

**THE IMPACT OF REMITTANCES ON ZIMBABWEAN
ECONOMIC DEVELOPMENT**



BY

JUDITH TAMBAMA

**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT
OF THE REQUIREMENTS OF THE MASTER OF SCIENCE
DEGREE IN ECONOMICS**

**DEPARTMENT OF ECONOMICS
FACULTY OF SOCIAL STUDIES
UNIVERSITY OF ZIMBABWE
JUNE 2011**

DEDICATION

To my husband, Josias Marimba, sister and brother, Nyasha and Munyaradzi Tambama.

ACKNOWLEDGEMENTS

My heartfelt gratitude goes to my supervisors, Dr Zhou, Mr Pindiriri, Mr Makoto and Mr Mavesere for their unwavering guidance and constructive criticism throughout this study. I would also like to extend my profound gratitude to Dr Kouassi and Gibson Ncube for reviewing my work and providing valuable comments.

A special word of thanks goes to my husband Josias Maririmba for the wholeheartedly given financial and emotional support in the realisation of my dreams. I also want to express gratitude to my classmates/colleagues especially Archibald Macheka, Onias Munamati and Everisto Mugocho for the warm environment they provided during this work.

I also wish to thank The African Economic Research Consortium (AERC) for the financial support they gave me and the research training in Nairobi (Kenya).

Finally, to the Almighty God, my Creator King, my Porter, I say “Thank you Lord for being there for me each and every second of each and every day”.

ABSTRACT

Remittances have grown to rival or surpass official development assistance and have increased living standards in the migrant sending countries. This research analysis explores the empirical developmental impact of formal remittances in Zimbabwe, particularly their effect on poverty reduction and human capital. Using a three stage least squares estimation technique to counter the endogeneity problem of remittances, the study provides evidence that a unit increase in the share of remittances on GDP reduces poverty by 52% and increases human capital accumulation by 11.5% in Zimbabwe. The reverse causality of remittances and poverty reduction has not been supported by the results of this study. Thus remittances contribute significantly to development objectives such as those of the Millennium Development Goals. The paper also strives to show that trade openness, GDP and dependency ratio help increase remittance inflows. Consequently, the development potential of remittances can particularly be improved by increasing the total flow of formal remittances and bilateral and multilateral agreements between the sending and the receiving countries. Improved management of remittances and incentives to channel remittances into more productive uses can also improve the developmental effect(s) of remittances.

TABLE OF CONTENTS

DEDICATION.....	I
ACKNOWLEDGEMENTS	II
ABSTRACT.....	III
TABLE OF CONTENTS	IV
LIST OF FIGURES	VI
LIST OF TABLES	VII
LIST OF ACRONYMS	VIII
CHAPTER ONE: INTRODUCTION.....	1
1.0 INTRODUCTION.....	1
1.1 DEFINITION OF REMITTANCES	2
1.2 PROBLEM STATEMENT	3
1.3 OBJECTIVES OF THE STUDY	4
1.4 RESEARCH QUESTIONS.....	5
1.5 HYPOTHESIS TO BE TESTED	5
1.6 JUSTIFICATION OF THE STUDY	5
1.7 ORGANISATION OF THE STUDY.....	7
CHAPTER TWO: BACKGROUND OF THE STUDY.....	8
2.0 INTRODUCTION.....	8
2.1 AN OVERVIEW OF THE ZIMBABWEAN ECONOMY AND MIGRATION TRENDS	8
2.2 GLOBAL REMITTANCE TRENDS	11
2.3 ZIMBABWEAN REMITTANCE TRENDS	13
2.4 ZIMBABWEAN MIGRANTS SKILLS AND EDUCATION	14
2.5 THE MIGRATION LEGAL FRAMEWORK IN ZIMBABWE	15
CHAPTER THREE: LITERATURE REVIEW.....	16
3.0 INTRODUCTION.....	16
3.1 ECONOMIC DEVELOPMENT.....	16
3.2 THEORETICAL LITERATURE.....	18
3.2.1 <i>The migration optimists</i>	19
3.2.2 <i>Migration pessimists: Historical Structural and Dependency views</i>	20
3.2.3 <i>The pluralist perspective</i>	22
3.3 EMPIRICAL LITERATURE REVIEW	24
CHAPTER FOUR: ECONOMETRIC METHODOLOGY	30
4.0 INTRODUCTION.....	30
4.1 THEORETICAL SPECIFICATION	30
4.2 EMPIRICAL SPECIFICATION	31
4.3 DEFINATION AND JUSTIFICATION OF VARIABLES	32
4.3.1 <i>Dependent Variables</i>	32
4.3.2 <i>Control Variables</i>	33

4.4 ECONOMETRIC MODELLING	36
4.4.1 <i>The Identification Problem</i>	36
4.4.2 <i>Testing for Stationarity</i>	37
4.5 DATA SOURCES	39
CHAPTER FIVE: ESTIMATION AND DISCUSSION OF RESULTS	40
5.0 INTRODUCTION.....	40
5.1 PRELIMINARY RESULTS.....	40
5.2 TESTING FOR MODEL SPECIFICATION.....	42
5.3 REGRESSION RESULTS.....	44
5.4 INTERPRETATION OF RESULTS AND DISCUSSION.....	45
5.5 SUMMARY	50
CHAPTER SIX: SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS	51
6.0 INTRODUCTION.....	51
6.1 SUMMARY AND CONCLUSION	51
6.2 POLICY RECOMMENDATIONS	52
6.3 SUGGESTIONS FOR FUTURE RESEARCH	54
APPENDICES.....	55
APPENDIX 1: IDENTIFICATION	55
APPENDIX 2: RESULTS-STATA ORIGINAL OUTPUT	56
REFERENCES.....	57

LIST OF FIGURES

Figure 1: Inflows to developing countries (US\$ billions).....	10
Figure 2: Per capita remittances for the top 20 recipient countries.....	11
Figure 3: The linkages between remittances and development.....	23

LIST OF TABLES

Table 1: Summary Statistics.....	39
Table 2: Correlation Matrix for equation 4.4.....	40
Table 3: Correlation Matrix for equation 4.5.....	41
Table 4: Correlation Matrix for equation 4.6.....	41
Table 5: Dickey Fuller-Generalised Least Squares tests for unit root in levels.....	42
Table 6: DF-GLS unit root test results after first differencing.....	43
Table 7: Regression results for equation 4.4.....	43
Table 8: Regression results for equation 4.5.....	43
Table 9: Regression results for equation 4.6.....	44

LIST OF ACRONYMS

DF-GLS	Dickey Fuller Generalised Least Squares
ESAP	Economic Structural Adjustment Programme
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
HDI	Human Development Index
HPI	Human Poverty Index
IFAD	International Fund for Agriculture and Development
IOM	International Organisation for Migration
LEDRIZ	Labour and Economic Development Research Institute of Zimbabwe
MARS	Migration And Remittances Survey
MDGs	Millennium Development Goals
NELM	New Economics of Labour Migration
RBZ	Reserve Bank of Zimbabwe
SADC	Southern African Development Community
SAMP	Southern African Migration Project
UNDP	United Nations Development Programme
UNCTAD	United Nations Conference on Trade And Development
ZANU PF	Zimbabwe African National Union Patriotic Front
ZIMPREST	Zimbabwe Programme for Economic and Social Transformation
ZIMVAC	Zimbabwe Vulnerability Assessment Committee

CHAPTER ONE: INTRODUCTION

1.0 Introduction

Keely and Bao (1989) contend that remittances have “beaten” all other developmental paradigms because they offer a speedy route from poverty to comfort. They break the vicious cycle of generational poverty in developing nations. Remittances are emerging as an important source of external development finance and they have been growing in both absolute volumes, as well as relative to other sources of external finance. Perhaps even more important, they are the most stable source of external finance and are providing crucial social insurance in many countries afflicted by economic and political crises. Migration has the potential to deliver many positive benefits for development and poverty reduction, as well as contributing to the achievement of the Millennium Development Goals (MDGs). Migrant remittances represent a key source of foreign exchange for countries of origin and provide valuable lifelines to recipient families and communities.

Migration and remittances are inextricably intertwined because remittances would not occur if the senders had not migrated in the first instance. The most tangible link between migration and development is through the impact of remittances. They represent the human face of globalisation in which people migrate in search for a better life to provide for their families back home. It has been proved that international remittances represent the second most important source of external funding in developing countries after FDI and are about double the level of official aid related inflows to developing countries (Adam and Page, 2005).

As a result of the political and socio-economic challenges that Zimbabwe experienced over the last decade, millions of Zimbabweans left the country as a survival strategy. As this socio-political and economic crisis deepened, all macroeconomic indicators were unfavourable and unstable. Inflation rate reached 231 million percent in July 2008¹, the official exchange rate against the greenback was pegged at US\$1/ZWD\$300 000 with the parallel market rate reaching the hyperbolic rate of US\$1/ZWD1.5million in 2007². Poverty and unemployment were in excess of 90 percent by December 2008³. Consequently, an

¹ Central Statistical Office, August (2008), now ZIMSTAT

² Reserve Bank of Zimbabwe Quarterly Economic Reviews, 2008

³ International Labour Organisation (ILO), 2009

external means of sustenance in the form of remittances increasingly played a fundamental and pivotal role in the livelihood of the economy's citizens (ZIMVAC, 2009).

There is a growing consensus that international migration has a direct impact on economic development and that it is important in the development of appropriate policies and initiatives that facilitate the realisation of the full potential benefits of international migration. Opportunities presented by migration include, but are not necessarily limited to, the inflow of remittances and foreign currency, investment capital from those in the diaspora, technology, and the increased chances of trade flows between the receiving and the sending countries. Remittances are now widely accepted as the most tangible and the least controversial link between migration and development. Consequently, they are viewed as a vital building block in poverty reduction and economic development in migrant sending countries. This therefore calls for measures conducive to making remittances effective as a means of advancing economic development.

Remittances to crisis stricken countries play a crucial role in sustaining the economic survival of a significant proportion of the population. Savage and Harvey (2007) add that people who receive remittances may play an important part in the recovery process once channels are re-established through sharing of remittances within and between communities which may increase their impact beyond the immediate receivers. Remittance flows into local communities may have positive multiplier effects on local economies because of increased disposable income for example through higher demand for local services, construction jobs and other activities. Ratha (2003) contends that, since remittances are non-political household-to-household transfer of money, they are therefore not affected by macroeconomic fundamentals.

1.1 Definition of Remittances

The IMF balance of payments categorises remittances into three components: workers' remittances, which are transfers by migrants considered as residents, compensation of employees, which includes transfers by non-resident migrants, seasonal workers and cross border workers, and migrant transfers, which usually include transfers of goods or financial

assets. Other researchers have limited the definition of remittances to personal flows of money that migrants send to their family back home (Ratha, 2002).

This study is primarily grounded upon the definition of remittances proposed by Ratha (2002). In kind remittances; transfer of goods for example cars, food and household appliances play an important role in improving the standards of living of the receiving households. However, economic development is way more than improvement of quality of life of only those who receive remittances because such commodities are highly unlikely to be used for sustainable development. Ellerman (2005) calls this part of the use of remittances sterile for developmental purposes and that it is “non local expenditure on conspicuous consumption”. Moreover, as difficult as it already is with data on remittances, the latter sent through informal channels are difficult if not impossible to measure accurately hence the World Bank’s (2005) conclusion that “what cannot be measured cannot be used in policy making”. Also, the accounting prudence concept states that revenue must be understated so as to avoid overstating profits (benefits in this case). Espousing the ideas of the World Bank, Ellerman’s postulations (2005), the accounting prudence concept and the fact that in kind remittances are difficult to measure, this study is going to be prudent and utilise data available for only cash remittances that come through formal channels.

1.2 Problem Statement

For a whole decade, Zimbabwe experienced the worst economic crisis in its recent history⁴, which witnessed an estimated 4 million Zimbabweans migrating to other countries (Pasura, 2008). The livelihood of the remaining Zimbabweans during the crisis implies an exogenous source of income as there was a huge discrepancy between earnings and poverty datum line. Hence, Tevera and Chikanda (2009) claim that without remittances, the situation in Zimbabwe would have been dire than it was.

The huge out-emigration during the crisis left the country suffering the consequences of brain drain especially in the health, education and the mining sectors (UNDP, 2008). The Lake

⁴ GDP declined by 37 percent between 1998 and 2006, inflation rate hit a maximum of 1.6 million in 2008, real wages were US\$11.54 with the consumer price index was 184101.08 base year 2001 in 2006 (ZIMSTAT, 2008).

Kivu Consensus (An agenda for a competitive Africa) (2009) suggested that African governments must focus on developing linkages to the African Diaspora, rather than focusing on the brain drain. Thus, instead of the country crying foul about brain drain, it must find a way of converting that brain drain to “brain gain” and avoid “brain waste”, *per se*.

The motivation of this paper emanates from the fact that remittances have evidently lifted the face of many economies in the world whose economic standing was in the same dire straits as was Zimbabwe at some point⁵. However, the significance and magnitude of the effect on development of these flows in Zimbabwe has not been adequately investigated.

Despite the ever increasing size of formal remittances there has been little effort to analyse its empirical effect on economic development especially on poverty and human capital in Zimbabwe. In fact, notwithstanding that remittances have been implicated as a vital source of income with crucial income smoothing effect and contribution to standards of living, its impact in Zimbabwe is not known. Thus, because of the poor understanding of the impact of remittances in Zimbabwe’s economic and human development, remittances have remained somewhat poorly managed. Consequently, this makes it imperative that the impact of remittances in Zimbabwean be investigated.

1.3 Objectives of the Study

Main objective

- To empirically investigate the impact of remittances on Zimbabwean economic development.

Specific objectives

- To test the effect of remittances on poverty reduction.
- To investigate the contribution of remittances on human capital accumulation.
- To determine the determinants of remittances.

⁵ These countries include Ireland, Mexico, The Philippines, Kenya, Ghana and Somalia among others. G8 (2007)

1.4 Research Questions

To achieve the above objectives, the study specifically seeks to address the following questions:

- To what extent does the inflow of remittances reduce poverty?
- To what extent do the processes of migration and remittances contribute to human capital?
- What are the factors that affect remittances?

A time series three stage least squares (3SLS) is going to be used in the study to investigate and address the research questions.

1.5 Hypothesis to be tested

- H1: remittances have a significant and negative effect on poverty levels
- H2: human capital increases with increase in remittances
- H3: high poverty levels and human capital both affect remittances positively

1.6 Justification of the Study

The magnitude of flows of remittances during recent years has attracted a great deal of attention from academics and development practitioners, who have grown increasingly interested in understanding their potential developmental impact and corresponding policy implications. Existing evidence on these issues, however, is mostly restricted to a small number of countries, notably Mexico and El Salvador in the case of Latin America. Patterns of migration and remittances vary considerably across countries in terms of the social and economic background of migrants and their families. The impact of growing remittances is also likely to differ in ways that at present are still largely unknown hence a need for a country specific investigation of the impact of remittances on development.

A few studies have been done on the remittance-development nexus in Zimbabwe for example Maphosa (2004), International Organisation for Migration (IOM) (2005), Bracking and Sachikonye (2006), and Labour Economic Development Research Institute of Zimbabwe (LEDRI) (2009). However, all these case studies qualitative data and primary interviews with sample sizes ranging from 200 to 500 which cannot be generalised for the whole nation. The arguments in these studies are that of the widely known problems of remittances data and that most remittances to Zimbabwe come through informal channels hence cannot be quantified. However, cash remittances are the least the country is receiving meaning total remittances are more than official remittances. Following the accounting prudence concept, it is better to under estimate benefits and over state costs to avoid exaggeration of benefits. Consequently, this study poses the challenge that there is nothing wrong in investigating the significance of the under estimated remittances as this will give a minimum impact which will be at least accurate.

About 25 percent of Zimbabweans (Pasura, 2008) have moved to other countries and the trend is not temporary and as such there is need for clear policy to ensure mutual benefits for the receiving and the sending countries. Public policy should focus on maximising the developmental benefits of migration by increasing the positive impact of remittances since stopping migration is neither possible nor feasible. However, these benefits will be difficult to maximise if the transmission mechanism and the magnitude of effect on development of remittances is not readily known. Thus, the results of the study will assist policy makers in formulating policies that ensures remittances are harnessed in the recovery of the economy.

It is critical to investigate the relevance of remittances in development using quantifiable estimation techniques so that the magnitude of the effect if any can be determined. It then follows that for policies that are intended to harness remittances into a development mantra to be formulated, evidence has to come from what can be measured hence the use of formal remittances in the study. This study therefore, is the first to my knowledge, to explore the macroeconomic impact of remittances in Zimbabwe using econometric estimation techniques.

1.7 Organisation of the Study

This study will be structured as follows: Chapter two will present the background of the Zimbabwean economy. Chapter three will review related literature and the fourth chapter will focus on the econometric methods and procedures to be used in the study. Estimation and interpretation of results will be provided in chapter five while Chapter six summarises and concludes with policy recommendations.

CHAPTER TWO: BACKGROUND OF THE STUDY

2.0 Introduction

This chapter looks at the background of the study with the first section presenting an overview of the Zimbabwean economy and migration trends for the period of study that is, from 1980 to 2009. This is split into three categories, the control regime (1980-1990), the economic liberalisation period (1991-1996) and the crisis period (1997-2007). Global remittance trends will be the focus of the second section. Remittance trends, the financial sector and the migrant legal framework for Zimbabwe will also be analysed in this chapter.

2.1 An Overview of the Zimbabwean Economy and Migration Trends

The control regime, 1980-1990

The period 1980 to 1990 saw Zimbabwe within the framework of a command economy with redistributive objectives that necessitated a large public sector and increased government spending on health, education and other social welfare programmes. There were great improvements in terms of social indicators like health, education and poverty levels but this resulted in unsustainably high budget deficits. In the 1980s, Zimbabwe's growth rate was among the highest in Sub Saharan Africa at an average of 4.3 percent with 10.7 and 9.7 percent in 1980 and 1981, respectively. However, in the mid 1980s, the economy plunged into a recession which was initially sparked by two consecutive droughts in 1982/83 and 1984/85. This recession could also be attributed to controlled macroeconomic policies that failed to provide adequately resource flows and incentives for long term investment, (UNDP 2010). The economy was characterised by weak export performance, low levels of capital formation and foreign exchange scarcity which led all economic stakeholders to accept the need for a package of reforms.

Migration during this period involved white Zimbabweans leaving the country because of fear of retribution on attainment of independence (Selby, 2006). Tevera and Crush (2003) estimate that about 50,000 to 60,000 whites left the country between 1980 and 1984. The

white population of 232,000 in mid-1979 was estimated to have fallen to about 80,000 by 1990 (Godwin, 1993). Also, during this period migration emanated from the post-independence conflict (Gukurahundi) in Matabeleland and parts of the Midlands between the ruling Zanu-PF government and the opposition liberation party PF-ZAPU. This conflict is estimated to have led to the emigration of 4,000 to 5,000 refugees to other countries (Jackson, 1994).

Economic liberalisation period, 1991-1996

Following the macroeconomic problems the country faced in the 1980s, Economic Structural Adjustment Programme (ESAP) was introduced in 1991. The main aim was to enhance the role of the market to attain development. The characteristics of these structural adjustment policies included measures to produce a more stable economy followed by policies to alter the structure of the economy to make it better suited to a global market environment. However, instead of a 5 percent GDP growth rate target under ESAP, the actual rate was 0.8 percent because the government failed to adhere to the internal logic of the reforms, (UNDP 2010). The situation was worsened by the severest drought in the country in 1992/93. ESAP brought economic hardships that resulted in many professionals such as teachers, nurses and doctors leaving the country in search of greener pastures abroad (Chetsanga and Muchenje, 2003; Tevera and Crush, 2003; and Chikanda, 2005).

The crisis period, 1997-2007

The crisis period started with the population bearing heavy social costs from the reforms. The liberalisation of the economy had not led to poverty reduction and economic diversification. The failure of the ESAP saw Zimbabwe coming up with another package to undo the damages that ESAP had left behind. The Zimbabwe Programme for Economic and Social Transformation, (ZIMPREST) (1996-2000), included the reduction of the budget deficit, facilitating public sector reforms and financial liberalisation. It also sought to address the agenda of poverty reduction, land reform, black economic empowerment and the indigenisation of the economy. However, the programme faltered. UNDP (2010) attribute the onset of the crisis to the so called 'black Friday' crash of the Zimbabwean dollar on 14 November 1997 which came about from the government's unbudgeted payment of gratuities to war veterans. This was followed by Zimbabwe's participation in the DRC conflict that led

to a further ballooning of fiscal deficit. Policy reversals worsened macroeconomic fundamentals and resulted in high inflation, low foreign reserves, a weak balance of payments, a shrinking domestic market, supply side bottlenecks and overall low growth. Government on the other hand attribute the economic crisis to the land redistribution programme. The programme was for empowerment of the black and land was taken from white Zimbabweans which led to the imposition of sanctions on Zimbabwe by the West hence economic crisis (STERP 2009).

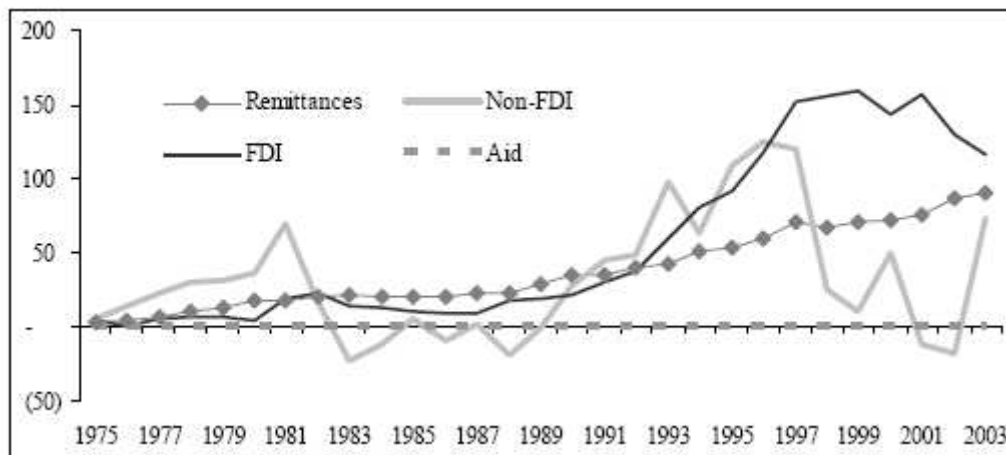
Since the beginning of the economic crisis, GDP growth declined from 0 percent in 1998 to -7.4 percent in 2000 and to -10.4 percent in 2003. The years 2005 to 2007 experienced a real GDP growth that averaged -5.9, (UNDP 2010). Economic Report on Africa (2002) highlighted that 75 percent of the population had incomes that were below the poverty line in 2002 with high inequality as reflected by a Gini coefficient of 0.568 in 2001. In short, Zimbabwe's social and economic situation deteriorated resulting in hyperinflation, unemployment and a continued decline of the Zimbabwe Dollar against major currencies, (Bird and Busse, 2007). UNCTAD (1997) classified Zimbabwe as a "highly unequal society" in which the richest 20% of the population receive 60% of the income. About 30% of income accrues to the middle 40% of the population and only 10% to the poorest 40% of the people

The economic crisis led to an exodus of an estimated 3-4 million Zimbabweans because of political and economic reasons (Pasura, 2008). South Africa attracted the vast majority of these migrants, with an estimated 2 to 2.5 million Zimbabweans living in that country. In addition, approximately half a million and 400 000 Zimbabweans are believed to be in the United Kingdom and Botswana, respectively (Bracking and Sachikonye, 2006). Other popular destinations include the USA, Canada, Australia, and New Zealand. Zimbabwe is now in the top ten emigration countries in Sub-Saharan Africa alongside Mali, Burkina Faso, Ghana, Eritrea, Nigeria, Mozambique, South Africa, Sudan, and the Democratic Republic of Congo. Migration is so widespread that at least one emigrant exists per household (Tevera and Crush, 2003; Maphosa, 2004). Maphosa (2007) found that the majority of the migrants are between the ages of 20 and 50 which is the working age, and 53 percent are not married.

2.2 Global Remittance Trends

The World Bank (2003; in Ratha, 2007) notes that migrant remittances have been more stable than other kinds of external flows, and hence more countries are looking at remittances as an instrument for development. They are now the second largest inflows after FDI flows for developing countries and the figures are continuously increasing as shown by Figure 1. UNDP (2008) estimations show that 8% of the world population receive remittances (about 500 million people), thereby directly impacting on the alleviation of poverty.

Figure 1: Inflows to developing countries (US\$ billions)

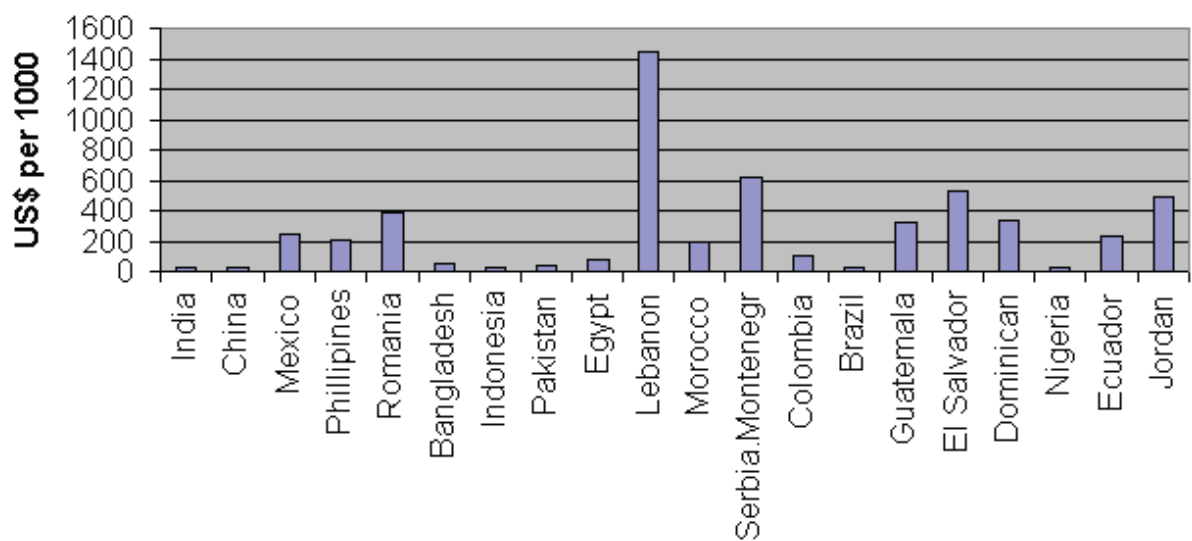


Source: Aggarwal et al 2006; 34

According to the World Bank, officially recorded remittances to developing countries reached \$316 billion in 2009, down 6% from \$336 billion in 2008 as a result of the global economic crisis. These amounts only reflect remittances that were transferred through formal channels implying that total remittances are way more than these official figures. The World Bank (2006) estimated total remittances including flows through unofficial channels to be 50% more than the official figures. The main sources of remittances are the United States of America, Germany, Belgium and Switzerland. The amount of remittances to developing countries constitutes two thirds of the world's total remittances in 2007. Latin America and the Caribbean are the largest recipients of remittances in terms of actual flows. However, the Middle East and North Africa are the largest recipients of remittances as a proportion of GDP. Remittances to Sub-Saharan Africa are considered to be highly underestimated (Ratha, 2008)

Figure 2 presents per capita remittance for the top 20 recipient countries. Lebanon stands out to have the highest per capita remittances of US\$1450 followed by Serbia with US\$600. India, China, Indonesia, Brazil and Nigeria have the lowest per capita remittances. In 2007, Mexicans living abroad primarily in United States and Canada sent an astonishing US\$24 billion (Kivu Consensus, 2009) to their home country. These remittances became the largest source of foreign revenues fuelling the nation's trade surplus and with the considerably high volumes of money coming in; the peso remains a strong and stable currency.

Figure 2: Per capita remittances for the top 20 recipient countries



Source : LEDRIZ 2009

Ireland stands out as a clear shining example of economic success backed by effective mobilisation of non-resident remittances and investments. Until just over a decade ago, Ireland used to be one of the poorest countries in Western Europe. To avoid poverty and to improve their lot, a large number of Irish people migrated to the United States and other countries. This pattern is very similar to what Zimbabwe has been experiencing over the last few years as the economic and political environment became hostile. As they became more prosperous, the Irish Diaspora started investing in their home country. With the correct sets of consistent and progressive policies and incentives, Ireland started prospering. Currently, Ireland has a booming economy and has joined the league of the richest countries in the world (Muponda 2009). In addition, there have been positive impacts of remittances in national development in countries ranging from Israel to Jordan, Lebanon, Turkey, Mexico, the Philippines, India, Pakistan, Bangladesh and Sri Lanka (see Ratha et al., 2007; Ruiz and

Agunias, 2007; Ratha and Xu, 2008; Chishti, 2007; Hernandez-Coss, 2005; Siddiqui, 2004; De Haas, 2005).

2.3 Zimbabwean Remittance Trends

A study by Bracking and Sachikonye (2007) estimated that 50 percent of the Zimbabwean population receive remittances. The total remittance flow to Zimbabwe is not certainly known as most of the remittances come through informal channels. Moreover, during the economic crisis period, most remittances were in the form of goods and services which conforms to the IMF category 3 of its remittances definition. Zimbabwe is also not spared of the worldwide problematic nature of remittances data. This is shown by the different remittance statistics for the same period by different sources. For instance, the International Fund for Agricultural Development (IFAD) reported that in 2006 Zimbabwe received US\$361 million in remittances excluding hand-in-hand transfers, representing 7.2 percent of the country's 2006 GDP.

The Reserve Bank of Zimbabwe (RBZ) data shows remittances of US\$5.2 million (2006) and US\$14.0 million (2007) as having been transferred through money transfer agencies it supervises. In 1980, remittances to Zimbabwe were US\$17 million which grew to US\$33 million in 1982, then started a downward trend from 1984 to mid 1990s, (UNCTADstats). The Reserve Bank of Zimbabwe officially recorded US\$46.3 million in remittances in 2004. This figure increased by 69 percent to US\$78.5 million in 2008 which also shot to US\$198.2 million in 2009 thus an increase of 152 percent. These figures however, show that not all remittances are captured formally because given an estimate of 4 million migrants and assuming each migrant sends a dollar every month, then in a year, Zimbabwe should be getting USD48 million in remittances.

Tevera and Chikanda (2009) did a migration and remittances survey in Zimbabwe and found that on average, a migrant sends R2 759 per annum. They also found that in the region, the largest remitters were in Botswana followed by Zambia then South Africa. What is clear is that no one knows with any degree of certainty the exact magnitude of remittances coming to

Zimbabwe because remittance flows largely occur through informal channels and hence are unrecorded.

Orozco and Lindley (2007) estimated US\$1.3 billion total remittances (formal and informal) to Zimbabwe in 2004. A study by Magunha *et al* (2009) suggests that 81.7 percent of Zimbabweans living in England remitted an estimated US\$0.94 billion to Zimbabwe in 2007. The same study shows that 60.2 percent remitted cash for food, 41.9 percent remitted cash for medicine with 52.6 percent remitting cash for school fees. They also show that a range of 8-28 percent of the sample remitted different types of goods with the likes of clothes, food, vehicles, medicines and fuel. Bracking and Sachikonye (2007) found out that 24.7 per cent of migrant remitters were in the UK and 22.7 per cent in South Africa, although the low density Harare suburbs enjoyed receipts from 62 per cent of the primary senders identified as being resident in the UK. A migration and remittances survey done by Tevera and Chikanda (2009) shows that 25.6 percent of Zimbabwean migrants were sending remittances through a bank in Zimbabwe with a total of 41.4 percent sending through formal channels.

2.4 Zimbabwean Migrants Skills and Education

A survey by Chetsanga and Muchenje (2003) found that 24.6 percent of Zimbabwean emigrants were trained doctors, nurses or pharmacists; 23.1 percent were engineers or scientists; 20 percent were teachers and 16.9 percent were accountants. In total, they estimated that 490 000 skilled Zimbabweans were outside the country by 2002. Hill (2004) estimated that between 70 and 90 percent of all Zimbabwean university graduates were working outside the country. Information from the UK Home Office Skills Audit on the pre-migration activities provides further evidence on the high skills base of those leaving Zimbabwe for UK. It is estimated that 80 percent of doctors, nurses, pharmacists, radiologists and therapist who were trained since 1980 have left the country (Chikanda, 2005)

2.5 The Migration Legal Framework in Zimbabwe

The developmental effect of remittances follows the Keynesian view of macroeconomics that market forces alone will not achieve the objectives that are to be attained. A proactive intervention of the government will help create the necessary conditions to harness remittances into development. However in Zimbabwe, unlike other developing countries like Kenya, Ghana, Bangladesh and Mexico to state but a few, there is little talk about remittances from the authorities save for the RBZ subsidiary Homelink that also has a Diaspora housing scheme. The government also set up a Migration and Development Unit in 2008 within the Ministry of Economic Planning and Investment Promotion that has a small secretariat and reports to inter ministerial committee. Nonetheless, there are uncoordinated efforts by various governments departments and ministries in managing migration. For instance, the Ministry of Labour and Social Services is generally responsible for labour policy, while that of Home Affairs deals with issues of immigration. The Ministry of Higher and Tertiary Education is responsible for skills development and retention and the Reserve Bank and Ministry of Economic Planning and Investment Promotion are focusing on remittances. Thus currently, Zimbabwe lacks a comprehensive legal, institutional and policy framework dealing specifically with migration and development. Moreover, there is no sound relationship between the government and the migrants and since Witwatersrand Native Labour Association (WENELA)⁶ in South Africa; Zimbabwe does not have any bilateral agreements with other countries as far as migrants are concerned except for a few in South Africa on Limpopo farm workers.

⁶ The formal recruitment system between Zimbabwe and South Africa was through the WENELA system. It was discontinued in protest of the Apartheid system by the post independence government.

CHAPTER THREE: LITERATURE REVIEW

3.0 Introduction

This chapter focuses on reviewing existing literature on migration, remittances and development. The first section will elaborate on the evolution of economic development while the second section reviews theoretical literature of migration, remittances and development. The main aim of the third section is to give existing empirical evidence on the experience of Zimbabwe and other countries with remittances.

3.1 Economic Development

Classical economists made little or no distinction between economic growth and economic development. These theories include, the Harrod-Domar theory, the Big Push theory by Rosestein and Rodan, the Surplus Labour Model by Lewis, Ranis and Fei and the stages of development by Rostow. All these theories emphasise on savings and investment for development which basically matches economic growth models. However, economic development is a complex multi-dimensional concept involving improvements in well-being of humans. Economic development is not possible without economic growth but economic growth is possible without development. Economic growth is a narrow measure of economic welfare because it does not account for non economic aspects like access to health and education, environment and freedom or social justice. Thus, economic growth is a necessary but insufficient condition for development (Rajaratnam, 2010).

In the first development decade, dating roughly from the late 1940s to the early 1960s, modernisation theory largely shaped development strategies for developing countries. This theory emphasised the transformation and ‘take off’ of subsistence economies into modern industrial capitalist societies. Growth was premised on the development of a strong entrepreneurial class through appropriate savings and investment strategies. The results of such growth would have a trickledown effect of development benefits on the poor. In this

scheme, the major agent of economic development was the modernising elite, and an “appropriate” political framework that emphasised on order and control (Levy, 1967).

Towards the latter half of the 1960s and early 1970s, the optimistic assumptions of modernisation theory came under increasing criticism. The dependency theorists cast serious doubts on the expected benefits of the neo-classical theory. The “trickle down” effect was simply not taking place. By 1976, with poverty growing in developing countries, the International Labour Organisation (ILO) began to lay emphasis on a “basic needs approach” to development. This, it was argued, would deal more directly with poverty issues. With the advent of structural adjustment programmes in the 1980s and 1990s, there was renewed emphasis on economic growth and the assumptions of modernisation theory, though tempered by the introduction of compensatory programmes for the poor (ZHDR, 1998).

In trying to answer the question why some countries are poorer than others even if they have high savings and investment levels, the neo classical development economists came up with the idea of institutions⁷. Many economists strongly emphasise the importance of institutions in sustainable development in Africa⁸. Johnson *et al* (2004) argue that economic institutions determine the incentives and constraints on economic actors. They shape economic outcomes and influence the structure of economic incentives in society.

Amartya Sen, a Nobel Prize laureate in economics in 1998, wrote a book that attracted the attention of many economists entitled ‘Development as Freedom’ in 1999. Sen’s approach to the values of development is an attempt to move beyond the utilitarian and positivists fallacies of development. From Marx, Sen is able to associate the development of capability⁹ with that of freedom rather than necessity. According to this theory, development is not a matter of expanding supplies of commodities, but of enhancing the capabilities of people so that people live the lives they have reason to value. He interlinked poverty reduction, inequalities reduction and freedom to constitute development. Sen (1999) postulated that

⁷ North (1990) defines institutions as the rules of the game in a society or, more formally, the humanly devised constraints that shape human interaction.

⁸ Hall and Jones (1999), Kaufmann *et al.* (1999), Acemoglu *et al.* (2001), Dollar and Kraay (2003), and Rodrik *et al.* (2004), Frankel and Romer (1999) and Ndulu and O’Connell (2000)

⁹ Capability Approach (Sen, 1989)

development requires the removal of major sources of “unfreedom poverty”, cruelty, poor economic opportunities, systematic social deprivation, neglect of public facilities, intolerance and over activity of repressive states. Deneulin (2003:1) sees Sen’s capability approach as the ‘background theoretical framework’ for the UNDP’s Human Development Reports, which were also built upon the concept of basic needs (Stewart, 1995; Stewart and Deneulin, 2001). The 1990 UNDP Human Development Report (HDR) defined human development as the “process of enlarging people’s choices” in a way that enables them to live “long, healthy and creative lives”. It recognises the fact that the end result of all developmental efforts is to enhance people’s welfare. The 1994 Human Development Report linked this to creating environments in which people can expand their capabilities and opportunities, both for current and future generations. Human development then refers to the enrichment of people’s lives and social progress in as far as social well-being is concerned, strengthening productive sectors and expanding employment, enhancing and maintaining infrastructures, transferring knowledge, technology and skills while also enhancing the use of traditional wisdom and culture and building local capacities, exploiting and regenerating natural resources in a sustainable manner providing social protection and safety net, enhancing gender equity, empowering people to participate in decisions that affect their lives, providing for current and future needs (UNDP 1993).

3.2 THEORETICAL LITERATURE

Theories of Migration, Remittances and Development

Several theories have been developed to link migration to development, but these are variants of push-pull theory developed by Ravenstein (1889). These include the neoclassical economic theory (Sjaastad 1962; Todaro 1969), the historical/structural theory (Sassen, 1988) among others. Over the past four decades, the impact of migration and specifically the migration of skilled workers on development in countries of origin has been the subject of continuous debate. De Haas (2008) broadly identifies two radically opposed approaches, which he terms ‘migration optimist’ and ‘migration pessimists’.

3.2.1 The migration optimists

The migration optimists largely believe that migration has generally had a positive impact on the development process in sending societies, as it can generate counterflows of capital (remittances and investment) and knowledge, which can be invested and are believed to subsequently stimulate development and modernization. One of the theories from the migration optimists is the equilibrium model of migration.

The Equilibrium Model of Migration

In the neo-classical economic framework (Sjaastad 1962; Todaro 1969), population movement is conceptualized as the geographical mobility of workers responding to imbalances in the spatial distribution of land, labour, capital and natural resources. The skewed geographic location of the factors of production determines the unequal returns to each factor. This, in turn, influences the direction and the magnitude of migratory streams. The neo-classical approach to international migration is based on the notion of wage differentials between receiving and sending areas, as well as on the migrant's expectations for higher earnings in host countries (Todaro, 1969).

By redistributing human capital from places of low productivity to places of high productivity, migration is considered a “development fostering” process (Spengler and Myers, 1977:11). The remittances of migrant labourers are viewed as instrumental in restoring a balance of payments, and in stimulating savings and investment at the place of origin. Upon their return, repatriates serve as agents of change by applying the ideas and skills acquired abroad to establish farms, businesses and other enterprises conducive to development.

According to the equilibrium model, the international movement of labour leads to a gradual convergence in the levels of economic growth and social well-being. Here, migration is perceived as a process that contributes to the optimal allocation of production factors for the benefit of all, in which the process of factor price equalisation will lead to migration ceasing once wage levels are equal (de Haas, 2007).

The model can be extended to include variables such as the character and the extent of the information available, the utility significance of the costs and benefits to the agent making the decision (Rothenberg, 1977) and “lifetime income”, defined as the present value of expected future income due to migration (Sjaastad, 1962). The neo-classical economists argue that people move permanently to raise and maximize their wages in receiving countries, thus, return migration is viewed as a failure, if not an anomaly.

The Equilibrium Model has tended to dominate the literature on migration by providing a formal theory of individual behaviour. However, problems with the neoclassical perspective relate to the equilibrium that is presumed to follow from the geographic mobility of labour, to the underlying causes of the structural parameters within which individual decisions are made (Amin, 1974). Also, the approach relates to the actors and to their motivations for return which seem to be determined by financial or economic factors only, while providing little explanation of how remittances and skills are used in home countries.

3.2.2 Migration pessimists: Historical Structural and Dependency views

Most migration pessimists tend to address migration as a negative phenomenon contributing to the further underdevelopment of sending societies through the ‘migrant syndrome’ which drains developing countries of their labour and human capital resources (Papademetriou, 1985). These theorists were the first to come up with the concept of brain drain (Adams, 1969) and brawn drain¹⁰ (Penninx, 1982). Thus, migration is seen as a means to increase spatial and inter-personal disparities in developmental levels, as well as socio-cultural effects rather than as a means to development. In sum, migration is believed to intensify regional development inequalities.

Migration pessimists argue that remittances are used for conspicuous consumption and that they create a culture of dependency. Recipients tend to choose more leisure as opposed to more work. Some recipients stop working and simply wait for remittances to come (Kapur and McHale, 2005). Inflation was also seen as a result of migrant’s remittances by the pessimists due to increased consumption. Moreover, remittances lead to increases in the nation’s domestic wealth, they could reduce labour supply, increase the demand for non

¹⁰ The massive departure of young, able bodied men and women from rural areas which is blamed for causing a critical shortage of agriculture and other labour (Lewis 1986).

tradable goods and generate real exchange rate appreciations (Dutch disease) which in turn could hurt competitiveness and growth of a nation.

Remittances induce an appetite for foreign consumption patterns in the receivers. Information about goods and services in the countries where the migrants are hosted has resulted in a demand for foreign products hence the remittances 'leak' back into other countries. Briefly, migration is seen as an undesirable product of poverty, a problem which needs to be solved as de Haas (2007; 5) puts it, "the main positive effect of migration, the increase in family welfare for migrants and their families, was considered to be artificial and dangerous, because remittances were supposed to be an unstable and temporary source of revenue".

The historical-structural approach to the study of migration is difficult to summarize because it is found in a variety of models¹¹. The structural perspective draws its principal insight from Marx's historical materialism. The structural/historical paradigm stresses the role of cultural elements. This perspective assumes that population movement can only be examined in the context of historical analysis of the broader structural transformations underway in a particular social formation (Balan, 1973; 1979; Lopes, 1973). In this approach, migration is seen as a form of cultural domination. Massey *et al* (1998) state that this paradigm leads to the hypothesis that international migration is especially likely between past colonial powers and their former colonies. This is because of cultural, linguistic, administrative, investment, transportation, and communication links that were established and which allowed to develop during the colonial era. Specific transnational markets and cultural systems are the result of these links.

Portes and Rumbaut (1996) situate migration in a context of structural unbalancing of peripheral societies under the influence of core capitalist countries. Apart from historical causes, this kind of structural unbalancing may also be brought about by means of mass communication, which spreads information on Western lifestyle and shapes consumption expectations in the culturally peripheral societies. Thus, the historical/structural paradigm perceives migration as one way of the developing world's increasing dependency on the global political economic systems dominated by the powerful Western states. Massey *et al*

¹¹ These include 'dependency theory' (See, Portes and Browning, 1976; Cardoso and Faletto, 1979), 'internal colonialism' (See, Walton, 1975), the 'center-periphery' framework (See, Cornelius and Kemper, 1978).

(1993) challenged the migration optimist and argues that migration ruins the peasant societies by undermining their economies and uprooting their populations.

According to dependence theories, the cause of underdevelopment is the reliance on industrialized countries while internal factors of developing countries are considered irrelevant or seen as symptoms and consequences of dependence. The development of industrialized countries and the underdevelopment of developing countries are parts of one historical process. Developing countries are dependent countries. The economic and political interests of industrialized countries determine their development or underdevelopment. Implicit development here means liberation, an end of structural dependence, and independence, hence migration is seen as a form of dependency on the developed countries and detrimental to development.

3.2.3 The pluralist perspective

De Haas (2007) notes that the variation and complexity of real life migration-development interaction is difficult to fit into deterministic schemes. This is so because there is no automatic mechanism by which international migration results in development. Migration is typically not a desperate response to destitution and unemployment, but a deliberate attempt to spread income risks, improve social and economic status and hence, overcome local development constraints. Accordingly, migration is generally a reaction to relative rather than to absolute poverty and thus, a survival or coping strategy (de Haas, 2007). The pluralist perspective is clearly outlined in the New Economics for Labour Migration.

New Economics for Labour Migration

The New Economics of Labour Migration (NELM) emerged as neutraliser of the neoclassical theory and the structuralist theory that seemed too rigid to deal with the complex realities of migration and development interactions. NELM presented a more subtle view, in which both positive and negative development responses are possible (Taylor, 1999 and Stark, 1978; 1991). This approach perceives migration as the risk sharing behaviour of households rather than individuals as households are better able to diversify resources like labour in order to reduce income risk. Lucas and Stark (1985) suggest that migration is a household response to

income risk since remittances serve as income insurance for households in the country of origin.

Even though the Neo-Classical and the NELM both give valuable insights regarding the reasons for which people move abroad and return home, they differ on their perspectives regarding return migration. NELM views return migration as the logical outcome of a 'calculated strategy', defined at the level of the migrant's household, and resulting from the successful achievement of goals. In fact, as Stark (1991, 26) argues, NELM approach 'shifts the focus of migration theory from individual independence to mutual interdependence'. Remittances are part and parcel of a strategy aimed at diversifying the resources of the household with a view to better compensate for the risks linked to the absence of an efficient insurance markets in home countries. NELM contends that people move on a temporary basis to achieve their goals, hence return migration is viewed as a success story, if not a logical outcome. In fact, according to NELM, migrants go abroad for a limited period of time, until they succeed in providing their households with the liquidity and income they expect to earn. Thus, the NELM approach to return migration goes "beyond a response to negative wage differential" (Stark 1996, 11).

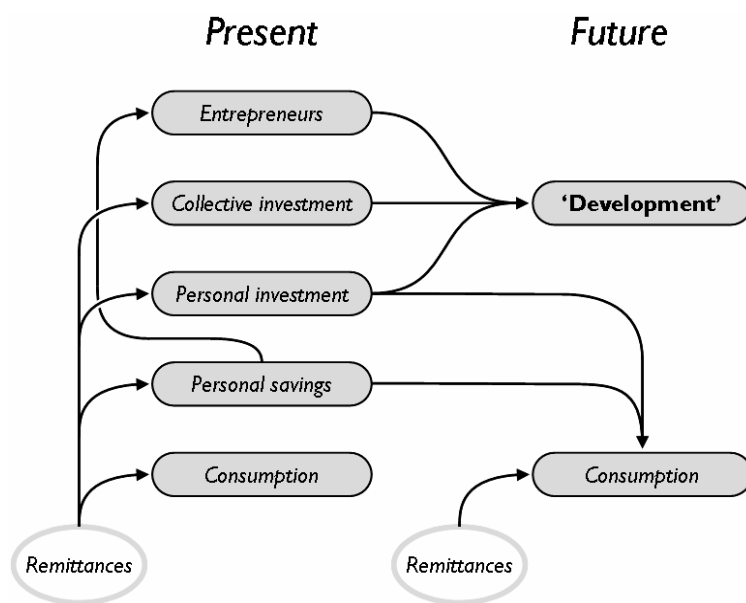
NELM also suggests that the poorest do not have access to migration opportunities because of their lower capacity for risk-taking. The severely poor are believed to be almost unable to migrate, or migrate under bad terms, for example, bonded labour such that migration does not improve their wellbeing or makes them worse off (Mosse *et al*, 2002).

In the pluralists views on migration and development, the question is not whether migration has a positive or negative impact on development but why migration has contributed to development in some communities and much less, or even negatively in others and the factors that contribute the differentiation (Ghosh, 1992 and Taylor, 1999 in De Haas, 2007). However, the weakness of the NELM approach pertains to the fact that migrants are exclusively viewed as foreign-income bearers or 'financial intermediaries', as Taylor (1995) puts it.

Carling (2004) shares the same sentiments with NELM views on migration and development. He however recognised the fact that the way remittances are used determine if they are going to contribute to development or not. As Figure 3 shows, if remittances are spent on consumption, then future expenditure has to be financed by future remittances or other

sources of income. However, if remittances are invested or saved in financial institutions, they would lead to development and finance future consumption as well. This means that invested or saved remittances have a multiplier effect and thus can lead to sustainable development. It has also been observed that remittances can be used in such a manner that future livelihoods will not depend on future remittances. Ellerman (2003) clearly states that for communities that are currently large remittance dependent, development would mean building enterprises that would not survive directly or indirectly on remittances so that local jobs could be sustained without continuing migration or the need for more remittances.

Figure 3: The linkages between remittances and development



Source: Carling 2004

3.3 EMPIRICAL LITERATURE REVIEW

Analysis of household survey data shows that remittances have reduced poverty and resulted in better development outcomes in many low-income countries (Ratha, 2003). Remittances may have reduced the share of poor people in the population by 11 percentage points in Uganda, 6 percentage points in Bangladesh and 5 percentage points in Ghana. Studies in El Salvador and Sri Lanka find that the children of remittance recipient households have a lower school drop-out rate (Ratha and Mahopatra, 2007). In Mexico, Guatemala, Nicaragua and Sri

Lanka children in remittance recipient households have higher birth weights and better health indicators than other households.

Fajnzylber and Lopez (2008) studied remittances and development using poverty reduction, economic growth and inequality as their development indicators in Latin America. They used both micro and macroeconomic data based on household survey for 11 Latin American countries. Their results indicate that 9 out of 10 countries exhibit higher Gini coefficients for non-remittance income suggesting that if remittances were eliminated, income inequality would increase. Also, on average, remittances were found to reduce extreme poverty by 35 percent for countries where migrants tend to come from the lower quintiles of income distribution, notably in Mexico, El Salvador and the Dominican Republic. Using a cross country regression analysis, Fajnzylber and Lopez also found that remittances reduce poverty in Latin America more than elsewhere in the developing world partly because it leads to less income inequality. The cross country approach was again used to study the remittance-growth nexus. Remittances had a positive impact on growth shown by an increase of 0.27 percent on per capita GDP growth due to a 1.6 percent of GDP increase in remittances in the same period. The headcount poverty indicators based on poverty lines of US\$1 and US\$2 per person per day measured at purchasing power parity (PPP) was used as an indicator for poverty. However, PPP had been criticised because it is based on the law of one price which is restrictive and does not hold in reality.

Adams and Page (2005) investigated the role of remittances in reducing poverty and inequality in developing countries. The study covered 71 low and middle income developing countries using cross country data with growth-poverty model developed by Ravallion (1997). The endogeneity problem of remittances was controlled by using instrumental variables. The findings show that remittances significantly reduce the level, depth and severity of poverty in the developing world. On average, a 10 percent increase in per capita official remittances leads to a 3.5 percent decline in the share of people living in poverty.

Brown (2008) conducted a study on the effects of remittances on human development in Fiji and Tonga. Household level survey data and a variety of econometric methods including instrumental variable techniques were used to examine the impacts of migration and remittances on a number of key aspects of human development. These include poverty and inequality, household wealth, education and health. The study reports strong evidence of

positive effects in relation to each of the human development indicators. The wealth index for the remittance recipient households was 2.20 points higher in Fiji and 2.77 in Tonga. Remittances were also found to contribute positively to other social development goals such as education and health where formal, public systems of social protection are effectively absent. The study questioned the concern of policy makers to redirect remittances into formal financial system if they are focusing on development objectives, like the MDGs. The author concluded that from a policy perspective, remittance informal mechanisms might best be left alone rather than introducing measures to incorporate them into the formal financial systems.

Pernia (2008) looked at the impact of remittances on development in the Philippines. Poverty reduction was the development indicator in the study. He used panel data and 3 stage least square method for 15 regions in the country. Welfare of the poor was proxied by the mean per capita expenditure. The results postulated that remittances have a positive and significant effect on the well being of poor households. An increase of P1 000 in remittance per capita results in P2 543 additional annual family spending per person amongst the poorest quintile. The study concludes that remittances contribute significantly to regional development through increased spending for consumption, human capital and housing investments and consequent multiplier effects. He however noted that because the more advanced regions tend to get bigger shares of the total, remittances may contribute to regional divergence rather than convergence (increase in regional inequality).

In a World Bank working paper, Acosta, Fajnzylber and Lopez (2007) explored the impact of remittances on poverty, education and health (human capital) in eleven Latin American countries using a two step estimation technique proposed by Heckman (1970). The main findings of the study were that remittances lower poverty levels with modest estimated impacts and country heterogeneity in the poverty reduction impact (2-7 percent decrease in poverty headcount). A positive effect on education and health was also witnessed but restricted to specific groups of the population. Access to remittance is positively and significantly associated with higher educational attainment in 6 out of 11 countries and improvement in children's health was seen, particularly among low-income households. Also noteworthy is the fact that poverty rates observed among households with migrants tend to be lower than those found in the general population.

Adams (1991) enumerates the effects of remittances on poverty, inequality, and development in rural Egypt. The study reports that when remittances are included in predicted per capita household income, the Gini coefficient increases by 24.5 percent. He explains this by the fact that the poorest quintile of households produces a proportionate share of still-abroad migrants, the richest 40 percent of households produce more than their share, but the second and third quintiles are underrepresented. “It is these variations in the number of migrants produced by different income groups—and not differences in either migrant earnings abroad or marginal propensities to remit—that cause international remittances to have a negative effect on rural income distribution” (Adams, 1991:74).

A dynamic migration model coupled with a general equilibrium technique was used by Rapoport and Docquier (2003) to study the relationship between remittances and inequality. They developed a model of interdependency between migration, remittances and inequality to investigate how migration and remittances affect inter household inequality in the origin communities. Migration was shown to decrease wealth inequality but may generate higher income inequality.

With the motive to unravel the claims of many writers that remittances are a development mantra, Kapur (2003) found out that many migrants do not come from the poorest households but rather the rich ones. Accordingly, while remittances are friendly to the poor, their direct effect on the poorest groups may be limited. Using qualitative techniques, he emphasised that the effects on structural poverty are likely to occur through second order effects. He also contends that if labour migration is unskilled then the effect on poverty and inequality will be maximised because the supply of unskilled labour will be reduced in the sending country thereby raising unskilled wages. Generally, the study concluded that the direct impact of remittances on economic development and growth is limited citing the fact that the bulk of remittances are spent on consumption.

Concentrating on North and South America, Ellerman (2005) investigated remittances and development. He unearthed the 3 Ds (dirty, difficult and dangerous jobs) phenomenon of migration citing that migration is a trap that tends to forgo development in favour of locking the sending country into a semi- permanent role of supplying labour for the dirty, difficult and dangerous but comparatively well paid jobs in the receiving country. The paper clearly shows mixed feelings on the developmental impact of remittances. The study however agrees

that remittances do alleviate poverty while they last just as any form of transfer payments. The money buys goods and services for people and institutions which they would otherwise have to go without, but that is all it does. He argued that increased income is not increased development

De Haas (2005) in Agunias (2006) argues that improvements in human capital and the well being of people brought about by remittances constitute development. Although the extent of remittance multipliers is highly controversial, empirical studies suggest that \$1 in remittances generates an additional \$1 in local economic activity as recipients buy local goods or invest in housing, education or health care (Martin, 2002).

Gustafsson and Makonnen (1993) used the data of 7680 households from the 1986-87 survey to examine the impact of remittances on poverty and welfare in rural and urban Lesotho. They found that 35% of household incomes come from the remittances. It shows that if the remittances were set to zero, the average per-capita household consumption would fall by 32% and the poverty head count index would increase by 26%. In addition, a cessation of remittances would lead to a 52% increase in the poverty gap index. A similar study by Taylor *et al* (2005) used the data of 1782 household from 2003 survey of rural Mexico to show the impact of international remittances on poverty. The study estimates that poverty headcount and poverty gap indices would decline by 0.77 and 0.53, respectively with 10 % increase in international remittances.

The most influential study on the remittances-development nexus in Zimbabwe was done by Bracking and Sachikonye (2007). The paper explores the role of remittances within an internationalised informal welfare system, reframing vulnerability and marginalisation. They embarked on a household survey in Harare and Bulawayo interviewing a total of 300 households. The study used a qualitative approach to derive statistical conclusions based on the responses of the sample. They found out that about 50 percent of urban population receive remittances in Zimbabwe. Their findings included the point that distribution of money and goods received is not weighted to the poorest as 40 percent do not receive any remittances. Thus, household income inequality may be aggravated by these remittances since 38 percent of the richest households receive remittances. They however suggested that richer households use remittances for productive accumulation or acquisition of consumption assets while poorer households tend to consume their remittances wholly on food and durable goods. Two

thirds of the remittances transfers were also found to be informal and 82 percent of households used the informal channels to transit goods. This was because the study was done during the economic crisis where remittances were heavier on the goods side given a non active production sector that resulted in severe shortages of basic commodities in the country. However, the need to remit goods may have lessened now since the production sector has significantly improved as the economy is recovering.

Using a qualitative approach, Maphosa (2004) studied remittances and poverty reduction in Mangwe district which is 200 kilometres from Bulawayo for Zimbabweans working in South Africa. 150 questionnaires were administered with group discussions and focus groups. The study found out that the majority of the migrants worked in the hotel and restaurant sectors. Out of 150 households sampled, 68.7 percent had at least one member who had migrated to South Africa. The study also found out that not all households with migrants receive remittances. 22.3 percent of households with members who had migrated to South Africa indicated that they were not receiving remittances from these migrated relatives. Non-cash items constituted the bulk of remittances but the total value of remittances was not estimated because some respondents were reluctant to disclose such information. The study concluded that remittances are critical for poverty reduction in the district.

Southern African Migration Project (SAMP) devised a household level migration and remittances survey (MARS) which was conducted in several SADC countries including Zimbabwe. The MARS study was implemented in Zimbabwe in 2005 and surveyed 723 urban and rural households to see the impact of remittances on household survival. In this study Tevera and Chikanda (2009) found out that remittances eased the situation of many households in Zimbabwe during the economic crisis. They concluded that remittances reduced vulnerability to hunger, ill-health and poverty in both rural and urban households.

CHAPTER FOUR: ECONOMETRIC METHODOLOGY

4.0 Introduction

This chapter outlines the econometric estimation techniques adopted in this study in investigating the impact of remittances on economic development. Theoretical and empirical models are presented in this chapter. Justification of variables, including sources of data is also specified in this chapter.

4.1 Theoretical Specification

This study uses poverty and human capital as indicators of economic development and investigates the effect of remittances on these variables. This necessitates the use of simultaneous equations. According to Wooldridge (2003) simultaneous equations models (SEM), with the intercepts suppressed can be presented as follows:

$$Y_1 = \alpha_{12}Y_2 + \alpha_{13}Y_3 + \beta_{11}Z_1 + U_1 \quad (4.1)$$

$$Y_2 = \alpha_{21}Y_1 + \beta_{21}Z_1 + \beta_{22}Z_2 + \beta_{23}Z_3 + U_2 \quad (4.2)$$

$$Y_3 = \alpha_{32}Y_2 + \beta_{31}Z_1 + \beta_{32}Z_2 + \beta_{33}Z_3 + \beta_{34}Z_4 + U_3 \quad (4.3)$$

where Y_g are the endogenous variables and Z_j are exogenous. The first subscript on the parameters indicates the equation number, while the second indicates the variable number; we use α for parameters on endogenous variables and β for parameters on exogenous variables. The simultaneous equations outlined above shows that an endogenous variable in one equation is appearing as an explanatory variable in another equation in the system. As a result, such an endogenous variable becomes stochastic and is usually correlated with the disturbance term¹² of the equation in which it appears as an explanatory variable. In this situation, the classical OLS may not be applied because the estimators obtained are not consistent hence the use of 3SLS. The completeness of the system requires that the number of equations equal the number of endogenous variables.

¹² This failure of Least squares is sometimes called simultaneous equations bias.

Regardless of the number of equations in an SEM, each identified equation can be estimated by 2SLS. Nevertheless, when any system with two or more equations is correctly specified and certain additional assumptions hold, system estimation methods are generally more efficient than estimating each equation by 2SLS. The most common system estimation method in the context of SEMs is three stage least squares (3SLS) (Zellner and Theil, 1962).

4.2 Empirical Specification

The model used in the present study has three main variables that are poverty, remittances and human capital. In the light of the literature reviewed on the remittances and development nexus and the theoretical model presented in section 4.1, the algebraic equation for empirical investigation is being modelled as follows:

$$cpk = f(rem, hk, gdp, fdi, tax, Inf, top, ec) \quad (4.4)$$

$$rem = f(cpk, hk, gdp, dr, xr, findeep, top, rem_{t-1}, ec) \quad (4.5)$$

$$hk = f(cpk, rem, gdp, fdi, dr, lr, hlth, ec) \quad (4.6)$$

where

cpk is consumption per capita

rem is formal remittances as a share of GDP

gdp is gross domestic product

hk is human capital proxied by secondary school enrolment

fdi is flow of foreign direct investment

infl is inflation rate

dr is dependency ratio

xr is direct quote exchange rate

tax is total tax revenue

lr is education proxied by literacy rate

hlth is health proxied by government health expenditure as a percentage of total expenditure

findeep is financial deepening measured as M2/GDP

top is trade openness

ec is economic crisis dummy

4.3 Defination and Justification of Variables

4.3.1 Dependent Variables

Consumption per capita (cpk)

This study utilises consumption per capita (that is private consumption divided by total population) as a proxy for poverty. Consumption measures a household's welfare in relation to meeting current basic needs. Consumption being a smoother measure of welfare, it may be a better reflector of a family's long term welfare (Adhikari, 2008). It can be viewed as realised welfare and it is a relatively better indicator of poverty in the context of developing countries (Adhikari, 2008).

This study also chooses consumption over income because income fluctuates as postulated by the permanent income hypothesis. In an economy like Zimbabwe, the informal sector is larger and the bulk of the population lives in rural areas and depends on agricultural produce, income is not stable. Also, not all income is consumed and not all consumption is financed from income and income can be sensitive to shocks and potentially volatile. Thus, it is better to measure welfare using consumption as it captures attained welfare as compared to income which measures potential welfare (Atkinson, 1989). The Human Development Index (HDI) and Human Poverty Index (HPI) could not be used because data for HDI is periodic in the 1980s and HPI is also published periodically even at present (after four years).

Remittances (Rem)

Ratha (2002) defines remittances as personal flows of money from migrants to their families and friends. Remittances that come through formal channels are utilised in this study because of the problem in measuring informal remittances. Many similar studies for example (Chami *et al*, 2009; Fajnzylber and Lopez, 2008; Barajas *et al*, 2009; Singh, Haacker and Lee, 2009) also used formal remittances in their analysis. Remittances are expected to have positive relationship with poverty reduction and human capital.

Human Capital (HK)

The endogenous growth model (Lucas, 1988, Romer, 1990) added human capital as an important determinant of economic growth. Romer (1990) established that the accumulation

of a stock of human capital enables an economy to increase its efficiency in wealth production. In this view, human capital measured with net secondary school enrolment is utilised in the study. The variable is assumed to be endogenous and the expected relationship is positive with remittances and poverty reduction.

4.3.2 Control Variables

Gross Domestic Product (GDP)

Gross Domestic Product is the value of all goods and services produced within the boundaries of a country over a period of time. A one year lag of GDP per capita is included in the poverty equation because GDP levels affect poverty and inequality but it takes time before the effect is realised (Sawhill, 1988; Steven, 1999 and Shahbaz, 2006). A higher GDP per capita reflect a higher level of development and is held as an indication of a higher ability to reduce poverty. The mechanism in which general economic performance contribute to poverty reduction are universally disagreed (see Dollar and Kray, 2000). GDP is expected to have a positive relationship with poverty reduction.

Dependency ratio (DR)

Dependency ratio is a measure of the portion of a population which is composed of dependents (people who are too young or too old to work). The dependency ratio is equal to the number of individuals aged below 15 and above 64 divided by the number of individuals aged 15 to 64, expressed as a percentage. A rising dependency ratio is a concern in many countries. The variable is expected to have a positive relationship with remittances and a negative relationship with human capital.

Foreign Direct Investment (FDI)

Foreign Direct Investment is an investment made to acquire a lasting management in an enterprise operating in a country other than that of the investor. FDI is an important source of capital and is used as a proxy for financial openness of an economy which measures the medium and long term ability of a country to attract investment from abroad (Shahbaz 2006; 2007). FDI also complements domestic private investment which is associated with the creation of new jobs and enhancement of technology which is the most important tool for

achieving improvements in human well being or poverty alleviation. The coefficient of FDI is expected to be positive with poverty reduction, remittances and human capital.

Inflation (Inf)

Inflation is the rate at which the general price level increases in a country. It hurts the poor more than the rich because the poor barely afford basic necessities. This situation is further worsened by the erosion of the purchasing power of the little that the poorer people earn. The impact of inflation on the poor segments of society is directly correlated that is, it worsens the situation of poverty in the economy (Shahbaz and Naveed, 2007). Inflation is expected to have a negative relationship with poverty reduction.

Tax (tax)

Tax is the way in which government gets most of its revenue. The impact on poverty due to changes in tax revenue differs according to the modifications in the progressiveness and this entire situation is judged in an environment of macroeconomic stabilization policies. To control for the latter, it is important to deal with the complementary measures that may have been implemented to tackle both macroeconomic instability and adverse effects of adjustments and stabilization programmes (Sawhill, 1988; Steven, 1999; Figini and Santarelli, 2004). In order to classify the role of the state in income redistribution as a way to eradicate poverty, total tax revenue is used and the expected sign of its coefficient is negative.

Financial Deepening (findeep)

Financial deepening measures financial sector infrastructure. For a smooth inflow of remittances, the economy has to be financially open and adopting the technology that effects efficient and effective money transfer. If there are hiccups in the financial sector of the economy, remittances will be sent through informal channels. M2/GDP is used in the study to proxy financial deepening. The variable is expected to be positively related to remittances.

Trade Openness (top)

Trade openness is a measure of how well our borders are open to other economies. Economic theorists have given much nominal attention on the degree of openness (Harrison, 1996; Edwards, 1998; Yanikkaya, 2003). This variable can also be used to indicate the movement of people through the borders since data on migration is not available. Therefore, Imports +

Exports are utilized in study. The expected correlation is positive with both poverty reduction and remittances.

Education (lr)

Education is the process by which a society transmits its accumulated knowledge, values and skills from one generation to the other through institutions. For many years, the level of education had been proved to be the main contributor to the stock of human capital of a nation (Barro, 1991). This study utilises literacy rate as a proxy for the economy's level of education in determining human capital stock. Other studies like Chu *et al* (1995) and Tanzi and Chu (1999) used the same proxy in their studies. The coefficient of education is expected to be positive.

Health (Hlt)

Mushkin (1962) suggests that human capital consist of both education and health. Health plays an essential role in improving people's productivity and well being (Barro and Sala-i-Martin, 1995). Several channels through which health affects human capital then growth and or development has been identified (Weil, 2005). This study uses government expenditure on health to capture the health status of the nation. Health is expected to be positively related to human capital.

Economic Crisis (EC)

Zimbabwe underwent a severe economic downturn in the past decade and the inclusion of an economic shock will capture the crisis and also negative economic shocks like this are known to hit harder on the poor and increases remittances. Harvey and Savage (2007) note that remittances are very high in countries that have economic or political crisis. In the crisis years, the variable will take the value 1 and zero otherwise. The coefficient of the economic crisis dummy is expected to be positive on remittances and negative with poverty reduction and human capital.

4.4 Econometric Modelling

Remittances, poverty and human capital are assumed to be endogenous due to reverse causality. Remittances are more likely a compensation for unfavourable economic conditions, hence poor countries tend to receive large amount of remittances. Also, if a nation's households are poor, it is highly likely that the stock of human capital is affected as most will not afford education and health care. On the other hand, high stocks of human capital implies high income hence poverty eradication. In order to take account of the endogeneity problem we use the Three Stage Least Squares (3SLS) method to estimate the three equations. Similar methodology is followed by Pernia (2005), IMF (2007), and Gupta, Pattillo, and Wagh (2007).

The 3SLS method was chosen because remittances have an endogeneity problem which can be solved by the 3SLS. This estimation procedure takes into account not only the endogeneity of the four variables but also the interaction between equations through the covariance matrix of the equations' disturbances. Also, 3SLS gives room to analyse more than one indicator of development as there is no one agreed upon definition of development.

Other methods that could have been used to analyse the problem include the Computable General Equilibrium (CGE) models, the Vector Auto Regression (VAR) method and the Fully Modified Ordinary Least Squares (FMOLS) technique. However, even though the CGE model is the best to analyse developmental issues, the constraint was that the latest Social Accounting Matrix (SAM) for Zimbabwe was that of 1991. While the VAR model lacks theoretical underpinnings and cannot be used for policy analysis, the FMOLS method requires that all the variables be integrated of order 1 of which one cannot be sure of especially with Zimbabwean data because of the economic crisis. Thus, given the circumstances and available data, 3SLS stands out to be the most feasible estimation technique to analyse the problem.

4.4.1 The Identification Problem

Equations 4.4 - 4.6 are structural equations and by substituting one into another, the reduced form equations will be obtained. The reduced form of a model is the one in which the

endogenous variables are expressed as functions of the exogenous variables. Whether the numerical estimates of parameters of the structural equations can be obtained from the estimated reduced form coefficients poses the identification problem with simultaneous equations. If the numerical estimates can be obtained, the equation is identified otherwise it is unidentified or over identified.

The rank condition provides both necessary and sufficient conditions of identification and is the one that is going to be utilised in this study. In a model or system of M simultaneous equations, an equation is identified if and only if at least one non zero determinant of order $(M-1)$ can be constructed from the coefficients of the variables (both endogenous and predetermined) excluded from that particular equation but contained in the other equations of the model. If more than one such determinant may be constructed, the equation is over-identified while if no such determinant can be constructed, it is under-identified. The identification condition must be checked before estimation since if an equation is not identified, it cannot be estimated. This makes it critical to check the identification condition of all the equations in the system before estimation¹³.

4.4.2 Testing for Stationarity

Most of the macroeconomic data is usually non stationary. A time series is said to be stationary if its mean and covariance are independent. If a non stationary variable is regressed on another non stationary variable, the results obtained might be attractive with a very high R^2 and a low DW statistic whilst in actual fact they are spurious (Lutkepohl, 1993). Thus, OLS may lead to inconsistent and inefficient parameters hence the results obtained will not have a meaningful economic interpretation. To avoid the pitfall of wrong inferences from spurious regression, time series data should be tested for stationarity and made stationary if not.

The distribution theory supports the Dickey-Fuller test that assumes the errors are statistically independent and have a constant variance. Phillip and Perron (1988) developed the

¹³ Please refer to Appendix 1 for the rank order calculations for identification.

generalised Dickey-Fuller procedure that allows the disturbance to be weakly dependant and heterogeneously distributed. However, this test is not reliable for small sample data set due to its size and power properties (Dejong *et al*, 1992 and Harris, 2003). For small samples these tests seem to over reject the null hypothesis when it is true and accept it when it is false.

A new test that was developed by Elliot *et al* (1996), Dickey-Fuller Generalised Least Squares (DF-GLS) solves the problems of data size and power properties. The order of integration is calculated from de-trending procedure developed by Elliot *et al*. (1996) that enhanced the power of ADF test. DF-GLS test is based on the null hypothesis $H_0 : \gamma = 0$ which concludes non stationarity and the alternative hypothesis $H_1 : \gamma \neq 0$ which concludes stationarity in the regression:

$$\Delta X_t^d = \gamma X_{t-1}^d + \gamma_1 \Delta X_{t-1}^d + \dots + \gamma_{p-1} \Delta X_{t-p+1}^d + \eta_t \quad (5)$$

Where X_t^d is the de-trended series and null hypotheses of this test is that X_t has a random walk trend, possibly with drift as follows.

$$X_t^d = X_t - \varphi_0 - \varphi_1 t \quad (6)$$

The null hypothesis for DF-GLS is that X_t is stationary about a linear time trend and the alternative is it is stationary with a non zero mean with no linear time trend. Considering the second hypotheses, DF-GLS test is performed by estimating the intercept and trend utilizing the generalized least square technique. This estimation is investigated by generating the following variables:

$$\hat{X} = [X_t, (1 - \hat{\beta}L)X_2, \dots, (1 - \hat{\beta}L)X_T] \quad (7)$$

$$\hat{Y} = [Y_t, (1 - \hat{\beta}L)Y_2, \dots, (1 - \hat{\beta}L)Y_T] \quad (8)$$

And
$$Y_t = (1, t) \hat{\beta} = 1 + \frac{\bar{\alpha}}{T} \quad (9)$$

Where T represents the number of observation for X_t and $\bar{\alpha}$ is fixed¹⁴ while OLS estimation is followed by the following equation:

$$\hat{X} = \varphi_0 \hat{Y} + \varphi_1 Y_t + \varepsilon_t \quad (10)$$

¹⁴ The power of envelop curve is one half at $\bar{\alpha} = -13.7$ when the model has constant and trend term and at $\bar{\alpha} = -7$ when it has a constant term only (see Elliot *et al*, 1996)

OLS estimators, $\hat{\varphi}_0$ and $\hat{\varphi}_1$ are responsible for the removal of trend from X_t above. ADF test is then employed on the transformed variable by fitting the OLS regression¹⁵:

$$\Delta X_t^d = \lambda_0 + \rho X_{t-1}^d + \sum_{j=1}^k \gamma_j \Delta X_{t-j}^d + \mu_t \quad (11)$$

In the second hypothesis, $\bar{\alpha} = -7$ in the required equation of β and then $X_t^d = X_t - \varphi_0$ is calculated. The ADF regression fitted on new transformed variables are then employed to test the null hypothesis, that is $\rho = 0$. If the null hypothesis is not rejected, the variable series contains a unit root and the series is non stationary with k being the maximum lag length. If a series is non stationary, there is need to establish its order of integration before it can be estimated. Differencing the series can make it stationary. The order of integration refers to the number of times a series is differenced to achieve stationarity. Thus, a stationary series is said to be integrated of order d if it has been differenced d times.

4.5 Data Sources

A time series analysis will be utilised in this study for empirical testing. The period of study is from 1980 to 2007. This is the time when data for all the variables are available. Data was collected from various sources. Data on remittances and FDI was collected from the Reserve Bank of Zimbabwe. Secondary school enrolment data was sourced from the United Nations Statistics Division. Tax revenue data will be collected from ZIMRA. Inflation, GDP, consumption, exchange rate and government expenditure data will be collected from the Central Statistics Office (CSO) now Zimbabwe Statistics (Zimstats).

¹⁵ For the critical values of null hypothesis which is $\rho = 0$ see (Elliot et al, 1996)

CHAPTER FIVE: ESTIMATION AND DISCUSSION OF RESULTS

5.0 Introduction

This chapter presents estimated results of the tests elaborated in the methodology chapter. The first section presents the summary statistics of all the variables in the model. This is followed by the correlation matrix the unit root test. The regression results are then reported with those of the parsimonious model following. Discussion and interpretation of results are in the last section of the chapter.

5.1 Preliminary Results

Table 1: Summary Statistics

Variable	Obs	Mean	Std. Dev	Min	Max
cpk	28	693.34	191.9	410.21	1072.6
HK	28	648297.9	226902	74321	891487
FDI	28	46.93	86.57	0.8	444.3
Tax	28	1480	829.26	193	5175
Infl	28	334.414	1268.71	7.1	6273.7
GDP	28	7541.214	1681.87	5235	10409
EC	28	.4285	.5039	0	1
Rem	28	0.1799	0.2984	0.00378	1.10394
DR	28	92.8	9.46	80	108
XR	28	1.07e+07	5067e+07	.630557	3.00e+08
LR	28	0.8125	0.0647	0.69	0.9
Hlth	28	0.0635	0.01682	0.05	0.11
findeep	28	53.705	258.029	0.000256	1364.37
top	28	29587.26	45536.02	19.0185	169825.9

Table 1 shows the descriptive statistics of the dependent and explanatory variables to be used in the study for the period 1980 to 2007. The standard deviation shows variability of the variable and the minimum and maximum helps to check for outliers in the data. There are 28 observations for each variable. Exchange rate shows the largest standard deviation of 5067e+07 followed by trade openness with a standard deviation of 45536.02. This shows that there are huge variations in the exchange rate and trade openness. The minimum and maximum for exchange rate is 0.63 and 3.00e+08 respectively, whilst that of trade openness is 19.01 and 169825.9 million respectively. The huge gap between the minimum and the maximum of these two variables accounts for the large standard deviations.

Table 2 shows a pair wise correlation matrix of explanatory variables in poverty reduction equation. The correlation matrix tests multicollinearity among explanatory variables.

Table 2: Correlation Matrix for equation 4.4

	Rem	HK	FDI	Tax	Infl	GDP	top	EC
Rem	1.0000							
HK	-0.0103	1.0000						
FDI	-0.1114	0.3376	1.0000					
Tax	-0.3845	0.1903	-0.0751	1.0000				
Infl	0.5363	0.2434	0.0432	-0.3256	1.0000			
GDP	-0.6184	0.1911	0.4583	0.0645	-0.3375	1.0000		
top	0.7229	0.5903	0.1401	-0.1030	0.5488	-0.4788	1.0000	
EC	0.2759	0.5564	-0.0658	0.1444	0.2942	-0.3749	0.6596	1.0000

The presents of multicollinearity is shown by relationships of values greater than 0.8 (Cameron and Trivedi, 2005). As shown by the table above all the variable have values less than 0.8 hence there is no multicollinearity. This allows for the inclusion of all the variables in the regressions.

Table 3 shows the correlation matrix for the remittances equation number 4.5. As shown by the table all the variables have a correlation of less than 0.8 hence they can all be included in regression.

Table 3: Correlation Matrix for Equation 4.5

	cpk	HK	GDP	findeep	DR	XR	top	EC
cpk	1.000							
HK	-0.7189	1.0000						
GDP	0.1002	0.1911	1.000					
findeep	-0.3159	0.2067	-0.2954	1.0000				
DR	0.7645	-0.9114	0.0071	-0.2921	1.0000			
XR	-0.2895	0.1859	-0.2690	0.7956	-0.2675	1.0000		
top	-0.7111	0.5903	-0.4788	0.4862	-0.7518	0.4280	1.0000	
EC	-0.7188	0.5564	-0.3749	0.2447	-0.6817	0.2225	0.6596	1.0000

Table 4 reports the correlation matrix for the human capital equation number 4.6.

Table 4: Correlation Matrix for equation 4.6

	Rem	cpk	GDP	FDI	dr	LR	Hlth	EC
Rem	1.0000							
cpk	-0.1906	1.0000						
GDP	-0.6184	0.1002	1.0000					
FDI	-0.1114	-0.3026	0.4583	1.0000				
dr	-0.2047	0.7645	0.0071	-0.3357	1.0000			
LR	0.1412	-0.7033	0.1816	0.4246	-0.7986	1.0000		
Hlth	0.5326	-0.5478	-0.3049	0.1876	-0.7075	0.4979	1.0000	
EC	0.2759	-0.7188	-0.3749	-0.0658	-0.6817	0.03737	0.5117	1.0000

From table 4, there is no multicollinearity evident for the human capital equation. Thus, all the variables can be used in the regressions.

5.2 Testing for Model Specification

Model specifications tests help determine the model that is appropriate for the data. This facilitates in the coming up with an efficient and unbiased model that is empirically relevant.

Unit Root Tests Results

Table 5: Dickey Fuller-Generalised Least Squares tests for unit root in levels

Variable	DF-GLS stat	LAGS	Conclusion
cpk	-1.401	Any lags	Non-Stationary
lncpk	-1.386	Any lags	Non-Stationary
lnRem	-2.147**	8	Stationary
HK	-1.108	Any lags	Non-stationary
lnHK	-1.512	Any lags	Non-stationary
FDI	-3.729*	0	Stationary
Tax	-3.239*	0	stationary
Infl	-5.432*	0	stationary
GDP	-2.161**	8	Stationary
XR	-5.454*	0	Stationary
LR	-4.806*	0	Stationary
Hlth	-3.547*	0	Stationary
Top	-2.158**	8	Stationary

* and ** is 1% and 5% level of significance respectively

The 1% and 5% critical values for the DF-GLS are -2.652 and -2.439 respectively, with 0 lags and -2.656 and -1.950 respectively, when some lags are included. As shown by the table above, consumption per capita (cpk), natural log of consumption per capita (lncpk), human capital (HK) and natural log of human capital (lnHK) are the only variables that are not stationary in levels. Thus, the variables have to be differenced to achieve stationarity so as to avoid spurious regression. Table 8 below presents the unit root test for the differenced variables

Table 6: DF-GLS unit root test results after first differencing.

Variable	DF-GLS stat	Critical 1%	Critical 10%	Integration order
DHK	-3.534*	-2.654	-1.950	I(1)
DlnHK	-2.160**	-2.654	-1.950	I(1)
Dcpg	-5.307*	-2.654	-1.950	I(1)
Dlnpg	-5.809*	-2.654	-1.950	I(1)

Where D represents first difference, * and ** is significant at 1% and 5% level respectively

The variables that were non-stationary in levels were found to be stationary after first differencing as the table above suggest.

5.3 Regression Results

Table 7: Regression results for equation 4.4 (dependant variable-dcpg)

Variable	Coefficient	Std error	Z value	P value
drem	0.51964	0.11792	4.41	0.000
dhk	2.24e-06	4.91e-07	4.56	0.000
gdp	0.000044	0.000016	2.62	0.009
infl	0.000128	0.000262	5.01	0.000
tax	0.000192	0.000025	7.46	0.000
top	-2.53e-06	1.01e-06	-2.51	0.012

R-Squared = 0.7530

Table 8: Regression results for equation 4.5 (dependant variable-lnrem)

Variable	Coefficient	Std error	Z value	P value
ddr	0.520541	0.30113	1.73	0.084
top	0.000021	6.83e-06	3.20	0.001
dlnrem	0.240328	0.11988	2.00	0.045
gdp	-0.000422	0.00011	-3.77	0.000
ec	-1.061533	0.47106	-2.25	0.024

R-Squared= 0.8036

Table 9: Regression results for equation 4.6 (dependant variable-hk)

Variable	Coefficient	Std error	Z value	P value
drem	0.114534	0.0672876	1.70	0.089
dcpk	-0.000336	0.0001358	-2.48	0.013
gdp	-0.000022	0.0000112	-2.04	0.042
lr	-1.146914	0.3046622	-3.76	0.000
ddr	0.059498	0.0304344	1.96	0.051
fdiflow	0.000367	0.0001945	1.89	0.059
ec	-0.110007	0.0340339	-3.23	0.001

R-Squared= 0.6663

5.4 Interpretation of Results and Discussion

Table 7, 8 and 9 present regression results for the three equations in the model. The model estimates consumption per capita as a proxy for poverty, remittances and human capital. R-Squared, which shows the goodness of fit of the independent variables to the dependent variables is 0.7530, 0.8036 and 0.6663 for the consumption per capita, remittances and human capital equations, respectively. Thus, the independent variables explain the variations in the dependent variables for all the three equations. The p value of 0.0000 for the chi square for all the three equations shows the significance of the whole model¹⁶.

The results of the study show that the coefficient for remittances in Zimbabwe is positively related to consumption per capita and statistically significant at the 1% level. This means holding other variables constant, a unit increase in the proportion of remittances to GDP increases consumption by a rate of 52% thus, by implication remittances reduces poverty. This result supports the hypothesis that there is a positive relationship between remittance

¹⁶ Tables 7, 8 and 9 present results for the variables that are significant only. For the original stata output for the regression results please refer to appendix 2.

and poverty reduction and tallies with results of other studies¹⁷. Thus, as remittances increases, consumption increases thereby reducing poverty. This is so because households that receive remittances use the remittances for consumption, investment which have multiplier effects on the production level of an economy as the demand for goods and services increases. Also, the investment use of remittances helps create employment which spill over to the households that do not receive remittances thereby eradicating poverty.

As an explanatory variable for human capital, remittances as a share of GDP are significant at 10% level and its coefficient is positive. Thus, a 1% increase in the share of remittances to GDP induces a growth rate of 11.45% to human capital. This shows that remittances are playing a role in the accumulation of human capital in Zimbabwe which will impact on growth (Romer, 1990). These results are consistent with several similar studies that found a positive effect of remittances on human capital as school fees payment is a major use of remittances.¹⁸

Lagged remittances are significant at 5% level with a positive coefficient. This implies that a 1% increase in the one year lag of the share of remittances to GDP increases the current share of remittances to GDP by 24%. Thus, higher remittances in the initial year, possibly indicating higher migrant stock, cause higher remittances. Banga and Sahu (2000) and Gupta, Pattillo, and Wagh (2007) also found lagged remittances to have a significant positive effect on remittances in 71 developing countries and Sub-Saharan African countries, respectively.

Human capital is significant at 1% level and is positively related to consumption per capita. The results show that a unit increase in human capital results in 2.24e-04% rate of increase in consumption per capita and by implication, human capital reduces poverty. The results reveal that human capital is a key variable in poverty reduction because human capital increases productivity of a nation (Lucas, 1988 and Romer, 1990). However, the effect of the contribution of human capital to consumption is very minute. This is so because in Zimbabwe returns to education is very low as the incomes of the highly skilled and the educated do not differ much from those of the unskilled and the uneducated. Also, the informal sector in Zimbabwe is so large at about 80% (ILO, 2008) such that incomes of those that have acquired education and those without do not differ. Those with skills and education may not

¹⁷ Pernia (2008), Adams and Page (2003), Chami *et al* (2008), Brown (2008)

¹⁸ Brown (2008), Fajnzylber and Lopez (2008), Acosta, Fajnzylber and Lopez (2007)

find formal employment and engage in informal trading with low returns. This reason may also account for the statistical insignificance of human capital in determining remittances as the results portray.

Consumption per capita is found to be significant at 1% level in the human capital equation. The coefficient is however negative meaning that a dollar increase in consumption reduces human capital by 0.0336% in Zimbabwe. These results are inconsistent with those of other studies as Acosta *et al* (2007) found poverty reduction to be positively related to human capital. The results of this study therefore imply a substitution effect between human capital and consumption. As households spend on trying to fight poverty through consumption in this case, they are spending less on education thereby decreasing the stock of human capital. Moreover, the rewards to education are very low in Zimbabwe at the moment such that the non poor might find it more rewarding to engage in recreational professions rather than schooling. In view of the fact that remittances have been found to significantly reduce poverty through consumption in the study, Kapur and McHale, (2005) argues that recipients of remittances tend to choose more leisure as opposed to more work or more effort in schooling. Thus, as poverty decreases due to remittances, there will be less motivation for schooling

GDP has a positive effect on consumption per capita and is statistically significant at 1% level. A unit increase in GDP results in a 0.0044% rate of increase in consumption per capita *ceteris paribus*. Increased GDP reduces poverty through employment creation and an increase in government revenue which will be used for the betterment of social services. Also, more GDP means more disposable income which increases consumption thereby increasing the welfare of people and the quality of life.

The coefficient of GDP on the remittances equation is also statistically significant at 1% level and is negatively related to remittances. A dollar increase in GDP leads to a 0.042% decrease in remittances. These results support the hypothesis that GDP has a negative effect on remittances and are consistent with those of other studies like Pernia (2008). A country that is performing well in terms of income is in a position to create employment and attract back its migrants thereby reducing remittances.

The regression results also report a negative relationship between GDP and human capital at 5% level of significance. This means that a unit increase in GDP decreases human capital by

0.0023%. This misbehaviour may be explained by the brain drain that the nation has been experiencing since late 1990s.

The regression results show that inflation is statistically significant at 1% level and is positively correlated to consumption per capita. Its coefficient shows that a unit increase in the rate of inflation increases consumption per capita by a rate of 0.013% implying that an increase in inflation rate reduces poverty in a nation. These results contradict with several empirical studies for example, (Shahbaz and Naveed, 2007) found inflation to be positively related to poverty levels meaning an increase in the rate of inflation increases poverty. The results of this study report a positive relationship between inflation rate and consumption because of the hoarding effect of inflation in Zimbabwe. During the times of high inflation rates, people buy goods in bulk because of the anticipation of further increases in the inflation rate thereby increasing consumption.

A dollar increase in tax revenue brings about a growth rate of 0.019% on consumption per capita, thus the coefficient of tax is positive and statistically significant at 1% level of significance. This implies that increases in tax revenue significantly reduce poverty. These results are consistent with those found by Shahbaz and Naveed (2007). Tax revenue represents government's effort in the eradication of poverty as income is redistributed from those with high income and benefits the poor through social services and subsidies among other channels.

Trade openness is statistically significant at 1% level and negatively related to consumption per capita and positively related to remittances in the second equation. A unit increase in trade openness implies a 2.53e-04% rate of decrease in poverty reduction and 0.0022% rate of increase in remittances as a share of GDP. These results affirm the fact that how open our borders are is an important aspect of poverty reduction and the inflow of remittances. Trade openness shows the ease of people to move from one country to another thereby proxying the effect of migration trends on remittances since migration figures could not be found. A negative impact of trade openness on consumption per capita found in the study differs from the results found by Banga and Sahu (2000) in their study for 71 developing countries. They found trade openness to be positively correlated to poverty reduction. However, in Zimbabwe this negative effect can be explained by the fact that the country's imports are more than exports especially during the hyperinflation period. Consequently, local companies were left unprotected which heavily reduced production and a lot of firms closed thereby leaving most

of the country's population unemployed. Since, the factor of production that the poor have is labour, this increased the poverty levels of the nation.

The results of this study show that dependency ratio is statistically significant at 10% and positively correlated with both remittances and human capital. A unit increase in the dependency ratio increases remittances by 52% and human capital by 5.94% rate of growth. The effect of dependency ratio on remittances is consistent with that found by Pernia (2008). Dependency ratio, as the term suggest shows the non-working population as a ratio of the working. Thus, the higher the dependency ratio attracts more remittances as there will be more people who depend on such income. The positive relationship of the dependency ratio to human capital contradicts with theory but this can be explained by the fact that dependency in Zimbabwe is heavily skewed to those below 15 years of age since life expectancy has declined to about 35 years in 2009 (World Health Organisation, 2010). Thus, the below 15 years age group is the school going age hence the results suggest despite a high dependency ratio and with the help of external means of income like remittances, households still manage to educate their children. The situation is made even better with such programmes like Basic Education Assistance Module (BEAM) that assist the needy households by paying school fees for their children.

The regression results of this study found literacy rate to have a significant effect on human capital at 1% level of significance. The relationship is however negative meaning a 1% increase in the literacy rate reduces human capital by 114.6%. This result contradicts those found by other studies for example Barro (1991), Chu *et al* (1995) and Tanzi and Chu (1999). Zimbabwe has been reported to top literacy rate in Africa (UNDP, 2010) with literacy rate defined as the ability to read and write implying a bigger literacy base in the country. However, during the decade of economic crisis, the educational sector was hardly hit by brain drain and high school fees that households could not afford thereby negatively impacting on school enrolment.

The coefficient of Foreign Direct Investment is statistically significant at 10% level and is positively related to human capital. A unit increase in FDI increases human capital by 0.037%. FDI flows into a nation bring forth employment creation and a spill over effect of skills from other countries. This contributes positively on human capital in Zimbabwe, hence the results conforms to the hypothesis that FDI is a key factor for human capital accumulation.

The economic crisis dummy is significant and negatively related to both remittances and human capital. Remittances are reduced by 106% in the presents of economic crisis. This is so because most of the macroeconomic fundamentals like the exchange rate and inflation rate will be very high affecting the inflow of formal remittances negatively as migrants tend to prefer informal channels. 11% decrease in human capital in the presents of economic crisis supports the findings of other studies. In Zimbabwe, economic crisis was characterised by very high inflation rates, brain drain and capital flight which impacted negatively on human capital.

5.5 Summary

The study finds remittances to be significant in both consumption per capita and human capital formation. This implies that poverty is reduced by 52% and human capital is increased by 11.5% from a unit increase in remittances. The hypothesis that there is reverse causality between remittances and poverty reduction has not been supported by the results of this study. Other variables that have been found to influence consumption per capita are human capital, GDP, inflation, tax and trade openness. The study also finds consumption, GDP, literacy rate, dependency ratio, FDI and economic crisis to be the determinants of human capital formation.

CHAPTER SIX: SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS

6.0 Introduction

This chapter summarizes the main findings of this study and presents policy recommendations and suggestions for further studies.

6.1 Summary and Conclusion

The main aim of this study has been to investigate the empirical impact of remittances on development in Zimbabwe. Poverty reduction proxied by consumption per capita and human capital were used as indicators of development. Stata 10 was employed to investigate the relationship between the variables of concern. A three stage least squares was utilised to take into account the suspicion of reverse causality between remittances, poverty and human capital. Time series data was used which necessitated unit root tests to avoid spurious regression. These were conducted using the Dickey Fuller Generalised Least Squares (DF-GLS).

The results of the study coincide with those found at the international level (World Bank, 2006; Adams and Page, 2005) or at the regional level (Acosta *et al.*, 2007 and Fajnzylber and López, 2007; Inter-American Dialogue, 2007). The importance of remittances on poverty reduction and human capital formation had been confirmed with a unit increase in remittances reducing poverty by 52% and increasing human capital formation by 11.5%. The hypothesis of reverse causality between remittances and poverty was not supported by this study as the coefficient of poverty reduction on remittances is statistically insignificant. Other variables found to be of importance in the eradication of poverty in Zimbabwe are human capital, GDP, inflation rate, tax revenue and trade openness. Trade openness had a wrong sign verifying the negative effect of economic crisis in Zimbabwe where imports were huge, forcing local companies to close thereby increasing unemployment which hit hard on the poor.

The study discovered that remittance inflows to Zimbabwe are determined by the dependency ratio, trade openness, lagged remittances, GDP and economic crisis. Economic crisis, dependency ratio and lagged remittances had bigger effect on remittances. Another objective of the study was to investigate what determines human capital formation in Zimbabwe with particular interest on remittances. Remittances, poverty, GDP, literacy rate, dependency ratio and FDI, are of great importance in human capital formation in Zimbabwe as shown by the empirical results of this study. Poverty, GDP, literacy rate and the dependency ratio however had unexpected signs on their effect on human capital. This nonetheless, can be explained by low returns to education, brain drain, economic crisis and the presence of remittances in the economy as explained in Chapter five. Following the results of the study, we conclude that remittances reduce poverty through consumption and increases human capital formation and that there is no reverse causality between remittances and poverty reduction in Zimbabwe.

6.2 Policy Recommendations

The development potential of remittances can particularly be improved by increasing the total flow of remittances. However, migrants may have large propensity to remit but the home and host country policies may not be conducive to remittances. Even if the policies are conducive, due to absence of appropriate channels of sending remittances, these may reach the poor only after a long gap (when the migrant decides to carry the remittances personally or send it through someone). This may not be very effective in terms of reducing poverty. Even if the poor receive the remittances, proper use of remittances is important for sustainable reduction in poverty. Hence, measures to increase the inflow of formal remittances have to be put in place.

A consensus is also emerging on the need to facilitate the shift from informal to formal transfer systems. It has been argued that remittances diverted through informal means do not have the same multiplier effect as bank deposits and thus have less impact on development. Remittances channelled through banks or financial institutions can also deepen financial systems in the developing world because they can then increase the availability of resources to finance economic activities. A number of governments and international organizations have tried to encourage the use of formal remittance services in a number of ways. Banning the use of informal channels and installing legal remittance requirements have been adopted

in some cases, though unsuccessfully. More recently, the thrust of the policy debate are on how to encourage banking among migrants and on how to design appropriate and balanced regulatory frameworks for the remittance industry. Zimbabwe can consider bilateral arrangements with the Zimbabwean migrant receiving countries so as to reduce the cost of sending money through formal channels. Also, international forums may be used to formulate policy frameworks to regulate the flow of migrants and reduce the number of illegal migrants.

The Government of Zimbabwe may also resort to tax breaks for migrants' income so as to create a conducive environment for the remittances market. In Egypt, migrants remitting through banks receive tax breaks for up to ten years. Some governments, such as the Egyptian and the Moldovan have programs enabling migrants to buy land at preferential prices. Colombia also reformed its tax laws to attract remittances. The government ordered the removal of the tax to entice expatriates to remit a larger portion of their salaries to relatives in Colombia. As Wimaladharma *et al* (2004) find Bancolombia, a Colombian bank noted for handling about \$100 million in remittances annually, eliminated a 3% tax charged on remittances

Efforts to increase the volume of remittances should also be supported by efforts in channelling the remittances to more productive uses for sustainable reduction in poverty and human capital formation. Apart from providing food security to the households, if remittances are used for improving skills and productivity of the recipients they will have more sustainable impact on improvements of standard of living. Families receiving remittances should be allowed to use future remittances as collateral for procuring loans for education, house building or other activities like procuring fertilizers and machinery. However, managing migration, particularly for poverty reduction, requires efforts at both bilateral as well as multilateral level. Effective and genuine partnerships must be established between migrant sending and migrant-receiving countries. Thus, there has to be consensus at the multilateral level on the poverty-reducing impacts of remittances, which is now supported by empirical evidence.

Domestic banks can also resort to securitization of future remittance flows in order to raise external finance. Workers' remittances represent a future flow receivable that financial institutions can collateralize to access additional capital. In other words, securitization

enables banks in developing countries to raise hard currencies by selling bonds. As Buch *et al* (2002) note, securitization can address ‘information asymmetries in inefficient domestic financial markets and thereby improve the quality of investment in developing countries.’

6.3 Suggestions for Future Research

This study investigated and confirmed the importance of remittances on Zimbabwean economic development in particular poverty reduction and human capital formation. However, the data used for remittances is formal cash remittances which are far from the real figures of remittances as a lot of migrants send in kind and cash remittances through informal channels. Consequently, there is need for household surveys that capture migration variables in Zimbabwe. Also, a study of the impact of remittances on inequality needs to be carried out in order to appreciate the effect of remittances on development fully. Macroeconomic methods of modelling like the CGE model may also be adopted so that the effect of remittances on all the sectors of the economy can be examined.

APPENDICES

APPENDIX 1: Identification

$$cpk = f(rem, hk, gdp, fdi, tax, Inf, top, ec) \quad (4.4)$$

$$rem = f(cpk, hk, gdp, dr, xr, findeep, top, rem_{t-1}, ec) \quad (4.5)$$

$$hk = f(cpk, rem, gdp, fdi, dr, lr, hlth, ec) \quad (4.6)$$

Writing the coefficients of variables in the equations, with α being the constant and the error term as the subject of formula in tabular form

Eq no	1	rem	hk	gdp	fdi	tax	infl	top	ec	dr	xr	findeep	lr	hlt	cpk
1	$-\alpha_1$	$-\beta_{11}$	$-\beta_{12}$	$-\beta_{13}$	$-\beta_{14}$	$-\beta_{15}$	$-\beta_{16}$	$-\beta_{17}$	$-\beta_{18}$	0	0	0	0	0	1
2	$-\alpha_2$	1	$-\beta_{22}$	$-\beta_{23}$	0	0	0	$-\beta_{27}$	$-\beta_{29}$	$-\beta_{24}$	$-\beta_{25}$	$-\beta_{26}$	0	0	$-\beta_{21}$
3	$-\alpha_3$	$-\beta_{32}$	1	$-\beta_{33}$	$-\beta_{34}$	0	0	0	$-\beta_{38}$	$-\beta_{35}$	0	0	$-\beta_{36}$	$-\beta_{37}$	$-\beta_{31}$

To get the (M-1) (M-1) matrix which we will then find a determinant, the row of the equation under consideration is struck out in the table. The columns of the coefficients of that equation which are not zero are also struck out. The entries left gives out coefficients of variables included in the system but not in the equation under consideration. Thus for equation 4.4, one

of the 2×2 remaining matrix is $\begin{pmatrix} -\beta_{24} & -\beta_{25} \\ -\beta_{35} & 0 \end{pmatrix}$ and the determinant is $-\beta_{25}\beta_{35}$ which is non

zero thus equation 4.4 is identified. Taking the remaining 2×2 matrix for the other 2 equations shows all the equations in the model are identified.

APPENDIX 2: Results-Stata original output

Three-stage least-squares regression

Equation	Obs	Parms	RMSE	"R-sq"	chi2	P
d1ncpk	26	8	.0877008	0.7530	78.81	0.0000
1nrem	26	9	.7269909	0.8036	113.95	0.0000
d1nhk	26	8	.0676075	0.6663	51.10	0.0000

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
d1ncpk						
drem	.5196483	.1179273	4.41	0.000	.2885151	.7507815
dhk	2.24e-06	4.91e-07	4.56	0.000	1.28e-06	3.20e-06
gdp	.0000441	.0000168	2.62	0.009	.0000112	.0000077
fdiflow	.0003813	.0002625	1.45	0.146	-.0001332	.0008959
infl	.000128	.0000255	5.01	0.000	.0000779	.0001781
tax	.0001929	.0000259	7.46	0.000	.0001422	.0002436
top	-2.53e-06	1.01e-06	-2.51	0.012	-4.50e-06	-5.53e-07
ec	.036274	.0523911	0.69	0.489	-.0664107	.1389586
_cons	-.7200932	.1542146	-4.67	0.000	-1.022348	-.4178381
1nrem						
dcpk	-.0002761	.0013128	-0.21	0.833	-.0028491	.0022969
dhk	1.48e-06	3.43e-06	0.43	0.666	-5.25e-06	8.21e-06
xr	3.89e-08	3.64e-08	1.07	0.285	-3.24e-08	1.10e-07
ddr	.5205413	.3011338	1.73	0.084	-.0696701	1.110753
findeep	-.008902	.0083642	-1.06	0.287	-.0252956	.0074916
top	.0000218	6.83e-06	3.20	0.001	8.46e-06	.0000352
d1agdrem	.2403287	.1198811	2.00	0.045	.005366	.4752913
gdp	-.0004226	.000112	-3.77	0.000	-.0006422	-.000203
ec	-1.061533	.4710633	-2.25	0.024	-1.9848	-.138266
_cons	.2535875	.9413405	0.27	0.788	-1.591406	2.098581
d1nhk						
drem	.1145349	.0672876	1.70	0.089	-.0173464	.2464162
dcpk	-.0003363	.0001358	-2.48	0.013	-.0006025	-.0000701
gdp	-.0000228	.0000112	-2.04	0.042	-.0000447	-8.77e-07
1r	-1.146914	.3046622	-3.76	0.000	-1.74404	-.5497866
hlth	-1.775347	1.215379	-1.46	0.144	-4.157446	.6067523
ddr	.0594981	.0304244	1.96	0.051	-.0001327	.1191289
fdiflow	.0003679	.0001945	1.89	0.059	-.0000133	.0007492
ec	-.1100079	.0340339	-3.23	0.001	-.1767132	-.0433026
_cons	1.377325	.2426816	5.68	0.000	.9016781	1.852972

References

Acosta, P. Fajnzylber, P and Lopez, H (2007), *The Impact of Remittances on Poverty and Human Capital: Evidence from Latin American Household Surveys*, World Bank Policy Research Working Paper 4247, June 2007

Adams, R.H. (1991), *The economic uses and impact of international remittances in rural Egypt*. Economic Development and Cultural Change, Vol.39, No.4, pp.695-722.

Adams, W. (1969). *The Brain Drain*. New York: Macmillan

Adams, R. and Page, J. *Do International Migration and Remittances Reduce Poverty in Developing Countries?* World Development 33 No. 3 (2005): 1645–69.

Adhikari, C. (2008), *The role of land reform in reducing poverty across Nepal*. Submitted for third Annual Himalayan Policy Research Conference, Nepal Study.

Aggarwal, R., DemirgucKunt, A. and Martinez, M. S. (2006). *Do workers' remittances promote financial development?* World Bank Policy Research Working Paper, No. 3957.

Agunias, D. (2006), *Linking Temporary Worker Schemes with Development*. Migration Information Source.

Amin, S. (1974), *Modern migration in West Africa*. Oxford University Press, London

Atkinson, A. B. (1989), *Poverty in social economics*. The New Palgrave, ed. J. Eatwell, M. Milgate and P. Newman, New York, Norton

Baran, P. (1973), *On the political economy of backwardness*. In *The political economy of development and underdevelopment*, ed. CK Wilber, pp. 82-93. New York: Random House

Barro, R. J, (1991). *Economic Growth in a Cross Section of Countries*, The Quarterly Journal of Economics, MIT Press, vol. 106(2), pages 407-43, May.

Barro, R. J and Sala-i-Martin, X. (1995). *Technological Diffusion, Convergence, and Growth*, NBER Working Papers 5151, National Bureau of Economic Research, Inc.

Bird, K and Busse, S, 2007, *Re-thinking aid policy in response to Zimbabwe's protracted crisis*, ODI Discussion paper

Bloch, A. (2005), *The Development Potential of Zimbabweans in the Diaspora*, IOM Migration Research Series No. 17.

Bracking, S. and Sachikonye, L. (2006), *Remittances, poverty reduction and the informalisation of household wellbeing in Zimbabwe*, Global Poverty Research Group, working paper no. 45

Cameron C, and Trivedi P. K. (2005), *Suppliment To Microeconomics: Methods And Applications*, Cambridge University Press, New York.

Cardoso, F. H. and Faletto, E. (1979), *Dependency and development in Latin America*. Berkeley: University of California Press.

Carling, J. (2004), *Policy options for increasing the benefits of remittances*. Paper presented at Workshop B9: Remittances and Development: beyond increasing incomes at the Ninth International Metropolis Conference, Geneva, 27/09—01/10 2004.

Chami, R., Fullenkamp, C. and Gapen, M. (2009), *Measuring Workers' Remittances: What Should Be Kept in and What Should Be Left Out*, mimeo, IMF.

Chetsanga, C.J. and T. Muchenje (2003), *An Analysis of the Cause and Effect of the Brain Drain in Zimbabwe*. Scientific and Industrial Research and Development Centre, Harare.

Chikanda, A. (2005), *Medical Leave: The Exodus of health professionals from Zimbabwe, 2005*. Migration Policy Series No.34. SAMP, Kingston, Canada.

Chishti, M.A. (2007), *The Phenomenal Rise in Remittances to India: A Closer Look*, Migration Policy Institute Policy Brief

De Haas, H. (2003) *Migration and Development in Southern Morocco. The Disparate Socio-Economic Impacts of Out-Migration on the Todgha Oasis Valley*, De Haas, Amsterdam.

De Haas, H (2005), *International Migration, Remittances and Development: Myths and Fact*, Third World Quarterly 26, no. 8 (December 2005): 1269-1284.

Deneulin S. (2003), *Examining Sen's capability approach to development as guiding theory for development policy*. Thesis (D.Phil.)--University of Oxford.

Dollar, D and Kraay, A, (2002), *Growth Is Good for the Poor*, Journal of Economic Growth, Springer, vol. 7(3), pages 195-225,

Edwards, S. (1998), *Openness, Productivity, and Growth: what do we really know?* Economic Journal, v108, n447, pp. 383-398.

Elliott, G., Rothenberg, T. J. and Stock, J. H. (1996), *Efficient Tests for an Autoregressive Unit Root*, *Econometrica*, 64, 813-836

Ellerman, D. (2003), *Policy Research on Migration and Development*. Policy Research Working Paper, 3117. Washington, DC: World Bank

Ellerman, D. (2005), *Jane Jacobs on Development*. Oxford Development Studies 32, no. 4 507-521.

Engle, R., Hendry, D. and Richard, J. *Exogeneity*. *Econometrica*, 51, 1983, pp. 277– 304.

Fajnzylber, P. and López, J. H. (2007), *Close to Home: The Development Impact of Remittances in Latin America*. World Bank, Washington, DC.

Figini, P. and Santarelli, E. (2004), *Does Globalization Reduce Poverty*. mimeo

Ghosh, B. (1992), *Migration-development linkages: Some specific issues and practical*

policy measures. International Migration, Vol. 30, No. 3/4, pp. 423-52.

Godwin, P. (1993), *Rhodesians Never Die: The Impact of War and Political Change on White Rhodesia*. Oxford University Press, Oxford.

Government of Zimbabwe, (2009), *Short Term Emergency Recovery Plan*, GoZ

Government of Zimbabwe, (1998), *Zimbabwe Programme for Economic and Social Transformation*. GoZ

Granger, C. W. J. (1969), *Investigating causal relations by econometric models and cross spectral methods*. *Econometrica*, 37:24-36

Green, W. H. (2002), *Econometric Analysis*. 5th edition, New York University, Pearson Education, Inc., Upper Saddle River.

Gupta, S., Pattillo, C. and Wagh, S. (2007), *Impact of Remittances on Poverty and Financial Development in SubSaharan Africa*. IMF Working Paper 07/38.

Gustafson, B., and Makonnen, N. (1993), *Poverty and remittances in Lesotho*. *Journal of African Economies*, 2, 49–73.

Harris, J., and Todaro, M. P. (1970), *Migration, Unemployment and Development: A Two Sector Analysis*, *American Economic Review*, 60, 1970, pp.126-42.

Harrison, A. (1996), *Openness and Growth: A Time-Series, Cross-Country Analysis for Developing Countries*. *Journal of Development Economics*, v48, n2 419-47.

Hernandez-Coss, R. (2005), *Lessons from the US-Mexico Remittances Corridor on Shifting from Informal to Formal Transfer Systems*. World Bank, Washington, D.C.

Hill, F. (2004), *Eurasia on the Move: The Regional Implications of Mass Labor Migration from Central Asia to Russia*. Presentation at the Kennan Institute, Washington, DC.

Human Development Reports. Various Issues, Web site, <http://hdr.undp.org>

IMF. (2005), *Approaches to a Regulatory Framework for Formal and Informal Remittance Systems: Experiences and Lessons*, Prepared by the Monetary and Financial Systems

IAD. (2007), *Making the Most of Family Remittances*. Second Report of the Inter-American Dialogue Task Force on Remittances. Washington, DC.

IFAD. (2006) *Sending Money Home: Worldwide Remittance Flows to Developing Countries*, <http://www.ifad.org/events/remittances/maps/index.htm>

IOM, (2005), *The Development Potential of Zimbabweans in the Diaspora: A survey of Zimbabweans Living in the UK and South Africa*, Migration Research Series No. 17, Geneva, IOM

IOM. (2007), *Migration for Development in Africa*. Geneva: IOM.

Jackson, J. (1994), *Repatriation and Reconstruction in Zimbabwe During the 1980s*. in *When Refugees Go Home*, edited by T. Allen and H. Morsink. London, UNRISD. pp. 126–166.

Kapur, D. (2003) *Remittances: The New Development Mantra*, Paper prepared for the G-24 Technical Group Meeting.

Kapur, D. and McHale, J. (2005), *Give Us Your Best and Brightest: The Global Hunt for Talent and Its Impact on the Developing World*. Washington, DC: Centre for Global Development.

Keely, B. C and Tran, B. N. (1989), *Remittances from Labour Migration: Evaluations, Performance and Implications*. *International Migration Review*. (23) 3 500-525, Autumn.

Kramarenko, V., Engstrom, L., Verdier, G., Fernandez, G., Oppers, S. E., Hughes, R., McHugh, J. and Coats, W. (2010), *Zimbabwe: Challenges and Policy Options after Hyperinflation*. Washington, D.C. International Monetary Fund, 10/3

LEDRIZ. (2009), *The Flow, Impact and Regulatory Framework of Migrant Labour Remittances in Zimbabwe*. Study Commissioned by The Ministry of Economic Planning and Investment Promotion and IOM.

Levy, V. (1987), *Aid and economic growth in the sub-Saharan: Africa: The recent experience*, *European Economic Review*, 32; 1777-1795.

Lucas, R. (1988), *On the Mechanics of Economic Development*. *Journal of Monetary Economics* 22:3-42

Lucas, R.E. B. and Stark, O. (1985) *Motivations to Remit: Evidence from Botswana*, *Journal of Political Economy*, Vol. 93, pp. 901-918.

Lutkepohl, H. (1993), *Introduction to Multiple Time Series Analysis*, Paperback, Subsequent Edition, Springer-Verlag

Magunha, F., Bailey, A. and Cliffe, L. (2009), *Remittance Strategies of Zimbabweans in Northern England*, School of Geography, University of Leeds, Leeds LS2 9JT, January.

Maphosa, F. (2004), *The Impact of Remittances from Zimbabweans working in South Africa on Rural Livelihoods in the Southern Districts of Zimbabwe*. A summary of a report submitted to The Council for the Development of Social Science Research in Africa (CODESRIA).

Maphosa, F. (2007), *Remittances and development: The impact of migration to South Africa on rural livelihoods in southern Zimbabwe*. *Development Southern Africa*, Vol. 24, No. 1: 123-135.

Martin, P. (2002), *Economic integration and migration: the Mexico –US case*, paper prepared for the WIDER conference, Helsinki.

Massey, D. S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A. and Taylor, J. E. (1998) *Worlds in Motion: Understanding International Migration at the End of the Millennium*. Oxford: Clarendon Press.

Mosse, D., Gupta, S., Mehta, M., Shah, V., Rees, J. (2002), *Brokered livelihoods: Debt, labour migration and development in Tribal Western India*. In de Haan and Rogaly, eds.

Muponda, G. (2009), *Tapping Diaspora capital to kick-start Zimbabwean economy*. GMRI Capital. <http://www.gmricapital.com>

Mushkin, S. J.(1962). *Health as an Investment*. Journal of Political Economy 70 (5): 129–57.

Orozco, M. and Lindley, A. (eds.) (2007), *Country Profile: Zimbabwe*, Migrant Remittances Newsletter, 4(2): 6, April.

Papademetriou, D. G. (1985), *Illusions and Reality in International Migration: Migration and Development in post World War II Greece*. International Migration XXIII:211-23

Pasura, D.M. (2008), *A Fractured Diaspora: Strategies and Identities among Zimbabweans in Britain*. Unpublished PhD thesis, University of Warwick.

Penninx, R. (1982), *A Critical Review of Theory and Practice: The Case of Turkey*. International Migration Review, 16 (4), 781-818.

Phillips, P., and Perron, P. (1988), *Testing for a Unit Root in Time Series Regression*. Biometrika, 75, 1988, pp. 335–346.

Portes, A. and Rumbaut, R. G. (1996), *Immigrant America, A Portrait*. University of California Press, Berkley.

Portes, A. And Browning, H. (1976), *Current perspectives in Latin American urban research*. Austin : Institute of Latin American Studies, University of Texas,

Rapoport H. and Docquier F., (2003), *The economics of migrants' remittances*, in Varet, G. (Eds), chapter appeared in Handbook on the Economics of Reciprocity, Giving and Altruism, North Holland

Ratha, D. (2003) *Workers' Remittances: An Important and Stable Source of External*

Development Finance, In *Global Development Finance 2003: Striving for Stability in Development Finance* (Washington, DC: The World Bank, April 2003), pp. 157-175.

Ratha, D, (2006) *Trends, Determinants, and Macroeconomic Effects of Remittances*, In *Global Economic Prospects 2006: Economic Implications of Remittances and Migration* (Washington, DC: The International Bank for Reconstruction and Development / The World Bank, 2006), pp. 85-115.

Ratha, D. (2007), *Leveraging remittances for development*. Migration Policy Institute, Policy Brief No 3, Washington D.C. June.

Ratha, D. and Mohapatra, S. (2007). *Increasing the Macroeconomic Impact of Remittances on Development*. The note prepared for the G8 Outreach Event on Remittances, Berlin.

Ratha, D. and Xu, Z. (2008), *Sub-Saharan Africa, Migration and Remittances Factbook*, World Bank.

Ratha, D. Mohapatra, S. Vijayalakshmi, R. and Xu, Z. (2007), *Migration and Development brief*, Development Prospects Group, Migration and Remittances Team

Ravenstein, E. G. (1889), *The Laws of Migration*. *Journal of the Royal Statistical Society*, 52, 241-301

Reserve Bank of Zimbabwe. Various Issues. Quarterly Monetary Policy Statement, Harare

Romer, P (1990), *Endogenous Technological Change*. *The Journal of Political Economy*, Vol. 98, No. 5, Part 2: (Oct., 1990), pp. S71-S102.

Rothenberg, J. (1977), *On the microeconomics of internal migration*. In *Internal Migration: A Comparative Perspective*, eds. A. Brown and E. Neuberger,

Sassen, S. (1988), *The mobility of labour and capital*. University of Chicago

Savage and Harvey (2007), *Remittances during crises Implications for humanitarian response*. Humanitarian Policy Group (HPG) Report, Overseas Development Institute

Sawhill, V. (1988), *Poverty in U.S: Why id it so persistent?* Journal of Economic Literature, 26(3), PP.1073-1119.

Selby, A. E. (2006), *Commercial Farmers and the State: Interest Group Politics and Land Reform in Zimbabwe*. Unpublished DPhil Thesis, Oxford University

Sen, A. (1999), *Development as Freedom*. New York: Random House Inc.

Shahbaz, M. and Naveed, A. (2007), *Macroeconomic Determinants of Poor's Happiness*. Paper Presented at International Conference on Gross National Happiness in Thailand.

Shahbaz, M. and Naveed, A. (2007), *Impact of Remittances on Education Spending in Pakistan*. Mimeo

Shahbaz, M. and Naveed, A. (2007), *Rural- Urban income inequality under financial development and trade openness in Pakistan: The econometric evidence*. Pakistan Development Review, Pakistan Institute of Development Economics, vol 46(4), pp 657-672

Siddiqui, T. (2004), *Efficiency of migrant workers' remittances: The Bangladesh Case*. University of Dhaka

Sims, C. (1977), *Exogeneity and Causal Ordering in Macroeconomic Models.*" In New Methods in Business Cycle Research: Proceedings from a Conference. Federal Reserve Bank of Minneapolis, 1977, pp. 23-43.

Singh, R., Haacker, M. And Lee, K. (2009), *Determinants and macroeconomic impact of remittances in Sub Saharan Africa*. IMF Working Papers, 09/216, IMF

Sjaastad, L. A. (1962), *The Costs and Returns of Human Migration*. Journal of Political Economy 70 (5): 80-93.

Stark, O. (1991), *The Migration of Labour*. Harvard University Press, Cambridge, Mass

Stark, O., and Taylor, J. E. (1989), *Relative deprivation and international migration*. *Demography*, 26, 1–14.

Stewart, F. (1995), *Basic Needs, Capabilities and Human Development*. *Greek Economic Review* vol 17 n 2: 83-96.

Stewart, F. (2001), *Book Review: Women and Human Development: The Capabilities Approach*. by Martha Nussbaum *Journal of International Development* vol 13, 1191-92.

Taylor, J. E. (1999), *The New Economics of Labour Migration and the Role of Remittances*, *International Migration* 37, no.1: 63–86.

Taylor, J. E., Mora, J., Adams, R. and Feldman, L. (2005), *Remittances, Inequality and Poverty: Evidence from Rural Mexico*. ARE WP, No. 05-003.

Tevera, D. and Crush, J. (2003), *The New Brain Drain from Zimbabwe*. Southern African Migration Project Migration Policy Series No. 29.

Todaro, M. P. (1969), *A Model of Labor Migration and Urban Unemployment in Less Developed Countries*. *American Economic Review* 59 (1): 138–48.

The World Bank, (2006), *Global Economic Prospects: Economic Implications of Remittances and Migration*. Washington, DC: The International Bank for Reconstruction and Development / The World Bank, 2006.

The World Bank, (2005), *World Development Indicators* (Washington, DC: The World Bank, 2005), Section 6.1

UNCTAD, (2007). *The Least Developed Countries: Knowledge, Technological Learning and Innovation for Development*. Geneva: UNCTAD.

UNDP (2008), *Comprehensive Economic Recovery in Zimbabwe: A Discussion Document*, United Nations Development Programme, Harare

UNDP (2009), *Human Development Report 2009 – Overcoming barriers: Human mobility and development*, United Nations, New York.

UNDP (2010), *The Potential Contribution of the Zimbabwe Diaspora to Economic Recovery*, Working Paper No. 11 of the Comprehensive Economic Recovery in Zimbabwe Working paper series, UNDP, Harare.

Weil, D. N. (2005), *Accounting for the Effect of Health on Economic Growth*, NBER Working Papers 11455, National Bureau of Economic Research, Inc.

Wimaladharma, J., Pearce, D. and Stanton, A. (2004), *Remittances: the New Development Finance?* Small Enterprise Development 15: 12-19.

Wooldridge, J. M. (2003), *Introductory Econometrics: A Modern Approach*, 2nd edition, Thomson South-Western, Mason, OH.

Yanikkaya, H. (2003), *Trade Openness and Economic Growth: A Cross-Country Empirical Investigation*. Journal of Development Economics 72 (1): 57–89

Zellner, A. (1979), *Statistical Analysis of Econometric Models*. Journal of the American Statistical Association, 74, pp. 628– 643.

Zellner, A. and Theil, H. (1962), *Three Stage Least Squares: Simultaneous Estimation of Simultaneous Equations*. Econometrica, 30, 1962, pp. 63–68.

Zimbabwe, Central Statistical Office. Various issues. *Quarterly Digest of Statistics*. Harare.

Zimbabwe Millennium Development Goals 2004 progress report, Government of Zimbabwe

Zimbabwe Vulnerability Assessment Committee. (2009), available at www.zimreliefinfor/file/attachments