 percentage

points), Guinea (57.07), and Uganda (52.37). In total, 29 out of 45 SSA countries recorded a decrease in poverty over the study period.

Table 2.10: Top 20 most-improved countries in reducing poverty (1981-2013)

Country	Region	Headcount poverty rate (%)			Net ODA received (% of GNI)		
		1981	2013	Change (1981-2013)	1981	2013	Average (1981-2013)
Bhutan	SA	95.36	1.38	-95.54	7.84	8.89	14.86
China	EAP	88.32	1.85	-86.47	0.10	0.00	0.24
Vietnam	EAP	82.00	3.18	-78.82	0.00	2.62	3.50
Timor-Leste	EAP	99.87	21.76	-78.11	0.00	5.54	16.56
Nepal	SA	75.31	8.46	-69.90	7.72	4.22	7.93
Indonesia	EAP	76.84	9.83	-67.01	1.33	0.01	0.88
Cabo Verde	SSA	65.38	6.79	-58.59	39.66	14.19	26.18
The Maldives	SA	54.62	4.67	-58.07	0.00	1.71	7.05
Guinea	SSA	92.71	35.64	-57.07	0.00	9.85	9.40
Pakistan	SA	62.76	6.99	-56.21	3.56	0.88	2.07
Turkmenistan	ECA	54.81	2.06	-52.75	0.00	0.11	0.70
Uganda	SSA	87.01	34.64	-52.37	7.21	7.04	11.26
Swaziland	SSA	90.94	41.06	-49.88	0.00	2.37	2.48
Chad	SSA	79.54	34.90	-44.64	6.22	3.83	10.70
Cambodia	EAP	45.69	1.69	-44.00	0.00	5.80	9.37
Botswana	SSA	54.10	13.04	-41.06	10.40	0.62	3.89
Burkina Faso	SSA	85.62	45.11	-40.51	11.45	9.60	13.14
Lao PDR	EAP	54.33	15.09	-39.24	0.00	4.35	11.18
India	SA	53.25	17.03	-39.15	1.01	0.11	0.47
St. Lucia	LAC	67.97	29.30	-38.67	5.49	2.04	3.88

Source: World Bank (2016a, 2017)

In the EAP region, the largest decreases in poverty were recorded in China (86.47 percentage points), Vietnam (78.82), Timor-Leste (78.11), and Indonesia (67.01) in decreasing order. In total, 18 out of 19 countries recorded a decrease in poverty over the study period with the exception of the Federated States of Micronesia. The World Bank and the IMF (2015) argue that the MDGs influenced national development planning frameworks in nine EAP countries, including Timor-Leste, Indonesia, Cambodia, the Lao People's Democratic Republic,

Mongolia, and Vanuatu. However, extreme poverty levels in Vanuatu only decreased by 0.31 percentage points from 14.62% in 1981 to 14.31% in 2013.

China's remarkable progress is regarded as a world miracle, as the country lifted almost 200 million people during this period, recording a reduction in the poverty rate from 88% to less than 2%. Given the number of people lifted from poverty and the dramatic decrease in poverty levels, the key trends in China's poverty reduction journey are highlighted next. China began its pro-market economic reforms, including market liberalisation, from around 1980 onwards (Ravallion, 2011). At this time, the national poverty levels were high, around 88.32% in 1981. One of the key reforms, which is credited for the major reduction in poverty, particularly in rural areas, was the agriculture reform, known as the Household Responsibility System (Ravallion, 2011, p. 79). The process included the dismantling of collectives and the equitable allocation of all farmland to individual farmers (Ravallion & van de Walle, 1991; Ravallion, 2011). Perkins *et al.* (2013, p 189) summarised the discourse of China's success by stating that "*many observers trace the start of China's success to the economic reforms of the late 1970s, which decollectivized agriculture and encouraged farm households to produce and market more of their output, pulling them out of poverty*". It is important to note that the levels of net ODA received (% of GNI) in China were low throughout the study period, averaging at 0.24%.

As with China, India and Brazil helped their respective regions pull the majority of people out of extreme poverty. During this period, India managed to lift more than 180 million people out of extreme poverty. However, despite this progress, 218 million Indians were still living on less than US\$1 a day in 2013. Brazil's fight against poverty, on the other hand, has been impressive. It managed to reach the MDG target well ahead of schedule. The country reduced headcount poverty rates from a high of 30% in 1984 to less than 5% in 2013, and the total population in absolute poverty decreased from 40 million to less than 10 million during the same period. However, the 1980s and early 1990s were not easy, as poverty levels were rising. Ravallion (2011, p. 84) attributes this to the country's low economic growth; hyperinflation; high fiscal deficits; and general macroeconomic populism, which was prevalent in the LAC region. Ravallion (2011) further credits the sharp decreases in poverty from the mid-1990s to the Bretton-Woods-induced ESAPs, which were characterised by the privatisation of state-owned companies, trade liberalisation, fiscal discipline, and macroeconomic stability. Brazil also introduced cash transfer programmes and reformed its social policies to make them pro-poor (Ravallion, 2011, p. 86).

Table 2.11: Worst-performing countries, poverty increased (1981-2013)

		Headcount Poverty Rate (%)			Net ODA received (% of GNI)		
Country	Region	1981	2013	Change (1981-2013)	1981	2013	Average (1981-2013)
Liberia	SSA	4.17	54.08	49.91	10.41	35.52	31.08
Madagascar	SSA	53.17	78.02	24.85	5.42	4.35	10.33
Uzbekistan	ECA	0.5	23.17	22.67	0.00	0.49	0.82
Djibouti	MENA	1.06	22.52	21.46	0.00	0.00	16.53
Cote d'Ivoire	SSA	4.1	25.36	21.26	1.85	7.64	5.06
Tajikistan	ECA	2.11	22.56	20.45	0.00	3.77	7.84
Guinea-Bissau	SSA	48.22	67.32	19.10	47.44	9.15	35.78
The DRC	SSA	60.85	75.89	15.04	3.02	10.25	9.22
Zambia	SSA	47.07	60.5	13.43	8.06	4.00	15.60
Zimbabwe	SSA	4.04	17.47	13.43	1.64	7.70	5.44
Togo	SSA	40.02	51.9	11.88	9.21	7.02	10.16
Nigeria	SSA	38.37	49.74	11.37	0.06	0.48	0.98
Georgia	ECA	2.84	11.49	8.65	0.00	4.14	5.69
Venezuela, RB	LAC	1.27	8.05	6.78	0.02	0.01	0.04
Malawi	SSA	66.53	70.3	3.77	12.84	20.75	19.83
Rwanda	SSA	57.13	60.34	3.21	12.13	13.52	19.35
Comoros	SSA	10.77	13.96	3.19	32.17	15.24	19.06
Gabon	SSA	3.69	6.7	3.01	1.34	0.50	1.53

Source: World Bank (2016a, 2017)

Table 2.11 lists countries that have fared poorly in terms of the fight against poverty. In fact, poverty levels have increased by at least 3 percentage points in each of the 18 countries listed. More than 70% of these worst-performing countries are in the SSA region, with the weakest-performing country being Liberia, which has been receiving the highest proportion of ODA/GNI.

Furthermore, an analysis of poverty rate levels by the population of people living on less than US\$1.90 a day reveals that around three-fifths of the world's extreme poor are concentrated in only five countries, namely Bangladesh, China, the Democratic Republic of Congo, India, and

Nigeria. Moreover, the top 10 poor countries in terms of the population in extreme poverty consist of slightly more than 70% of the world's extreme poor. Other countries in the top 10 include Ethiopia, Indonesia, Madagascar, Pakistan, and Tanzania.

2.6. Conclusion

The main objective of this chapter was to discuss the dynamics and trends of poverty and foreign aid at a global and regional level. With regard to poverty, the chapter discussed the causes of, definitions, measurements, and spread of poverty in the developing world in general and the regional poverty reduction dynamics. The chapter described the three broad approaches to the measurement of poverty, namely the capability, assets-based, and multidimensional poverty measures. The description included the differences between the three, their corresponding indicators, and the advantages and disadvantages of each method. The study then settled for the assets-based income or monetary indicators of poverty. This was because they were deemed to be simple, transparent, and widely used by the UN, the World Bank, and other development institutions for global poverty measurements and the determination of foreign aid allocation (Deaton, 2010, p. 6).

With regard to foreign aid, this chapter also provided a global overview in terms of its history, volumes, and the main bilateral donors. In addition, the trends and co-movement of extreme poverty and foreign aid were also presented, paying particular attention to regional dynamics and the developing world's status in meeting the MDGs and prospects for the SDGs.

The main finding from Chapter 2 is that the developing world has become increasingly prosperous. Some important points in line with this finding will now be briefly summarised. First, overall, global headcount poverty rates (at US\$1.90 a day) decreased considerably from approximately 44% in 1981 to less than 10% in 2015. For the developing world, the poverty rate decreased from 53% to 11.9% over the same period. A trend analysis of poverty by regions revealed that the composition of global poverty across regions has changed significantly. EAP registered a dramatic decline which has been described as miraculous (Quibria, 2002). This region was the poorest in the world, with more than 80% of its population living on less than US\$1.90 a day; however, it reduced this rate to 4% by 2015. Poverty rates in SA have also been declining, but not as sharply as in the EAP region, and the rates remain higher than the developing country average. SSA on the other hand saw a steady increase in poverty rates

between the 1980s and 1990s before a gradual turn; nevertheless, it remains the poorest region with more than 35% of its citizens living on less than US\$1.90 a day. Half of the world's extremely poor people are now increasingly concentrated in the SSA region, where poverty depth and breadth remain a challenge. The growing global share of the SSA region reflects slower poverty reduction amid rapid population growth (World Bank, 2016, pp. 5-6). These recent trends demonstrate that poverty is becoming increasingly concentrated in SSA and SA regions, where its depth and breadth remain a challenge (World Bank, 2016b, p. 1).

Second, at a global level, the world met the MDG target of halving the global poverty rate from the 1990 levels by 2015. In 1990, there were around 1.9 billion people living below \$1.90 a day (constituting 36.9% of the world population) and this number is projected to have reduced to 700 million people, with an estimated global poverty rate of 9.6%. Therefore, the world met the MDG target in 2010, which is 5 years ahead of schedule. This fall, however, was not uniform across regions and time periods. SSA is the only region which has not met its MDG target. It remains the poorest region, with more than 35% of its citizens living on less than US\$1.90 a day and housing around half of the world's extremely poor people by the year 2015.

Third, the total annual ODA reached approximately US\$170.32 billion per year in 2015 (OECD, 2017). By 2013, it was estimated that total foreign aid since 1960 had amounted to US\$4.7 trillion, in 2013 prices. However, the proportion of ODA to other capital flows in developing countries which used to be around 55% in the 1960s has since decreased to around 30% in recent years. Private flows, which include FDI and commercial bank loans have instead grown from 29% to 57% over the same period. Nevertheless, foreign aid still remains one of the most important tools in donors' foreign policy mix and a vital source of funds for development in recipient countries. This study has documented that even though the motives of foreign aid allocation have changed over the last five decades, the promulgation of the MDGs firmly positioned poverty reduction at the centre of foreign aid allocation.

Forth, it was also noted that although a number of policymakers and academics still criticise foreign aid, roughly 60 countries have graduated from the DAC List of ODA recipients since 1970, mainly as a result of increases in their per capita income. It was found that between the period 1970 and 2017: (i) a total of 17 countries have been added to the ODA list, including South Sudan in 2011; (ii) 60 countries have graduated from the list, mainly due to increases in their per capita income; (iii) out of these 60 graduates, 45 graduated between 1991 and 2018;

and (iv) it is projected that another 24 countries and territories will graduate by 2030.. The first graduate from the SSA region is the Seychelles in 2018.

The results of an exploratory review in this chapter suggest that a number of countries have prospered over the years and have therefore not been made worse by foreign aid. Global poverty represented by headcount poverty rates (at US\$1.90 a day) has been decreasing considerably from around 44 percent in 1981 to less than 10 percent in 2015.

Fifth, the analysis of the co-movements of foreign aid and extreme poverty suggests that, on average, more foreign aid has been allocated to poorer regions, and as the poverty rates decreased, foreign aid disbursements also decreased. Given that the world met the MDG target well ahead of schedule, the increasing rate at which many developing countries are graduating from reliance on foreign aid (because of increases in their per capita income), and the renewed focus of aid on poverty as per the SDGs, a number of developing countries are forecasted to reach the “zero extreme poverty” target by 2030.

CHAPTER 3: THEORETICAL AND EMPIRICAL ANALYSIS OF THE RELATIONSHIP BETWEEN FOREIGN AID AND POVERTY

3.1. Introduction

The foregoing chapter discussed the dynamics of poverty and foreign aid in developing countries. This chapter describes in detail the theoretical and empirical literature on the relationship and impact of foreign aid and/or poverty. The theoretical sections of the chapter explore the theoretical links and transmission mechanisms through which foreign aid affects poverty, and they present some major debates on the effectiveness of foreign aid in development in general and poverty reduction in particular. Topical discussions on the aid-growth-poverty nexus, such as development theories, “Dutch-disease”, “aid fungibility”, “poverty traps”, and the “micro-macro paradox”, among others – are discussed in detail. The empirical section highlights tropical studies on the effectiveness of foreign aid in poverty reduction and the causal relationships between these two main variables.

Section 3.2 presents the theoretical link between foreign aid and poverty, while the channels through which foreign aid affects poverty are discussed in Section 3.3. The significant debate on the effectiveness of foreign aid is depicted in Section 3.4. Then, Section 3.5 provides a picture of the main empirical literature, and Section 3.6 offers a critique of existing literature. Thereafter, Section 3.7 summarises the main findings from the literature review before Section 3.8 concludes the chapter.

3.2. Theoretical Link between Foreign Aid and Poverty

The study of foreign aid by economists began in the 1950s, though aid was still a fairly new phenomenon, having been officially formalised in 1947. Earlier theorists suggest that foreign aid provides the necessary capital to boost developing countries into self-sustaining economic growth (Nurske, 1953; Lewis, 1954). McGillivray *et al.* (2006) noted that there was no empirical research assessing the impact of foreign aid in the 1950s. This section therefore deliberates the major development economics theories which have been used to justify the importance of aid for development. Some of these theories were also used to estimate the total amount of foreign aid required (aid allocation) and to evaluate the effectiveness thereof.

3.2.1. Vicious and virtuous circles

Some development theorists such as Rosenstein-Rodan (1943), Murphy *et al.* (1993) and Galor and Zeira (1993) began by investigating why some poor countries were failing to grow and why poverty seemed to be self-reinforcing (Schaffner, 2014). It was suggested that underdevelopment and poverty were perpetuated by one or more “*vicious circles*”, which had the effect of preventing growth and confining the economy to a low-income or “*poverty trap*” (Clunies-Ross *et al.*, 2009, p. 109). On the other the hand, “*virtuous circles*” were thought to be opposing forces that promote growth by setting into motion self-reinforcing, income-raising systems that work through “*circular and cumulative causation*” (Myrdal, 1957; Fujita, 2004).

According to Clunies-Ross *et al.* (2009, p. 109), “*a typical vicious circle would see initial low productivity levels leading to low per capita income levels – which place a very low ceiling on attainable levels of savings – which, in turn, rule out the new capital investment needed to improve productivity. The economy is stuck in low-productivity, low-income trap*”. Therefore, the vicious and virtuous circles theory can be termed the poverty trap model (Murphy *et al.*, 1989). These theories suggest that a wide range of overlapping vicious circles can hinder attempts by the poor to climb out of poverty, thereby impairing national growth performance (Clunies-Ross *et al.*, 2009, p. 110). It is further argued that the consequences of poverty may inhibit people from breaking out of it. Many economists argued for a “*special effort to push the economy over a threshold into a region where sustained increase in per capita incomes is possible*” (Clunies-Ross *et al.*, 2009, p. 111). According to Solow (1970), there was a need for “*a major burst of investment [to] lift the system into a self-generating expansion of income and capital per head*”²¹.

Increasing the rate of investment was therefore suggested as the means to grow and break the poverty trap. It was argued that developing countries needed a “*big push*” to free themselves from the constraints of the low-level trap (Rosenstein-Rodan, 1943; Clunies-Ross *et al.*, 2009). It was also further argued that efforts to promote growth would be most successful if accompanied by simultaneous attempts to reduce poverty and improve income distribution. Foreign aid would provide the much-needed increase in investment. The main argument was that foreign aid “*jump starts economic growth, and initiates a virtuous cycle whereby*

²¹ As quoted from (Clunies-Ross, et al., 2009, p. 112).

investment generates income and thus raises the economic return to further investment” (Shleifer, 2009, p. 381).

3.2.2. Stages of economic growth theory

The “stages of economic growth theory” is commonly associated with Rostow (1960 and 1990). The theory argues that all countries pass through a series of “stages” as they develop. The initial stage is the traditional society, which is characterised by lower economic growth rates, with more than 75% of the population involved in agricultural activities. The second stage is termed the transitional stage, which involves an increased efficiency of agriculture and a general modernisation of the economy. The third and more critical stage in the development process is take-off. The take-off is assumed to be a result of a sharp increase in the level of savings and investment²², the availability of these funds for entrepreneurs, and the adoption of modern production technologies (Clunies-Ross *et al.*, 2009, pp. 116-117). The fourth and final stages are a drive to maturing and high mass consumption, respectively. This theory was, for some time, widely accepted as the “road map” of the development process for poor countries (Clunies-Ross *et al.*, 2009) and the justification for foreign aid to help poor countries to take-off. According to Easterly (2006, pp. 24-25), Rostow (1960) declared that “*an increase of \$4 billion in external aid would be required to lift all of Asia, the Middle East, Africa, and Latin America into regular growth, at an increase of per capita income say, 1.5 percent per annum*”.

3.2.3. The Harrod-Domar model and gap models

According to Easterly (1997), the Harrod-Domar model is the most widely model applied by development economists and aid policymakers to determine the amounts of aid to be allocated to developing countries. This model is an extension of the Keynesian analysis of the economic growth model by Harrod (1939 and 1948) and a similar but independent study by Domar (1946). The Harrod-Domar equation or relationship is illustrated in Equation 3.1.

$$g = s/v \quad [3.1]$$

²² According to Clunies-Ross *et al.* (2009), this could be from around 5% to well over 10% of GNI.

where

- g is the rate of growth of income (output) in the economy;
- s is the savings ratio or rate of savings (which is assumed to be equivalent to available savings); and
- v is the capital-output ratio.

There are three main assumptions of the model. First, an excess supply of labour exists in the economy; second, economic growth is only constrained by the availability and productivity of capital; and third, the availability of capital (level investment) is determined by the level of savings (McGillivray *et al.*, 2006, p. 1033).

Although it was not the original intention of the creators of the model, development economists used the Harrod-Domar relationship to estimate the savings and investment requirements for specific rates of economic growth (Clunies-Ross *et al.*, 2009). For example, once the capital-output ratio can be estimated accurately, it would be possible to predict the growth rate, given the current savings rate. The savings rate to achieve a targeted growth rate could be equally well estimated. Given that the capital-output ratio (v) was assumed to be constant, the main policy implication was that the higher the savings (investment ratio), the higher the growth rate would be (Hussain, 2001).

The implication for foreign aid allocation was that if the savings rate is too low (which has been the case for most developing countries), given the preferred rate of economic growth, then there is a “financing gap” which needs to be filled to achieve the desired rate of growth²³. The total required investment was compared with available domestic savings to determine the investment gap and the level of foreign resources that would be required to fill the finance gap. Foreign aid could be used to ease the savings constraint, increase the level of available investment and therefore boost the rate of growth and ultimately poverty reduction (McGillivray *et al.*, 2006).

²³ The starting point of the two-gap analysis was that developing countries are constrained by a dearth of capital for investment because of a shortfall in savings. The level of savings available in developing countries was assumed to be below the level required to achieve the target level of growth (Clunies-Ross *et al.*, 2009, p. 119).

Chenery and Bruno (1962) and Chenery and Strout (1966) extended the Harrod-Domar model from the original “savings-investment gap” to include the “foreign exchange gap”. It became known as the “two-gap or dual-gap model”. According to Hussain (2001, p. 2), the World Bank computerised the Chenery’s version of the Harrod-Domar model. Easterly (1997) argued that this version (and its similar updates) were used by around 90% of country economists in the World Bank to make economic growth and resource requirement predictions. The foreign exchange gap was premised on the notion that in order for developing economies to grow at acceptable rates, the importation of significant quantities of capital goods and other essential inputs for production are necessary (Clunies-Ross *et al.*, 2009). It was further argued that developing countries do not have the export earnings to acquire these capital goods for investment (McGillivray *et al.*, 2006). Even with sufficient funds to finance the investment gap, the foreign exchange gap was argued to be “binding” and could retard growth rates. An important assumption for this two-gap model was that local savings could not be easily turned into foreign exchange, at least in the short term. Foreign aid would thus play a dual role: augmenting the amount of resources available for investment and providing the much-needed foreign exchange.

Bacha (1990) and Taylor (1990, 1994) identified a third gap: the “fiscal gap”. The main argument was that some developing countries’ governments do not have the “*revenue raising capacity to cover the desired level of investment*” (McGillivray *et al.*, 2006, p. 1034). Therefore, foreign aid given directly to recipient governments could potentially ease the fiscal gap provided that the aid is used for investment purposes.

In summary, the Harrod-Domar and the gap models were used to justify the importance of aid to developing countries. Using the three-gap models (the savings-investment, the foreign exchange, and the fiscal balance gap), it was argued that foreign aid would supplement low savings and therefore increase the level of investment funds, provide the foreign exchange needed for the importation of crucial capital goods and inputs and boost domestic revenues. The overall aim was to raise savings and investments, which were assumed to be key for sustainable economic growth and poverty reduction. Early studies on aid effectiveness investigated the impact of aid on savings and investment and assumed that “*one dollar of foreign aid will increase savings and investment by one dollar and therefore lead to increases in growth*” (McGillivray *et al.*, 2006, p. 1034).

The Harrod-Domar models have been criticised for being too rigid and unrealistic. For example, the models assume that the marginal propensity to save and the capital-output ratio are constant, even in the long run. The harshest critic of the Harrod-Domar and the gap models was Easterly (1997). He asserts that “*Domar’s model was not intended as a growth model, made no sense as a growth model, and was repudiated as a growth model forty years ago by its creator*” (Easterly, 1997, p. 2). Hussain (2001) supported this assertion and developed an alternative model, which is explained in the following sub-section. Despite the criticism, Masud and Yontcheva (2005) argued that the Harrod-Domar model and the two-gap model by Chenery and Strout (1966) remain the most influential theoretical underpinnings of the AEL.

3.2.4. The Thirlwall-Hussain model

The Thirlwall and Hussain (1982) model, also known as the balance of payments or constrained growth model is based on Thirlwall’s law²⁴ (Thirlwall, 1979). This states that the rate of growth of any open economy is equal to its export volume growth divided by the income elasticity of demand for imports (Thirlwall, 1979). Thirlwall and Hussain (1982) extended this law and showed the effects on economic growth emanating from an initial imbalance in the current account, terms of trade, and capital inflows. This extended model can be used to forecast growth, measure the “financing gap”, formulate policy advice, and offer indicators for estimating the development effectiveness of foreign aid (Hussain, 2001).

Unlike neo-classical growth theories, which are supply-side models, the one by Thirlwall and Hussain (1982) is a demand-side model. It postulates that the main binding limitation on growth in an open economy is a shortage of foreign exchange. The model contends that a country’s balance of payments position is the main constraint on growth, because it imposes a limit on demand to which supply can adapt (Hussain, 2001). It is further argued that economic growth can only be faster and sustainable if exports are expanding more than imports. Countries’ growth strategies should thus be anchored to “*foreign exchange productivity of investment*” such as foreign exchange earnings (Hussain, 2001, p. 5).

Hussain (2001) argued that foreign aid can contribute to higher growth rates if it can be used to finance the excess of imports over exports. It is further argued that if no corresponding

²⁴ Named after Thirlwall (1979).

change in the production structure and the pattern of trade in the recipient country occurs, then the economy will continue to depend on foreign aid for higher growth rates. Therefore, if the fundamental objectives are faster economic growth and poverty reduction, then the allocation of foreign aid should be such that it can help poor countries graduate to a self-sustaining growth path. The model suggests two broad indicators of measuring the long-term development effectiveness of foreign aid: (i) the ability to promote export growth relative to that of imports in the recipient country and (ii) the creation of an environment that attracts private capital into the aid-recipient country (Hussain, 2001).

Hussain (2001) applied the Thirlwall and Hussain (1982) model to the estimation of the financing gap for a sample of 24 African countries, as an alternative model to the Harrod-Domar approach. The study concluded that foreign exchange is the binding constraint in most African countries, and the effectiveness of foreign aid should therefore be measured in terms of foreign exchange earnings (or savings) (Hussain, 2001).

However, the Thirlwall and Hussain (1982) model has not been able to find traction in development economics and the foreign aid practitioners' community. It was criticised by Ranaweera (2003, p. 2), who asserts that it was an "*incomplete model*".

3.3. Channels by which Foreign Aid Affects Poverty

Mosley *et al.* (1987, p. 616) highlighted three "*effects*" through which foreign aid can influence development in a recipient country. First, aid can have direct effects when its disbursement can be traced directly to the project for which the aid money was originally intended. Second, aid can affect development outcomes indirectly through its influence on the recipient government's public-sector spending. The availability of foreign aid presents the recipient country with an opportunity to reallocate its expenditure. Lastly, the "*transfer of aid money raises the prices of some goods, depresses the price of some others, and hence has side-effects on the private sector of the recipient economy through the price system*" (Mosley *et al.*, 1987, p. 617).

Guillaumont (2011) and Guillaumont and Wagner (2014) recently described three main macroeconomic channels through which foreign aid can affect poverty. These include an impact through growth, an impact through social public expenditures, and the macroeconomic

stabilising effect of aid. A clear link exists between these channels and the “effects” proposed by Mosley *et al.* (1987). These channels are briefly discussed below.

3.3.1. Traditional growth channel

This is the traditional channel that is discussed in the theory of foreign aid and mainstream empirical literature on the effectiveness of such aid. The empirical analysis is based on the growth models that are anchored to savings and investment. It is assumed that foreign aid will stimulate growth through increased investment, and economic growth would in turn lead to poverty reduction. There are two main debates concerning this channel: the first is whether aid has been effective in boosting growth, and the second is whether growth translates to poverty reduction.

3.3.1.1. *The aid-growth nexus*

After many ambiguous and conflicting results, there is now evidence of convergence and consensus that foreign aid has a significant impact on growth. However, aid has generally been successful in some countries but not in others, and the effectiveness of aid may depend on the type of aid, the way in which it is financed, the time horizon, and the policy and institutional environment of the recipient country (Kraay, 2005; Radelet, 2006). Kraay (2005, p. 9) argued that aid can contribute to poverty reduction through growth, over the medium to long term where most changes in poverty depend on growth. There are however factors other than aid that will be important for determining the level of poverty alleviation.

3.3.1.2. *From growth to poverty reduction*

According to Feeny (2003, p. 73), “*growth is often viewed as the primary driver of poverty reduction and therefore inferences of the impact of aid on poverty are commonly drawn from the impact of aid on growth*”. Kraay (2005, p. 1) asserts, “*sustained poverty reduction is impossible without sustained growth*”. The main assumption here is that if aid has a positive impact on growth and if growth reduces poverty, then aid contributes to poverty reduction (Guillaumont & Wagner, 2014, p. 11). The extent to which aid affects poverty will depend on the growth elasticity of poverty reduction (or the income elasticity of poverty). Earlier studies by Collier and Dollar (2001, 2002) assumed that the universal income elasticity of poverty is

two (2). Furthermore, Collier and Dollar (2001, 2002) were explicit in their assumption that the aid-poverty-growth channel is the only aid-induced route to poverty reduction. As a result, they used this uniform income elasticity of poverty to calculate what they termed the optimal aid allocation. However, subsequent studies by Hanmer and Naschold (2000) and Mosley *et al.* (2004) show that the partial growth elasticity of poverty reduction could be around 0.34 and 0.48 respectively. Overall, the income elasticity of poverty varies according to the recipient country's income distribution (level of inequality), the change in the level of inequality, income per capita, and growth volatility (Bourguignon, 2003; Guillaumont & Wagner, 2014).

3.3.2. Pro-poor public expenditure channel

In the aid-growth regressions, Burnside and Dollar (2000) introduced the importance of good policies (which included budget deficit, inflation, and openness) as a condition for the effectiveness of foreign aid. Subsequent studies incorporated the quality of institutions, corruption, governance, and a host of other variables. However, as noted by Mosley *et al.* (2004, p. 223), the policy variables emerging from these aid-growth regressions were highly controversial and could not offer a conclusive answer as to how aid will eventually lead to poverty reduction.

Gomanee *et al.* (2003) and Mosley *et al.* (2004) developed what they termed the pro-poor (public) expenditure (PPE) index. This is a composition of public expenditures that are most likely to benefit the poor (Guillaumont & Wagner, 2014, p. 14). The PPE index includes government expenditures on social sectors such as basic healthcare, primary education, water and sanitation, rural roads, and agricultural extension services (Mosley *et al.*, 2004).

Mosley *et al.* (2004, p. 236) posited that PPE is an important channel by which aid can reduce poverty. Gomanee *et al.* (2005b) further argued that aid can improve human development by financing public expenditures that can increase welfare indicators. The empirical analysis of the study found that foreign aid can reduce poverty, and that the impact is more significant in countries with lower levels of human development indicators (Gomanee *et al.*, 2005b, p. 299). Kosack (2003) found that aid has an indirect impact on poverty and well-being if it is spent on poor people who are disadvantaged. However, a potential risk of aid crowding out fiscal revenue exists (Guillaumont & Wagner, 2014). Furthermore, foreign aid may lead to an

increase in the supply of foreign exchange in the recipient country's economy, which might lead to the Dutch disease²⁵ (see discussions on the effectiveness of foreign aid below).

3.3.3. Macroeconomic stabilising effect channel

Guillaumont and Wagner (2014, p. 23) argued that at the macroeconomic level, aid is expected to stabilise the recipient country's economic growth. The main assumption is that growth, especially in developing countries, is volatile owing to exogenous shocks, such as exports instability. While aid has been accused of instability, unpredictability, and "pro-cyclicality", Guillaumont and Wagner (2014) maintain that aid has a destabilising macroeconomic impact. Studies by Collier and Goderis (2009), Guillaumont and Le Goff (2010), and Jeanneney and Kpodar (2012), which tested the stabilising impact of aid using different methods found evidence that foreign aid has a stabilising effect.

Guillaumont and Wagner (2014, p. 25) further argued that, because economic growth is a major factor in poverty reduction, growth instability harms the poor through its adverse effect on economic growth. In addition, Collier and Goderis (2009) found that aid reduces the negative effect of vulnerability on growth. Chauvet and Guillaumont (2009) investigated the effect of aid on income volatility and found that aid makes growth more stable, and that the higher effectiveness of aid in vulnerable countries could be a result of aid's stabilising effect. Jeanneney and Kpodar (2012) also found that not only does aid stabilise the resources available for the financing of consumption, investment, and trade, but it is also effective in aid-dependent and vulnerable countries (also see Collier, 2007). Furthermore, Guillaumont and Korachais (2008) found that income instability affects poverty through reduced growth, and it also impacts poverty-increasing income inequalities.

Guillaumont and Wagner (2014) therefore reasoned that "*if macroeconomic instability generates poverty and if aid has a stabilising impact, it should be expected that due to this impact, aid contributes to poverty reduction not only by increasing the rate of growth but also by making this growth more pro-poor*" (Guillaumont & Wagner, 2014, p. 27). The paper, however, noted that this field of aid effectiveness, through stabilisation impact is fairly new and has not been tested empirically.

²⁵ See Collier (2007) and Stiglitz (2007).

3.3.4. Other channels of international cooperation for poverty eradication

Guisan *et al.* (2015) offer an estimation of the quantitative impact of seven channels of international cooperation on development and poverty eradication in developing countries, including not only foreign official aid but also private aid, foreign trade, remittances, and other channels. The results suggest that the impact is usually positive, particularly when the flows from international cooperation are used to improve education, health, infrastructures, industry and development.

3.4. Debate on the Effectiveness of Foreign Aid

The above discussion on the theoretical link between foreign aid and poverty is supportive of the idea that such aid is necessary for stimulating economic growth and reducing poverty in developing countries. The main argument was that countries were poor because of an insufficient savings rate. The solution was to fill this savings gap using outside aid. Foreign aid injections would allow developing countries to “take off” as a result of increased growth rates in the short run and transition to a higher steady-state income level. It was further assumed that growth will “cascade” or lead to poverty reduction. This section presents some of the main debates in the aid effectiveness literature.

3.4.1. Theoretical criticism of the effectiveness of foreign aid

According to Shleifer (2009), the early critics of foreign aid were Bauer (1972) and Friedman (1958). When the majority of early development theorists were justifying the importance of aid using the big push theory and the gap models, Bauer (1972) criticised the big push model, arguing then that foreign aid will lead to the misallocation of scarce resources and the destruction of economic incentives, and it would therefore not boost economic growth.

Bauer (2000) criticised the argument that foreign aid can assist a country to break out of the poverty trap by reasoning that:

“Development aid is not necessary to rescue poor societies from a vicious circle of poverty. Indeed, it is far more likely to keep them in that state. It promotes dependence on others. It encourages the idea that emergence from poverty depends on external

donations rather than on people's own efforts, motivation, arrangements, and institutions" (Bauer, 2000, p. 46).²⁶

Friedman (1958) was more critical of the perceived role of foreign aid, and made the following observation:

"Foreign economic aid is widely regarded as a weapon in the ideological war in which the United States is now involved. Its assigned role is to help win over to our side those uncommitted nations that are also underdeveloped and poor ... The objectives of foreign economic aid are commendable. The means are, however, inappropriate to the objectives ... The proponents of foreign aid have unwittingly adopted a basic premise of the Communist ideology that foreign aid is intended to combat. They have accepted the view that centralized and comprehensive economic planning and control by government is an essential prerequisite for economic development ... An effective program must be based on our ideology, not on the ideology we are fighting." (Friedman, 1958, pp. 63, 77-78).

Thus, Friedman (1958) and Bauer (1972, 2000) criticised the precise findings of the theoretical argument that foreign aid can lead to development and poverty reduction in developing countries. These arguments were later expanded on by Moyo (2009), Easterly (2003, 2006, 2008), Deaton (2013) and other foreign aid critics.

3.4.2. Aid-dependency syndrome

According to Doucouliagos and Paldam (2006), the motive of foreign aid and the empirical discussions on the effectiveness thereof in the late 1960s and mid-1970s was its use as a political tool. The dominant viewpoint then was that poverty in developing countries was because of exploitation by the rich capitalist world. Therefore, aid was treated as compensation for past wrongs. Early empirical studies by Griffin (1970) and Weisskopf (1972) were counterproductive, as they tended to replace domestic saving, thereby creating aid dependency. Friedman (1958) and Bauer (1972) also argued that foreign aid causes dependency by making resources available for governments to expand public spending, often times pursuing flawed (socialist or populist) policies that are harmful in the long term. It was argued that "*excessive*

²⁶ This quote was taken from Brumm (2003, p. 167).

aid” may distort the economy of a recipient country, leading to an aid-dependent, low-growth economy (Doucouliagos & Paldam, 2006, p. 232). A more recent study by Hansen and Tarp (2000) revealed that the optimum amount of aid is about 10-20% of the recipient country’s GDP, and beyond that point, aid dependency becomes an increasing problem. Moyo (2009, p. 28) argued that aid “*perpetuates the cycle of poverty and derails sustainable economic development*”.

3.4.3. Poverty and development traps

As discussed in the theoretical link between foreign aid and poverty, some of the arguments for foreign aid allocation are the concepts of poverty and development traps. It was argued that developing countries are “trapped” in poverty and underdevelopment, and that they need outside assistance to “escape the traps”. Kraay (2005) stated that in spite of the popularity and plausibility of poverty traps from theoretical literature, few empirical studies found evidence for the existence of poverty traps. Sachs (2005) is one of the researchers who attributes the underdevelopment in Africa to poverty traps; however, Collier (2007, p. 5) argued that “*poverty is not intrinsically a trap*”. Kraay (2005, p. 3) further asserted that there is “*little compelling evidence that such [poverty] traps exist*”.

Sachs (2005) and Collier (2007) further expounded on how development traps keep poor countries poorer. Collier (2007, p. 5) used examples from empirical studies to show that poor countries are facing one or more of four development traps, namely the conflict trap, the natural resource trap, the trap of being landlocked with unfavourable neighbours, and the trap of poor governance in a small country. Collier (2007) concluded that through properly structured and targeted aid, poor countries can overcome some of these development traps. However, “*aid does have serious problems, and more especially serious limitations. ... aid alone will not be sufficient to turn the societies of the bottom billion around, [though aid] is part of the solution rather than part of the problem*” (Collier, 2007, p. 123). Moyo (2009) strongly disagreed, stating that “*the problem is that aid is not benign – it’s malignant. No longer part of the potential solution, it’s part of the problem – in fact, aid is the problem*” (Moyo, 2009, p. 47).

3.4.4. The Dutch disease

One of the channels through which foreign aid can hurt a local economy and lead to an increase in poverty is a process called the Dutch disease. Aid comes in the form of foreign exchange²⁷. To use this money locally, a government has to sell foreign exchange to obtain the local currency equivalent. The buyers of foreign exchange in a local economy are mainly importers, which means that the main determinant of demand for foreign exchange is demand for imports. Without foreign aid, an economy pays for its imports through exports (the main generator of foreign exchange). Now, with foreign aid, importers can choose to acquire foreign exchange from exporters or foreign aid. Therefore, foreign aid is now in direct competition with exporters: more aid means less need for exports, leading to reduced earnings for exporters. According to Collier (2007, p. 162), the mechanism that generates this effect is the exchange rate. An increase in foreign aid leads to an increase in foreign exchange in the local economy, which in turn leads to the appreciation of the exchange rate. An appreciation of the exchange means that a dollar earned by an exporter is now worth less in terms of local currency. Foreign aid may crowd out exporters, thereby killing the export competitiveness of already poor economies. It should therefore be accompanied by trade liberalisation which increases the demand for imports by making them cheaper without the need to appreciate the exchange rate (Collier, 2007, p. 163). Stiglitz (2007, p. 148) also recommends that a country must spend part of the foreign resource currency on imports and keep some of the rest abroad.

3.4.5. Diminishing returns on aid and aid-absorptive capacity

According to Collier (2007), foreign aid is subject to what is called “diminishing returns”. This means that as donor countries continue to increase the amount of aid to a recipient country, the returns from each additional dollar tend to decrease.

Clunies-Ross *et al.* (2009, p. 595) define aid-absorptive capacity as the maximum amount that a country can effectively use. A study by Radelet *et al.* (2004) showed that their category of aid (termed short-impact aid) had no effect on growth when it reached 8% of the recipient country’s GDP and thereafter, the additional foreign aid had a negative effect on growth. Burnside and Dollar (2000) also found that the larger the current amount of aid, the smaller the

²⁷ Mostly USA dollars, British pounds and euros.

additional growth benefit from extra aid. According to Collier (2007, p.100), without a change in the aid-absorption capacity, the doubling of aid envisioned in the MDGs might have exceeded the limits to aid absorption. Clunies-Ross *et al.* (2009) however, argued that the aid-absorptive capacity can still be increased through training, a reduction of corruption, and capacity building (or technical assistance). Furthermore, other recent studies demonstrate that two thresholds exist: lower- and upper-aid thresholds (Gomanee *et al.*, 2003; Guillaumont & Wagner, 2014). The lower threshold justifies the need for a “*big push*” (Guillaumont, 2011, p. 8).

3.4.6. Fungibility of aid

Foreign aid is said to be fungible²⁸ when a portion or the full amount of aid money earmarked for a particular purpose (which would have been financed anyway) is freeing resources for another purpose that would otherwise not have been funded (Guillaumont & Wagner, 2014, p. 17). A seminal paper by Boone (1996) found that aid was fungible. The World Bank (1998) also argued that foreign aid (especially project aid) was fungible, and this reduces aid effectiveness. Another study by Feyzioglu *et al.* (1998) found aid to be fungible in some economic sectors, such as education, agriculture, and energy, but also found evidence of fungibility in the transport and communication sectors.

However, recent studies have produced mixed results. Mavrotas (2002) did not find evidence of aid fungibility in a case study of three countries²⁹. Moreover, a study by Dreher *et al.* (2008) found that even though aid allocated to the education sector was fungible, it led to a positive impact on school enrolment. Guillaumont and Wagner, (2014, p. 18) argued that even if aid is fungible, it does not mean that it is less effective. They further argued that the recipient government may use the extra resources to finance other sectors that are “pro-poor”, such as agriculture. Therefore, fungibility can be either beneficial or disadvantageous, depending on the recipient government’s decision regarding the use of released resources. However, Moyo

²⁸ Fungibility is said to occur when the marginal increase in sectoral expenditure following the receipt of aid is lower than the marginal amount of foreign aid dedicated to this particular sector. Fungibility can be total, if aid does not have any impact on the targeted sector, or partial, if the impact is lower than the total amount of aid affected.

²⁹ The three countries are the Philippines, Costa Rica, and Pakistan.

(2009) argued that the majority of African governments have been diverting freed resources to worthless and detrimental agendas such as corruption.

3.4.7. Foreign aid volatility

According to Lele and Goldsmith (1989), donors' aid commitments and the actual aid flows are not always aligned. This causes mistrust, thereby increasing the risk of aid being used to support non-productive expenditures. Mosley and Suleiman (2007) further argued that the volatility of aid flows affects donor organisations which will in turn affect total aid flows.

Furthermore, the failure to sustain aid flows weakens the political base of support for developmental expenditure (Mosley & Suleiman, 2007, p. 140). Chauvet and Guillaumont (2009, p. 452), however, found that even if aid is volatile, it "*is not clearly as pro-cyclical as is often argued, and, even if pro-cyclical, is not necessarily destabilizing*". They further argued that foreign aid has a stabilising impact with respect to exports and income volatility.

3.4.8. Foreign aid and consumption

Boone (1996) found that foreign aid does not increase investment, had zero effect on growth, and does not reduce poverty (using human development indicators as proxies). Paradoxically, the study found that aid increases the size of the recipient government's consumption expenditure. According to Moyo (2009), aid can be inflationary, as it leads to increased demand for locally produced, non-tradable goods and imports.

3.4.9. Foreign aid, corruption, governance, and policies

Moyo (2009) argued that because aid is fungible, it is easily stolen, redirected, and extracted, thereby leading to increased rent seeking and corruption. Burnside and Dollar (2000 and 2004) emphasised that aid is only effective in its goals if the recipient country has 'good' policies and quality institutions. A study by Barro (1999) argued that democracy helps in combating corruption and also encourages more redistribution of income from the rich to the poor. The World Bank (2002, p. 8) argued, "*we have learned that corruption, bad policies, and weak governance will make aid ineffective*".

3.4.10. Macro-micro paradox

Mosley (1987) is credited with coining the phrase “macro-micro paradox” of aid. This was based on the general observation that, while most micro or project-related studies were quite clear about the effectiveness of foreign aid, macro-level studies could not offer such clarity (McGillivray *et al.*, 2006, p. 1032). For example, while evaluations of aid effectiveness at the microeconomic level continue to indicate positive rates of return, the World Bank (2008) and Rajan Subramanian (2008) concluded that at a macro level, “*it is difficult to discern any systematic effect of aid on growth*”. A recent study by Arndt *et al.* (2010, p. 1) used some modern micro methods to evaluate macro phenomenon and after finding positive effects of aid on growth from both the micro and macro perspectives, concluded that “*there is no micro-macro paradox*”.

3.5. Empirical Literature on Foreign Aid, Poverty, and Freedom

This sub-section reviews literature that has evaluated the effectiveness of aid in reducing poverty. A detailed literature search revealed that most of the studies are focused on the impact of aid on growth, with an implicit assumption that an increase in growth will translate to poverty reduction. Since this study is focused on the impact of foreign aid on poverty, only studies that referred to poverty or welfare were considered. The reviewed studies fall into two broad categories: those which investigated the impact of aid poverty and (or through) growth and those which directly examined aid’s poverty reduction effect. The study also reviews some literature on the effectiveness of foreign aid in political or economic freedom.

3.5.1. Empirical studies on foreign aid and non-monetary measures of poverty

A paper by Boone (1996) is one of the earliest to empirically test the effectiveness of aid in increasing investment (and therefore growth) and improvement in the HDI, as a poverty proxy. Some of the widely-quoted findings are that (i) aid does not promote economic development; (ii) aid does not increase investment, but it does increase the size of government, which confirms that aid is fungible; (iii) aid effectiveness was not dependent on the political regimes (liberal, democratic, or repressive); and (iv) aid does not have a significant impact on poverty indicators (infant mortality and primary schooling ratios).

One of the most popular papers on aid effectiveness was by Burnside and Dollar (2000). The paper in its working form was widely quoted by multilateral institutions and major aid agencies (Easterly, 2003). The main conclusion from Burnside and Dollar (2000, p. 847) was that “*aid has a positive impact on growth in developing countries with good fiscal, monetary, and trade policies but has little effect in the presence of poor policies*”. The findings of the working paper were reported in a World Bank (1998) report titled *Assessing Aid*. The most compelling argument from Burnside and Dollar (2000) was that a “*1 percent gross domestic product in aid given to a poor but well-managed country can increase its growth by a sustained 0.5 percentage points*” (Easterly, 2003, pp. 24-25)³⁰. The World Bank (1998) went further and argued that aid goes beyond growth, stating that a “*1 percent of GDP in assistance reduces poverty by 1 percent*” (World Bank, 1998, p. 14).

Some of the early papers that examined the effectiveness of foreign aid in reducing poverty were by Collier and Dollar (2001, 2002). Collier and Dollar (2001) developed a model of “efficient aid” in which aid will be allocated according to “*policy improvements that create a better environment for poverty reduction and effective aid*” (Collier & Dollar, 2001, p. 1787). The paper categorically stated that “*poverty reduction ... depends primarily on the quality of economic policy*” (Collier & Dollar, 2001, p. 1800). The policy implication from this analysis was that a mixture of good policy and foreign aid leads to economic growth and poverty reduction.

A year later, Collier and Dollar (2002) derived what they termed a “poverty-efficient”³¹ allocation of aid criteria, and they compared it with actual aid allocations to estimate the impact on poverty reduction. The authors showed that aid, operating through increased economic growth, was responsible for lifting about 10 million people out of extreme poverty each year. The study further estimated that approximately 19 million people could be lifted out of poverty each year if aid agencies use a “poverty-efficient” aid allocation strategy. However, this poverty-efficient reallocation of aid, which was also discussed in the World Bank (1998) Report – *Assessing Aid* – was heavily criticised (Lensink & White, 2000).

³⁰ Quoting the Financial Times of 2002.

³¹ A poverty-efficient aid programme is one which reduces poverty by as much as possible.

Hirano and Otsubo (2014) applied the conceptual framework of globalisation and the poverty-growth-inequality (P-G-I) relationship to investigate the effectiveness of aid in development. The paper found that social aid (education, health, and water and sanitation spending) significantly and directly benefits the poorest in society. Economic aid (transportation, energy, and communication and financial infrastructure spending) also increases the income of the poor through growth.

A recent study by Arndt *et al.* (2015) assessed the impact of aid on economic growth, social welfare indicators (poverty and infant mortality) and intermediate outcomes (such as investment, consumption, health, education, and agriculture). The study estimated the long-term cumulative effects of aid in developing countries for the period 1970-2007 using limited information maximum likelihood (LIML) and inverse probability weighted least squares (IPWLS) estimators in a simultaneous equation model (SEM) framework. They found evidence that aid does stimulate growth, improves social welfare indicators and reduces poverty. Though the results indicate that aid does not have a significant effect on inequality, it was found that aid can raise investment, improve school enrolment, boost life expectancy, and reduce infant mortality (Arndt *et al.*, 2015, p. 14).

3.5.2. Empirical studies on foreign aid and monetary (extreme) poverty

Kosack (2003) assessed the effectiveness of aid in improving the quality of life in aid-recipient countries. The study used the ordinary least squares (OLS) and two-stage least squares (2SLS) estimation techniques on a sample of 49 developing countries over a period 1974-1985. The study found that aid can directly increase welfare, but only in democracies, and not in autocracies. Moreover, the paper found strong evidence that foreign aid has an indirect effect on poverty and well-being if it is spent on disadvantaged poor people.

Bahmani-Oskooee and Oyolola (2009) used pooled time-series and cross-sectional data for 49 developing countries over the period 1981-2002 to estimate the impact of foreign aid on poverty. To control for endogeneity, the study used the 2SLS panel estimation techniques. The paper found that aid reduces poverty and that inequality is detrimental to poverty reduction. Chong *et al.* (2009) used the DPD method's instrumental variable (GMM-IV) to examine the effect of aid on income inequality and poverty reduction for the period 1971-2002. The study

could not find a robust statistical relationship between foreign aid and poverty or income inequality even in the presence of good institutions.

Mosley *et al.* (2004) examined the direct effect of aid on poverty using the GMM three-stage least squares (3SLS) methodology in a simultaneous equation set-up. The three main equations were poverty, aid, and policy. The policy variable in the Mosley *et al.* (2004) analysis represented a significant departure from the World Bank (1998) and Burnside and Dollar (2000) “good” economic policies. To emphasise the departure, they called the proposed policies “new conditionality”. They also developed the PPE index. The study found strong evidence that corruption, inequality, and the composition of public expenditure are strongly associated with aid effectiveness (Mosley *et al.*, 2004, p. F236). The conclusion and policy implication of the study was that aid allocations which consider good micro and macro policies, income distribution, and GDP per capita are more effective in achieving developmental goals.

Mosley and Suleiman (2007) followed up on the arguments advanced in the earlier paper by Mosley *et al.* (2004). The latest study used both panel data econometric analysis covering all developing countries and four case studies of heavily aid-dependent countries in Africa³². Mosley and Suleiman (2007) estimated a poverty equation that incorporates the effects of aid through growth, macro-economic policy, PPE, and instability in aid levels. They found evidence that the level, composition, and stability of foreign aid matter in poverty reduction. The paper reaffirms the earlier findings that aid is most effective in reducing poverty if it is used for PPEs such as agriculture, education, and infrastructure. Military expenditure was found to have a negative impact on poverty reduction.

Gomanee *et al.* (2005b) tested the hypothesis that aid leads to increasing aggregate welfare using a fixed-effect panel data estimation method on a sample of 104 countries for the period 1980-2000. The proxies for welfare were infant mortality and the HDI. The main findings of the paper were that aid directly improves welfare indicators and that the impact is greater in low-income countries compared to middle-income countries. The paper also found that growth is the channel through which aid indirectly affects welfare. Furthermore, they found no evidence that aid channelled through PPE has a positive impact on welfare³³. Another study by

³² The case studies are Ethiopia and Uganda, where aid effectiveness has been impressively high, and Zimbabwe and Malawi, where it has been depressingly low (Mosley & Suleiman, 2007, p. 140).

³³ See also Gomanee *et al.* (2003) for a detailed discussion of PPE.

Gomanee *et al.* (2005a) also investigated the impact of aid on human welfare using quantile regressions. The results contradicted the earlier paper, as they found evidence that aid can affect welfare through public expenditure and that the effect is greater in countries with lower welfare (poorer countries). In addition, they found evidence that the marginal effectiveness of aid in alleviating poverty is higher in poorer countries than in richer countries (Gomanee *et al.*, 2005a, p. 308).

Masud and Yontcheva (2005) assessed the effectiveness of foreign aid in reducing poverty. The study used development indicators such as infant mortality and illiteracy or education as proxies for poverty. The paper compared the impact of two measures of foreign aid: official bilateral aid, which flows directly from a donor government to a recipient country, and projects aid, which is disbursed through international NGOs to developing countries. The two methodologies used were 2SLS regression and the system-generalised method of moments (SGMM) approach. The study concluded that NGO aid significantly reduces infant mortality, compared to bilateral aid, and that the impact of both types of aid on illiteracy is less significant (Masud & Yontcheva, 2005, p. 20).

Kaya *et al.* (2013) investigated the effectiveness of aid given to the agricultural sector in poverty reduction. The study disaggregated total aid into sub-categories and focused on agricultural aid. The empirical analysis used four-year averaged, cross-country data for a panel of 46 developing aid-recipient countries over the 1980-2003 period. The main dependent variable was the poverty headcount ratio at US\$ 1, while the main explanatory variables were aid issued to the agricultural sector and PPE³⁴. The fixed-effects panel estimator found that a 1% increase in agricultural aid reduces the headcount poverty ratio by 0.2% in the aid-recipient countries. The study also found that the growth elasticity of the headcount poverty ratio ranges from 1.7 to 3.5 based on different specifications. The paper concluded that agricultural aid is effective in poverty reduction directly and indirectly through growth (Kaya *et al.*, 2013, p. 593).

Alvi and Senbeta (2012) examined the effect of foreign aid on poverty in a sample of 79 developing countries over the period 1981 to 2004. The study used DPD estimation methods (SGMM) proposed by Blundel and Bond (1998). Moreover, it utilised three measures of poverty, namely the headcount index, the PG, and the SPG; two sources of aid – bilateral and

³⁴ As per Mosley *et al.* (2004) and Gomanee *et al.* (2005a).

multilateral – and two compositions of aid: grants and concessionary loans. The study found that “*aid reduces poverty after controlling for average income and income distribution*” (Alvi & Senbeta, 2012, p. 968). The study further found that multilateral aid and grants reduce poverty, while bilateral aid and loans do not.

Table 3.1 presents a summary of some empirical studies which used panel data to analyse the effectiveness of foreign aid in reducing poverty. The first panel of Table 3.1 lists studies that reviewed the impact of aid on non-monetary measures of poverty (such as poverty rate, poverty gap, and squared poverty gap, and with social indicators such as HDI, infant mortality, and literacy). Seven studies fall under this category, and their main findings are mixed. Four studies found evidence that aid improves social development indicators, two found no evidence, and another paper had mixed results³⁵. Of the seven studies, six found that aid reduces poverty, while one did not find significant evidence.

³⁵ Masud and Yontcheva (2005) find that NGO aid significantly reduces infant mortality, while bilateral aid does not.

Table 3.1: Summary of empirical studies on aid and poverty

Study/Author(s)	Period	Countries	Main Dependent Variables	Main Explanatory Variables	Methodology	Main Findings
A: AID AND NON-MONETARY MEASURES OF POVERTY (SOCIAL INDICATORS)						
Boone (1996)	1971-1990	96 countries	– Infant mortality – Primary schooling ratios	– Aid as % of GNP – Per capita GDP growth rate	OLS, IV, and fixed effects	– Aid does not have a significant impact on human development indicators (infant mortality and primary schooling ratios).
Arvin and Barillas (2002)	1975-1998	118 aid-receiving countries.	– GNP per capita	– Aid as % of GNP – Democracy – (Aid) x (Democracy)	Granger causality	– The study results show that aid was not affecting poverty (GNP per capita) and vice versa.
Kosack (2003)	1974-1985	49 developing countries	– HDI	– Aid as % of GDP – Democracy index	OLS and 2SLS	– The study found that aid can directly increase welfare but only in democracies, not in autocracies. – The paper also found strong evidence that foreign aid has an indirect effect on poverty and well-being if it is spent on disadvantaged poor people.
Masud and Yontcheva (2005)	1990-2001.	58 developing countries	– Infant Mortality, – Illiteracy	– NGO aid – Bilateral aid	2SLS and SGMM	– NGO aid significantly reduces infant mortality compared to bilateral aid. – The impact of both types of aid on illiteracy is less significant.
Gomanee <i>et al.</i> (2005b)	1980-2000	104 countries	– HDI – Infant mortality	– Aid as % of GNI – GNP per capita – Pro-poor public expenditure	Fixed-effects panel	– Aid directly improves welfare indicators, and the impact is greater in low-income countries, compared to middle-income countries.
Hirano and Otsubo (2014)	1990s-2000s	99 countries	– Capita income of the poorest quintile	– Growth rate of GDP per capita – Aid as % of GNP – Sectorial aid	Panel 2SLS	– Economic aid is useful for the poor because of its growth-inducing impact. – Social aid is beneficial for the poor through systematic distributional effects.
Arndt <i>et al.</i> (2015)	1970-2007	78 countries	– School enrolment, – Life expectancy – Infant mortality	– Aid as % of GDP	LIML and IPWLS in SEMs	– Aid can raise investment, improve school enrolment, boost life expectancy, and reduce infant mortality.

Study/Author(s)	Period	Countries	Main Dependent Variables	Main Explanatory Variables	Methodology	Main Findings
B: AID AND MONETARY POVERTY (EXTREME/ABSOLUTE POVERTY INDICATORS)						
Mosley <i>et al.</i> (2004)	1980-2000.	34 countries	– Poverty headcount – Infant Mortality	– Aid as % of GNI – GNP per capita – Pro-poor public expenditure	GMM 3SLS	– Corruption, inequality, and the composition of public expenditure are strongly associated with aid effectiveness.
Mosley and Suleiman (2007)	1980-2002	39 developing and transitional economies	– Poverty headcount	– Aid as % of GNP – GNP per capita – Agriculture expenditure (%)	GMM 3SLS	– Aid is most effective in reducing poverty if it is used for PPEs such as agriculture, education, and infrastructure.
Bahmani-Oskooee and Oyolola (2009)	1981-2002	49 developing countries	– Headcount ratio	– Bilateral aid – GPD per capita – Gini coefficient	2SLS panel estimation	– Foreign aid reduces poverty.
Chong <i>et al.</i> (2009)	1971-2002.	136 countries	– Poverty rate – Poverty gap – Squared poverty gap	– ODA as a % of GDP (aid) – Aid squared – Aid x Corruption	SGMM estimator	– An insignificant statistical relationship exists between foreign aid and poverty or income inequality.
Alvi and Senbeta (2012)	1981-2004	79 developing countries	– Poverty rate – Poverty gap – Squared poverty gap	– Aid as a % of GNI – GDP per capita – Gini coefficient	SGMM estimator	– Foreign aid reduces poverty. – Multilateral aid and grants reduce poverty. – Bilateral aid and loans do not reduce poverty.
Kaya <i>et al.</i> (2013)	1980–2003	46 developing countries	– Poverty headcount ratio	– Agricultural aid – GNP per capita – Pro-poor public expenditure	Fixed-effects panel and 3SLS	– Agricultural aid is effective in poverty reduction directly and indirectly through growth.
Arndt <i>et al.</i> (2015)	1970-2007	78 countries	– Poverty headcount (\$1.25 and \$2 a day)	– Aid as % of GDP	LIML and IPWLS	– Aid stimulates growth, improves social welfare indicators, and reduces poverty.

Source: Authors' compilation

3.5.3. Empirical studies on the impact of political and economic freedom on the effectiveness of foreign aid

A review of the AEL shows that researchers generally agree that certain preconditions must be met to ensure the effectiveness of aid in recipient countries (Arvin & Barillas, 2002; Jones & Tarp, 2016; Knack, 2004). One such key condition is the existence of political freedom (or democracy). There is also widespread debate over the influence of aid in promoting better governance as well as the influence of better governance/democracy on the volume of aid (Ali, 2009; Knack, 2004; Swiss, 2014). This sub-section examines empirical studies on the relation between foreign aid and political and economic freedom. Special attention is paid to answering the following question: does political or economic freedom enhance the effectiveness of foreign aid in poverty reduction?

Using data for 155 countries over the period 1960-2011, Bjella (2012) tested the hypothesis that “aid leads to greater economic development in a democratic rather than autocratic receiving nation” and found that the more democratic countries become, the more effective foreign aid tends to be in those places. Arvin and Barillas (2002) used data from 118 countries over the period dating 1975 to 1998 to assess whether conditioning aid leads to a reduction of poverty in more democratic receiving countries. Using Granger causality, the study found that aid did not have a significant impact on poverty reduction given those countries’ states of democracy. Moreover, Breuning and Ishiyama (2007) used the World Bank measurement of the political stability index to measure the effectiveness of foreign aid in 26 post-conflict economies where civil wars ended after 1980 (1996-2005). The study found no conclusive evidence that foreign aid flows were influenced by the emergence of political stability in conflict areas.

Knack (2004) examined the extent to which the provision of aid leads to democracy in 105 countries over the period 1975-2000. Two democracy proxies were used: The Change of Polity index and the Freedom House index. The study findings suggest that even though countries’ levels of democracy were rising over the review period, little if any of this progress was attributable to aid flows. Another study by Knack in 2001 utilised cross-country data between the years 1975 and 1995 to examine how volumes of aid influence recipient countries’ governance. It was found that at higher aid levels, there is a greater tendency for the quality of governance to become eroded. In a related study, Ali (2009) corroborated the findings of Knack

(2004) after examining the flows of United States of America (USA). aid into Pakistan from 1947 to 2006. These aid flows indicate that there was a consistent pattern of high aid flows from the USA to Pakistan military dictatorships versus low amounts advanced towards democratic regimes. Ali (2009) therefore concluded that instead of promoting democratic governance in Pakistan, aid flows from the USA have been undermining the development of democracy in Pakistan over the review period.

Swiss (2014) found that donor conditions are generally dynamic between recipients with diverse economic development stages and over time. While foreign aid was found to be responsive to democracy and human rights issues in recipient countries, the study noted that it may be too simplistic to assume that aid flows are used as rewards for democracy and upholding human rights. The study further argues that complicated interactions exist that influence the volume of aid, which suggests that donors can still provide aid to nations despite the lack of democratic values and the abuse of human rights. On the one hand, Bjørnskov (2010) found that foreign aid targeted at democratic countries seems to be associated with a distribution of income to higher incomes groups (elites). This implies that aid in a democratic environment might lead to the worsening of poverty and an increase in income inequality. On the other hand, Brown (2005) found that aid flows to autocratic regimes tend to strengthen the elites' hold on power, as they use aid receipts to their advantage.

Heckelman and Knack (2008) conducted a similar study using Fraser economic freedom data for 74 countries from 1980 to 2000, and they found evidence that the impact of aid on market-liberalising policy reform differs between regions of countries as well as time periods. Heckelman and Knack (2009) extended the argument between aid efficiency and poverty reduction in the wake of democratic governments by integrating economic freedom. Cross-country data was used specifically over the period 1990-2000. Economic freedom was measured using the Hedonic index. The study found that foreign aid does not significantly influence economic freedom in recipient countries; however, to some extent, it contributes to policy and institutional environments that are favourable for economic growth. Connors (2011) performed a similar study and found that foreign aid does not have a significant effect on either economic freedom or poverty reduction.

3.5.4. Empirical studies on the causal relationship between foreign aid, poverty and economic growth

According to Todaro and Smith (2012), until recently, it was assumed in economic development policy discussions, that an increase in economic growth would naturally “trickle down” to the general population and ultimately, result in poverty reduction (Aghion & Bolton, 1997). Though several studies have criticised the notion of direct “trickle down” economics, recent studies have confirmed that economic growth and the quality of growth are important for poverty reduction (Norton, 2002; Dollar & Kraay, 2002; Feeny, 2003). This sub-section discusses some empirical studies on the causal relationship between foreign aid, poverty and economic growth. As explained in the methodology section, economic growth is treated as an intermittent variable in the trivariate Granger causality analysis.

3.5.4.1. Studies on causality between foreign aid and poverty

Hoffman (1991) examined the causal relationship between poverty in female-headed households with small children and aid to families with dependent children (AFDC) via transfer payments using the USA data for the period 1959 to 1988. The study used a Granger causality test and found weak statistical evidence that receipt of aid ‘Granger causes’ poverty but found strong statistical evidence that an increase in real value of aid ‘causes’ a reduction in poverty.

Arvin and Barillas (2002) employ Granger causality to investigate the direction of causality between aid and poverty in a bivariate framework and then included democracy in a trivariate Granger model. Both the bivariate and trivariate models are tested on annual data from 1975 to 1998 from a sample of 118 aid-receiving countries. The study categorised countries into two broad groups: geographical regions and levels of income. For the full sample, the study results show that aid was not affecting poverty and vice versa. For the sub-samples, aid was found to reduce poverty in the East Asia Pacific region but had a detrimental impact on poverty in low-income countries (Arvin & Barillas, 2002, p. 2154).

3.5.4.2. Studies on causality between foreign aid and economic growth

A recent study by Forson *et al.* (2015) examined the causal relationship between European Union (EU) aid inflows and economic growth in Ghana during the period from 1970-2013.

Granger causality was tested using the Vector Error-Correction Model (VECM), and the study found evidence of an independent short-run causal relationship between the two variables and a long-run unidirectional causal relationship from EU aid inflows to GDP growth. Amin (2017) used the same approach to conduct a Granger Causality test between economic growth, foreign aid and other variables using data for Bangladesh for the period from 1980 to 2013. The study did not find any statistical evidence for short-run causality between economic growth and foreign aid but found evidence that in the long-run, causality was unidirectional from economic growth to foreign aid.

Tekin (2012a) investigated the causal relationship among foreign aid, trade openness and economic growth in the African least developed countries (LDC) for the period between 1970 and 2010 using the seemingly unrelated regressions (SUR) estimator proposed by Zellner (1962). The results from this study showed little evidence of any causal relationship between foreign aid and economic growth. Another study by Asteriou (2009) used the autoregressive distributed lag (ARDL) approach to investigate the long-run relationship between foreign aid and economic growth using panel data for five South Asian countries for the period 1975 to 2002. The paper found a positive long-run relationship between aid and GDP growth.

3.5.4.3. Studies on causality between economic growth and poverty

Some of the earliest studies to investigate the relationship between economic growth and poverty and whether economic growth ‘trickles down’ to poverty reduction were by Thornton *et al.* (1978, 1980). Using the USA data for the period 1947 to 1974, the two studies found that economic growth alleviates the incidence of poverty. This finding was also supported by de Janvry and Sadoulet (2000), using a panel of 12 Latin American countries between 1970 and 1994. However, using a sample of Latin American countries, Korzeniewicz (2000) concluded that economic growth had not led to significant poverty reduction in the region.

Using the ARDL-bounds testing approach to co-integration, and the ECM-based Granger causality method, Nindi and Odhiambo (2015) examined the causal relationship between poverty reduction and economic growth in Swaziland during the period 1980–2011. The main results from the empirical investigation are that (i) economic growth does not Granger cause poverty reduction in the short run and in the long run, and (ii) property reduction Granger causes economic growth in the short run.

A recent study by Perez-Moreno (2016) used a panel of 52 developing countries for the years from 1970 to 1998 to examine causality between economic growth (proxied by real GDP per capita) and extreme poverty (proportion of people living on less than US\$1/day). The study found that economic growth unidirectionally causes poverty reduction. Pradhan and Arvin (2015) used a panel VECM framework for the period 1961-2012 to investigate the causal relation between foreign and economic growth and two other variables. The panel cointegration tests found evidence of the existence of a long-run equilibrium relationship among the four variables and in the short-run, foreign aid was found to unidirectionally Granger cause economic growth. There was evidence of bidirectional causality in the long run.

3.6. Critique of Existing Literature on Foreign Aid and Poverty

Literature on aid effectiveness is dominated by empirical studies on the usefulness of foreign aid in economic growth. There are two main problems with this aid-growth nexus. First, it does not directly address the primary objective of aid allocation which is poverty reduction. According to White (2015), there has been consensus among donors and recipient countries since the 1990s that the main aim of foreign aid is poverty reduction. This position was further emphasised by the promulgation of the MDGs by the United Nations General Assembly in the year 2000. The MDGs were a set of developmental goals and targets agreed on by the international community, whose primary focus was on halving poverty and improving the welfare of the world's poorest by 2015 (Sachs, 2005).

The second problem with the aid-growth nexus is the implicit assumption that aid affects growth through growth (Burnside & Dollar, 2000; Collier & Dollar, 2001, 2002; White, 2015). This might be correct, as sustainable improvements in social outcomes require high and sustained growth rates; however, there has been a narrow interpretation that if aid does promote economic growth, then it implies poverty reduction. This is not satisfactory, because aid can affect poverty directly or through other channels.

A general dearth of empirical literature is available on the effectiveness of foreign aid in poverty reduction. The poverty-reducing effects of aid are thus not well documented (White, 2015, p. 187). A few studies that have been reviewed in this chapter (see Section 3.5) investigated the effect of aid on different socio-economic development indicators such as infant

mortality rate, poverty (headcount, poverty gap, and squared poverty gap), the HDI, and education, among others. Other studies explored the channel through which aid affects poverty, with a special focus on social and public spending such as agriculture, health, and education. Arndt *et al.* (2015, p. 6) argued that access to “*merit goods*” such as primary education and basic health is not only a fundamental human right but essential to the development process. However, as with the aid-growth literature, evidence on the effectiveness of aid in poverty reduction is mixed. Even though the majority of studies reviewed seemed to agree that aid has a positive impact on poverty, the number of studies is still too small to make a general conclusion.

3.7. Summary of Main Discussion Points in this Chapter

This chapter explored the theoretical link between foreign aid and poverty as well as the empirical results of the effectiveness of aid in poverty reduction. The dominant theory in the aid debate is the two-gap model which assumes that developing countries face constraints on savings and export earnings that hamper investment and economic growth (Chenery & Strout, 1966). Foreign aid can consequently be used to fill the gap between investment needs and domestic savings. While the two-gap model has been criticised, it has remained the most influential theoretical underpinning of the AEL (Easterly, 2003; Masud & Yontcheva, 2005). Other theories include the vicious and virtuous circles, the stages of economic growth theory, the Harrod-Domar model, and the Thirlwall-Hussain model. According to Guillaumont and Wagner (2014), the theoretical background of empirical studies on aid effectiveness has been strongly questioned.

Aid effectiveness literature is dominated by the impact of aid on economic growth. The majority of early empirical studies concluded that aid had no significant effect on growth, savings, or investment. However, a shift in opinion has occurred, as later studies have found a positive though modest impact of aid on growth (Arndt *et al.*, 2015). However, the conventional view on the effectiveness of aid in poverty reduction has been built on the basis that aid increases the growth rate of per capita income, and that this growth will in turn lead to a reduction in poverty rates. As discussed in this chapter, there are other transmission mechanisms through which foreign aid affect poverty, other than economic growth.

Apart from economic growth, other channels through which foreign aid affects poverty include: (i) through aid's influence on the public-sector spending of the recipient government which might lead to human development and welfare indicators; (ii) stabilisation of the recipient country's economic growth; and (iii) building of democratic and economic institutions, among others. Below, we briefly discuss previous empirical studies which examined the causal relationship between foreign aid, poverty and economic growth.

Both the theoretical and empirical literature on aid effectiveness has generated significant and prolonged debates. The following three distinct schools of thought exist on aid effectiveness:

- i. Foreign aid is ineffective and has caused more harm. The main critics of aid are Bauer (1972), Friedman (1958), Easterly (2003, 2006, 2008), Moyo (2009), and Doucouliagos and Paldam (2009).
- ii. Foreign aid has been effective in reducing poverty and has to be increased, according to Sachs (2005), Stiglitz (2007), Arndt *et al.* (2010, 2015), and Alvi and Senbeta (2012).
- iii. Aid works in certain conditions, including other channels, according to Burnside and Dollar (2000, 2004), Collier and Dollar (2002), Collier (2007), Mosley *et al.* (2004), and Gomanee *et al.* (2005a, 2005b).

Of particular importance to this study is the following: considering that one of the main aims of foreign aid is poverty reduction, the poverty-reducing effects of aid are not well documented because of the paucity of this strand of studies. Mosley *et al.* (1987) referred to the lack of attention to the poverty impact of aid as “a disgrace”.

Though research on the impact of aid on monetary and non-monetary measures of poverty is sparse, the number of studies that find aid to be ineffective are in the minority. Overall, the following conclusions can be made from these aid-poverty studies:

- Earlier analysis of the impact of foreign aid on poverty is based on the notion that aid will stimulate growth, and growth will then lead to poverty reduction (Collier & Dollar 2001, 2002).
- Studies on monetary poverty generally find a positive effect of aid on poverty.
- Foreign aid may have either a direct impact on poverty for a given level of income growth (Alvi & Senbeta, 2012) or an impact on the income elasticity of poverty (Mosley *et al.*, 2004).

- The type of aid, sectoral composition and channels matter in aid effectiveness:
 - Multilateral aid and grants reduce poverty, but bilateral aid and loans do not (Alvi & Senbeta, 2012).
 - Agricultural aid is more effective in poverty reduction compared to aid given through non-agricultural sectors (Kaya *et al.*, 2013).
 - A combination of growth and PPE improves the effectiveness of aid in reducing monetary poverty (Mosley *et al.*, 2004; Mosley & Suleiman, 2007; Gomanee *et al.*, 2005a).
- The number of studies on the poverty-reducing effect of aid are in the majority; however, given the relatively few studies, it is difficult to sustain absolute conclusions. There is a need for further studies, especially on the channels through which aid affects poverty and the types of aid.

3.8. Conclusion

The main objective of this chapter was to highlight some of the main debates on the effectiveness of foreign aid in poverty reduction through a review of both theoretical and empirical literature. In the exploration of the theoretical link between foreign aid and poverty, it was found that the dominant development theory in the aid debate is the two-gap model which states that foreign aid can be used to fill the gap between investment needs and domestic savings. The other theories include virtuous and vicious circles, the stages of economic growth theory, the Harrod-Domar model, and the Thirlwall-Hussain model. All these theories have been heavily criticised, and the theoretical background of empirical studies on aid effectiveness has been questioned. The chapter also discussed the possible transmission mechanisms through which foreign aid impacts on poverty. The main ones are as follows: economic growth, pro-poor public expenditure, and macroeconomic stabilising effect channels.

The main findings from this literature review are that no generally accepted economic theory exists upon which foreign aid allocation is based, and the debate on the effectiveness of foreign aid in poverty reduction is still far from over. While several theories have been advanced, each of them has been heavily criticised. Moreover, the results from empirical studies are still diverse. There are two distinct and extreme lines of thought: those who believe that foreign aid can contribute to a virtuous circle of economic growth and poverty reduction. The other group

contends that foreign aid leads to a vicious cycle of poverty and stunted development. Perhaps the debate needs to shift to “what makes aid work or how does one make aid work?” In this regard, some interesting studies cited in this chapter, demonstrate the positive effect of several channels of foreign aid in the diminution of poverty and an improvement in the quality of life of recipient developing countries.

The empirical literature on the impact of foreign aid on poverty is divided into three broad groups: studies that used non-monetary measures of poverty, those that used monetary measures of poverty, and studies on the impact of political and economic freedom on the effectiveness of foreign aid. The survey shows that the majority of studies reviewing the impact of foreign aid on non-momentary measures found that aid does reduce poverty, whereas a few found no evidence, and some found diverse results. Of the seven studies that investigated the impact of aid on monetary measures of poverty, the majority found that aid reduces poverty while a minority did not find significant evidence. Therefore, the number of studies that find foreign aid to be effective in poverty reduction are in the majority. Regarding the role of political and economic freedom in aid effectiveness, the results are mixed. Considering the relatively few studies in the literature, it is difficult to make a conclusive statement. Further studies are recommended, especially given the need to evaluate the recently concluded MDGs. This will help to document lessons learnt in view of the recently promulgated SDGs which envision a world of “no poverty”. The empirical literature also includes studies which examined the causal relationship between foreign aid and poverty and the results of which are also mixed.

CHAPTER 4: EMPIRICAL MODEL SPECIFICATION AND ECONOMETRIC ESTIMATION METHODOLOGY

4.1. Introduction

The preceding chapter highlighted some of the main debates on the effectiveness of foreign aid in poverty reduction through a review of both theoretical and empirical literature. The main aim of this chapter is to present a detailed discussion of the econometric estimation techniques used in this study as well as the theoretical and empirical model specifications. The two main econometric estimation techniques employed in this study are (i) the SGMM for examining the impact of foreign aid on poverty reduction and (ii) the panel vector error correction model (VECM) for testing the causal relationship between foreign aid and poverty. The chapter is divided into five sections. The SGMM estimation framework is presented in Section 4.2 together with its theoretical framework and model specifications as well as a discussion on possible endogeneity, identification, and robustness checks. Section 4.3 explains the steps involved in the panel VECM estimation and how Granger causality is inferred. Section 4.4 discusses the data sources and definitions of variables used in the study, and Section 4.5 concludes the chapter.

4.2. System-Generalised Method of Moments Model: Impact of Foreign Aid on Poverty Reduction

4.2.1. Theoretical framework

The central objective of development assistance is poverty reduction. A large volume of literature on aid effectiveness finds that aid mainly finances government consumption which partially explains why aid has not had a significant positive effect on growth. In these studies, it is “*implicitly assumed that aid can only reduce poverty by increasing growth*” (Lensink & White, 2000, p. 402). Hanmer *et al.* (1999) suggested that the growth elasticities of poverty depend on income distribution. It is also possible that the increase in government consumption might benefit the poor through pro-poor social expenditures (Burnside & Dollar, 1998; Masud & Yontcheva, 2005). As summarised in Section 3 of Chapter 3, the channels by which foreign

aid affects poverty include economic growth, pro-poor public expenditure and the macroeconomic stabilisation effect.

According to (Mosley, *et al.*, 2004, p. F221), the total effect of aid on poverty can be disaggregated into direct and indirect impacts. The indirect impact is when aid affects poverty through economic growth and changes in policy. The total impact of aid on poverty is illustrated in Equation 4.1:

$$\begin{aligned} \frac{\partial(POV)}{\partial(AID)} = & \frac{\partial(POV)}{\partial(AID)} + \frac{\partial(POV)}{\partial(GDP)} \left[\frac{\partial(GDP)}{\partial(AID)} + \frac{\partial(GDP)}{\partial(AID)} \frac{\partial(POL)}{\partial(AID)} \right] \\ & + \frac{\partial(POV)}{\partial(POL)} \frac{\partial(POL)}{\partial(AID)} \end{aligned} \quad [4.1]$$

where $\frac{\partial(POV)}{\partial(AID)}$ is the direct effect of aid on poverty, and the second and third terms represent the interaction between aid and growth (*GDP*) and policy (*POL*). The total impact of foreign aid (*AID*) on poverty (*POV*) is thus a combination of its direct effect, its effect on GDP per capita (*GDP*) plus the effect on policy (the vector *POL*).

As illustrated in Equation 4.1, there are various ways or channels through which aid can affect poverty. Foreign aid that generates income earning opportunities or provides social services, such as donor-funded projects in health or sanitation, can reduce poverty directly. Aid that contributes to economic growth might lead to long-term poverty reduction. Furthermore, aid that is directed through government spending can reduce poverty by increasing expenditure on those social services that contribute directly to welfare improvement and poverty reduction (Gomanee, *et al.*, 2004). Furthermore, aid has been used to strengthen democratic institutions, with the hope that strong institutions will lead to sustainable development and poverty reduction (Riddell, 2008).

One of the objectives of this study is to test whether foreign aid can impact poverty through enhancement of political or economic freedom. The majority of literature on the aid-growth-poverty nexus cites the importance of macroeconomic and pro-poor policies, institutions, and democracy as the main requirements or channels for aid effectiveness (World Bank, 1998; Burnside & Dollar, 2000; Mosley *et al.*, 2004; Alvi & Senbeta, 2012).

This study tests the efficacy of the so-called WC³⁶ model of aid allocation. The term WC refers to a set of economic policy prescriptions associated with institutions based in Washington, D.C. such as the IMF, the World Bank, and the U.S. Treasury Department. The original policy prescriptions, in the 1980s, included minimum government intervention in the market, privatisation, trade liberalisation, and deregulation (Quibria & Islam, 2015). These were later “augmented” to include a set of economic and political conditions such as “good” governance and institutional quality, which became known as aid conditionalities or selection criteria (Rodrik, 2006; Riddell, 2008; Lew & Arvin, 2015).

This theoretical framework can be located within the seminal studies by Burnside and Dollar (2000) who found that that aid is effective in reducing poverty only in countries with good policy environments. Collier and Dollar (2002) argued that foreign aid can reduce extreme poverty and hasten poverty reduction in poor countries with good policies and quality institutions. Kosack (2003) found that foreign aid could be more effective in improving quality of life in more democratic countries. According to the United Nations General Assembly (1993) and Reinsberg (2015), some donors have embraced political freedom and economic liberalisation as part of the conditionalities in their foreign aid allocation. Following Kosack (2003) and Connors (2011), the proxies for the policy variable in this study are political and economic freedom which are used separately in the estimations. However, unlike Kosack (2003) and other previous studies, the present study’s proxies for the dependent variable (poverty) are different measures of extreme poverty.

4.2.2. Empirical model specification for examining the impact of foreign aid

According to Datt and Ravallion (1992), a poverty measure can be decomposed into growth and distributional effects as follows:

$$P_t = P(Z|\mu_t, L_t) \quad [4.2]$$

³⁶The term Washington Consensus was first used by an English economist named John Williamson in 1989.

where P_t is the poverty measure, Z is the poverty line, μ_t is the mean income, and L_t is the vector of parameters explaining the Lorenz curve at time t (Datt & Ravallion, 1992, p. 277). Taking a derivative of Equation (4.2) will decompose poverty into the following equation:

$$\Delta Pov = \Delta Pov^G + \Delta Pov^R \quad [4.3]$$

This implies that changes in poverty measures can be decomposed into growth (ΔPov^G) and redistribution (ΔPov^R) components³⁷. Datt and Ravallion (1992), Ravallion and Chen (1997), and recently Alvi and Senbeta (2012, 2014) used Equations 4.2 and 4.3 as basic specifications for poverty analysis.

$$\log P_{jit} = \alpha_0 + \beta_1 \log Y_{it} + \beta_2 \log G_{it} + \vartheta_i + \varepsilon_{it} \quad [4.4]$$

where P_{jit} is a vector of the measures (proxies) of extreme poverty in country i at time t . Each proxy of extreme poverty is represented by the subscript j . In this study, there are three proxies of extreme poverty, namely the poverty headcount rate, the PG, and the SPG. In addition, β_1 is the growth elasticity of poverty (Besley & Burgess, 2003) and Y_{it} is the real per capita income (real GDP per capita). G_{it} is the Gini coefficient for country i at time t , ϑ_i is the unobserved individual country-specific effect, and ε_{it} is the idiosyncratic error term.

Following the World Bank (1998), Burnside and Dollar (2000), Mosley *et al.* (2004), and Alvi and Senbeta (2012), Equation (4.4) can be augmented by incorporating foreign aid as shown in Equation (4.5):

$$\log P_{jit} = \alpha_0 + \beta_1 \log Y_{it} + \beta_2 \log G_{it} + \beta_3 \log AID_{jit} + \beta_4 X_{jit} + \beta_5 POL_{jit} + \vartheta_i + \varepsilon_{it} \quad [4.5]$$

³⁷See Akobeng (2016, p. 212).

where AID_{jit} is a vector of foreign aid proxies, including ODA as a percentage of GNI, loans, grants, and multilateral and bilateral aid. Each proxy is used individually in this study's estimation. The coefficient β_3 captures the direct effect of foreign aid on poverty. Furthermore, X_{jit} represents a vector of control variables, while POL_{jit} is a vector for either political or economic freedom for country i at time t .

The study is also aimed at exploring the conditions under which foreign aid can lead to poverty reduction or channels through which aid impacts on poverty. As demonstrated in sub-section 4.2.1 (theoretical framework) above, aid may affect poverty through economic growth and policy. Literature on the aid-poverty nexus emphasises the importance of policies, institutions, democracy and pro-poor policies as the main requirements for aid effectiveness (see World Bank, 1998; Burnside & Dollar, 2000; Mosley *et al.*, 2004; Alvi & Senbeta, 2012, among others). In the present study, these conditions are subdivided into socio-economic policies and freedom. The former includes FDI, secondary education, civil conflict trade openness and the globalisation index.

Seminal studies by Bane and Ellwood (1986) and Hoynes *et al.* (2006) demonstrated that poverty is persistent, and past levels of poverty can thus explain the current and future poverty levels. The lagged poverty level ($P_{ji,t-1}$) can therefore be introduced as one of the regressors to account for the persistent nature of poverty (Equation 4.6). Equation 4.6 is the fully specified augmented model.

$$\begin{aligned} \log P_{jit} = & \alpha_0 + \beta_0 \log P_{ji,t-1} + \beta_1 \log Y_{it} + \beta_2 \log G_{it} + \beta_3 \log AID_{jit} + \beta_4 X_{jit} \\ & + \beta_5 POL_{jit} + \vartheta_i + \varepsilon_{it} \end{aligned} \quad [4.6]$$

One of the objectives of this study is to test whether political or economic freedom enhances the effectiveness of foreign aid in reducing poverty. The interaction of foreign aid with a vector for either political or economic freedom is therefore included, as presented in Equation 4.7³⁸.

³⁸According to Brambor *et al.* (2006), all constitutive terms should be included in the interaction model specification.

$$\begin{aligned} \log P_{jit} = & \alpha_0 + \beta_0 \log P_{j,t-1} + \beta_1 \log Y_{it} + \beta_2 \log G_{it} + \beta_3 \log AID_{jit} + \beta_4 X_{jit} \\ & + \beta_5 \log(POL_{jit} \times AID_{jit}) + \vartheta_i + \varepsilon_{it} \end{aligned} \quad [4.7]$$

Differentiating Equation 4.8 with respect to foreign aid (AID_{jit}) yields the following (Equation 4.8):

$$\frac{\partial(P_{jit})}{\partial(AID_{jit})} = \beta_3 + \beta_5 \log POL_{jit} \quad [4.8]$$

where β_3 and β_5 capture the extent to which POL_{jit} enhances the effectiveness of foreign aid in poverty reduction. The introduction of the interaction term means that the effect of foreign aid on poverty, in such a specification, should be treated as a marginal effect (see Brambor *et al.*, 2006; Asongu & Nwachukwu, 2016; Akobeng, 2016).

All the independent variables in the models estimated (including the policy and control variables) have been picked, based on the literature on the decomposition of and determinants of poverty. The explanatory variables have also been used in previous poverty and foreign aid studies (World Bank, 1998; Burnside & Dollar, 2000; Kosack, 2003; Mosley *et al.*, 2004; Connors, 2011; Alvi & Senbeta, 2012) and are briefly explained in the next subsection.

4.2.3. Definitions of variables and *a priori* expectation

The dependent variable for this study is extreme poverty. The class of poverty measure used in this study follows the work of Foster *et al.* (1984), with three proxies for extreme poverty measures: (i) poverty headcount index, (ii) poverty gap index, and (iii) squared poverty gap index. The headcount index, or the poverty rate, measures the proportion of households in a population with income per person below the poverty line. Thus, it measures the prevalence of poverty, in terms of the spread of poverty within the population (Schaffner, 2014). The poverty-gap index measures the depth of poverty and it considers the dispersal of the poor (Schaffner, 2014, p. 88). The squared poverty gap index (also referred to as the poverty severity index) is sensitive to both global prevalence and the average depth of poverty as well as the occurrence of deep poverty among the poor (Alvi & Senbeta, 2012; Schaffner, 2014). For this study, the international poverty line adopted is US\$1.90 a day, commonly known as a “dollar a day”.

Foreign or developmental aid is the key independent variable in this study. Foreign aid is generally defined as public and private funds given to developing countries – “*with the main purpose of improving economic development and welfare traps*” (Clunies-Ross *et al.*, 2009, p. 590). The study used the standard definitions used by OECD-DAC. Official development assistance and OA include (i) grants and (ii) concessional loans of more than a year’s term, and with a 25% or more grant element. Foreign aid can also be categorised according to its (i) source and (ii) type. The main sources of foreign aid to developing countries are (a) bilateral, which is from one country’s government to another, and (b) multilateral (many-sided), which goes through international institutions, such as the World Bank and the U.N. agencies. The three types of aid are total aid, loans and grants. This study disaggregated foreign aid into the above-mentioned three types and two sources in order to examine the effects of each category on poverty. Grants do not carry any interest, and no repayment is required, while loans carry interest and need to be repaid. Therefore, their effects on poverty are expected to be different. Moreover, the literature suggests that bilateral aid is usually allocated along colonial lines and strategic alliances, whereas multilateral aid has “economic development and welfare” as the main objective (Peiffer & Boussalis, 2015; Asongu & Nwachukwu, 2016). If foreign aid (or each proxy) indeed reduces poverty, then the coefficient of aid (β_3) is expected to be negative.

The main independent variables are based on poverty decomposition by Datt and Ravallion (1992) and Ravallion and Chen (1997) who decomposed poverty into growth and distributional effects which are proxied by real GDP per capita at 2010 constant prices and the Gini coefficient respectively. The Gini coefficient is a commonly used measure of inequality. The coefficient lies between 0 and 1 (or from 0% to 100%), with higher values signifying higher levels of inequality. Both theoretical and empirical literature suggest that economic growth leads to poverty reduction; thus, the expected sign for β_1 is negative. The coefficient β_1 , which is the growth elasticity of poverty, captures how growth in average income enables the poor to come out of poverty. According to Feeny (2003, p. 73), “*growth is often viewed as the primary driver of poverty reduction and therefore inferences of the impact of aid on poverty are commonly drawn from the impact of aid on growth*”. Other studies such as those by Collier and Dollar (2001, 2002), Kraay (2005), and Guillaumont and Wagner (2014) support the view that foreign aid might affect poverty through growth.

The coefficient for the inequality variable or Gini (β_2) is expected to be positive, as greater inequality is assumed to lead to increased poverty through hampering the extent to which growth benefits the poor (Hanmer & Naschold, 2000; Naschold, 2002). However, it is important to note that poverty and inequality, though theoretically distinct, are closely related (Atkinson, 1987; Karagiannaki, 2017). Therefore, an increase in inequality is expected to be associated with a corresponding increase in poverty.

Our policy variables are political freedom (democracy) and economic freedom. The relationship between political or economic freedom and poverty seems to have contrasting results across the literature. Theoretically, since the majority of the population in developing countries are poor, one would expect that the poor would use their numbers in an electoral process to put the government to account (Varshney, 1999). It is further argued that political freedom (democracy) is likely to contribute to poverty reduction as long it is deepened to include (i) freedom to organise, (ii) real authority for elected rulers, (iii) substantive policy agendas, and (iv) direct participation (Moore, 2004; Agborsangaya-Fiteu, 2009). However, empirical studies have shown that there is no direct link between democracy and poverty reduction. Varshney (1999, p. 4) asserted “*that democracies by themselves do not remove poverty; economic strategies do.*” Bratton (2006, p. v) explored the relationship between the poor in sub-Saharan Africa and democratic citizenship. This research discovered that, though the poor were dissatisfied with the quality of service delivery, they lacked ‘key capabilities of democratic citizenship’ and therefore could not use institutions of democracy to make elected national leaders accountable. Furthermore, transitioning to political and economic freedom has not led to poverty reduction in some countries (Tuya, 2013; Connors, 2011). Varshney (1999) therefore, suggests that there are poor and rich democracies in the world which implies that the impact of political and/or economic freedom on poverty can either be positive or negative.

As postulated by Klein *et al.* (2001), it would be expected that foreign direct investment (FDI) inflows lead to a reduction in poverty. However, other studies found that FDI might also lead to an increase in poverty or a neutral relationship (Huang *et al.*, 2010; Gohou & Soumare, 2012; Shamim *et al.*, 2014). Thus, the FDI coefficient could be positive or negative.

According to the World Bank (2002, p. ix), the evaluation of the impact of globalisation, defined as “*the growing integration of economies and societies around the world*” on poverty has produced mixed results. Generally, globalisation reduces poverty, because more integrated

economies tend to grow faster, and this growth is usually widely diffused. Even though the economic arguments in favour of globalisation emphasise the positive relationships between increased globalisation and higher living standards (or poverty reduction), the UN (2001) noted that the “*reality has proven not to be so rosy*”. Furthermore, a World Bank (2002) study has shown that, on the one hand, globalisation is credited for the massive poverty reduction in poor countries with around 3 billion people, whose countries managed to break into the global market. On the other hand, poor countries with around 2 billion people are being left behind, playing very marginal roles in the global economy (World Bank, 2002, pp. ix-x). Basu (2006) agrees with the World Bank (2002) that globalisation can either be good or bad depending on period or location among others. This suggests that the impact of globalisation on poverty can either be negative or positive.

There are two main schools of thought on the relationship between poverty and conflict in literature. The first group posts poverty as the main cause of civil war and conflict (Braithwaite *et al.*, 2016). The second group contends that conflict leads to poverty (Collier *et al.*, 2003). They argue that “*once a country experiences conflict, it faces a reversal of economic development, which in turn increases the likelihood of future onsets of conflict*” (Braithwaite *et al.*, 2016, p. 46).

Justino and Verwimp (2013) investigated the impact of conflict on poverty in Rwanda and found that households who had faced violent conflicts were more likely to fall into poverty. Braithwaite *et al.* (2016) found that causality runs from poverty to conflict. Gurr and Marshall (2005) found that poverty and civil conflict tend to reinforce each other, as some conflicts are caused by a combination of poverty and weak states and institutions. This suggests that there is a possibility of endogeneity and causal relationship between poverty and conflict. Thus, the coefficient for civil conflict can either be negative or positive. Lastly, civil conflict variables need to be treated as endogenous in our estimation.

Many development practitioners and policy makers believe that education is the surest way for individuals to overcome poverty (McKinney, 2014; Kilty, 2015). South Africa’s former president, Nelson Mandela is quoted as saying:

“Education is the great engine of personal development. It is through education that the daughter of a peasant can become a doctor, that the son of a mine worker can become the head of the mine, that a child of farm workers can become the president of

a great nation. It is what we make out of what we have, not what we are given, that separates one person from another” (Mandela, 1995, p. 20).

Theoretically, low levels of education are regarded as one of the causes and symptoms of poverty (Pritchett, et al., 2000). Eryong and Xiuping (2018) argue that the higher the level of education, the higher the level of income and hence the lower level of poverty. It is therefore expected that the coefficient for secondary education will be negative thus implying that the higher the level of education the lower the levels of poverty.

Regarding the relationship between international trade (trade openness) and poverty, the World Bank Group and World Trade Organization (2015) argue that trade can reduce poverty indirectly through economic growth and directly through the creation of employment for low skilled and poor workers in export industries. The World Bank Group and World Trade Organization (2018, p. 8) further noted that, though there are several channels through which trade affects poverty, empirical evidence reveals that the poor are affected differently. This suggests that the coefficient of trade openness on a poverty regression could be negative and significant or insignificant. According to Harrison (2006), globalisation encompasses international trade. This raises the possibility of multicollinearity in our data.

4.2.4. Endogeneity and other methodological issues

One of the main criticisms of the early AEL is that empirical studies lack robustness of econometric results (Chauvet, 2015, p. 360). This is partially because of the weaknesses in the methodologies used in addressing endogeneity issues. Several seminal studies in the AEL seem to conclude that earlier estimates of foreign aid effects may not be reliable because of endogeneity bias (Rajan & Subramanian, 2008; Civelli *et al.*, 2018, p. 50).

The endogeneity of foreign aid emanates from two main sources: (i) reverse causality (or simultaneity) between aid and poverty and (ii) unobservable heterogeneity or omitted variable bias (Baltagi, 2013). In this study’s model, if aid donors are motivated by poverty reduction, then the higher the levels of poverty, the greater the desire to offer foreign aid to reduce them. Second, some donors might be motivated by a desire to stimulate real income growth in an aid-recipient country thus leading to a correlation between foreign aid and GDP per capita, which are both right-hand-side (RHS) regressors. Furthermore, the addition of the lagged dependent

variable ($P_{i,t-1}$) in Equation 4.1 as part of the regressors introduces new complications, including autocorrelation and heterogeneity. Endogeneity, autocorrelation, and heterogeneity lead to inconsistency of the OLS, random, and fixed-effects estimates (Baltagi, 2005, 2013).

The instrumental variable (IV) methods in this research involve the use of relevant instruments that are correlated with foreign aid (the main explanatory variable) but not with the explained variable (poverty). According to Angrist and Pischke (2009), an ideal instrument comes from institutional knowledge and the researcher's ideas about the processes determining the variable of interest.

For this study, the relevant instrument(s) should be correlated with the explanatory variable (foreign aid) but not with the dependent variable (poverty). The instrument (commonly referred to as Z) should satisfy the following two conditions: (i) $\text{cov}(Z, \text{aid}) \neq 0$, and (ii) $\text{cov}(Z, \varepsilon) = 0$; that is, the instrument should be highly correlated with the independent or main explanatory variable (aid) but uncorrelated with the error, respectively (Asra, *et al.*, 2005, p. 4). The IVs proposed in this research should affect the level of foreign aid received by a country while being exogenous to the recipient country's level of poverty. Therefore, the instrument can be any factor that is in the foreign aid allocation function but does not appear in the poverty function (Baum, 2006).

To address endogeneity issues, several possible external instruments were developed or collated and tested for suitability in this study. The instruments include a donor's friend dummy (France colony), as used by Boone (1994, 1996), Burnside and Dollar (2000), and Easterly (2005); a recipient country's arms imports (Boone, 1994, 1996; Burnside & Dollar, 2000); population size (Burnside & Dollar, 2000; Easterly, 2005); the GDP per capita of the OECD³⁹ countries multiplied by the inverse of the distance between the aid receiving country and the main OECD countries (Tavares, 2003; Akobeng, 2016), and lagged aid (Dalgaard, *et al.*, 2004). The other external instruments tested in this study include the recipient country's arms imports (Boone, 1994, 1996; Burnside & Dollar, 2000), population size (Burnside & Dollar, 2000; Easterly, 2005), and lagged aid (Dalgaard, *et al.*, 2004). However, the prospect of finding

³⁹The 28 donor countries are the UK, the USA, Spain, Sweden, Switzerland, Slovenia, the Slovak Republic, Portugal, Poland, Norway, New Zealand, the Netherlands, Luxembourg, the Korean Republic, Japan, Italy, Ireland, Iceland, Greece, Germany, France, Finland, Denmark, the Czech Republic, Canada, Belgium, Austria, and Australia.

suitable instruments that adequately address the aid endogeneity issue has been criticised by Roodman (2008) and Deaton (2009); thus, the study used internal instrumentation techniques. In the SGMM framework, the predetermined and endogenous variables in levels were instrumented by suitable lags in their own first differences (Blundell & Bond, 1998; Baltagi, 2013).

4.2.5. Justification for using system-generalised method of moments

Empirical literature posits a number of approaches to estimating a DPD model with suspected endogeneity problems. These include (i) an IV approach proposed by Anderson and Hsiao (1981, 1982), (ii) the first-differenced GMM (DGMM) estimator by Arellano and Bond (1991), (iii) a bias-corrected least squares dummy variable (LSDVC) or fixed-effects (FE) estimators developed by Kiviet (1995) and Bruno (2005a, 2005b), and (iv) the SGMM (Arellano and Bover, 1995; Blundell and Bond, 1998). In a model with highly dynamic data, the first two estimation techniques have been proven to suffer from a severe small-sample bias because of weak instruments (Nickell, 1981; Blundell & Bond, 1998). Though the LSDVC approach performs well in small, dynamic, and unbalanced panel data samples, the model is not suitable where endogenous variables exist on the RHS, as it is for “*strictly exogenous regressors*” (Bruno, 2005b, p. 473).

To overcome the problems of endogeneity, simultaneity, autocorrelation, and heterogeneity in this study’s data, the endogeneity robust SGMM was adopted. It is an extension of the Arellano and Bover (1995) and Blundell and Bond (1998) method by Roodman (2009a, 2009b) and is available as *xtabond2* in Stata. The SGMM estimator produces dramatic efficiency gains over the basic DGMM (Blundell & Bond, 1998; Baltagi, 2013, p. 168).

Some of the advantages of the SGMM estimation approach over the other methods and its suitability for the sample in this research are briefly explained next. First, the method is suitable for dynamic or persistent panels.

Second, the SGMM addresses biases due to endogeneity (or reverse causality) by controlling for simultaneity (using an instrumentation process) and the unobserved heterogeneity (using time-invariant omitted variables). This is partially done through the use of lagged explanatory

variables as internal instruments. The estimation technique also allows for the inclusion of external instruments.

Third, the technique is suitable in the “small T, large N” context, by addressing the Nickell (1981) bias and applying the “Windmeijer finite-sample correction” (Windmeijer, 2005). In this study’s sample, the number of countries ($N = 120$) is greater than the number of years ($T = 12$).

Fourth, the approach eliminates the country-fixed effects by differencing the internal instruments to make them exogenous to the fixed effects (Akobeng, 2016, p. 215); however, it does not eliminate the country differences. It controls for cross-country dependence, limits instrument proliferation, and restricts over-identification (Love & Zicchino, 2006; Roodman, 2009b; Baltagi, 2013; Tchamyou & Asongu, 2017; Tchamyou, 2018a, 2018b). The estimator allows the researcher to control for time-invariant, country-specific effects and the endogeneity of foreign aid (Alvi & Senbeta, 2012, p. 955).

Fifth, the two-step SGMM approach was adopted in this research’s specification because of its ability to control for heteroscedasticity – instead of the one-step approach, which is consistent with homoscedasticity. Forward orthogonal deviations were also adopted rather than differencing, so as to minimise data loss (Roodman, 2009b).

4.2.6. Identification, exclusion restrictions, specification, and robustness checks under the generalised method of moments approach

Following recent literature on the identification strategy by Love and Zicchino (2006), Roodman (2009b), and Boateng *et al.* (2018), all explanatory variables in this study, with the exception of year dummies or time-invariant variables are treated as endogenous or predetermined. Therefore, the *gmmstyle* is adopted for all the explanatory variables. The time-invariant variable (years) is treated as exogenous, and the corresponding approach for treating *ivstyle* (years) is “iv (years, eq[diff])”. It is plausible to treat years as exogenous, as it is unlikely for a time variable to be endogenous in the first difference (Roodman, 2009b; Asongu & De Moor, 2017; Asongu & Nwachukwu, 2018).

The first source of endogeneity, which is simultaneity, is addressed through instrumentation. As indicated above, both external and internal instruments are utilised⁴⁰. The lagged regressors are used as internal instruments for forward-differenced variables. The process involves the use of Helmert transformations, which reduces the impact of fixed effects on the relationship under examination (Arellano & Bover, 1995; Love & Zicchino, 2006; Asongu & De Moor, 2017). This transformation involves deducting the average of all future observations from the variables instead of the traditional method of subtracting the past observations from the present ones. This process is suitable for unbalanced panels, as it minimises data loss. According to Roodman (2009b, p. 21), this transformation, “... *no matter how many gaps, ... is computable for all observations except the last for each individual, so it minimizes data loss. And because lagged observations do not enter the formula, they are valid as instruments*”.

Lastly, the second source of endogeneity could be omitted variable bias. The IV literature requires strict instrument exogeneity. Theoretically, a need exists for exclusion restrictions: ruling out any direct effect of the chosen instruments (which is the time-invariant variable) on the dependent variable (poverty) or any effect running through omitted variables. This is a test for whether the strictly exogenous instruments affect poverty exclusively through the predetermined and endogenous variables (Bobba & Coviello, 2007; Asongu & De Moor, 2017). To test for exclusion restriction, the Difference in Hansen test (DHT) for instrument exogeneity is used. The null hypothesis of the DHT should not be rejected for confirmation that the instruments are explaining poverty through predetermined and suspected endogenous variables.

Overall, four main information criteria are used to assess the validity of the GMM model (Asongu & De Moor, 2017, p. 200). First, there is a test for serial- and autocorrelation. Therefore, tests are performed for both first- and second-order serial correlations using the Arellano and Bond (1991) test. The null hypothesis is that there is no second-order serial correlation in the disturbances of the first-differenced equation. By definition, first-order serial correlation is expected, but not second order for the consistency of the GMM estimator. The null hypothesis of the second-order autocorrelation test [AR (2)] should thus not be rejected (Arellano & Bond, 1991; Baltagi, 2013).

⁴⁰The *xtabond2* approach allows for the use of both external and internal instruments (Roodman, 2009a, 2009b).

The second criterion involves testing the validity of instruments or that instruments are not correlated with error terms. These are called over-identification restriction (OIR) tests, and they can be conducted using the Sargan (1958) or Hansen (1982) *J* test. The Hansen *J* test is preferable because of its robustness for heteroscedasticity and autocorrelation. According to Baum (2006, p. 201), Hansen's *J* statistics can also be used to evaluate the suitability of the model; thus, rejection of the null hypothesis implies that IVs do not satisfy the orthogonal conditions required⁴¹. The null hypothesis for the Hansen *J* test is that OIRs are valid. It is important to note that in the GMM estimation approach, using too many moment conditions is as undesirable as using too few moment conditions (Andersen & Sørensen, 1996).

Additionally, the problem becomes more pronounced with panel data, where the number of moment conditions grows considerably with the growth in the number of time-series observations and strictly exogenous variables. As a rule of thumb requirement, to avoid over-identification, the number of cross-sectional units should be higher than the number of instruments in each specification (see Bobba & Coviello, 2007; Roodman, 2009b; Baltagi, 2013).

Third, the DHT for instrument exogeneity should be conducted to test the validity of results from the Hansen OIR test (Asongu & De Moor, 2017). Fourth, different proxies of aid and poverty were used, and the results of the estimation are compared to those of previous studies.

4.3. Panel Data Vector Error Correction Model: Causality Between Foreign Aid and Poverty

Apart from investigating the impact of foreign aid on extreme poverty, this study also seeks to establish the direction of causality between these two main variables. Causality is normally investigated through the Granger causality framework (Granger, 1969; Green, 2003; Gujarati & Porter, 2009; Wooldridge, 2013). The main assumption in the Granger (1969) causality test literature is that a variable (say X) can only be said to cause (Granger cause) another variable (say Y) if current values of Y are conditional on past values of X. In other words, the future cannot cause (or predict) the past.

⁴¹ However, the Hansen's *J* statistic is known to over-reject the null hypothesis in certain circumstances (Baum, 2006).

Recent developments in the Granger (1969) causality literature have seen the extension of this methodology from time-series to panel data. Further developments have also included the need to test for the time-series properties of the data, including stationarity and cointegration tests. If the variables are integrated of the same order [$I(1)$], and they are co-integrated, then Granger causality can be tested through the panel VECM, as proposed by Granger (1988). A vector autoregression (VARs) approach could also be employed if the variables are not co-integrated (Dumitrescu & Hurlin, 2012; Mahembe, 2014; Muye & Muye, 2016). In summary, the conditions for the VECM include the following: (i) the series must be stationary or integrated of the same order, (ii) estimated parameters are sensitive to the number of lagged terms included in the model, (iii) error terms entering the causality test should be uncorrelated, and (iv) variables should be co-integrated (Mahembe & Odhiambo, 2016).

Furthermore, the two-step Engle-Granger causality procedure in the panel VECM framework allows for the testing of both short- and long-run causality. There are three possible Granger (1969, 1988) causality outcomes: (i) unidirectional causality between two variables, which supports a supply-leading or a demand-following hypothesis; (ii) bidirectional causality, supporting the feedback hypothesis; and (iii) independence or no causality, which supports a neutrality hypothesis. Furthermore, three types of causal inference exist in this setup, namely: (i) short-term causal effects; (ii) long-term causal effects; and (iii) strong causal effects, which occur when there is evidence of both short- and long-run causal effects. There is also a possibility that the system can have evidence of long-run causality without short-run causality. This is an exception, however.

The following procedures were implemented in the Granger causality test using the panel VECM framework:

- i. model specification
- ii. panel data stationarity test
- iii. panel data cross-sectional dependency (CSD) test
- iv. determination of optimal lags
- v. panel data cointegration test
- vi. panel data causality test, using the panel VECM
- vii. post-estimation diagnostic tests

These steps are briefly explained in the next sub-sections. Where possible, a comparison is made of different testing methods and a justification is provided for the method(s) chosen.

4.3.1. Empirical model specification for testing the causal relationship between foreign aid and poverty

The main purpose of this analysis is to examine the direction of causality between the study's two main variables: extreme poverty (proxied by the poverty headcount rate) and foreign aid (proxied by ODA as a percentage of GNI). However, given the prominent role of economic growth in achieving poverty reduction, Granger causality was conducted within a panel trivariate setting, with economic growth (proxied by the real GDP per capita) as the intermittent variable. The choice of having economic growth as an intermittent variable is based on the theoretical links between foreign aid and economic growth, between poverty and economic growth, and among the three variables simultaneously.

The model specification follows that by Holtz-Eakin *et al.* (1988), and it describes the causal relationship between foreign aid, poverty, and economic growth, as shown in Equation 4.10:

$$POV = f(ODA, GDP) \quad [4.10]$$

where POV is the poverty headcount rate, ODA is foreign aid as a percentage of GNI, and GDP represents economic growth. This structural causal framework can be written in the VECM and matrix format as depicted in Equation 4.11:

$$\begin{bmatrix} \Delta POV_{it} \\ \Delta ODA_{it} \\ \Delta GDP_{it} \end{bmatrix} = \begin{bmatrix} \alpha_{1j} \\ \alpha_{2j} \\ \alpha_{3j} \end{bmatrix} + \sum_{k=1}^{q-1} \begin{bmatrix} \beta_{11ik}(L)\beta_{12ik}(L)\beta_{13ik}(L) \\ \beta_{21ik}(L)\beta_{22ik}(L)\beta_{23ik}(L) \\ \beta_{31ik}(L)\beta_{32ik}(L)\beta_{33ik}(L) \end{bmatrix} \begin{bmatrix} \Delta POV_{it-k} \\ \Delta ODA_{it-k} \\ \Delta GDP_{it-k} \end{bmatrix} + \begin{bmatrix} \lambda_{1j}ECT_{it-1} \\ \lambda_{2j}ECT_{it-1} \\ \lambda_{3j}ECT_{it-1} \end{bmatrix} + \begin{bmatrix} \varepsilon_{1it} \\ \varepsilon_{2it} \\ \varepsilon_{3it} \end{bmatrix} \quad [4.11]$$

where POV , ODA , and GDP are as defined in 4.11 and which alternate in taking the dependent and explanatory variable roles; Δ is the first-difference operator $(1 - L)$; $the = 1, \dots, N$; $t = 1, \dots, T$; α_s, β_s , and λ_s ($j = 1, \dots, 3$) are parameters to be estimated; ε_{jt} ($j = 1, \dots, 3$) represents white noise error terms; ECT_{it-1} indicates the lagged values of the error correction terms (ECTs) from the cointegration regressions, and λ_s is the speed of adjustment along the long-term equilibrium path. Short-run causality is inferred from the lagged dynamic variables of the

explanatory variables (β_s) using the partial χ^2 statistics of the Wald test (Wald, 1943). Long-run causality is tested through the lagged co-integrating vectors ECT_{t-j} (λ_s).

4.3.2. Panel data unit root tests

One of the key requirements for the panel VECM is that the variables' stationarity properties must be tested. This is done through panel unit root tests which examine the order of integration where the panel variable attains stationarity (Pradhan & Arvin, 2015, p. 241). Several panel unit root tests exist, but the main ones from empirical literature are by Levin *et al.* (2002) (also known as Levin-Lin-Chu or LLC) and Im *et al.* (2003) (Im-Pesaran-Shin, IPS). Though both tests are based on the augmented Dickey-Fuller (ADF) principle (see Equation 4.12 below), the main difference between the two is that the former assumes a homogeneous unit root across all cross-sections, whereas the latter allows for heterogeneity (Baltagi, 2013, p. 276).

$$\Delta y_{i,t} = \rho_i y_{i,t-1} + \sum_{L=1}^{Pi} \theta_{iL} \Delta y_{i,t-L} + \alpha_{mi} d_{mt} + \varepsilon_{i,t}, \quad \text{for } m = 1,2,3. \quad [4.12]$$

where d_{mt} denotes the vector of deterministic variables; ρ_i is the lag-order, which is permitted to vary across cross-sections and is determined by choosing a ρ_{max} and then using a t -statistic of θ_{iL} . Finally, $\varepsilon_{i,t}$ is assumed to be independently distributed across i and t , $i = 1, \dots, N$, $t = 1, \dots, T$.

The results of the panel unit root tests inform the panel causality tests procedure. As indicated above, two important conditions for the estimation of the panel VECM Granger causality test are that the variables must be stationary and integrated of order one (i.e. $I(1)$).

The null hypothesis under both LLC and IPS is that the series contains a unit root against the alternative that each series is stationary. The IPS is preferred because of its ability to cater for individual country heterogeneity. The panel unit root tests are performed on each of the three variables on both level and first differences. For a robustness check, two other tests were also conducted, namely Fisher-ADF and Fisher-Phillips-Perron (Fisher-PP) panel unit root tests (Madala & Wu, 1999; Choi, 2001).

4.3.3. Panel cross-sectional dependency tests and determination of optimal lags

Testing for CSD is one of the key issues to consider when dealing with panel data Granger causality tests (Muye & Muye, 2016). As a consequence of increased globalisation and the interconnectedness of the developing countries in this study's sample, there is a possibility that a structural break or shock in one country could affect other countries in the sample. The null hypothesis is that no CSD (correlation) exists in residuals, and the test statistic is asymptotically distributed as standard normal (Tekin, 2012b). In this research, both the Breusch and Pagan (1980) and Pesaran (2004) tests were employed, though the former is more valid mainly for a large T and small N (Pesaran, 2004). The latter was primarily used for a robustness check.

Panel Granger causality tests are known to be sensitive to lag lengths; therefore, it is important to establish the optimal lags (Konya, 2006; Mahembe & Odhiambo, 2016; Tekin, 2012b). The most common lag length selection methods⁴² in literature are the Akaike information criterion (AIC) (Akaike, 1974) and Schwarz information criteria (SCs) (Schwarz, 1978). Other researchers compared the two models and found that both are generally valid in optimal model selection, though Kuha (2004) and Wang and Liu (2006) provided evidence that the SCs perform better. Winker and Maringer (2005) showed that SCs perform relatively well in the VECM framework. This study therefore employed them using the unrestricted VAR model to determine the optimal lag selection. The AIC was also utilised for a robustness check.

4.3.4. Panel cointegration tests

Panel cointegration tests are conducted to determine whether a long-run equilibrium relationship exists between non-stationary variables. The results of the panel cointegration tests influence the panel Granger causality test strategy and model specification (Karanfil & Li, 2015). A result that indicates panel variable cointegration implies that the variables under consideration move together over time so that short-term disturbances are corrected in the long run (Engle & Granger, 1987; Stock & Watson, 1993). Therefore, causality should be investigated through the panel VECM framework. Conversely, a lack of cointegration suggests that the variables do not have a long-run relation and therefore tend to move randomly away

⁴² Other lag length selection methods include the sequential modified LR test statistic, the final prediction error, and the Hannan-Quinn information criterion.

from each other (Granger, 1988). A panel VAR should hence be estimated for causality analysis.

As with the panel unit root tests, several panel cointegration tests are used in empirical literature. These tests can be divided into two broad groups, namely residual-based and the likelihood-based tests. The most popular test from the first group is the one developed by Kao (1999), while the Pedroni (1999, 2004) panel cointegration tests consist of a set of seven tests, which combine the residual-based Lagrange multiplier (LM) tests, the ADF, and Philips-Perron (PP) principles. This study uses both the Kao (1999) and Pedroni (1999, 2004) panel cointegration tests. The Kao (1999) test is residual-based and assumes a homogenous or common co-integrating vector, whereas the Pedroni (1999, 2004) test allows for significant heterogeneity. For both tests, the null hypothesis is that no cointegration exists against an alternative that there is a co-integrating relationship.

4.3.5. Panel causality and post-estimation diagnostic tests

Having established the order of integration through the panel root tests and the presence of a long-run equilibrium through the panel cointegration tests, the next step is to test the direction of causality – dynamic panel causality tests. The tests for causality, however, are dependent on the panel cointegration results (Granger, 1988; Engle & Granger, 1987; Stock & Watson, 1993). In the case of no cointegration, a panel VAR equation is estimated. The panel VAR equation is similar to Equation 4.11 above but without the error correction component⁴³. In a panel VAR, only short-run coefficients are estimated, and short-run causality is inferred. Four categories of results are expected from the panel VAR/VECM Granger causality approach: (i) joint causality, where the coefficient of the ECT is negative and significant; (ii) short-run causality, when the coefficients of the short-run explanatory variables are statistically significant; (iii) long-run causality, when the coefficients of the long-run explanatory variables are statistically significant; and (iv) strong causality, which is a situation in which the ECT is present and both short-run and long-run causality occurs.

⁴³A panel VECM is a restricted panel VAR.

After estimating the VECM, causality can be inferred in three main ways:

- (i) *Checking the regressors' and ECT t-statistics.* Short-run causal effects are inferred if the regressors' *t*-statistics are statistically significant, while long-run causality is inferred when the coefficient of the ECT is negative and statistically significant.
- (ii) *Granger/Wald causality test.* This a short-run causality test, and it is conducted on the lagged explanatory variables. The null hypothesis is that the coefficient(s) of the lagged regressor(s) or explanatory variables is equal to zero against the alternative hypothesis that the coefficient(s) is not equal to zero. The null hypothesis is rejected if the probability value of the χ^2 statistics is less than 5% ($p \leq 0.05$).
- (iii) *Pairwise Granger causality test.* This was specifically developed to test the direction of causality. The null hypothesis is that no Granger-causality exists against the alternative that the null hypothesis is not true. The null hypothesis is rejected if the probability value of the *F*-statistics is less than 5% ($p \leq 0.05$).

Normally, the three methods lead to the same conclusion. This study used the first and the second method, and the third method was used for robust checks only.

The final step in the panel Granger causality test in the VECM framework is to run diagnostic tests. For the residual diagnostics, the study ran the serial autocorrelation, normality, and heteroscedasticity tests.

4.4. Data Sources and Definition of Variables

4.4.1. Data sources

The extreme poverty proxies (dependent variable) in this study are from the recently released World Bank poverty and inequality dataset (PovcalNet). The poverty measures in the PovcalNet dataset are estimated using a programme developed by Chen and Ravallion (2001). The compilation is based on primary information from nationally representative living-standard household surveys. The poverty data are estimated by using a combination of PPP and exchange rates for household consumption. The latest update from the World Bank (2018) database is from 1981 to 2013. It covers 1 500 household surveys across 164 countries in the world, including 26 high-income countries (World Bank, 2018). The poverty measures used in this study are based on the international poverty line of US\$1.90 a day in the 2011 PPP. This

is the internationally accepted measure of extreme or absolute poverty, which was originally defined as the “dollar a day” poverty line (please see Chen & Ravallion, 2008; Ravallion *et al.*, 2009; and Ravallion & Chen, 2010 for background papers).

The PovcalNet dataset provides tri-annual estimates of poverty and inequality measures from 1981 to 2008. Thereafter, there is annual data from 2010 to 2013. Thus, the sample of this research is from 1981 to 2013. Since the dependent variable (poverty) is available every 3 years between 1981 and 2008, and following Alvi and Senbeta (2012), three-year averages were taken of this study’s explanatory variables during the period 1981-2008 and two-year averages thereafter. As a result, the T therein covers 12 periods (from 1981 to 2013). The N for developing countries is 120 individual countries, which means that N is greater than T. Appendix A.1 lists the countries in the sample which were chosen based on data availability. However, due to data scarcity, the panel is unbalanced.

The main independent variable in this investigation is foreign aid which is proxied by ODA as a percentage of GNI, loans, grants, and multilateral and bilateral aid. Foreign aid data was obtained from the OECD-DAC. The political freedom (or democracy score) is proxied by the Polity IV Index from the Center for Systemic Peace Polity IV Project, while economic freedom data are from the Economic Freedom of the World (EFW) 2017 Report which was compiled by the Fraser Institute. The inequality database is from the Standardized World Income Inequality Database (SWIID) (Solt, 2016), while the real GDP per capita, secondary education enrolment, FDI, and trade openness are from the World Bank’s World Development Indicators (World Bank, 2017). The globalisation index was obtained from the Konjunkturforschungsstelle (KOF) Swiss Economic Institute (Dreher *et al.*, 2008); and the civil conflict variable was obtained from the Center for Systemic Peace Project’s Major Episodes of Political Violence (MEPVs) and the Conflict Regions 1946-2016 database (Marshall, 2017). Asongu and Nwachukwu (2018) caution against having more than five control variables, as this would lead to biases in estimated coefficients because of instrument proliferation. Hence, the control variables were restricted to a maximum of five in each estimated equation. See Table 4.1 for a list of all variables, definitions, and their sources.

Table 4.1: Summary of variables' definitions and sources

Variable Name	Variable Definition	Source
Poverty headcount rate	Percentage of population living below the poverty line (at \$1.90 a day, 2011 PPP)	PovcalNet, World Bank
PG	The average income shortfall as a share of the poverty line (at \$1.90 a day, 2011 PPP)	PovcalNet, World Bank
SPG	The squared average income shortfall as a share of the poverty line (at \$1.90 a day, 2011 PPP)	PovcalNet, World Bank
ODA as % of GNI	Total foreign aid (ODA) as a percentage of GNI	OECD-DAC
Bilateral aid	ODA from bilateral sources as a share of GDP	OECD-DAC
Multilateral aid	ODA from multilateral sources as a share of GDP	OECD-DAC
Grants	ODA grants as a share of GDP	OECD-DAC
Loans	ODA loans as a share of GDP	OECD-DAC
GDP per capita	GDP per capita (constant 2010 US\$)	World Development Indicators (WDI), World Bank
Gini coefficient	The Gini coefficient/index (measure of inequality)	SWIID
Foreign direct investment (FDI)	FDI, net inflows (% of GDP)	World Development Indicators (WDI), World Bank
Democracy score (political freedom)	Democracy score (from 0 to 10) – low value corresponding to autocracy, and higher values representing democracy.	Polity IV Project
Economic freedom index	Economic freedom of the world (from 0 to 10) – measures the degree to which institutions adhere to the free market ideal	Economic Freedom of the World 2017 Report, Fraser Institute
Secondary education	School enrolment, secondary (% gross)	World Development Indicators (WDI), World Bank
Civil conflict	Total summed magnitudes of all societal MEPVs	Center for Systemic Peace Project
Trade openness	Exports of goods and services (% of GDP)	World Development Indicators (WDI), World Bank
Globalisation index	The KOF Globalisation Index – measures the economic, social, and political dimensions of globalisation	KOF Swiss Economic Institute (Konjunkturforschungsstelle)

Notes: The abbreviations ODA, GDP, and GNI stand for official development assistance, gross domestic product, and gross national income, respectively; the others are as defined in the text.

4.5. Conclusion

This chapter presented the theoretical and empirical model specifications as well as the econometric estimation techniques used in the study. The chapter also discussed econometric challenges such as endogeneity and how to account for it in the estimation of GMM models, including the use of IVs. Furthermore, the chapter elaborated on the steps in the implementation of panel data Granger causality. Lastly, data sources and definitions of variables were discussed.

The two main econometric estimation techniques employed in this study are briefly summarised herein. The first technique is the SGMM estimation framework which was used

for estimating the impact of foreign aid on poverty. The SGMM was preferred for the following reasons: (i) it is suitable for dynamic or persistent panels; (ii) it can address biases because of endogeneity (or reverse causality) by controlling for simultaneity; (iii) it is appropriate in the “small T, large N” context by addressing the Nickell (1981) bias and applying the “Windmeijer finite-sample correction”; (iv) the method eliminates the country-fixed effects by differencing the internal instruments in order to make them exogenous to the fixed effects without eliminating the country differences – it controls for cross-country dependence, limits instrument proliferation, and restricts over-identification; (v) the *two-step* SGMM approach adopted in this study’s specification has the ability to control for heteroscedasticity; and (vi) the framework also allows for the adoption of forward orthogonal deviations instead of differencing, so as to minimise data loss.

For causality analysis, the panel VECM Granger framework was adopted because of its ability to explicitly distinguish between three types of causal inference, namely (i) short-run causal effects; (ii) long-run causal effects; and (iii) strong causal effects, which occur when there is evidence of both short- and long-run causal effects. Furthermore, the method was chosen because the variables were found to be integrated in the same order and were co-integrated.

CHAPTER 5: ECONOMETRIC ANALYSIS AND EMPIRICAL FINDINGS

5.1. Introduction

The foregoing chapter focused on the econometric estimation techniques employed in this study as well as the theoretical and empirical model specifications. This chapter presents the econometric analysis and the empirical findings based on the two main methodologies applied in this study: (i) an impact assessment of foreign aid on poverty using the SGMM estimation method and (ii) an assessment of the direction of causality between foreign aid and poverty through panel Granger causality tests in the VECM framework.

Through the use of the SGMM estimation method, the study explores several issues in line with the study objectives. They are as follows:

- i. the overall impact of foreign aid (total ODA) on the poverty rate;
- ii. the impact of different proxies of foreign aid on the three proxies of extreme poverty;
- iii. an investigation into whether freedom (political and economic) enhances the effectiveness of foreign aid; and
- iv. a comparison of the impact of foreign aid on poverty by developing country income groups.

The dynamic panel Granger causality analysis, in the VECM framework, was used to examine the direction of causality between the two main variables: (i) extreme poverty, proxied by headcount poverty rate, and (ii) foreign aid, proxied by total ODA as a percentage of GNI. However, given the prominent role of economic growth in achieving poverty reduction, Granger causality was conducted within a panel trivariate setting with GDP per capita as the third variable (intermittent variable).

The chapter is divided into five main sections. Section 5.2 presents the econometric analysis and the empirical findings of the DPD SGMM estimation, while Section 5.3 focuses on the panel Granger causality analysis and results. Then, Section 5.4 offers a detailed discussion and summary of the main empirical findings of the study, and Section 5.5 concludes the chapter.

5.2. Results on the Impact of Foreign Aid on Poverty Reduction

In this section, the results of the impact of foreign aid on poverty reduction are presented and discussed in detail. The section starts by highlighting the time-series characteristics of the panel data used in the study before discussing the main results from the SGMM DPD estimation.

5.2.1. Summary statistics

The panel consists of 120 developing countries and 12 time periods, averaged over 3 years from 1981 to 2013. The dependent variable is poverty, and it is proxied by the poverty headcount rate (main proxy), the PG, and the SPG. The main independent variable (variable of interest in this study) is foreign aid, which is proxied by ODA as a percentage of GNI (main proxy), bilateral aid, multilateral aid, grants, and loans. Based on the poverty identity by Datt and Ravallion (1992), the basic specifications of the poverty estimation variables are the real GDP per capita (representing economic growth) and the Gini coefficient (as an inequality measure representing the distributional effects of poverty).

The policy variables for this study are the political freedom score and the economic freedom index. Furthermore, the main control variables included in this study are as follows: FDI, secondary education, civil conflict, trade openness, and the globalisation index. Table 5.1 lists the descriptive statistics for the logged and normalised data⁴⁴ in terms of the mean, median, minimum, maximum, and standard deviations of the variables.

⁴⁴All the variables, except for time dummy, democracy, and conflict, have been converted into logarithm form. The democracy and conflict variables are normalised so that values are between zero and one.

Table 5.1: Summary statistics

Variable	Obs.	Mean	Std. dev.	Min.	Max.
Poverty headcount rate	1 415	2.59	1.65	-4.61	4.60
Poverty gap index	1 413	1.44	1.90	-5.30	4.50
Squared poverty gap	1 397	0.71	2.02	-4.61	4.40
ODA as % of GNI	1 218	1.14	1.86	-7.70	4.78
Bilateral aid	1 205	0.74	1.75	-5.70	4.22
Multilateral aid	1 198	-0.03	1.97	-5.70	4.33
Grant	1 311	5.28	1.38	-4.20	9.28
Loan	1 003	4.00	1.85	-4.61	7.86
GDP per capita	1 338	7.42	1.02	4.79	10.06
Gini coefficient	994	-0.80	0.16	-1.54	-0.38
Foreign direct investment	1 189	0.39	1.56	-7.92	4.11
Political freedom score	1 207	0.51	0.30	0.00	0.95
Economic freedom index	983	1.72	0.23	0.60	2.11
Secondary education	1 105	3.73	0.77	0.88	4.74
Civil conflict	1 190	0.52	0.09	0.48	0.95
Trade openness	1 241	4.19	0.64	-3.01	5.91
Globalisation index	1 354	3.76	0.27	2.90	4.37

Notes: The sample comprises 120 developing countries for the period 1981-2013. These summary statistics are based on logged and normalised data. The abbreviations are as follows. Obs. stands for number of observations; Std. dev.: standard deviations; Min.: minimum; Max.: maximum; ODA: official development assistance; GDP: gross domestic product; and GNI: gross national income.

All the variables in Table 5.1 are in logarithmic format except for political freedom, economic freedom, and civil conflict, which are normalised so that their values are between zero and one. Since the data have been linearised, the summary of the statistics for the variables shows minimum variations across the countries in the sample.

5.2.2. Cross-correlation analysis

Cross-correlation analysis is used to ascertain the correlations between the variables in this study's model. Table 5.2 shows the Pearson (1896) correlation matrix for all the variables including the lag of the dependent variable. The Pearson correlation coefficient measures the strength and direction of association that exists between two continuous variables. The asterisk (*) next to the coefficients indicates the significance at p-values of 0.05 or lower.

Table 5.2: Pearson correlation matrix

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Poverty rate	1																			
2. Poverty gap	0.98*	1																		
3. Sqd poverty gap	0.94*	0.99*	1																	
4. ODA as % of GNI	0.39*	0.37*	0.35*	1																
5. GDP per capita	-0.66*	-0.63*	-0.59*	-0.63*	1															
6. Gini coefficient	0.19*	0.20*	0.21*	-0.07*	0.17*	1														
7. Grant	0.14*	0.11*	0.09*	0.15*	-0.35*	-0.05	1													
8. Loan	0.11*	0.09*	0.07*	-0.12*	-0.27*	-0.20*	0.69*	1												
9. Bilateral aid	0.38*	0.36*	0.33*	0.98*	-0.59*	-0.06	0.10*	-0.16*	1											
10. Multilateral aid	0.43*	0.41*	0.38*	0.93*	-0.68*	-0.12*	0.06*	-0.10*	0.86*	1										
11. FDI	-0.18*	-0.16*	-0.15*	-0.00	0.26*	0.10*	-0.09*	-0.14*	-0.04	-0.02	1									
12. Political freedom	-0.21*	-0.19*	-0.19*	-0.17*	0.31*	0.26*	0.04	-0.02	-0.13*	-0.15*	0.22*	1								
13. Econ. Freedom	-0.37*	-0.36*	-0.34*	-0.19*	0.35*	0.08*	-0.01	-0.15*	-0.17*	-0.17*	0.49*	0.44*	1							
14. Sec. education	-0.62*	-0.62*	-0.61*	-0.48*	0.69*	0.04	-0.21*	-0.13*	-0.47*	-0.48*	0.29*	0.39*	0.50*	1						
15. Civil conflict	0.13*	0.11*	0.09*	-0.14*	-0.13*	-0.05	0.20*	0.24*	-0.13*	-0.14*	-0.25*	-0.08*	-0.19*	-0.06	1					
16. Trade openness	-0.22*	-0.21*	-0.20*	0.15*	0.27*	0.01	-0.31*	-0.36*	0.16*	0.10*	0.41*	0.13*	0.37*	0.21*	-0.34*	1				
17. Globalisation	-0.50*	-0.48*	-0.45*	-0.43*	0.62*	0.15*	0.15*	0.13*	-0.41*	-0.44*	0.46*	0.50*	0.63*	0.61*	-0.21*	0.30*	1			
18. Lag. poverty rate	0.95*	0.93*	0.89*	0.38*	-0.65*	0.21*	0.18*	0.12*	0.38*	0.42*	-0.16*	-0.19*	-0.36*	-0.61*	0.13*	-0.23*	-0.47*	1		
19. Lag. poverty gap	0.94*	0.96*	0.94*	0.38*	-0.63*	0.22*	0.14*	0.10*	0.36*	0.41*	-0.14*	-0.17*	-0.35*	-0.62*	0.12*	-0.22*	-0.45*	0.98*	1	
20. Lag. sqd poverty	0.92*	0.95*	0.96*	0.35*	-0.59*	0.22*	0.12*	0.07*	0.33*	0.39*	-0.13*	-0.17*	-0.34*	-0.61*	0.09*	-0.21*	-0.43*	0.94*	0.99*	1

Notes: The asterisk (*) next to the correlation coefficients indicates the significance at p-values of 0.05 or lower. The abbreviations are as follows. ODA stands for official development assistance; GDP: gross domestic product; GNI: gross national income; FDI: foreign direct investment; Sec.: Secondary; Econ.: Economic; Lag.: Lagged; and Sqd: Squared.

As listed in Table 5.2, all the proxies of aid (ODA, bilateral aid, multilateral aid, loans, and grants) are positively and significantly correlated with all the poverty proxies (poverty headcount rate, poverty gap, and SPG). Alvi and Senbeta (2012) argued that the positive association between aid and poverty could be an indication that more aid goes to poor countries.

It is important, however, to note that the positive correlation between aid and poverty does not necessarily imply a causal relationship⁴⁵. Table 5.2 also demonstrates that all 5 proxies of foreign aid have a strong, negative, and statistically significant correlation with the real GDP per capita, ranging from -0.68 to -0.27. Generally, all the aid and poverty proxies negatively related with the majority of the control variables. Among the explanatory variables, GDP per capita is strongly and positively correlated with secondary education (0.69) and globalisation (0.62). This strong correlation increases the possibility of the problem of multicollinearity among some of the explanatory variables. The effect of multicollinearity is that the coefficient estimates of the multiple regression may change randomly as a result of small changes in the model or the data. However, multicollinearity does not reduce the predictive power or reliability of the model as a whole; it only affects calculations regarding individual predictors. To address this issue, the study used different proxies of aid, GDP, and education in the estimation and added one control variable at a time. The addition of one control variable at a time in multivariate regression reduces the chances of including “suppressor variables”, which would be highly correlated with another explanatory variable (Tzelgov & Henik, 1991; Pandey & Elliott, 2010).

5.2.3. Justification of the use of SGMM estimation technique

According to McGillivray, *et al.* (2006), one of the main reasons for contradictory findings on empirical aid literature is different econometric estimation techniques used. This study considered several estimation techniques and found that, based on the data, the best estimation method is SGMM. Firstly, as shown in Table 5.2, the correlation between all the three proxies of poverty in levels and their corresponding lagged values are higher than the rule of thumb threshold of 0.8. Furthermore, the coefficient of the lagged poverty variables in all estimated equations is highly significant at the 1 percent level. This confirms that poverty is persistent, and therefore the dynamic panel data method is the correct specification, ruling out the standard instrumental variables (IV)

⁴⁵ Section 5.4 of this chapter presents the results from the causality tests.

such as two-stage least squares (2SLS or TSLS). In addition, the OLS and the FE methods are biased due to the inclusion of the lagged poverty.

Secondly, our sample can be described as having “small T, large N”, with the number of countries (N=120) greater than the number of years (T=12). Thirdly, the LSDVC method is also considered less accurate in a dynamic model with suspected endogeneity (Flannery & Hankins, 2013, p 14), while DGMM is considered less efficient compared to SGMM. Therefore, only the results of the more efficient SGMM method are presented and discussed in the next subsections.

All the SGMM estimations used the ‘collapse’ option for instruments to limit instrument proliferation and the number of lags in the explanatory variables was set at a one for the same reason (Roodman, 2009b). Furthermore, the unsuitability of the standard instrumental variables and the robustness of the internal instruments, meant that the use of external instruments became unnecessary. All the explanatory variables, except year dummies or time invariant variables were treated as endogenous or predetermined.

5.2.4. Results of the impact of foreign aid on poverty reduction

This sub-section presents the results of the impact of all the proxies of foreign aid on all the proxies of extreme poverty. These results are based on the SGMM estimation of the augmented equation (Equation 4.6). The main aim of this sub-section is to assess whether foreign aid has a direct effect on poverty reduction. A negative and significant coefficient of foreign aid proxy implies, on average, that particular foreign aid proxy directly reduces the incidence of extreme poverty in developing countries. Table 5.3 shows the results of the impact of different proxies of foreign aid on the poverty headcount rate.

Table 5.3: Impact of different proxies of foreign aid on poverty headcount rate

Dependent Variables	Poverty rate (Model 1.1)	Poverty rate (Model 1.2)	Poverty rate (Model 1.3)	Poverty rate (Model 1.4)	Poverty rate (Model 1.5)
ODA as % of GNI	-0.252*** (0.000)				
Grant		-0.244*** (0.000)			
Loan			-0.022 (0.430)		
Bilateral aid				-0.283*** (0.000)	
Multilateral aid					-0.134*** (0.001)
GDP per capita	-0.636*** (0.000)	-0.413** (0.011)	-0.239** (0.032)	-0.693*** (0.001)	-0.383** (0.017)
Gini coefficient	1.542** (0.016)	1.689* (0.051)	0.294 (0.548)	2.293*** (0.004)	1.024 (0.153)
Foreign direct investment	-0.004 (0.862)	-0.038 (0.115)	-0.051*** (0.008)	-0.020 (0.465)	-0.013 (0.588)
Political freedom	-0.125 (0.577)	0.395 (0.180)	-0.148 (0.374)	0.102 (0.691)	0.175 (0.422)
Secondary education	0.320*** (0.002)	0.261** (0.010)	0.209*** (0.002)	0.337*** (0.003)	0.400*** (0.000)
Civil conflict	-0.436 (0.446)	-0.105 (0.846)	0.470 (0.504)	-0.378 (0.535)	-0.797 (0.100)
Trade openness	0.100 (0.469)	0.221 (0.131)	-0.369** (0.018)	0.126 (0.406)	0.115 (0.370)
Globalisation	-2.017*** (0.001)	-1.300** (0.032)	-0.350 (0.234)	-1.954*** (0.002)	-2.479*** (0.000)
Poverty rate (lagged)	0.777*** (0.000)	0.915*** (0.000)	0.892*** (0.000)	0.768*** (0.000)	0.840*** (0.000)
Constant	-	9.005*** (0.000)	4.604*** (0.000)	-	-
AR (1) <i>p</i> -value	0.004	0.003	0.012	0.008	0.001
AR (2) <i>p</i> -value	0.683	0.707	0.659	0.246	0.676
Sargan OIR <i>p</i> -value	0.000	0.000	0.000	0.000	0.000
Hansen OIR <i>p</i> -value	0.372	0.244	0.591	0.426	0.246
DHT for instruments (a) Instrument in levels					
H excluding group	0.350	0.302	0.103	0.470	0.133
Dif (null, H = exogenous)	0.399	0.273	0.894	0.391	0.430
(b) IV (years, eq[diff])					
H excluding group	0.252	0.060	0.618	0.276	0.136
Dif (null, H = exogenous)	0.591	0.894	0.441	0.647	0.597
Observations	608	603	436	592	581
No. of groups	95	93	89	94	94
No. of instruments	49	49	49	49	49

Notes: All the regressions are estimated using the dynamic two-step SGMM estimator technique developed by Blundell and Bond (1998), with Windmeijer (2005) finite-sample correction. Numbers in parentheses () are *p*-values. *** Significance at the 1% level, ** Significance at the 5% level, and * Significance at the 10% level. All regressions include time dummies; however, to save space, they are not shown here. The abbreviations ODA, GDP, and GNI stand for official development assistance, gross domestic product, and gross national income, respectively; the others are as defined in the text.

First, a discussion is provided regarding the impact of total foreign aid (ODA as a percentage of GNI) on the poverty headcount rate, which is the main extreme poverty proxy. This particular result is listed in the second column (Model 1.1) of Table 5.3.

The results displayed in Model 1.1 are generally consistent with *a priori* economic theory, and they can be summarised as follows. First, the coefficient of total foreign aid (-0.252) is negative and statistically significant at the 1% level. This means that, on average, a 10% increase in the level of ODA as a share of GNI is associated with a 0.25% reduction in the poverty headcount rate (which is the proportion of people living on less than US\$1.90 per person per day). This implies that foreign aid is significant in reducing the poverty rate in developing countries. Moreover, this result corroborates earlier findings by Mosley *et al.* (2004), Mosley and Suleiman (2007), Alvi and Senbeta (2012), and Arndt *et al.* (2015) that foreign aid has positive poverty reduction effects.

Second, the GDP per capita is negatively signed and statistically significant at the 5% level. *Ceteris paribus*, a 10% increase in GDP per capita is associated with a reduction in poverty rate of approximately 0.65%. Furthermore, the GDP per capita has relatively larger coefficients than ODA, indicating that economic growth explains a higher significant part of the decrease in poverty levels. This confirms results from an earlier study by Dollar and Kraay (2002), who boldly declared that “*growth is good for the poor*”.

Third, the coefficient for inequality (Gini coefficient) is generally positive and statistically significant. This is in line with economic theory which states that an increase in income disparity may lead to higher levels of poverty. Ravallion (1997) found that if initial inequality is high, it can result in rising poverty irrespective of impressive economic growth. Therefore, inequality hinders the world’s progress in the fight against poverty. Fourth, the coefficient of lagged headcount poverty rate is positive and statistically significant at the 1% level. This confirms the strong persistent behaviour of extreme poverty rates in developing countries. In addition, this finding is in line with earlier studies by Bane and Ellwood (1986) and Hoynes *et al.* (2006), who showed that poverty is persistent. The appropriateness of the dynamic specification in poverty estimation is also confirmed by the results of the correlation coefficient between all the headcount poverty rates and its corresponding lagged values (0.95) which are higher than the rule of thumb threshold of 0.8 (see Table 5.2).

Lastly, of the other six control variables in the model, FDI, international trade, and globalisation yielded the correct sign. According to economic theory, an increase in FDI, an improvement in trade, and the deepening of globalisation have the potential to lead to a reduction in extreme poverty. The education indicator (gross enrolment in secondary education), though statistically significant, entered the model with a positive coefficient⁴⁶. Other control variables that entered the model with unexpected signs are political freedom and trade openness. The possible reasons these control variables displayed an unexpected sign could be multicollinearity, small sample sizes, and minimum variation in the explanatory variables (Kennedy, 2002). As depicted in Table 5.2, the correlation between secondary education and GDP per capita is 0.69 and significant at the 5% level, while political freedom seems to be highly correlated with globalisation. Other variables have expected signs but are not statistically significant. The only control variable that has the expected sign and is statistically significant is globalisation.

The post-estimation diagnostics on Model 1.1 show that the model meets the requirements for the two-step SGMM estimation with forward orthogonal deviations. The Arellano and Bond (1991) test for second-order serial correlation did not reject the null hypothesis of no autocorrelation. Furthermore, the Hansen (1982) test for over-identification failed to reject the null hypothesis that the OIRs are valid, and the DHT also failed to reject the null hypothesis that the instrument subsets are strictly exogenous. This confirms that Model 1.1 is an optimal model and passes all the post-estimation diagnostic tests.

5.2.5. Impact of different proxies of foreign aid on the proxies of extreme poverty

Another important set of results displayed in Table 5.3 is the impact of different proxies of foreign aid on the poverty headcount rate. As shown in that table, the coefficients for total aid (ODA), grant, and both bilateral and multilateral aid are negative and statistically significant at the 1% level. The coefficient of loan is negative but statistically insignificant. This implies that with the exception of loans, the other types of foreign aid have a poverty headcount rate reduction effect in developing countries. Tables 5.4 and 5.5 present the results related to the analysis of the impact of total aid (ODA), grants, loans, and both bilateral and multilateral aid on the poverty gap and the squared poverty gap respectively.

⁴⁶ It might be the case that in the set of countries analysed, education is increasing income inequality and therefore increasing poverty instead of reducing it as per theoretical prediction. This is however, beyond the scope of this study.

Table 5.4: Impact of different proxies of foreign aid on poverty gap index

Dependent Variables	Poverty gap (Model 2.1)	Poverty gap (Model 2.2)	Poverty gap (Model 2.3)	Poverty gap (Model 2.4)	Poverty gap (Model 2.5)
ODA as % of GNI	-0.168*** (0.000)				
Grant		-0.390*** (0.000)			
Loan			-0.087*** (0.008)		
Bilateral aid				-0.294*** (0.000)	
Multilateral aid					-0.173*** (0.000)
GDP per capita	-0.409*** (0.001)	-0.546*** (0.001)	-0.275* (0.060)	-0.540*** (0.000)	-0.269** (0.043)
Gini coefficient	0.340 (0.492)	1.846** (0.037)	0.984 (0.148)	1.794** (0.031)	-0.019 (0.977)
Foreign direct investment	-0.003 (0.871)	-0.012 (0.672)	-0.049* (0.050)	-0.002 (0.949)	-0.004 (0.873)
Political freedom	-0.045 (0.809)	0.794** (0.010)	-0.026 (0.912)	0.387 (0.140)	0.470** (0.032)
Secondary education	0.305*** (0.000)	0.273*** (0.006)	0.259*** (0.006)	0.354*** (0.001)	0.419*** (0.000)
Civil conflict	-0.773 (0.103)	-0.069 (0.910)	0.264 (0.451)	-0.791 (0.221)	-1.167** (0.020)
Trade openness	0.142 (0.159)	0.221 (0.189)	-0.683*** (0.001)	0.282* (0.050)	0.126 (0.291)
Globalisation	-2.124*** (0.000)	-1.411* (0.055)	-0.714* (0.051)	-3.168*** (0.000)	-3.386*** (0.000)
Poverty rate (lagged)	0.826*** (0.000)	0.836*** (0.000)	0.886*** (0.000)	0.801*** (0.000)	0.892*** (0.000)
Constant	10.394*** (0.000)	10.883*** (0.000)	-	15.626*** (0.000)	13.522*** (0.000)
AR (1) <i>p</i> -value	0.072	0.115	0.076	0.138	0.007
AR (2) <i>p</i> -value	0.403	0.475	0.942	0.586	0.278
Sargan OIR <i>p</i> -value	0.000	0.000	0.000	0.000	0.000
Hansen OIR <i>p</i> -value	0.174	0.090	0.225	0.131	0.029
DHT for instruments (a) Instrument in levels					
H excluding group	0.228	0.442	0.183	0.197	0.029
Dif (null, H = exogenous)	0.244	0.062	0.338	0.185	0.139
(b) IV (years, eq[diff])					
H excluding group	0.285	0.064	0.321	0.116	0.037
Dif (null, H = exogenous)	0.164	0.374	0.222	0.337	0.179
Observations	607	602	436	591	580
No. of groups	95	93	89	94	94
No. of instruments	59	49	49	49	49

Notes: All the regressions are estimated using the dynamic two-step SGMM estimator technique developed by Blundell and Bond (1998), with Windmeijer (2005) finite-sample correction. Numbers in parentheses () are *p*-values. *** Significance at the 1% level, ** Significance at the 5% level, and * Significance at the 10% level. All regressions include time dummies; however, to save space, they are not shown here. The abbreviations ODA, GDP, and GNI stand for official development assistance, gross domestic product, and gross national income, respectively; the others are as defined in the text.

Table 5.5: Impact of different proxies of foreign aid on squared poverty gap index

Dependent Variables	Squared poverty gap (Model 3.1)	Squared poverty gap (Model 3.2)	Squared poverty gap (Model 3.3)	Squared poverty gap (Model 3.4)	Squared poverty gap (Model 3.5)
ODA as % of GNI	-0.274*** (0.000)				
Grant		-0.267*** (0.001)			
Loan			-0.085** (0.024)		
Bilateral aid				-0.222*** (0.001)	
Multilateral aid					-0.145*** (0.001)
GDP per capita	-0.415** (0.025)	-0.454*** (0.004)	0.008 (0.950)	-0.388** (0.045)	-0.242* (0.081)
Gini coefficient	0.140 (0.871)	0.856 (0.295)	0.071 (0.936)	0.657 (0.454)	-1.060 (0.109)
Foreign direct investment	0.035 (0.275)	0.005 (0.867)	-0.016 (0.601)	0.012 (0.707)	-0.001 (0.984)
Political freedom	0.263 (0.343)	0.454 (0.167)	-0.007 (0.978)	0.220 (0.430)	0.269 (0.274)
Secondary education	0.417*** (0.000)	0.314*** (0.001)	0.224** (0.046)	0.307*** (0.003)	0.431*** (0.000)
Civil conflict	-0.918 (0.145)	-0.511 (0.409)	0.245 (0.758)	-0.799 (0.251)	-1.109* (0.055)
Trade openness	0.022 (0.868)	0.073 (0.627)	-0.673*** (0.003)	0.168 (0.206)	-0.025 (0.819)
Globalisation	-3.155*** (0.000)	-1.207** (0.046)	-1.425*** (0.001)	-2.509*** (0.000)	-2.334*** (0.000)
Poverty rate (lagged)	0.889*** (0.000)	0.903*** (0.000)	0.967*** (0.000)	0.919*** (0.000)	0.991*** (0.000)
Constant	14.094*** (0.000)	-	7.345*** (0.001)	-	-
AR (1) <i>p</i> -value	0.008	0.003	0.034	0.005	0.006
AR (2) <i>p</i> -value	0.666	0.704	0.927	0.610	0.386
Sargan OIR <i>p</i> -value	0.000	0.000	0.000	0.000	0.000
Hansen OIR <i>p</i> -value	0.270	0.271	0.308	0.111	0.023
DHT for instruments					
(a) Instrument in levels					
H excluding group	0.639	0.586	0.456	0.476	0.242
Dif (null, H = exogenous)	0.168	0.185	0.269	0.075	0.024
(b) IV (years, eq[diff])					
H excluding group	0.319	0.054	0.292	0.156	0.021
Dif (null, H = exogenous)	0.295	0.951	0.397	0.203	0.236
Observations	596	589	430	580	568
No. of groups	95	93	89	94	94
No. of instruments	59	49	49	49	49

Notes: All the regressions are estimated using the dynamic two-step SGMM estimator technique developed by Blundell and Bond (1998), with Windmeijer (2005) finite-sample correction. Numbers in parentheses () are *p*-values. *** Significance at the 1% level, ** Significance at the 5% level, and * Significance at the 10% level. All regressions include time dummies; however, to save space, they are not shown here. The abbreviations ODA, GDP, and GNI stand for official development assistance, gross domestic product, and gross national income, respectively; the others are as defined in the text.

The main objective of the analysis in Tables 5.4 and 5.5 is to investigate the possible impact of different types of aid on each of the proxies of extreme poverty. As with Table 5.4, all the proxies of foreign aid lead to a reduction in the poverty gap, except for grants and multilateral aid. Even though the coefficients of both grants and multilateral aid are negative and statistically significant at the 1% level, the two equations (Models 2.2 and 2.5) did not pass the Hansen OIR test. The other control variables generally maintain the expected signs.

The results in Table 5.5 show that all five proxies of foreign aid lead to a reduction in the squared poverty gap with the exception of multilateral aid. As in Table 5.4, the coefficient of multilateral aid is negative and statistically significant (Model 3.5) but it failed the Hansen OIR test. In addition, the GDP per capita, globalisation, and lagged poverty have the expected signs and are highly significant. The other control variables displayed mixed results.

The main findings from Tables 5.3, 5.4, and 5.5 can be summarised as follows:

- The coefficient for total aid (ODA) is negative and statistically significant at the 1% level across the three proxies of extreme poverty. This confirms that total foreign aid has a significant effect in terms of reducing extreme poverty in developing countries.
- The analysis of the impact of different proxies of aid on the three proxies of extreme poverty demonstrates that
 - all five proxies of foreign aid except for loans reduce the poverty headcount rate
 - official development assistance, loans, and bilateral aid reduce the poverty gap, but grants and multilateral aid do not
 - official development assistance, grants, loans, and bilateral aid reduce the squared poverty gap, but multilateral aid does not.
- The coefficient of GDP per capita is mainly negative and highly significant, indicating that an increase in economic growth helps in the reduction of all forms of extreme poverty.
- The coefficient for the inequality variable is largely positive and significant. This confirms that high levels of inequality have a detrimental effect on the fight against extreme poverty. Therefore, this fight cannot be won without a corresponding fight against inequality.
- The coefficient for globalisation is largely negative and significant, highlighting the importance of globalisation in the fight against poverty.
- The lagged variables of the three proxies of extreme poverty are positive and highly significant, further confirming that poverty is strongly persistent.

The results summarised above and displayed in Table 5.3 to Table 5.5 are generally in line with the findings of Mosley *et al.* (2004), Bahmani-Oskooee and Oyolola (2009), Alvi and Senbeta (2012), and Arndt *et al.* (2015). All these studies utilised aid as a percentage of GNI as a proxy for ODA, though they slightly differed on the proxies for poverty. The majority of the studies used the poverty headcount rate only. Chong *et al.* (2009) however made use of the same three proxies of extreme poverty and the same estimation methodology (the SGMM) but found different results. Some of these main results are briefly discussed below.

With respect to the issue of grants and loans, the findings are generally in line with literature on the allocation of aid which premises that grants are more likely to have poverty-reducing effects compared to loans (Senbeta, 2009)⁴⁷. However, another body of empirical literature seems to suggest that loans are most effective for development. This literature argues that loans are generally used for infrastructure development and other investment activities, while grants are normally used for technical assistance (Odedokun, 2004; Gunatilake *et al.*, 2015). A recent study by Das and Serieux (2015) concluded that all foreign inflows generate capital outflows. Loans lead to around 45% outflows, while grants are associated with 12% reverse flows. These reverse flows were found to be most prevalent in Asian and SSA countries.

The present study's findings on bilateral and multilateral aid go against prior expectations. Evidence was found that bilateral aid had a significant effect on poverty reduction compared to multilateral aid. Theoretically, however, one would expect multilateral aid to be more effective in reducing poverty. According to Riddell (2008) and Clunies-Ross *et al.* (2009), multilateral aid is most likely to be allocated to sustainable development and poverty-reduction concerns, whereas bilateral aid is allocated based on colonial, strategic, and other political considerations. According to OECD statistics, bilateral aid exceeds multilateral aid – roughly 70 to 30 (Rogerson, *et al.*, 2004, p. 16). Therefore, approximately one-third of all ODA is allocated multilaterally (Riddell, 2008). Rogerson *et al.* (2004) argued that the events after the terrorist attack in the USA in 2001 (commonly referred to as 9/11) have changed the focus of bilateral aid from the historical political and strategic motives to the addressing of poverty; this suggests that bilateral aid can indeed reduce poverty. Other studies by Rajan and Subramanian (2005) and Gunatilake *et al.* (2015) found inconclusive results regarding the differential effects between bilateral and multilateral aid.

⁴⁷ As defined in Chapter 2 of this thesis, grants are transfers made in cash, goods, or services for which no repayment is required. Loans are transfers for which repayment would be required.

Lastly, across the 15 models (Models 1.1 to 3.5) estimated in Tables 5.3, 5.4, and 5.5, the GDP per capita and the globalisation index remain negative and largely significant at the 5% level. This demonstrates the importance of boosting economic growth and embracing globalisation in the policy mix aimed at poverty reduction. The coefficient for inequality is largely positive, confirming that high levels of inequality hinder the fight against poverty. The coefficient for the lagged poverty rate is highly significant, corroborating both theoretical and empirical literature that poverty is persistent.

5.2.6. Impact of political and economic freedom on the effectiveness of foreign aid

One of the objectives of this study is to test whether political or economic freedom enhances the effectiveness of foreign aid in poverty reduction. Following studies by Burnside and Dollar (2000) and Collier and Dollar (2002), the current work investigated this question through the introduction of the interaction term in this research's SGMM estimation framework. The policy proxies adopted in this study are political and economic freedom, represented by Polity IV (or democracy) and the EFW respectively.

Unlike the previous analysis, the introduction of the interaction term suggests that the effect of foreign aid on poverty should be treated as a marginal effect (Brambor *et al.*, 2006; Asongu & Nwachukwu, 2016) and should be estimated and calculated as shown in Equations 4.7 and 4.8 in Chapter 4. The results of this analysis are presented in the following six tables (Tables 5.6 to 5.11).

Table 5.6: Effectiveness of political freedom on different proxies of foreign aid – poverty headcount rate

Dependent Variables	Poverty rate (Model 3.1)	Poverty rate (Model 3.2)	Poverty rate (Model 3.3)	Poverty rate (Model 3.4)	Poverty rate (Model 3.5)
ODA as % of GNI	-0.366*** (0.000)				
Grant		-0.450*** (0.001)			
Loan			-0.097* (0.089)		
Bilateral aid				-0.405*** (0.000)	
Multilateral aid					-0.167*** (0.001)
GDP per capita	-0.584*** (0.000)	-0.358*** (0.007)	-0.239*** (0.009)	-0.655*** (0.000)	-0.348** (0.013)
Gini coefficient	1.634*** (0.005)	2.005*** (0.007)	0.513 (0.267)	2.030*** (0.003)	0.811 (0.224)
Foreign direct investment	-0.021 (0.367)	-0.046* (0.050)	-0.049** (0.022)	-0.031 (0.238)	-0.024 (0.278)
Political freedom	-0.262 (0.177)	-2.076** (0.030)	-0.570 (0.137)	0.183 (0.384)	0.245 (0.170)
<i>Pol. Freedom x Aid Variable</i>	0.197** (0.013)	0.460*** (0.008)	0.093 (0.236)	0.199** (0.036)	0.046 (0.352)
Secondary education	0.255*** (0.009)	0.230** (0.015)	0.263*** (0.000)	0.274** (0.018)	0.407*** (0.000)
Civil conflict	-0.301 (0.599)	0.317 (0.456)	0.001 (0.999)	-0.341 (0.560)	-0.604 (0.213)
Trade openness	0.157 (0.207)	0.088 (0.412)	-0.255* (0.057)	0.151 (0.256)	0.110 (0.351)
Globalisation	-1.805*** (0.002)	-1.453*** (0.004)	-0.616*** (0.003)	-1.883*** (0.001)	-2.372*** (0.000)
Poverty rate (lagged)	0.795*** (0.000)	0.854*** (0.000)	0.893*** (0.000)	0.777*** (0.000)	0.880*** (0.000)
Constant	12.122*** (0.000)	-	5.507*** (0.000)	13.161*** (0.000)	10.678*** (0.000)
AR (1) <i>p</i> -value	0.004	0.002	0.012	0.006	0.001
AR (2) <i>p</i> -value	0.860	0.757	0.454	0.355	0.684
Sargan OIR <i>p</i> -value	0.000	0.000	0.000	0.000	0.000
Hansen OIR <i>p</i> -value	0.591	0.134	0.311	0.623	0.342
Observations	608	603	436	592	581
No. of groups	95	93	89	94	94
No. of instruments	53	53	53	53	53

Notes: All the regressions are estimated using the dynamic two-step SGMM estimator technique developed by Blundell and Bond (1998), with Windmeijer (2005) finite-sample correction. Numbers in parentheses () are p-values. *** Significance at the 1% level, ** Significance at the 5% level, and * Significance at the 10% level. All regressions include time dummies, but to save space, they are not shown here. The key abbreviations are as follows. ODA stands for official development assistance; GDP: gross domestic product; GNI: gross national income; Pol.: Political. The other abbreviations are as defined in the text.

Table 5.7: Effectiveness of economic freedom on different proxies of foreign aid – poverty headcount rate

Dependent Variables	Poverty rate (Model 3.1)	Poverty rate (Model 3.2)	Poverty rate (Model 3.3)	Poverty rate (Model 3.4)	Poverty rate (Model 3.5)
ODA as % of GNI	-0.540*** (0.000)				
Grant		-0.665** (0.011)			
Loan			-0.410* (0.055)		
Bilateral aid				-0.660*** (0.000)	
Multilateral aid					-0.389*** (0.000)
GDP per capita	-0.299*** (0.001)	-0.300*** (0.000)	-0.245*** (0.006)	-0.288*** (0.004)	-0.180* (0.082)
Gini coefficient	0.943*** (0.005)	1.100** (0.011)	0.536 (0.115)	1.361*** (0.001)	0.694** (0.030)
Foreign direct investment	-0.056*** (0.003)	-0.053*** (0.003)	-0.017 (0.344)	-0.039** (0.034)	-0.053*** (0.005)
Economic freedom	-0.400** (0.011)	-1.702** (0.041)	-1.182* (0.066)	-0.408** (0.011)	0.045 (0.682)
<i>Econ. Freedom x Aid Variable</i>	0.263*** (0.001)	0.305** (0.037)	0.204* (0.091)	0.319*** (0.001)	0.212*** (0.000)
Secondary education	-0.070 (0.264)	0.109* (0.090)	0.039 (0.596)	-0.061 (0.380)	-0.011 (0.855)
Civil conflict	-0.493* (0.054)	-0.175 (0.541)	-0.770* (0.051)	-0.717** (0.022)	-0.858*** (0.006)
Trade openness	-0.060 (0.364)	-0.025 (0.640)	-0.458*** (0.004)	-0.072 (0.268)	-0.245*** (0.002)
Globalisation	0.307 (0.367)	-0.380 (0.282)	-0.260 (0.301)	0.014 (0.972)	0.420 (0.223)
Poverty rate (lagged)	0.911*** (0.000)	0.928*** (0.000)	0.871*** (0.000)	0.915*** (0.000)	0.986*** (0.000)
Constant	3.543*** (0.004)	8.141*** (0.002)	-	4.972*** (0.002)	-
AR (1) <i>p</i> -value	0.032	0.019	0.108	0.038	0.007
AR (2) <i>p</i> -value	0.821	0.655	0.191	0.977	0.917
Sargan OIR <i>p</i> -value	0.000	0.000	0.000	0.000	0.000
Hansen OIR <i>p</i> -value	0.335	0.069	0.373	0.506	0.776
Observations	495	491	339	482	471
No. of groups	82	80	76	81	81
No. of instruments	53	53	53	53	53

Notes: All the regressions are estimated using the dynamic two-step SGMM estimator technique developed by Blundell and Bond (1998), with Windmeijer (2005) finite-sample correction. Numbers in parentheses () are *p*-values. *** Significance at the 1% level, ** Significance at the 5% level, and * Significance at the 10% level. All regressions include time dummies; however, to save space, they are not shown here. The key abbreviations are as follows. ODA stands for official development assistance; GDP: gross domestic product; GNI: gross national income; and Econ.: Economic. The other abbreviations are as defined in the text.

Table 5.8: Effectiveness of political freedom on different proxies of foreign aid – poverty gap

Dependent Variables	Poverty gap (Model 3.1)	Poverty gap (Model 3.2)	Poverty gap (Model 3.3)	Poverty gap (Model 3.4)	Poverty gap (Model 3.5)
ODA as % of GNI	-0.415*** (0.000)				
Grant		-0.547*** (0.000)			
Loan			-0.276*** (0.000)		
Bilateral aid				-0.433*** (0.000)	
Multilateral aid					-0.237*** (0.000)
GDP per capita	-0.455*** (0.001)	-0.440*** (0.001)	-0.228* (0.068)	-0.458*** (0.006)	-0.200* (0.097)
Gini coefficient	1.204** (0.042)	1.649** (0.037)	0.762 (0.234)	1.688** (0.023)	0.016 (0.981)
Foreign direct investment	-0.002 (0.925)	-0.027 (0.308)	-0.062** (0.025)	-0.009 (0.725)	-0.014 (0.572)
Political freedom	-0.139 (0.488)	-2.609** (0.010)	-1.419*** (0.007)	0.145 (0.489)	0.455** (0.015)
<i>Pol. Freedom x Aid Variable</i>	0.238*** (0.004)	0.565*** (0.002)	0.281*** (0.006)	0.226** (0.023)	0.106** (0.049)
Secondary education	0.227** (0.013)	0.236** (0.014)	0.306*** (0.000)	0.244** (0.016)	0.399*** (0.000)
Civil conflict	-0.473 (0.338)	0.179 (0.718)	0.740 (0.311)	-0.572 (0.319)	-1.094** (0.022)
Trade openness	0.262** (0.022)	0.062 (0.605)	-0.458** (0.010)	0.300** (0.019)	0.162 (0.149)
Globalisation	-3.062*** (0.000)	-1.435** (0.012)	-0.982*** (0.000)	-3.296*** (0.000)	-3.376*** (0.000)
Poverty rate (lagged)	0.802*** (0.000)	0.805*** (0.000)	0.886*** (0.000)	0.816*** (0.000)	0.932*** (0.000)
Constant	15.036*** (0.000)	11.763*** (0.000)	7.542*** (0.00)	16.077*** (0.000)	-
AR (1) <i>p</i> -value	0.062	0.123	0.061	0.128	0.006
AR (2) <i>p</i> -value	0.455	0.450	0.693	0.574	0.283
Sargan OIR <i>p</i> -value	0.000	0.000	0.000	0.000	0.000
Hansen OIR <i>p</i> -value	0.151	0.087	0.138	0.170	0.055
Observations	607	602	436	591	580
No. of groups	95	93	89	94	94
No. of instruments	53	53	53	53	53

Notes: All the regressions are estimated using the dynamic two-step SGMM estimator technique developed by Blundell and Bond (1998), with Windmeijer (2005) finite-sample correction. Numbers in parentheses () are p-values. *** Significance at the 1% level, ** Significance at the 5% level, and * Significance at the 10% level. All regressions include time dummies, but for space reasons, they are not shown here. The main abbreviations are as follows: ODA stands for official development assistance; GDP: gross domestic product; GNI: gross national income; and Pol.: Political. The other abbreviations are as defined in the text.

Table 5.9: Effectiveness of economic freedom on different proxies of foreign aid – poverty gap

Dependent Variables	Poverty gap (Model 3.1)	Poverty gap (Model 3.2)	Poverty gap (Model 3.3)	Poverty gap (Model 3.4)	Poverty gap (Model 3.5)
ODA as % of GNI	-0.764*** (0.000)				
Grant		-0.870*** (0.006)			
Loan			-0.263 (0.318)		
Bilateral aid				-0.921*** (0.000)	
Multilateral aid					-0.559*** (0.000)
GDP per capita	-0.248*** (0.008)	-0.376*** (0.000)	-0.178 (0.112)	-0.405*** (0.000)	-0.214** (0.026)
Gini coefficient	1.025*** (0.009)	1.086** (0.022)	1.270*** (0.004)	1.030** (0.030)	0.557 (0.112)
Foreign direct investment	-0.042** (0.036)	-0.055** (0.013)	-0.002 (0.941)	-0.053*** (0.004)	-0.079*** (0.001)
Economic freedom	-0.441*** (0.005)	-2.419** (0.016)	-0.721 (0.340)	-0.409** (0.012)	0.023 (0.855)
<i>Econ. Freedom x Aid Variable</i>	0.389*** (0.000)	0.430** (0.015)	0.096 (0.517)	0.440*** (0.000)	0.289*** (0.000)
Secondary education	-0.178** (0.011)	0.111 (0.106)	-0.048 (0.579)	-0.138* (0.056)	-0.104* (0.090)
Civil conflict	-0.522* (0.072)	-0.337 (0.326)	-0.752 (0.161)	-0.787** (0.028)	-0.851*** (0.005)
Trade openness	-0.005 (0.949)	-0.039 (0.544)	-0.583*** (0.002)	-0.011 (0.883)	-0.291*** (0.005)
Globalisation	0.163 (0.698)	-0.487 (0.161)	0.035 (0.921)	0.283 (0.533)	0.849** (0.045)
Poverty rate (lagged)	0.880*** (0.000)	0.849*** (0.000)	0.910*** (0.000)	0.854*** (0.000)	1.011*** (0.000)
Constant	3.969*** (0.003)	-	-	4.806*** (0.003)	-
AR (1) <i>p</i> -value	0.145	0.186	0.647	0.206	0.014
AR (2) <i>p</i> -value	0.486	0.501	0.092	0.473	0.261
Sargan OIR <i>p</i> -value	0.000	0.000	0.000	0.000	0.000
Hansen OIR <i>p</i> -value	0.093	0.126	0.431	0.102	0.157
Observations	494	490	339	481	470
No. of groups	82	80	76	81	81
No. of instruments	53	53	53	53	53

Notes: All the regressions are estimated using the dynamic two-step SGMM estimator technique developed by Blundell and Bond (1998), with Windmeijer (2005) finite-sample correction. Numbers in parentheses () are *p*-values. *** Significance at the 1% level, ** Significance at the 5% level, and * Significance at the 10% level. All regressions include time dummies; however, to save space, they are not shown here. The key abbreviations are as follows. ODA stands for official development assistance; GDP: gross domestic product; GNI: gross national income; and Econ.: Economic. The other abbreviations are as defined in the text.

Table 5.10: Effectiveness of political freedom on different proxies of foreign aid – squared poverty gap

Dependent Variables	Squared poverty gap (Model 3.1)	Squared poverty gap (Model 3.2)	Squared poverty gap (Model 3.3)	Squared poverty gap (Model 3.4)	Squared poverty gap (Model 3.5)
ODA as % of GNI	-0.480*** (0.000)				
Grant		-0.393*** (0.002)			
Loan			-0.272*** (0.000)		
Bilateral aid				-0.366*** (0.001)	
Multilateral aid					-0.253*** (0.001)
GDP per capita	-0.358** (0.018)	-0.238* (0.069)	-0.056 (0.665)	-0.369** (0.046)	-0.223* (0.091)
Gini coefficient	0.076 (0.920)	1.224* (0.050)	0.193 (0.820)	1.130 (0.178)	-0.871 (0.142)
Foreign direct investment	0.009 (0.775)	-0.004 (0.875)	-0.021 (0.473)	-0.004 (0.989)	-0.011 (0.730)
Political freedom	-0.384 (0.183)	-3.094*** (0.001)	-1.359** (0.011)	0.018 (0.942)	0.095 (0.653)
<i>Pol. Freedom x Aid Variable</i>	0.314*** (0.007)	0.578*** (0.001)	0.270** (0.010)	0.198* (0.079)	0.153** (0.046)
Secondary education	0.243** (0.031)	0.235** (0.010)	0.279*** (0.006)	0.179 (0.100)	0.369*** (0.000)
Civil conflict	-0.580 (0.305)	0.049 (0.920)	0.680 (0.366)	-0.335 (0.607)	-1.065** (0.042)
Trade openness	0.194 (0.107)	-0.094 (0.363)	-0.504*** (0.006)	0.215* (0.088)	0.060 (0.625)
Globalisation	-3.033*** (0.000)	-1.541*** (0.007)	-1.568*** (0.000)	-2.733*** (0.000)	-2.394*** (0.000)
Poverty rate (lagged)	0.877*** (0.000)	0.912*** (0.000)	0.955*** (0.000)	0.894*** (0.000)	0.992*** (0.000)
Constant	13.666*** (0.000)	10.112*** (0.000)	8.271*** (0.000)	13.113*** (0.000)	9.069*** (0.000)
AR (1) <i>p</i> -value	0.007	0.003	0.032	0.005	0.005
AR (2) <i>p</i> -value	0.646	0.684	0.832	0.581	0.388
Sargan OIR <i>p</i> -value	0.000	0.000	0.000	0.000	0.000
Hansen OIR <i>p</i> -value	0.170	0.194	0.304	0.148	0.054
Observations	596	589	430	580	568
No. of groups	95	93	89	94	94
No. of instruments	53	53	53	53	53

Notes: All the regressions are estimated using the dynamic two-step SGMM estimator technique developed by Blundell and Bond (1998), with Windmeijer (2005) finite-sample correction. Numbers in parentheses () are *p*-values. *** Significance at the 1% level, ** Significance at the 5% level, and * Significance at the 10% level. All regressions include time dummies, but for space reasons, they are not included here. The primary abbreviations are as follows. ODA stands for official development assistance; GDP: gross domestic product; GNI: gross national income; and Pol.: Political. The other abbreviations are as defined in the text.

Table 5.11: Effectiveness of economic freedom in different proxies of foreign aid – squared poverty gap

Dependent Variables	Squared Poverty gap (Model 3.1)	Squared Poverty gap (Model 3.2)	Squared Poverty gap (Model 3.3)	Squared Poverty gap (Model 3.4)	Squared Poverty gap (Model 3.5)
ODA as % of GNI	-0.697*** (0.000)				
Grant		-0.710*** (0.008)			
Loan			-0.206 (0.401)		
Bilateral aid				-0.794*** (0.000)	
Multilateral aid					-0.513*** (0.000)
GDP per capita	-0.003 (0.972)	-0.281*** (0.000)	-0.002 (0.985)	-0.214* (0.067)	-0.079 (0.356)
Gini coefficient	0.721* (0.077)	1.174* (0.057)	1.225** (0.021)	1.010** (0.047)	0.315 (0.421)
Foreign direct investment	-0.030 (0.228)	-0.023 (0.361)	-0.014 (0.547)	-0.039 (0.106)	-0.054* (0.057)
Economic freedom	-0.467** (0.029)	-1.719* (0.061)	-0.469 (0.473)	-0.464** (0.032)	0.077 (0.637)
<i>Econ. Freedom x Aid Variable</i>	0.359*** (0.000)	0.323** (0.030)	0.069 (0.607)	0.364*** (0.000)	0.252*** (0.000)
Secondary education	-0.228*** (0.003)	0.083 (0.406)	-0.101 (0.253)	-0.178** (0.034)	-0.127* (0.076)
Civil conflict	-0.546 (0.100)	-0.364 (0.439)	-0.477 (0.360)	-0.704* (0.054)	-0.746** (0.034)
Trade openness	-0.146 (0.169)	-0.092 (0.255)	-0.608*** (0.001)	-0.041 (0.674)	-0.158 (0.123)
Globalisation	0.051 (0.903)	-1.011** (0.013)	-0.234 (0.558)	0.046 (0.919)	0.258 (0.511)
Poverty rate (lagged)	1.028*** (0.000)	0.931*** (0.000)	0.945*** (0.000)	0.997*** (0.000)	1.077*** (0.000)
Constant	-	10.369*** (0.001)	-	4.245*** (0.000)	-
AR (1) <i>p</i> -value	0.005	0.005	0.129	0.004	0.006
AR (2) <i>p</i> -value	0.450	0.533	0.062	0.418	0.298
Sargan OIR <i>p</i> -value	0.000	0.000	0.000	0.000	0.000
Hansen OIR <i>p</i> -value	0.061	0.088	0.472	0.216	0.130
Observations	483	477	333	470	458
No. of groups	81	79	75	80	80
No. of instruments	53	53	53	53	53

Notes: All the regressions are estimated using the dynamic two-step SGMM estimator technique developed by Blundell and Bond (1998), with Windmeijer (2005) finite-sample correction. Numbers in parentheses () are *p*-values. *** Significance at the 1% level, ** Significance at the 5% level, and * Significance at the 10% level. All regressions include time dummies; however, to save space, they are not shown here. The key abbreviations are as follows. ODA stands for official development assistance; GDP: gross domestic product; GNI: gross national income; Econ.: Economic. The other abbreviations are as defined in the text.

The main results regarding the impact of political and economic freedom on the effectiveness of foreign aid are illustrated in Tables 5.6 to 5.11. Given the inclusion of the interaction term, the interpretation of these results is as per Section 4.2.2 of the Methodology Chapter, especially

Equation 4.8. According to Brambor *et al.* (2006) and Asongu and Nwachukwu (2016), in interactive multivariate regressions, there are three distinct effects, namely: (i) the unconditional effect of foreign aid on poverty when policy variable is zero; (ii) the conditional (or interactive) effects; and the (iii) marginal or net effects which combines both unconditional and conditional (interactive) effects as shown in Equation 4.8. In interactive regressions, the interactive effects are not considered in isolation since, but the net or marginal effects. The detailed calculation of the marginal effects is in Appendix A.2.

Below is a summary of the results based on Tables 5.6 to 5.11:

- i. Headcount poverty rate:
 - a. The overall or net effect of total foreign aid (ODA) given (or in the presence of) political freedom is $-0.266 (-0.366+0.197 \times 0.51)$, where -0.366 is the unconditional effect of foreign aid, 0.197 is the conditional effect from the interaction between foreign aid and political freedom, and 0.51 is the mean value of political freedom. Grants and bilateral aid tend to reduce poverty headcount rates given political freedom, while the coefficients for the interaction terms between political freedom and both loans and multilateral aid are insignificant.
 - b. The marginal effect of foreign aid given economic freedom is $-0.088 (-0.540+0.263 \times 1.72)$, where -0.540 is the unconditional effect of foreign aid, 0.263 is the conditional effect from the interaction between foreign aid and economic freedom, and 1.72 is the mean value of economic freedom. There is evidence that all the other proxies of foreign aid except for grants have a poverty reduction effect in an environment of economic freedom.
 - c. On the one hand, four out of the five (4/5) proxies of foreign aid showed evidence of a poverty reduction effect given economic freedom, compared to three out of five (3/5) for political freedom. This suggests that both political and economic freedom are important channels through which aid can impact and enhance poverty reduction. On the other hand, the marginal effects of aid given political freedom tend to be larger than those given economic freedom.
- ii. Poverty gap index:
 - a. The net effect of total ODA on the PG given political freedom is estimated at $-0.294 (-0.415+0.238 \times 0.51)$, where -0.415 is the unconditional effect of total foreign aid,

0.238 is the conditional effect from the interaction between total foreign aid and political freedom, and 0.51 is the mean value of political freedom. Loans and bilateral aid tend to reduce the poverty gap given political freedom, while the models for grants and multilateral aid failed the Hansen OIR test.

- b. The model for the total ODA given economic freedom also failed the Hansen OIR test, and the marginal effect is therefore not significant. There is evidence that grants as well as bilateral and multilateral aid have a poverty reduction effect in an environment of economic freedom, while the coefficient for loans is not statistically significant.
 - c. For both political and economic freedom, three out of the five (3/5) proxies of foreign aid presented evidence of poverty reduction effects, providing further proof that both political and economic freedom are important channels through which aid can impact and enhance poverty reduction.
- iii. Squared poverty gap index:
- a. The overall effect of total foreign aid (ODA) on the SPG given political freedom is -0.320 ($-0.480+0.314 \times 0.51$), where -0.480 is the unconditional effect of total foreign aid, 0.314 is the conditional effect from the interaction between total foreign aid and political freedom, and 0.51 is the mean value of political freedom. All the other proxies of foreign aid, with the exception of multilateral aid, showed evidence that they could reduce the SPG in a democratic environment. The multilateral aid model failed the Hansen OIR test.
 - b. The model for the impact of total foreign aid on the SPG given economic freedom also failed the Hansen OIR test; therefore, the marginal effect is not significant. Evidence exists that only bilateral and multilateral aid have a squared poverty gap reduction effect in an environment of economic freedom.
 - c. On the one hand, four out of the five (4/5) proxies of foreign aid yielded evidence of a squared poverty gap reduction effect given political freedom, compared to two out of five (2/5) for economic freedom. On the other hand, the marginal effects of aid given political freedom tend to be larger than the marginal effects of aid given economic freedom.

Overall, the results regarding the impact of political and economic freedom on the effectiveness of foreign aid support the aid selectivity and conditionality paradigm (Burnside & Dollar, 2000).

This paradigm, which has been advocated by Western donors, states that aid should be channelled to countries practising political and economic freedom (Connors, 2011). Based on these findings, there is no evidence that the autocracy is better at enhancing the effectiveness of foreign aid in the fight against poverty.

However, it is important to note that the conditional effects (coefficient of foreign proxy) has consistently been negative while the unconditional effects (coefficient of the interactive term between foreign and policy variable proxy) has been positive. This suggests the possible existence of some conflicts. However, the overall or net effect has been consistently negative, suggesting that the both political and economic freedom enhances the effectiveness of foreign aid. Nevertheless, the conflicting signs between the conditional and unconditional effects suggests the existence of thresholds in our data. A panel data threshold regression model could have estimated the optimal threshold (Hansen, 1996; 2003). However, this estimation technique is beyond the scope of this study.

5.2.7. Impact of foreign aid on poverty reduction by country income group

This sub-section deals with the analysis of the impact of foreign aid on poverty reduction by country income group. To execute this task, developing countries were categorised into three groups, namely low income (26 countries), lower-middle income (48), and upper-middle income (42) according to the World Bank (2017) classification.

Instrument proliferation and identification problems were controlled for by reducing the number of explanatory variables to the bare minimum (which includes ODA as a percentage of GNI, GDP per capita, and the Gini coefficient only). The results for the analysis of the impact of ODA on the headcount poverty rate by country income group are presented in Table 5.12.

Table 5.12: Analysis of the impact of foreign aid on poverty by income group

Country Group	Income	Low Income	Lower-Middle Income	Upper-Middle Income
<i>Dependent Variables: Poverty rate</i>				
ODA as % of GNI		0.015 (0.799)	-0.201*** (0.000)	-0.145*** (0.002)
GDP per capita		0.202 (0.300)	-0.581** (0.020)	-0.283 (0.280)
Gini coefficient		0.494 (0.347)	0.372 (0.705)	2.386*** (0.006)
Democracy			-0.147 (0.210)	0.871** (0.048)
Globalisation			-0.808*** (0.001)	-3.136*** (0.000)
Age-dependent ratio			1.226*** (0.000)	0.128 (0.766)
Poverty rate (lagged)		0.994*** (0.000)	0.823*** (0.000)	0.670*** (0.000)
Constant		0.832 (0.639)	2.895 (0.335)	-
AR (1) <i>p</i> -value		0.672	0.069	0.007
AR (2) <i>p</i> -value		0.744	0.617	0.965
Sargan OIR <i>p</i> -value		0.000	0.000	0.000
Hansen OIR <i>p</i> -value		0.571	0.172	0.406
Observations		186	308	285
No. of groups		26	39	37
No. of instruments		25	37	37

Notes: All the regressions are estimated using the dynamic two-step SGMM estimator technique developed by Blundell and Bond (1998), with Windmeijer (2005) finite-sample correction. Numbers in parentheses () are *p*-values. *** Significance at the 1% level, ** Significance at the 5% level, * Significance at the 10% level. All regressions include time dummies, but they are not shown here to save space. The abbreviations ODA stands for official development assistance; GDP: gross domestic product; GNI: gross national income; and the others are as defined in the text.

As displayed in Table 5.12, the ODA coefficient in the low-income group is positive and insignificant, while that for the lower and upper middle-income groups is negative and statistically significant at the 1% level. Since all the results of the three equations shown in Table 5.12 meet the specifications and post-estimation diagnostic tests; it can be concluded that there is strong evidence that foreign aid reduces poverty in the lower and upper middle-income countries. This implies that such aid is less effective in poorer countries, and it becomes more effective as a country graduates to middle-income status. These results align with the arguments by Easterly (2006) that countries suffering from extreme poverty would not benefit from foreign aid because of limited natural resources, inadequate management, corruption and other internal challenges.

5.2.8. Specification, robustness checks, and comparison with other results

Specification and robustness checks were performed and compared with other results on all the estimations shown in Tables 5.3 to 5.12. All the estimated results confirmed that extreme poverty was persistent (the coefficient of lagged poverty was positively signed and highly significant) and therefore the use of the DPD model specification is justified. Four different tests were used to assess the validity of the SGMM estimation (please see Asongu & De Moor, 2017; Asongu & Nwachukwu, 2018), and the results are briefly explained hereunder. First, the study checked for both first- and second-order serial correlation using the Arellano and Bond (1991) test. By definition, while first-order serial correlation is expected, second-order serial correlation is not anticipated for the consistency of the GMM estimator (Baltagi, 2008). In the majority of the estimations, the test for first-order serial correlation rejected the null hypothesis of “no first-order serial correlation (AR [1])”, while the null hypothesis of “no second-order autocorrelation (AR [2])” was not rejected. Second, the Sargan and Hansen tests for OIR were conducted, assessing the null that “instruments are valid or uncorrelated with the error term”. It is important to note that the Sargan OIR is not robust but not weakened by instruments, while the Hansen OIR is robust but weakened by instruments. Thus, to limit instrument proliferation, steps were taken to ensure that the number of instruments was equal to or lower than the number of cross-sections in all this study’s specifications. All the estimations that failed the Hansen OIR test were considered to be insignificant.

5.3. Results of Panel Granger Causality Test Between Foreign Aid and Poverty

This section presents the panel Granger causality tests between foreign aid and poverty reduction in a trivariate setting. It starts by briefly highlighting the descriptive statistics of the three variables (poverty headcount rate, foreign aid, and real GDP per capita) before discussing the time-series statistical properties of the variables.

5.3.1. Descriptive statistics

Panel Granger causality requires that the variables first be tested for stationarity and cointegration. Since the majority of the panel unit root and cointegration tests, a preconditional Granger causality test required that the data be fairly balanced, the sample size had to be reduced to 82 developing countries with fairly balanced panels for headcount poverty (poverty rate), foreign aid (ODA as a percentage of GNI), and GDP capita growth. The number of time periods remained the same at twelve (12) periods.

Since the data have been linearised (by taking natural logarithms), the mean, minimum, and maximum values are in logarithm form and therefore will not be discussed further. Of importance, however, is the general comment on measures of central tendency, dispersion (standard deviation), and normality (skewness, kurtosis, and normality tests). Table 5.13 contains a summary of the descriptive statistics of three variables used in the panel Granger causality analysis.

Table 5.13: Descriptive statistics

Variable	Obs.	Mean	Std.	Min.	Max.	Skew.	Kur.	JB	Pro.
Poverty rate	964	2.98	1.33	-3.00	4.57	-1.25	4.67	363.09	0.00
ODA	964	1.03	1.90	-7.70	4.78	-1.08	4.02	229.41	0.00
GDP per capita	964	7.29	1.06	4.93	9.58	0.15	2.03	41.48	0.00

Notes: The sample comprises 82 developing countries for the period 1981-2013. These summary statistics are based on the natural logs of the variable, in levels. The abbreviations are as follows. ODA stands for official development assistance; GDP: gross domestic product; Obs.: observations; Std.: standard deviations; Min.: minimum; Max.: maximum; Skew.: skewness; Kur.: kurtosis; JB: Jarque-Bera statistics; Pro.: probability.

As listed in Table 5.13, the summary of the statistics for the three variables shows minimum variations across the 82 sampled developing countries of the world from 1981 to 2013. In terms of normality tests, the GDP per capita mirrors normal skewness and is platykurtic (with a kurtosis of less than 3). Both the poverty rate and ODA have a long-left tail (negative skewness) and are leptokurtic (with a kurtosis of more than 3). The Jarque-Bera statistics (the null hypothesis is that the distribution is normal) which measure the difference in the skewness and kurtosis of the series against those from the normal distribution demonstrate that the three variables are not normally distributed. This suggests the possibility of outliers in the data.

Table 5.14 presents the correlation coefficients for the variables used in the VECM framework. As expected, the GDP per capita and poverty rate as well as the GDP per capita and ODA present

negative correlation coefficients of -0.89 and -0.71 respectively. The correlation coefficient for ODA and the poverty rate is positive (0.50). This suggests that the poverty rate and ODA in this sample move in the same direction or are correlated.

Table 5.14: Correlation matrix

Variables	Poverty rate	ODA	GDP per capita
Poverty rate	1.00	0.50	-0.69
ODA		1.00	-0.71
GDP per capita			1.00

Notes: The sample comprises 82 developing countries for the period 1981-2013. These summary statistics are based on the natural logs of the variable, in levels. The abbreviations ODA and GDP stand for official development assistance and gross domestic product, respectively.

5.3.2. Panel unit root test results

The first step in a panel Granger causality analysis is to test whether the variables are stationary. Inclusion of non-stationary panels in the estimation might lead to spurious regressions (Gujarati & Porter, 2009; Baltagi, 2013). Though the IPS is preferred because of its ability to cater for individual country heterogeneity, four-panel data unit root tests are used for robustness.

The tests were applied on the three variables in levels and first differences, and the specifications included (i) no trend and intercept, (ii) with intercept only, and (iii) with intercept and trend. The LLC (2002) test assumes that the unit root process for the panel is common or homogenous, while the other three treat the panel as heterogeneous (individual unit root). In all four tests, the null hypothesis that the variable is non-stationary (meaning that it contains a unit root) was tested. Thus, rejection of the null means the variable in question is stationary. Table 5.15 provides results of the four-panel unit root tests, namely the LLC, IPS, ADF, and PP (by Fisher).

Table 5.15: Panel unit root tests

Test Statistics	Variables					
	Level data			First-difference data		
	POV	ODA	GDP	POV	ODA	GDP
<i>Case 1: No trend and intercept</i>						
LLC	-6.76***	-6.15***	11.98	-10.81***	-26.61***	-6.92***
IPS	-	-	-	-	-	-
ADF	303.48***	213.32***	36.85	338.11***	584.13***	302.42***
PP	402.06***	246.96***	58.30	565.90***	749.67***	413.98***
<i>Case 2: With intercept only</i>						
LLC	3.64	-17.44***	0.06	-9.87***	-20.73***	-13.64***
IPS	8.63	-1.24	6.40	-3.48***	-7.76***	-5.02***
ADF	88.11	177.03	98.66	235.42***	331.77***	273.04***
PP	92.42	145.74	139.66	456.80***	503.55***	391.75***
<i>Case 3: With intercept and trend</i>						
LLC	-4.95	-32.86***	-10.91***	-16.05***	-17.46***	-19.85***
IPS	3.74	-3.21***	0.35	-2.47***	-3.00***	-5.40***
ADF	118.18	213.67***	180.91	254.52***	264.81***	297.14***
PP	186.61	211.76***	214.27	557.13***	573.71***	486.02***

Notes: *** denotes significance at the 1% level. ODA stands for official development assistance; GDP: gross domestic product; POV: poverty rate; LLC: Levine-Lin-Chu statistics; IPS: Im-Pesaran-Shin statistics; ADF: augmented Dickey-Fuller statistics; and PP: Philips-Perron statistics.

As indicated in Table 5.15, under the “no trend and intercept” and “with intercept and trend” panel unit specification, the ODA panel seems to be stationary. However, the IPS (the preferred test) does not confirm this result when “intercept only” is included. The GDP and poverty rate panels are not stationary at this level but stationary in the first difference. In summary, the three panels could be considered as integrated of order one, $I(1)$.

5.3.3. Cross-sectional dependency test results

Baltagi (2008) and Tekin (2012b) argue that the majority of causality studies suffer from estimation bias as a result of the use of econometric estimation techniques which do not consider cross-sectional dependence. Table 5.16 shows the results of the Pesaran CD (2004) test for cross-sectional dependence.

Table 5.16: Panel cross-sectional residual dependence test

Variables	Test	Statistic	Probability
Poverty rate/ ODA/GDP	Breusch-Pagan LM	16446.56***	0.000
	Pesaran scaled LM	152.388***	0.000
	Pesaran CD	18.309***	0.000

Notes: *** denotes significance at the 1% level.

As depicted in Table 5.16, all the CSD tests strongly reject the null that there is no correlation (cross-sectional interdependence) between variables or residuals within the sample. The results present evidence of cross-dependence in poverty levels across countries in the sample. This is expected given that the countries in the sample are developing, and whose main characteristics are high levels of poverty and a low per capita GDP. This also shows that the poverty rate, ODA, and GDP per capita variables appear to reveal some dynamics that are common in developing countries.

5.3.4. Panel cointegration test results

Having found that the three variables are integrated of order one, the next step before testing Granger causality is to conduct cointegration tests. This is a test of whether there is a long-run relationship between the three variables (Granger, 1988; 2004). The study used the Pedroni (1999, 2004) panel cointegration tests. The Kao (1999) panel cointegration test was used to validate the presence of a long-run relationship between the three variables. For both the Pedroni (1999, 2004) and Kao (1999) panel cointegration tests, the null hypothesis is that there is no cointegration. The results are listed in Table 5.17.

Table 5.17: Panel cointegration test

Test	Statistic	Dependent Variable		
		Poverty Rate	ODA	GDP
Pedroni (1999, 2004)	Panel v-Statistic	-4.40	0.05	-0.77
	Panel rho-Statistic	2.95	2.82	3.63
	Panel PP-Statistic	-2.37***	-3.27***	1.56***
	Panel ADF-Statistic	-3.89***	-4.15***	0.81***
	Group rho-Statistic	5.33	5.71	5.81
	Group PP-Statistic	-7.26***	-9.03***	-5.30***
	Group ADF-Statistic	-7.43***	-11.74***	-6.32***
Kao (1999)	ADF t-Statistic	-2.40***	-8.62***	-3.75***
<i>Inference</i>		<i>Co-integrated</i>	<i>Co-integrated</i>	<i>Co-integrated</i>

Notes: *** denotes significance at the 1% level.

As displayed in Table 5.17, panel cointegration tests were conducted on each of the three equations with each of the variables – poverty rate, ODA, and GDP – assuming the role of the dependent variable and the others being explanatory variables. The results show that four out of the seven Pedroni (1999, 2004) tests reject the null of no cointegration at the 1% level of significance. According to Pedroni (2004), in a small N and small T sample, the group-ADF statistic performs better, followed by the panel-ADF statistic, while the panel-v statistic and panel-rho statistic perform poorly. The Kao (1999) panel cointegration test confirms the results of the Pedroni (1999, 2004) tests. It can therefore be concluded that there is evidence of the existence of a long-term equilibrium relationship between the three variables when each of them is a dependent variable.

5.3.5. Panel causality test results

As explained in the literature on panel Granger causality tests (Engle & Granger, 1987; Granger, 2004; Dumitrescu & Hurlin, 2012), when the variables are stationary but not co-integrated, a Granger causality test could be performed with the panel VAR framework. However, if the variables are integrated of the same order and are co-integrated, then a panel VECM can be applied to test both short- and long-run causality. The results of both the Pedroni (1999, 2004) and Kao tests showed evidence that foreign aid, poverty rate, and GDP per capita are co-integrated; therefore, a DPD model using the VECM Granger causality framework was estimated. Before the panel VECM estimation, the number of optimal lags was established as 2 using the SCs under the unrestricted panel VAR model. The panel Granger causality test results, based on the panel VECM, are presented in Table 5.18.

Table 5.18: Panel Granger causality based on VECM estimation

Dependent Variable	Direction of Causality/Explanatory Variables			
	Short run			Long run
	χ^2 statistics (p-value)			Coefficient (<i>t</i> -statistics)
	Δ POV	Δ ODA	Δ GDP	ECT
Δ POV	-	0.626 (0.429)	13.097*** (0.000)	-0.001 (-0.882)
Δ ODA	0.187 (0.666)	-	17.513*** (0.000)	-0.164*** (-9.286)
Δ GDP	3.687* (0.055)	15.971*** (0.000)	-	-0.001 (-0.271)

Notes: For the *short run*, the sum of the lagged coefficients for the respective short-run changes in the independent variable(s) are shown with their corresponding Wald χ^2 statistics and p-values in parentheses (). For the *long-run*, coefficients of the ECT are reported, and the t-statistics are in parentheses (). ***, **, and * denote a significance of 1%, 5%, and 10%, respectively.

As illustrated in Table 5.18, the short-run causality tests are performed through the Wald χ^2 statistics, whereas long-run causality is inferred from the coefficient of ECT and the corresponding *t*-statistics. In the short-run, there is evidence of (i) a bidirectional causal relationship between GDP per capita and headcount poverty rate (GDP \leftrightarrow POV), (ii) a unidirectional causal relationship from GDP per capita to foreign aid (GDP \rightarrow ODA), and (iii) a unidirectional causality from poverty rate to foreign aid (POV \rightarrow ODA). This study’s short-run results can be contrasted with those of Arvin and Barillas (2002, p. 2154), who found that “*aid does not have a significant impact on poverty, nor does poverty affect the level of aid that is given*”⁴⁸. Pradhan and Arvin (2015) found evidence of short-term unidirectional causality from foreign aid to economic growth.

For the long-run causality results, only the coefficient of the ECT – when foreign aid is the dependent variable – is negative and statistically significant. This implies that (i) foreign aid tends to converge to its long-run equilibrium path in response to changes in the per capita GDP and headcount poverty rates, and (ii) both the GDP per capita and poverty rate jointly Granger cause foreign aid in the long-run (GDP & POV \rightarrow ODA). In contrast, there is no evidence of a long-run relationship or causality when Δ POV and Δ GDP are the dependent variables.

Both the short- and long-run Granger causality results reinforce each other that causality runs from GDP per capita and poverty rate to foreign aid. The short-run causality from GDP per capita to

⁴⁸ Please note that the Arvin and Barillas (2002) study, by its own specification, only focused on the short-run Granger causality.

ODA suggests that donors mainly consider this variable in their short-term foreign aid allocation. The long-run joint causality for poverty and GDP to ODA implies that aid is generally allocated to developing countries with high levels of poverty and a lower GDP per capita. Furthermore, decisions on aid allocation are taken over a long-time horizon, and changes in poverty levels sometimes take generations. The lack of a long-run relationship between poverty rate and foreign aid when Δ POV is the dependent variable indicates that foreign aid is not a long-term solution for poverty.

5.3.6. Diagnostics tests for panel causality results

Lastly, after estimation of the panel VECM equations, it is important to perform panel data serial correlation tests to confirm the validity of the panel VECM estimations (Wooldridge, 2002; Muye & Muye, 2016). The Breusch-Godfrey serial correlation (LM) test was used. The null hypothesis is that no serial correlation exists against the alternative that there is serial correlation. Apart from serial correlation, normality and heteroscedasticity diagnostic tests were also conducted. The results of these panel data diagnostic tests are shown in Table 5.19.

Table 5.19: Diagnostic tests for panel Granger causality tests

Dependent Variable	Normality Test (Jarque-Bera)	Serial Correlation (LM-Test)	Heteroscedasticity (Joint test, no cross terms)
ΔPOV	15 408.02*** (0.000)	5.508 (0.788)	58.515 (0.142)
ΔODA	9 125.32*** (0.000)	5.508 (0.788)	58.515 (0.142)
ΔGDP	823.59*** (0.000)	12.220 (0.201)	326.83*** (0.000)

Notes: p-values are in parentheses (). ***, **, and * denote a significance of 1%, 5%, and 10%, respectively.

As listed in Table 5.19, all three models (equations) do not have serial correlation. The p-values for all three equations are more than 10%, and the null hypothesis thus cannot be rejected (therefore, the null hypothesis is accepted), which means that all the equations are free from serial correlations. The two main panel VECM equations (poverty rate and ODA) are homoscedastic. The main challenge across the three equations is that the residuals are not normally distributed. However, because of the absence of serial correlation, the results of the Granger causality can be relied upon (Wooldridge, 2002; Muye & Muye, 2016).

5.4. Summary and Discussion of Empirical Findings

This sub-section covers a detailed discussion of the main findings from the empirical analysis. Each finding is briefly explained and contrasted with previous studies. The sub-section begins with the main findings from the SGMM estimations, which investigate the impact of the effectiveness of foreign aid in poverty reduction before highlighting the results of the assessment of the causal relationship between foreign aid and poverty.

5.4.1. Main findings from the system-generalised method of moments estimations

The initial analysis in Table 5.3 included the estimation of the baseline model using five different estimation methods. From this analysis, it was concluded that the SGMM is the optimal and most efficient estimation framework given the persistence of the dependent variable, suspected endogeneity, and simultaneity. Throughout all specifications, it was found that poverty is strongly persistent, hence the dynamic specification.

First, the main finding from the SGMM estimation is that, in general, foreign aid does have a statistically significant extreme poverty reduction effect in developing countries. This is in line with a recent study by Arndt *et al.* (2015, p. 15), which found that “*on average and over the long-run, foreign aid reduces poverty ...*”. Alvi and Senbeta (2012, 2014) found similar results.

Second, the analysis of the impact of the different types of aid on the three proxies of extreme poverty reveals that (i) grants and both bilateral and multilateral aid reduce the poverty headcount rate, but loans do not, while (ii) grants, loans, and bilateral aid reduce both the poverty gap and the squared poverty gap, but multilateral aid does not. This study’s grant versus loans results are in line with the recent AEL, whereas the bilateral versus multilateral aid results are contrary to prior expectations. It was, however, argued that given that around 70% of aid is bilateral in nature and that the majority of donors are now targeting poverty reduction in their poverty allocations post 9/11, these results could be understood in this context.

Third, almost all foreign aid proxies were found to be more likely to be effective in reducing extreme poverty in a democratic environment with freedom of enterprise. The results also imply that both political and economic freedom are channels through which foreign aid impacts extreme

poverty. This finding vindicates the aid selectivity and conditionality paradigm which has been advocated by Western donors.

Fourth, the study found strong evidence that foreign aid reduces poverty in the lower and upper middle-income countries but not in low-income countries. This implies that foreign aid is less effective in poorer countries, and it becomes more effective as the country graduates to middle-income status. This result tends to add to the old debate regarding whether poverty traps indeed exist and whether foreign aid could be a tool to help poor countries escape from these traps. The finding seems to suggest that the poorest countries do not benefit much from foreign aid in terms of poverty reduction. It would, however, be interesting to investigate this finding further with a particular focus on the income threshold at which foreign aid begins to affect extreme poverty.

Fifth, in all the estimations where GDP per capita was included, as per the theoretical specification, it was found that the GDP per capita generally had a higher poverty-reducing effect (higher elasticity) compared to ODA, which confirms the results of an earlier study by Dollar and Kraay (2002), who boldly declared that “*growth is good for the poor*”. Furthermore, the inequality (Gini coefficient) coefficient was found to be mainly positive and significant, confirming that higher inequality is detrimental to poverty reduction.

5.4.2. Main findings from the Granger causality tests

The main findings from the panel VECM Granger causality analysis are that in the short-run, there is evidence of (i) a bidirectional causal relationship between GDP per capita and headcount poverty rate, (ii) a unidirectional causal relationship from GDP per capita to foreign aid, and (iii) unidirectional causality from poverty rate to foreign aid. In the long-run, the study found that (i) foreign aid tends to converge to its long-term equilibrium path in response to changes in the per capita GDP and headcount poverty rates, and (ii) both GDP per capita and poverty rate jointly Granger cause foreign aid in the long-run. No evidence was found of a long-term relationship or causality when poverty rate and GDP per capita were the dependent variables.

The strong and joint causal effect from the poverty rate and GDP per capita to foreign aid could be a confirmation that the majority of aid is directed towards poor countries. This was highlighted in Table 2.3 which presents a chronology of aid volumes and motives over the years. The

conclusion from this historical perspective was that from the 1990s to the promulgation of the MDGs, there has been a shift of foreign aid allocation motive towards poverty reduction (Riddell, 2008; Schaffner, 2014). As explained in the theoretical review section in Chapter 3, foreign aid can be associated with the aid-dependency syndrome, the encouragement of rent seeking or corruption, the Dutch disease, and the crowding-out of local investments, all of which tend to limit the aid's impact in reducing extreme poverty.

5.5. Conclusion

This chapter has empirically (i) examined the effectiveness of foreign aid in reducing extreme poverty in developing countries, (ii) investigated the impact of different proxies of foreign aid on the three proxies of extreme poverty, (iii) explored whether political freedom (democracy) or economic freedom enhances the effectiveness of foreign aid, (iv) analysed the impact of foreign aid on extreme poverty by income group, and (v) tested the direction of causality between foreign aid and poverty. The first five study objectives were examined using the SGMM estimation method, and the last one was conducted through a panel VECM Granger causality framework. Given the persistence in extreme poverty, a DPD specification was employed. In both estimation methods, specification and diagnostics tests were performed to ensure that the results would be reliable.

The main findings of the study are as follows. First, foreign aid does have a statistically significant poverty reduction effect, and the results are consistent across all the three extreme poverty proxies. Second, the disaggregation of aid by source and type shows that total aid, and both grant and bilateral aid are more likely to reduce extreme poverty. Third, evidence exists that both political and economic freedom are effective channels through which aid impacts extreme poverty. Fourth, foreign aid was found to be more effective in middle-income countries. Lastly, the panel Granger causality results presented evidence of both short- and long-run causality, mainly from poverty and GDP per capita to foreign aid.

CHAPTER 6: CONCLUSION AND POLICY IMPLICATIONS

6.1. Introduction

This final chapter summarises and concludes this study. It also offers policy implications based on the main empirical findings of the study. Further, it presents research challenges and limitations encountered in the study and offers pointers on areas for further research. The organisation of the chapter is as follows: Section 6.2 summarises the overview of the study, and Section 6.3 offers a summary and discussion of empirical findings. Then, Section 6.4 presents the conclusions and policy implications of the investigation. Finally, Section 6.5 highlights the limitations of the study and identifies areas for further research.

6.2. Overview of the Study

Broadly, the two main objectives of this study are to (i) estimate the impact of official development assistance (ODA) or foreign aid on poverty reduction and (ii) examine the direction of causality between foreign aid on poverty in developing countries. Following from these two broad objectives, there are six specific objectives which are summarised as follows:

- i. To empirically assess the overall impact of foreign aid (total ODA) on extreme poverty (headcount poverty rate) in developing countries;
- ii. To empirically test the impact of different proxies of foreign aid on the three proxies of extreme poverty;
- iii. To empirically investigate whether political freedom (democracy) and economic freedom enhance the effectiveness of foreign aid;
- iv. To compare the impact of foreign aid on extreme poverty according to developing country income groups; and
- v. To examine the causal relationship between foreign aid and extreme poverty in developing countries.

The following alternative hypotheses were tested in this study:

- i. Foreign aid (total ODA) leads to a reduction in extreme poverty (headcount poverty rate) in developing countries;
- ii. Different types of foreign aid (loans, grants, as well as bilateral and multilateral aid) lead to a reduction in different proxies of extreme poverty (headcount poverty rate, poverty gap, and squared poverty gap index) in developing countries;
- iii. Political and economic freedom enhance the effectiveness of foreign aid in reducing extreme poverty in developing countries;
- iv. The effectiveness of foreign aid in extreme poverty reduction spans different country income groups; and
- v. Foreign aid Granger causes extreme poverty.

To meet the study's objectives and exhaustively test the study hypothesis, two econometric models were developed. The first model, with several variations, estimated the impact of foreign aid on poverty. This model was used with respect to specific objectives (i) to (iv) and the corresponding alternative hypothesis. The technique for estimating the impact of foreign aid on poverty is system GMM. Though this technique has been criticised, it is believed that it was the most suitable estimation technique for this study due to a number of reasons. These include: (i) system GMM is suitable for dynamic or persistent panels; (ii) the method can address biases because of endogeneity by controlling for simultaneity; (iii) it is appropriate in the "small T, large N" context, by addressing the Nickell (1981) bias and applying the "Windmeijer finite-sample correction"; (iv) the method eliminates the country-fixed effects by differencing the internal instruments in order to make them exogenous to the fixed effects without eliminating the country differences – it controls for cross-country dependence, limits instrument proliferation, and restricts over-identification; (v) the *two-step* SGMM approach adopted in this study's specification has the ability to control for heteroscedasticity; and (vi) the framework also allows for the adoption of forward orthogonal deviations instead of differencing, so as to minimise data loss.

For the examination of the direction of causality between foreign aid on poverty in developing countries, the panel VECM technique was adopted. The panel VECM Granger causality

framework was found suitable because of its ability to explicitly distinguish between (i) short-run causal effects; (ii) long-run causal effects; and (iii) strong causal effects. Furthermore, the method was chosen because the variables were found to be integrated in the same order and were co-integrated.

6.3. Summary of Empirical Findings and Conclusion

This sub-section summarises and offers a brief discussion of the results with regard to the two main objectives and some secondary objectives which were investigated. The point of departure are the results of the impact of foreign aid on poverty and its secondary objectives.

6.3.1. Main empirical findings on the impact of foreign aid on poverty reduction

The study used the SGMM estimation method for assessing the impact of foreign aid on extreme poverty. The empirical results are summarised as follows:

- i. The main finding from the SGMM estimation is that, in general, foreign aid does have a positive impact on poverty reduction in developing countries. This is in line with the findings from the country-based literature in Chapter 2 which confirms that a number of countries have graduated from reliance on foreign aid over the years as a result of increases in their per capita income. In fact, some countries have shifted from being aid recipients to being aid donors. This result is consistent with Mosley *et al.* (2004), Bahmani-Oskooee and Oyolola (2009), Alvi and Senbeta (2012, 2014), and Arndt *et al.* (2015). However, Chong *et al.* (2009) found conflicting results when using the same methodology.
- ii. The analysis of the impact of the different types of aid on the three proxies of extreme poverty reveals that grants and bilateral and multilateral aid reduce the poverty headcount rate but loans do not; and grants, loans, and bilateral aid reduce both the poverty gap and the squared poverty gap but multilateral aid does not. The finding that grants generally reduce extreme poverty compared to loans is in line with the recent aid effectiveness literature (see also Senbeta, 2009; Odedokun, 2004; Gunatilake *et al.* 2015; and Das and Serieux, 2015). However, the finding that bilateral aid generally reduces extreme poverty compared to multilateral aid is contrary to our a priori expectations. Theoretically, one

would expect multilateral aid to be more effective in reducing poverty. This is because multilateral aid is most likely to be allocated to sustainable development and poverty-reduction concerns, whereas bilateral aid is allocated based on colonial, strategic, and other political considerations. This contrast could be due to the fact that around 70% of aid is bilateral in nature and that the majority of donors are now targeting poverty reduction in their poverty allocations post 9/11. Moreover, empirical literature is still divided on which type of aid is beneficial for poverty reduction. Das and Serieux (2015), for example, found that loans lead to more reverse capital outflows compared to grants, while Rajan and Subramanian (2005) and Gunatilake *et al.* (2015) found inconclusive results on the differential effects between bilateral and multilateral aid.

- iii. Almost all foreign aid proxies (total ODA as a percentage of GNI), grants, loans, bilateral and multilateral aid were found to be more effective in reducing extreme poverty in an environment of political and economic freedom. The results also imply that both political and economic freedom are channels through which foreign aid impacts extreme poverty. This finding vindicates the aid selectivity and conditionality paradigm which has been advocated by Western donors. These results are generally in line with previous studies by Burnside and Dollar (2000), Kosack (2003), Mosley *et al.* (2004), and Connors (2011).
- iv. The study found strong evidence that foreign aid reduces poverty in the lower and upper middle-income countries but not in low-income countries. This implies that foreign aid is less effective in poorer countries, and it becomes more effective as the country graduates to middle-income status. This result tends to add to the old debate about whether there are indeed poverty traps and whether foreign aid could be a tool to help poor countries escape from those traps. The finding seems to suggest that the poorest countries do not benefit much from foreign aid in terms of poverty reduction. It would, however, be interesting to investigate this finding further, especially in relation to the income threshold at which foreign aid begins to affect extreme poverty.
- v. The results of all the estimations where GDP per capita was included, as per the theoretical specification, show that the GDP per capita generally had a higher poverty-reducing effect (higher elasticity) compared to ODA. This confirms the importance of GDP growth in the fight against poverty. The study further argues that GDP per capita is a major driver of poverty reduction compared to foreign aid.

- vi. Furthermore, the inequality coefficient was generally found to be positive and significant, confirming that higher inequality is detrimental to poverty reduction.

6.3.2. Main empirical findings on the causal relationship between foreign aid and poverty

The results from the panel VECM-based Granger causality framework which examined the direction of causality between poverty and foreign aid in a panel trivariate setting reveal the following:

- i. In the short run, there was evidence of unidirectional causal flow from poverty rate to foreign aid. Other results indicate that there was a bidirectional causal relationship between the GDP per capita and headcount poverty rate and a unidirectional causal flow from GDP per capita to foreign aid.
- ii. In the long-run, the study found that (i) foreign aid tends to converge to its long-term equilibrium path in response to changes in the per capita GDP and headcount poverty rates, and (ii) both poverty rate and GDP per capita jointly Granger cause foreign aid in the long-run. No evidence was found of a long-run relationship or causality when poverty rate and GDP per capita were the dependent variables.
- iii. There was a strong joint causal flow from poverty rate and GDP per capita to foreign aid. This could be a confirmation that the majority of aid is directed towards poor countries. This is in line with Riddell (2008) and Schaffner (2014) who contend that the promulgation of the MDGs has led to a shift of the foreign aid allocation motive towards poverty reduction since the early 1990s.

6.4. Policy Implications and Recommendations

The main finding from this study is that foreign aid has a statistically significant poverty-reduction effect, and the results are consistent across all three extreme poverty proxies. The policy implication of this finding is that development partners and donors should continue to focus on poverty reduction as the main objective of ODA as has been the case during the MDGs. One of

the main targets of the recently promulgated SDGs is to eradicate extreme poverty for all people everywhere by 2030. One of the policy tools for reaching this target has been to encourage rich countries to increase their ODA allocations to developing countries by 0.7% of the former countries' GNI.

Based on the net or marginal effects, this study found that both political freedom (democracy) and economic freedom enhance the effectiveness of foreign aid in the reduction of extreme poverty. This also implies that democracy and freedom of enterprise are important channels through which foreign aid affects extreme poverty in developing countries. It would be important for aid donors to continue with the WC aid selectivity and conditionality paradigm which has been advocated by Western donors. Therefore, apart from advocating for political freedom, donors and international agencies should also encourage the development of institutions that ensure economic freedom. Building strong institutions, especially those which promote and protect economic freedom, might boost entrepreneurship, which is regarded as an engine for job creation and poverty reduction.

The study also found that GDP per capita had a positive impact on poverty reduction in developing countries. This suggests that per capita income remains an important channel and tool for poverty reduction. It would be crucial for foreign aid to also focus on addressing those bottlenecks which hinder economic growth. Literature has shown that sustainable poverty reduction programmes are anchored on prolonged and high economic growth rates.

Lastly, the study also found that an increase in inequality has a detrimental effect on the fight against poverty. Aid-recipient countries should therefore be encouraged to create income distributional policies that allow the benefits of growth to accrue to many people, thereby lifting the majority of people out of extreme poverty. Most countries that succeeded in lifting the majority out of extreme poverty, especially China, implemented some social and distributional policies. Lastly, the results illustrate the importance of combining increases in foreign aid with recipient country reforms such as promotion of FDI, trade liberalisation, and globalisation in order to maximise the impact of foreign aid on poverty reduction.

6.5. Limitations of the Study and Suggestions for Further Research

6.5.1. Limitations of the study

Given the nature of the data and data availability constraints, the GMM is, to the best of the researcher's knowledge, the most robust empirical strategy when $T < N$. Even though all efforts were made to make this study analytically defensible, it suffers from a few limitations, as is the case with many other scientific research studies. First, as with most cross-country aid-growth-poverty dynamic panel data studies, there are obvious challenges to effectively controlling for endogeneity and establishing causality. This is especially true when the dynamic specifications are designed to eliminate country-specific effects which account for the unobserved country differences.

Second, although panel data offers many advantages, it still has certain shortcomings (Hsiao, 2007). Some of the challenges include selectivity problems, short time-series dimensions, heterogeneity, and cross-section dependence among others (Baltagi, 2013). The inclusion of 120 developing countries in one estimation model presented some of these challenges.

The limitations identified above could have affected the empirical results and the inferences drawn from this analysis. However, it is presumed that their effects are minimal and that they have not significantly influenced the theoretical and empirical findings of this study.

6.5.2. Areas for further research

To counter the challenge of panel data as well as address the macro-micro paradox, future research could explore possibilities of individual country analysis, disaggregating poverty analysis by rural and urban areas. It would also be vital to examine the direction of causality between foreign aid, poverty, and democracy or economic freedom.

Another area of interest could be to assess the importance of foreign aid on those countries that graduated from ODA dependence through detailed case studies on individual countries. It would also be critical to understand those countries' features and domestic policies.

This study found evidence that foreign aid tends to reduce poverty in the lower and upper middle-income countries but not in low-income countries. This implies that the poorest countries do not benefit much from foreign aid in terms of poverty reduction. It would be interesting for future studies to investigate this finding further, especially in relation to the income threshold at which foreign aid begins to affect extreme poverty.

Our analysis of the unconditional and conditional effects showed revealed that (i) the unconditional effect of foreign aid on poverty was consistently negative; (ii) the conditional effect of foreign aid and freedom on poverty was consistently positive; and (iii) the net or marginal effect was consistently negative. Though we concluded, based on the negative marginal effects, that political and economic freedom enhances the effectiveness of foreign aid, it would be important for future research to employ panel data threshold analysis in order to determine the optimal thresholds.

Lastly, future studies might conduct a comparison of the impact of aid on different measures of poverty and welfare. These could include proxies such as the human poverty index, human development index, and multidimensional poverty index among others.

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APPENDICES

Appendix A.1: Country List (Sample of Developing Countries)

ID	Country	Region	ID	Country	Region	ID	Country	Region
1	Albania	ECA	41	Guatemala	LAC	81	Nigeria	SSA
2	Algeria	MENA	42	Guinea	SSA	82	Pakistan	SA
3	Angola	SSA	43	Guinea-Bissau	SSA	83	Panama	LAC
4	Armenia	ECA	44	Guyana	LAC	84	Papua New Guinea	EAP
5	Azerbaijan	ECA	45	Haiti	LAC	85	Paraguay	LAC
6	Bangladesh	SA	46	Honduras	LAC	86	Peru	LAC
7	Belarus	ECA	47	India	SA	87	Philippines	EAP
8	Belize	LAC	48	Indonesia	EAP	88	Rwanda	SSA
9	Benin	SSA	49	Iran, Islamic Republic	MENA	89	Samoa	EAP
10	Bhutan	SA	50	Iraq	MENA	90	Sao Tome and Principe	SSA
11	Bolivia	LAC	51	Jamaica	LAC	91	Senegal	SSA
12	Bosnia and Herzegovina	ECA	52	Jordan	MENA	92	Serbia	ECA
13	Botswana	SSA	53	Kazakhstan	ECA	93	Seychelles	SSA
14	Brazil	LAC	54	Kenya	SSA	94	Sierra Leone	SSA
15	Burkina Faso	SSA	55	Kiribati	EAP	95	Solomon Islands	EAP
16	Burundi	SSA	56	Korea, Rep.	EAP	96	South Africa	SSA
17	Cabo Verde	SSA	57	Kyrgyz Republic	ECA	97	Sri Lanka	SA
18	Cambodia	EAP	58	Lao People's Democratic Republic	EAP	98	St. Lucia	LAC
19	Cameroon	SSA	59	Lesotho	SSA	99	Sudan	SSA
20	Central African Republic	SSA	60	Liberia	SSA	100	Suriname	LAC
21	Chad	SSA	61	Macedonia, former Yugoslav Republic of	ECA	101	Swaziland	SSA
22	Chile	LAC	62	Madagascar	SSA	102	Tajikistan	ECA
23	China	EAP	63	Malawi	SSA	103	Tanzania	SSA
24	Colombia	LAC	64	Malaysia	EAP	104	Thailand	EAP
25	Comoros	SSA	65	Maldives	SA	105	Timor-Leste	EAP
26	Congo, Democratic Republic of	SSA	66	Mali	SSA	106	Togo	SSA
27	Congo, Republic of	SSA	67	Mauritania	SSA	107	Tonga	EAP
28	Costa Rica	LAC	68	Mauritius	SSA	108	Tunisia	MENA
29	Cote d'Ivoire	SSA	69	Mexico	LAC	109	Turkey	ECA
30	Djibouti	MENA	70	Micronesia, Federated States of	EAP	110	Turkmenistan	ECA
31	Dominican Republic	LAC	71	Moldova	ECA	111	Tuvalu	EAP
32	Ecuador	LAC	72	Mongolia	EAP	112	Uganda	SSA

ID	Country	Region	ID	Country	Region	ID	Country	Region
33	Egypt, Arab Rep.	MENA	73	Montenegro	ECA	113	Ukraine	ECA
34	El Salvador	LAC	74	Morocco	MENA	114	Uzbekistan	ECA
35	Ethiopia	SSA	75	Mozambique	SSA	115	Vanuatu	EAP
36	Fiji	EAP	76	Myanmar	EAP	116	Venezuela, Republica Bolivariana de	LAC
37	Gabon	SSA	77	Namibia	SSA	117	Vietnam	EAP
38	Gambia, The	SSA	78	Nepal	SA	118	West Bank and Gaza	MENA
39	Georgia	ECA	79	Nicaragua	LAC	119	Zambia	SSA
40	Ghana	SSA	80	Niger	SSA	120	Zimbabwe	SSA

Appendix A.2: Graduates from the DAC List of ODA Recipients

Countries and territories removed (which Graduated) from the DAC List of ODA Recipients			
Number	Country	Year	Region
1	Portugal	1991	ECA
2	French Guyana	1992	LAC
3	Guadeloupe		LAC
4	Martinique		LAC
5	Réunion		Africa (Owned by France)
6	Saint Pierre and Miquelon		LAC
7	Greece	1995	ECA
8	Bahamas	1996	LAC
9	Brunei		EAP
10	Kuwait		MENA
11	Qatar		MENA
12	Singapore		SA
13	United Arab Emirates		MENA
14	Bermuda	1997	LAC
15	Cayman Islands		LAC
16	Chinese Taipei		EAP
17	Cyprus		ECA
18	Falkland Islands (Malvinas)		LAC
19	Hong Kong (China)		EAP
20	Israel		MENA
21	Aruba	2000	LAC
22	the British Virgin Islands		LAC (Owned by Britain)
23	French Polynesia		EAP (Owned by France)
24	Gibraltar		ECA
25	Korea		EAP
26	Libya		MENA
27	Macau (China)		EAP

Countries and territories removed (which Graduated) from the DAC List of ODA Recipients			
Number	Country	Year	Region
28	Netherlands Antilles		LAC
29	New Caledonia		EAP
30	Northern Marianas Islands		EAP
31	Malta	2003	ECA
32	Slovenia		ECA
33	Bahrain	2005	MENA
34	Saudi Arabia	2008	MENA
35	Turks and Caicos Islands		LAC (Owned by Britain)
36	Barbados	2011	LAC
37	Croatia		ECA
38	Mayotte		SSA (Owned by France)
39	Oman		MENA
40	Trinidad and Tobago		LAC
41	Anguilla	2014	LAC (Owned by Britain)
42	Saint Kitts and Nevis		LAC
43	Chile	2018	LAC
44	Seychelles		SSA
45	Uruguay		LAC
1	Antigua and Barbuda	Projected-2030	LAC
2	Equatorial Guinea		SSA
3	Libya		MENA
4	Gabon		SSA
5	Kazakhstan		ECA
6	Panama		LAC
7	Turkey		ECA
8	Brazil		LAC
9	Argentina		LAC
10	Costa Rica		LAC
11	Malaysia		EAP
12	Mauritius		SSA
13	Mexico		LAC
14	Suriname		LAC
15	Turkmenistan		ECA
16	Belarus		ECA
17	Lebanon		MENA
18	Azerbaijan		ECA
19	China		EAP
20	Maldives		SA
21	Former Yugoslav Republic of Macedonia		ECA
22	Peru		LAC

Countries and territories removed (which Graduated) from the DAC List of ODA Recipients			
Number	Country	Year	Region
23	St. Vincent and Grenadines		LAC
24	Thailand		EAP

Source: Own Compilation from OECD (2014; 2018)

Appendix A.2: Marginal Effects of Aid Calculations

Impact of political and economic freedom on the effectiveness of foreign aid						
Effect of political freedom on different proxies of foreign aid - poverty headcount rate						
Foreign Aid Proxy	Aid Coefficient	Interaction Term (IT)	Mean Pol. Freedom	Marginal effect of Aid	Significance of IR	Hansen OIR p-value
ODA as % of GNI	-0.366	0.197	0.51	-0.266	Yes	Yes
Grant	-0.450	0.460	0.51	-0.215	Yes	Yes
Loan	-0.097	0.093	0.51	-0.050	No	Yes
Bilateral aid	-0.405	0.199	0.51	-0.304	Yes	Yes
Multilateral aid	-0.167	0.046	0.51	-0.144	No	Yes
Effect of economic freedom on different proxies of foreign aid - poverty headcount rate						
Foreign Aid Proxy	Aid Coefficient	Interaction Term (IT)	Mean Econ. Freedom	Marginal effect of Aid	Significance of IR	Hansen OIR p-value
ODA as % of GNI	-0.540	0.263	1.72	-0.088	Yes	Yes
Grant	-0.665	0.305	1.72	-0.140	Yes	No
Loan	-0.410	0.204	1.72	-0.059	Yes	Yes
Bilateral aid	-0.660	0.319	1.72	-0.111	Yes	Yes
Multilateral aid	-0.389	0.212	1.72	-0.024	Yes	Yes
Effect of political freedom on different proxies of foreign aid - poverty gap						
Foreign Aid Proxy	Aid Coefficient	Interaction Term (IT)	Mean Pol. Freedom	Marginal effect of Aid	Significance of IR	Hansen OIR p-value
ODA as % of GNI	-0.415	0.238	0.51	-0.294	Yes	Yes
Grant	-0.547	0.565	0.51	-0.259	Yes	No
Loan	-0.276	0.281	0.51	-0.133	Yes	Yes
Bilateral aid	-0.433	0.226	0.51	-0.318	Yes	Yes
Multilateral aid	-0.237	0.106	0.51	-0.183	Yes	No
Effect of economic freedom on different proxies of foreign aid - poverty gap						
Foreign Aid Proxy	Aid Coefficient	Interaction Term (IT)	Mean Econ. Freedom	Marginal effect of Aid	Significance of IR	Hansen OIR p-value
ODA as % of GNI	-0.764	0.389	1.72	-0.095	Yes	No
Grant	-0.870	0.430	1.72	-0.130	Yes	Yes
Loan	-0.263	0.096	1.72	-0.098	No	Yes
Bilateral aid	-0.921	0.440	1.72	-0.164	Yes	Yes
Multilateral aid	-0.559	0.289	1.72	-0.062	Yes	Yes

Effect of political freedom on different proxies of foreign aid – Squared poverty gap						
Foreign Aid Proxy	Aid Coefficient	Interaction Term (IT)	Mean Pol. Freedom	Marginal effect of Aid	Significance of IR	Hansen OIR p-value
ODA as % of GNI	-0.480	0.314	0.51	-0.320	Yes	Yes
Grant	-0.393	0.578	0.51	-0.098	Yes	Yes
Loan	-0.272	0.270	0.51	-0.134	Yes	Yes
Bilateral aid	-0.366	0.198	0.51	-0.265	Yes	Yes
Multilateral aid	-0.253	0.153	0.51	-0.175	Yes	No
Effect of economic freedom on different proxies of foreign aid – Squared poverty gap						
Foreign Aid Proxy	Aid Coefficient	Interaction Term (IT)	Mean Econ. Freedom	Marginal effect of Aid	Significance of IR	Hansen OIR p-value
ODA as % of GNI	-0.697	0.359	1.72	-0.080	Yes	No
Grant	-0.710	0.323	1.72	-0.154	Yes	No
Loan	-0.206	0.069	1.72	-0.087	No	Yes
Bilateral aid	-0.794	0.364	1.72	-0.168	Yes	Yes
Multilateral aid	-0.513	0.252	1.72	-0.080	Yes	Yes