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## The World Bank and development: Measuring the effectiveness of lending programs in Sub-Saharan Africa

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THE WORLD BANK AND DEVELOPMENT: MEASURING THE EFFECTIVENESS  
OF LENDING PROGRAMS IN SUB-SAHARAN AFRICA

by

Tina F. Mueller

Bachelor of Arts  
University of Nevada, Las Vegas  
2001

A thesis submitted in partial fulfillment  
of the requirements for the

**Master of Arts Degree in Political Science**  
**Political Science Department**  
**College of Liberal Arts**

**Graduate College**  
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## Thesis Approval

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## ABSTRACT

### **The World Bank and Development: Measuring the Effectiveness of Lending in Sub-Saharan Africa**

by

Tina F. Mueller

Dr. Jonathan R. Strand, Examination Committee Chair  
Assistant Professor of Political Science  
University of Nevada, Las Vegas

This study tests the assumption that borrowing from the World Bank, specifically the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA), promotes economic development. The focus of this study is the poorest region in the world today, Sub-Saharan Africa, for the 25 year time period of 1974-1999. Other hypothesized influences on wealth include human capital, debt, aid, foreign direct investment, savings, regime, and population. Two models include 36 countries in the data set and estimate the coefficients using generalized least squares regression. Two additional models use a data set that is complete for 27 countries and estimate the coefficients with Prais-Winsten regression using panel-corrected standard errors. The results suggest there is not a significant impact of World Bank lending on a country's level of wealth. The implications of this research deal with the effectiveness of development policies of international institutions in this region.

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## CHAPTER 1

### INTRODUCTION

The economic liberal approach to development recognizes the importance of the role of the international community in domestic economic development. Several international institutions established with economic liberal principles have the designated purpose of reducing poverty and increasing economic development in developing countries. Many of these institutions were created in the 1940s and there have been numerous attempts to evaluate their effectiveness in achieving their mandates.

This thesis explains economic development by taking a closer look at the role of the World Bank, in particular the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA). Admittedly, the World Bank and related International Financial Institutions have experienced their fair share of critiques along the way. Many of these critiques focus on the Bank's sister institution, the International Monetary Fund (IMF) (Vreeland 2003, Krueger 2000, and Bradshaw and Wahl 1991). An assumption of the mandate of the World Bank is that borrowing from the Bank will have a positive effect on national wealth.

This study aims to test this core assumption in the region that has experienced the slowest growth and some of the bleakest economic conditions, Sub-Saharan Africa. The focus is on this region for a 25 year time period of 1974-1999. Sub-Saharan Africa as a region and Africa as a continent are treated in many studies on growth and development

as outliers, exceptions to the norm. Given the economic conditions in this region this is disturbing. While the treatment of this region as an exception is certainly justifiable it only serves to highlight the need for continued research on explanations for slow growth and development in Africa. The second chapter identifies key literature on growth and development. A brief history is presented including identification and critiques of economic growth models.

The third chapter identifies literature focusing on development in Africa. Conditions in Africa are also discussed, offering support for the focus of this research on development in Sub-Saharan Africa. The fourth chapter focuses on the history of World Bank. This chapter includes an analysis of lending in Africa and also identifies the types of development loans that have been made. The non-lending efforts of the Bank that promote development in Africa are briefly discussed.

The fifth chapter presents the research design and identifies the dependent variable of level of wealth defined as gross domestic product per capita (GDP/capita). The main independent variable is total lending from the IBRD and IDA. The other independent variables included are human capital, debt, official development assistance and aid, foreign direct investment, domestic savings, regime type, and population. The research analysis and conclusion are presented in the sixth and seventh chapters, respectively.

Four models are tested in this research; two consider the effects of population using per capita measures of the five independent variables reported in total dollars and two simply use the measures using total dollar figures. The first and second models include 36 out of the 46 Sub-Saharan African countries in the data set and estimate the coefficients using generalized least squares, correcting for heteroskedasticity and

autocorrelation. The third and fourth models use a data set that is complete for 27 Sub-Saharan African countries. Prais-Winsten regression using panel-corrected standard errors is used to estimate the coefficients.

The results discussed in chapter six suggest there is not a significant impact of borrowing from the IBRD and IDA on a country's level of wealth; the relationship is found to be negative in two of the four models tested. The implications of this research deal with the effectiveness of international institutions and their development policies in this region and will be further discussed in the concluding chapter. The limitations of this research will also be identified in the final chapter.

## CHAPTER 2

### DEVELOPMENT LITERATURE

An emphasis on or understanding of economic development began with the recognition of the market economy. Growth, as explained by Adam Smith, was a phenomenon that would occur with relative ease and require little state intervention. While this liberal theory enjoyed a long reign in economic thought, according to Landes (1990) the “seeds of pessimism” began with Malthus and Ricardo and discussions of limits and restraints on the invisible hand. The industrial revolution, specifically new technologies and production methods, led to a modification of the international division of labor.

These changes led to the development of Marxist-oriented views regarding the global distribution of wealth, identifying the developing world as victims of exploitation by the capitalist states. This line of thinking presented a solution to stagnant growth in these exploited countries; simply eliminate imperialism and allow the former colonies to develop. These countries, this theory posits, would then follow in the footsteps of the West. However, as we look back over the last half century it is evident that in most former colonies poverty and under-development continued unabated. The question of why these countries have failed to realize high standards of living continues to stump economists as they seek to explain the variances in growth in the Less Developed Countries (LDCs) today.

In the mid-twentieth century, policies were promoted based on growth models designed for the LDCs with the expectation of quick growth, incorporating the idea that developing later in time has advantage. This assumes there is some kind of development learning curve that the LDCs could benefit from by learning from the mistakes and successes in the development paths taken by the countries which industrialized early (Landes 1990). The assumption of a “catch up” advantage is flawed for two important reasons. What is perhaps forgotten in this line of thinking is that among many other factors, the international context today is far removed from the international context of Western development. The world today is characterized by bilateral and multilateral trade agreements, international institutions (governmental and non-governmental), military alliances, various types of treaties, ethnic conflicts that transcend national borders, and global awareness of issues such as HIV/AIDS. There is greater competition in global markets for goods and services than in the past, directly affecting LDCs. Greater global concerns for human rights and the environment in particular also affect LDCs. These issues were of little concern to developed countries during their industrialization.

A second problem is found in the reliability of the models liberal economic policies were based upon. William Easterly (2002) finds several problems with the economic growth models (such as Solow and Harrod-Domar’s growth models) used as tools in determining the amount of savings, investment and/or aid required to stimulate growth. Pointing out the failures of other policies based on endogenous growth models, Easterly systematically looks at previous liberal approaches to growth and finds little validity to the theories behind them. The financing gap approach, favored by many in the early

years of post-WWII growth policy focused on investing aid for capital. Capital first meant machines, and then later was extended to refer to education as human capital. Machinery and technology at first were thought to be the answer for growth; increasing machinery and improving technology would lead to increases in output, which translates into growth. As Easterly points out, this assumption relied heavily on the idea that increased technology automatically translates into increased efficiency and output. Sir Arthur Lewis proposed this idea, forgetting that the technology alone would not lead to increased output; properly trained people to operate this new machinery were still required.

The Harrod-Domar model also bases growth on a similar idea, however, one of the authors of this model himself admitted later this theory was not applicable to developing countries. The idea behind this growth model seems rather simple, fill the gap between current savings and investment and the levels deemed essential to stimulate growth and economic development would occur as a result. However, increases in savings and investment do not automatically translate into growth. The missing piece of this growth model, whether it is capital in terms of machinery or technology or human capital, is that growth is more complex and not easily created by simple increases in money flowing to a country. Actual growth failed to meet the predictions from this and similar models.

#### Alternative Explanations for Slow Growth in Africa

According to Easterly, many policy prescriptions aimed toward increasing growth have failed. The natural question to ask is, why? Collier and Gunning (1999) identify



different explanations of the lack of growth in Africa. Their explanations focus on the combination of four different dimensions: domestic, external, policy, and destiny.

The domestic-destiny explanation considers domestic factors that characterize African countries. The geography and demographics of Africa are possible explanations of slow growth. People in the tropics are more exposed to diseases such as malaria that encumber overall public health. The HIV/AIDS crisis in the continent also affects demographics: many countries plagued by HIV/AIDS have seen a decline in life expectancy. For instance, the Democratic Republic of Congo experienced a 6 year decline in life expectancy from 1992-2002, The Ivory Coast experienced a similar drop of 6 years from 1987-2002, Ghana experienced a 6 year decline in just 5 years from 1997-2002. People born in Malawi in 2002 can expect to only live 37 years. The current life expectancy rate for the region as a whole is just 46 years. Since 1960, while all other regions of the world experienced steady increases in life expectancy, Sub-Saharan Africa saw a slight gain in life expectancy that peaked about 1992, when the devastating impact of HIV/AIDS on the region began to take effect.

The World Bank recognizes “Africa remains by far the region worst affected by the AIDS epidemic. The region has just over 10 percent of the world’s population, but is home to two-thirds of all people living with HIV” (UNAIDS 2004, <http://www.unaids.org/Unaid/EN/Geographpical+area/By+Region/Sub-Saharan+Africa.asp>). The global efforts to address this threatening disease are focusing on Africa as a result. The World Bank launched its Multi-Country HIV/AIDS Program for Africa (MAP) as a part of these efforts and as of July 2004 29 states, in cooperation with NGO’s and private sector organizations, have received \$1088.2 million dollars for

the purpose of increasing access to prevention, care, and treatment programs.

Nevertheless, the devastating effects have already taken place and cannot be overcome easily.

Table1: Impact of HIV/AIDS on Life Expectancy (at birth)

Region	1960	1970	1980	1990	1992	1995	1997	2000	2002
East Asia & Pacific*	38.81	59.05	64.34	67.18	67.51	68.00	68.33	68.99	69.43
Europe & Central Asia*	-	-	67.68	69.32	68.87	67.80	68.62	68.45	68.60
High Income: OECD	69.02	70.93	73.83	76.01	76.38	76.75	77.28	77.96	78.26
Latin America & Caribbean*	56.27	60.40	64.56	67.88	68.45	69.18	69.67	70.30	70.72
Middle East & North Africa*	46.90	52.29	58.08	64.27	64.97	66.07	66.80	67.86	68.58
South Asia*	43.88	48.85	53.60	58.49	59.46	60.77	61.63	62.44	62.98
Sub-Saharan Africa	40.22	44.18	47.63	49.96	49.99	49.21	48.61	46.54	45.84

\* Excludes high income countries, South Asia and Sub-Saharan Africa do not have any high income countries

Source: World Development Indicators, 2003

Low population density is also seen by Collier and Gunning (1999) as a factor of slow growth. Low population density leads to increased costs for transportation, a major obstacle for this region. Table 2 shows that Sub-Saharan Africa has similar population densities to Latin America and the Caribbean and the Middle East and North Africa. It should also be pointed out OECD countries also have lower population densities. These countries may have simply overcome this potential growth obstacle, however the more likely explanation is these countries began their growth processes long before the late

1960s and the population densities at that time were different than today due to the expansion of borders and phenomenal increases in population.

Domestic geography is also a factor under this explanation due to the hostile conditions in the tropics for agriculture and livestock. Precipitation patterns can also worsen conditions.

Table 2: Population Density by Region (people per square kilometer)

Region	1965	1970	1975	1980	1985	1990	1995	2000
East Asia & Pacific*	62	70	79	86	92	101	108	114
Europe & Central Asia*	216	228	241	253	265	277	20	20
High income: OECD	23	24	25	26	27	28	29	30
Latin America & Caribbean*	12	14	16	18	20	22	24	25
Middle East & North Africa*	10	12	13	16	18	21	24	27
South Asia*	132	149	168	188	210	234	258	283
Sub-Saharan Africa	11	13	15	17	20	23	25	28

\* Excludes high income countries, South Asia and Sub-Saharan Africa do not have any high income countries

Source: World Development Indicators, 2003

The external-destiny explanation relies partially on the fact that many Africans are land-locked. That most Africans live away from the coast also exacerbates the high transportation costs associated with low density population. Low population density only adds to the already high transportation costs. The small size of countries creates an additional political barrier to movement within the continent. Not only do state borders present an obstacle to transcontinental travel, but other borders exist within this region as well. For example, Angola's population is a mix of three major tribes among other categories that include 22 percent "other." The official language is Portuguese, but several African languages are spoken in this country. Forty-seven percent have

indigenous beliefs. The country that borders Angola to the South, Namibia, is made up of 50 Ovambo tribes, with 8 other tribes comprising an overall tribal population of 87 percent of the total population. The official language is English, however Afrikaans is most commonly spoken. The country that borders Angola to the East, the Democratic Republic of Congo, has a majority of Bantu people, with 200 other ethnic groups represented. French is the official language, while there are 4 other spoken African languages (CIA 2004). Virtually every country in this region differs from each other as far as ethnic groups, languages spoken, and religious beliefs. Each group besides the state itself has its own set of institutions that govern rules, norms, and practices of transportation to and through these geographical areas. This is only compounded by the fact there are often domestic, civil and interstate conflicts that create additional barriers to transportation and, hence, limits trade and other economic activity. Government opposition groups, as well as the regime in place also can adversely affect transportation; a military regime or rebel group can easily levy its own set of “taxes” on cargo throughout the country. The narrow range of commodities available for export is also included in the external-destiny explanation.

Other external factors, under this explanation, that can explain slow growth in African stem from dependency theory. Until the mid 1900s, most African countries were colonies, making them subject to the exploitation of the developed countries. Simply put, the relationship between the former colonies and former colonial powers has permanently affected the ability for newly freed colonies to start their own growth paths. The exploitation of natural resources and labor forces that occurred during colonialism informally exist today regardless the colonial ties were officially severed decades ago.

Following this line of thought, former colonies are destined to continue under these uneven economic relationships. Lenin focused on the relationship between the richer developed countries and the LDCs, explaining the uneven economic relationship as a result of the spread of capitalism. Developed countries would exhaust their own resources and reach the maximum profit levels they could under their current economic conditions. As a result, they would quickly expand beyond their domestic borders looking to increase profits by exploiting the various resources of the LDCs.

Johan Galtung (1971) refers to the existence of two types of countries, center<sup>1</sup> and periphery. This international structure contributes to continued dependence for LDCs. The same center and peripheral groups exist simultaneously within each type of country and continued dependence stems from transactions between the centers of both types of countries. The interests of both “centers” are the overriding concern in such transactions and often the periphery groups in LDCs suffer as a result. Inequalities among countries are tied to the existence of this embedded structure and therefore are likely to continue.

Samir Amin (1977) claims that imports to the core countries from the periphery have declined due to “unequal exchange” and “unequal development” and this contributes to the marginalization of LDCs (223). He also asserts that the imperialist framework under which capitalism spreads has caused a shift in LDCs from an exploitation of the center to that of the periphery.

While relying on dependency theories stemming from Marx and Lenin, such as Galtung’s and Amin’s, to fully explain the lag of economic development is no longer considered sufficient, it is difficult to deny the legacy of colonialism and neocolonialism. Most African countries have only experienced independence for 50-60 years, and to some

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<sup>1</sup> “Center” countries are also referred to as “core” countries.

extent there is still evidence of the influence of former colonial powers in languages, customs, among many other things.

The domestic-policy explanation focuses on regime type and actions of the African governments. Simply put, African governments have lagged behind other developing regions in implementing democratic institutions. Collier and Gunning explain that their focus on expanding the public sector coupled with lack of democratic values has led to poor public services in spite of high expenditures (Pradhan 1996). Government actions that affect the region include entering price control regimes, banning trade across certain zones, and regulating financial markets. Regime type directly impacts the form of regulatory behavior and rent-seeking that will be pursued. Regimes acting in their individual interests will seek rents in order to line their own pockets with money, while the population suffers. Evidence of this can be seen in Equatorial Guinea. The current dictator, Teodoro Obiang Nguema, is suspected of siphoning funds for personal gain to the Riggs Bank in Washington. Those funds are the profits from oil in Equatorial Guinea. While there is an ongoing SEC investigation at this time into the dealings of the Riggs Bank (Day 2004), the accusation paints a clear picture of how a repressive dictator can manipulate the economy of the country to serve his or her own interests. If Equatorial Guinea were under a regime with some level of democratic institutions recent oil profits conceivably could benefit the population as a whole, and perhaps serve as a catalyst for economic development.

External-policy explanations for slow growth focus also on policies, but policies that come from outside the region. High levels of debt, trade restrictions, and overvaluation of currencies are some of the policy problems included in this explanation. Efforts are

being made by the World Bank to address some of these problems, as will be discussed later.

Collier and Gunning touch on an issue that a few others have also considered, is Africa destined for slow growth? Masters and McMillan (2001) find that the predetermined characteristics of Africa, such as climate, to some extent matter. Over ninety percent of Sub-Saharan Africa lies in between the Tropics of Cancer and Capricorn. If climate matters for growth it would certainly matter for this region in particular. This fact alone serves as justification for looking further into this explanation of slow growth; especially when considering how slow growth has been since 1960. Countries with more temperate climates over time have enjoyed the benefits associated with seasonal frosts, whereas tropical climates were unable to rely on nature for agriculture and health. Capital, they suggest, in the past was more readily produced in such climates. Africa and other tropical regions lack seasonal frosts, and therefore must rely on specialization and trade for growth. The conclusion is there simply may be more obstacles in the growth process for tropical regions such as Africa simply because of climate. Lest one dismiss them for geographic determinism, Masters and McMillan offer a suggestion that research and policy could be adjusted to account for the climate and biophysical constraints of tropical climates in order to facilitate growth.

Bloom and Sachs (1998) also discuss the problems for Africa that stem from demographics and geography. While they mention a few successful cases of tropical countries experiencing growth, their earlier study concurs with Masters and McMillan (2001) in stating growth in this climate comes from manufacturing and services rather than agriculture. The transition from agriculture to manufacturing is one necessary

component of growth as we have seen through the experiences of Hong Kong, Singapore, and Mauritius. Bloom and Sachs (1998) are careful to recognize the danger in this line of thinking, and remind us that geography is only one factor to consider in assessing the lack of growth in Africa and other tropical regions. However, they agree with Landes (1998) that geography is an important factor for growth. Many cross country growth studies include variables to account for geographical constraints, such tropical conditions, and coastal features (Barro 1991; Bloom and Sachs 1998). Geography may contribute to the slow growth in Africa, but it is certainly not the only factor to consider. Considering and evaluating the factors considered under each of the four explanations may help to bring about change in economic policy that could potentially impact growth.

The recent attention given to possible explanations of slow growth in Africa are largely in response to the conditions in this region. Many countries in Sub-Saharan Africa suffer from a host of social and economic conditions that in many cases have worsened over the last half decade. The following chapter describes conditions in this region and underscores the importance of focusing on development in Sub-Saharan Africa.



## CHAPTER 3

### THE AFRICAN CONTEXT

#### Conditions in Sub-Saharan Africa

The fact is as we embark on the 21<sup>st</sup> century, Sub-Saharan Africa is still plagued by some of the worst economic conditions in the world. A large percentage of the population in Sub-Saharan Africa lives on less than two dollars a day, and almost half lives on less than one dollar a day. These figures alone depict the gross disparity in income between LDCs and high income countries, yet even more alarming is the fact that incomes between rich and poor countries have diverged over the last decade. More people in the year 2001 live on less than \$1/day than in 1990, and the same trend can be seen with those living on less than \$2/day. This single statistic reveals the drastic difference in living conditions between the developed world and the LDCs.

While the percentage of people living on less than \$1/day has decreased in the last full decade in East Asia & the Pacific, Latin America & Caribbean, and South Asia, three regions have experienced increases, as displayed in table 3. Europe & Central Asia, Middle East & North Africa, and Sub-Saharan Africa have experienced increases of 3.2 percent, 0.1 percent, and 1.9 percent respectively. Table 4 reveals that these same regions also experienced increases of population living on less than \$2/day, typifying the trend that many people are worse off today than in the recent past. The increases are especially daunting when you consider that in Sub-Saharan Africa in 1990, over 44 percent of the population lived on less than \$1/day and over 76 percent of the population

lived on less than \$2/day. In 2001, over 46 percent of the population lived on less than \$1/day and 78 percent of the population lived on less than \$2/day. While South Asia has a greater percentage living on less than \$2/day, Sub-Saharan Africa has the greatest percentage of people of any other region in the world living on less than \$1/day.

Table 3: Percentage of People Living on less than \$1/day by Region

Region	1990	1993	1996	1999	2001
East Asia & Pacific*	29.6	25	16.6	15.7	15.6
Europe & Central Asia*	0.5	3.7	4.2	6.2	3.7
Latin America & Caribbean*	11.3	11.3	10.7	10.5	9.5
Middle East & North Africa*	2.3	1.6	2	2.6	2.4
South Asia	41.3	40.1	35.1	34	31.1
<b>Sub-Saharan Africa</b>	<b>44.6</b>	<b>43.7</b>	<b>45.3</b>	<b>45.4</b>	<b>46.5</b>

\* Excludes high income countries, South Asia and Sub-Saharan Africa do not have any high income countries

Source: World Development Indicators, 2003

Table 4: Percentage of People Living on less than \$2/day by Region

Region	1990	1998
East Asia & Pacific*	66.1	48.7
Europe & Central Asia*	9.6	20.7
Latin America & Caribbean*	38.1	31.7
Middle East & North Africa*	24.8	29.9
South Asia	86.8	83.9
<b>Sub-Saharan Africa</b>	<b>76.4</b>	<b>78</b>

\* Excludes high income countries, South Asia and Sub-Saharan Africa do not have any high income countries

Source: World Development Indicators, 2003

Lack of income is not the only problem plaguing this region. Sen (2000) points out that income alone does not define poverty. Lack of access to healthcare is one of many

other factors contributing to the conditions of Sub-Saharan Africa. The number of hospital beds available for every 1000 people in Sub-Saharan Africa was half that of LDCs in East Asia and the Pacific, and Latin America & the Caribbean (see Table 5). These numbers are very small next to eight or ten beds available in Europe and Central Asia and high income countries as a whole.

Table 5: Hospital Beds per 1000 People by Region

Region	1960	1970	1980	1990
East Asia & Pacific*	-	1.44	2.22	2.28
Europe & Central Asia*	-	-	-	10.13
High income: OECD	9.43	9.56	8.84	8.00
Latin America & Caribbean*	3.43	3.46	-	2.44
Middle East & North Africa*	1.79	1.87	-	1.80
South Asia	0.51	0.58	0.72	0.72
<b>Sub-Saharan Africa</b>	<b>1.42</b>	<b>1.36</b>	<b>-</b>	<b>1.20</b>

\* Excludes high income countries, South Asia and Sub-Saharan Africa do not have any high income countries

Source: World Development Indicators, 2003

The low number of available hospital beds is only one of many indicators of the poor healthcare systems in these countries. Health expenditure per person also reveals the lack of adequate health care for most Africans. As displayed in Table 6, in 2001, South Asia has the lowest dollar amount spent on health per person at \$21.58, while Sub-Saharan Africa follows closely spending only \$29.30 per person. Spending per person rose slightly in most regions in just one year, whereas in Sub-Saharan Africa spending actually decreased by six percent in the same time period. The difference between the LDCs and high income countries is over \$2400.00 per person; the difference between

Sub-Saharan Africa and four out of the five other developing regions is also significant.

This further illustrates how far behind Sub-Saharan Africa is compared to other developing regions.

Table 6: Health Expenditure per capita by Region (current US\$)

Region	2001
East Asia & Pacific*	\$48.34
Europe & Central Asia*	\$123.26
High income	\$2840.99
Latin America & Caribbean*	\$255.37
Middle East & North Africa*	\$166.21
South Asia	\$21.58
Sub-Saharan Africa	\$29.30

\* Excludes high income countries, South Asia and Sub-Saharan Africa do not have any high income countries

Source: World Development Indicators, 2003

High infant mortality rates as well as low life expectancy rates paint a bleak picture of the conditions in this region. As shown in Table 7, while this number has decreased steadily over the past 40 years, it continues to remain significantly higher than every other region in the world.

Table 7: Infant Mortality Rate by Region (per 1000 births)

Region	1960	1970	1980	1990	1995	2000	2002
--------	------	------	------	------	------	------	------

East Asia & Pacific*	134	85	56	43	40	34	32
Europe & Central Asia*			45	37	36	32	31
High income	36	22	12	8	7	6	5
Latin America & Caribbean*	102	86	61	43	36	31	28
Middle East & North Africa*	163	131	94	57	52	46	44
South Asia	147	129	115	88	78	71	68
<b>Sub-Saharan Africa</b>	<b>164</b>	<b>141</b>	<b>116</b>	<b>110</b>	<b>110</b>	<b>104</b>	<b>103</b>

\* Excludes high income countries, South Asia and Sub-Saharan Africa do not have any high income countries

Source: World Development Indicators, 2003

Table 8 identifies growth trends by region for the period 1961-2002. Economic growth in the 1960s was the highest rate- an average of 2.77 percent gdp/capita from 1961-1965- experienced by the Sub-Saharan Africa in the late 20<sup>th</sup> century. Growth continued at a slightly slower rate of 2.39 percent from 1966-1970, however, from that time until today this region has never reached growth close to that rate. On average, negative growth plagued this region for nineteen years from 1976-1995, until slightly positive growth rates were attained in the 1990s and early 2000s. It is evident that growth in Sub-Saharan Africa has been slower than its other regional counterparts, and it has been continually slow. The fluctuations in growth over the last 40 years experienced by other developing regions are not experienced in this region; slow growth is consistent for Sub-Saharan Africa.

While there is evidence of slow growth in Africa, it should be pointed out that the growth rates for Sub-Saharan Africa are not that much lower than the rates for OECD countries. In 2002 for example Sub-Saharan Africa grew at a positive rate of one half percent and the OECD countries also grew at a positive rate of less than 1 percent. There

is a similar difference in growth rates in the early 1970s as well. However comparing rates of growth in the late 20<sup>th</sup> century does not fully illustrate the economic differences between Sub-Saharan Africa and developed countries. A closer look at absolute growth gives a more accurate picture of the differences between the developed world and LDCs.

Table 8: Growth Rates by Region (average % change in GDP/capita)

Region	1961-1965	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2002
East Asia & Pacific*	1.20	3.95	3.86	5.33	5.33	5.80	8.33	4.53	5.77
Europe & Central Asia*	0.00	0.00	0.00	0.00	0.00	-	-5.89	2.52	5.12
High income: OECD	4.27	4.46	2.36	2.83	1.95	3.02	1.25	2.25	.97
Latin America & Caribbean*	2.02	2.95	3.80	2.96	-1.56	-0.06	1.94	1.38	-2.18
Middle East & North Africa*	0.00	0.00		1.50	-1.87	-0.71	0.91	1.54	1.00
South Asia	1.68	2.19	0.14	1.28	3.09	3.59	3.05	3.48	2.57
Sub-Saharan Africa	2.77	2.39	1.83	-0.30	-1.86	-0.39	-1.42	0.68	0.54
World**	3.48	3.33	1.65	2.01	0.83	1.91	0.64	1.76	0.72

\* Excludes high income countries, South Asia and Sub-Saharan Africa do not have any high income countries

\*\* 208 economies included plus Taiwan

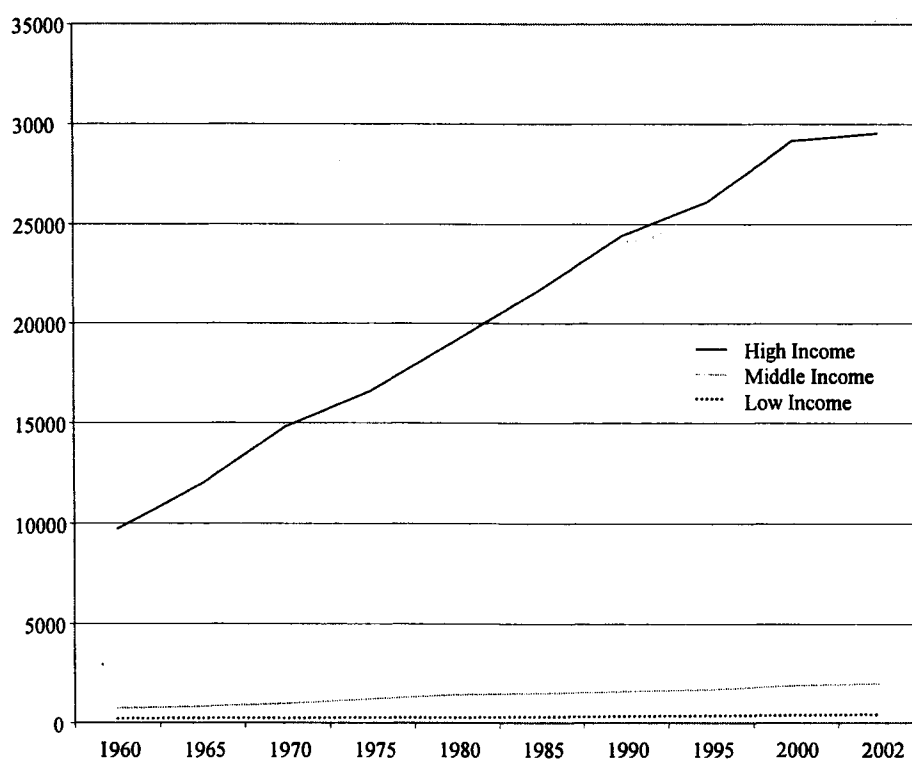
Source: World Development Indicators, 2003

### Economic Convergence or Divergence?

The debate continues in economics today whether countries' economies are diverging or converging, and the question lingers of when or even if the LDCs can ever catch up to the developed world in terms of national wealth. Figure 1 depicts a world in which economies have been diverging rather sharply over the past 40 years. Low income countries have a GDP/capita in 2002 of \$431, showing an increase of approximately \$200

over 22 years. Middle Income countries increased their GDP/capita from \$724 in 1960 to \$1,974 in 2002. High income countries went from \$9,725 GDP/capita in 1960 to \$29,541 in 2002. In 1960 the difference in GDP/capita between the high income countries and low income countries was \$9509 and in 2002 the difference was \$29,110, a 306 percent increase.

**Figure 1: Absolute Growth by Income Region**  
GDP/cap (1995 US\$)



Source: World Development Indicators, 2003. Adapted from Passé-Smith (2003).

These numbers show more than the relative growth rates, but rather they hint at the difference in living conditions for people in low income countries in comparison to those in high income countries. Another fact to consider is there are more people that live in the low income countries in 2002 than in 1960. Table 9 reveals the increases in the

proportion of people that live in low income countries versus those living in high income countries.

Table 9: Proportion of the World's Population by Income Category

Region	1960	1965	1970	1975	1980	1985	1990	1995	2000	2002
High Income	22.48	21.83	20.68	19.67	18.73	17.78	16.89	16.26	15.76	15.59
Middle Income	49.00	48.90	49.50	49.82	49.61	49.47	49.28	48.77	48.1	47.80
Low Income	28.52	29.27	29.81	30.51	31.65	32.75	33.83	34.97	36.14	36.61

Source: World Development Indicators, 2003. Adapted from Passé-Smith (2003)

Approximately eight percent more of the world's population in the year 2002 lived in low income countries than in 1960 and there are approximately seven percent less of the world's population living in high income countries over the course of the same years. Not only are economies apparently diverging, but an increasingly larger proportion of the world's people are living in low income countries many of those in Sub-Saharan Africa.

Incomes of the middle and lower income countries would have to experience extraordinarily sharp growth rates within short periods of time, reversing the divergence trend we see in the GDP/capita of the three income regions for these LDCs to ever catch up to the developed world's economies.

The convergence/divergence debate has been addressed by many economists with varying results. William J. Baumol (1986) recognizes a "remarkable" economic convergence of industrialized nations but also notes that "only the poorer less developed countries show no such trend" (1073). The term "convergence club" is used suggesting membership is limited. Convergence is not a single phenomenon for all the countries in



the world, rather a trend that fits the pattern of a particular category of similar countries each forming their own “club.” Baumol (1986) suggests the search for explanations of the exclusion of LDCs from the convergence trend would prove fruitless. Convergence as a global trend seemingly applies to all countries regardless of actual wealth as it refers to growth rates, however in light of consideration of “convergence clubs” the trend seems restricted to the developed world.

J. Bradford de Long (1988) recognizes this flaw in convergence supporters’ analyses, in particular that of Baumol (1986). He finds, using the same data dating back to 1870 but including countries that were in position to converge that there is no global economic convergence. Selection bias is a problem not just for Baumol but for many economists analyzing economic convergence (Boyer 1996); often nations that are currently considered as being developed are chosen. De Long (1988) further suggests that democratized industrial countries may be the only members of any “convergence” club.

The evidence in figure 1 and table 9 support a lack of global economic convergence when considering LDCs in addition to developed countries. While the goal of this study is not to determine if the economic convergence trend does describe the economic history of countries in Sub-Sahara Africa, it is important to note the apparent lack of convergence of LDCs with more developed countries. This brief discussion of economic convergence serves to further support the need to address the issue of lack of development in Sub-Saharan Africa, as it is a region comprised mainly of LDCs.

Both the severe conditions in Sub-Saharan Africa and the lack of absolute economic convergence in the last half decade support the focus of this research on development in this region. Conditions have not improved during most of the 20<sup>th</sup> century and prospects

for future improvements seem bleak. Chapter two addresses the question of why this region is slow to develop, and chapter three emphasizes an immediate need for continued research. The following chapter presents the history of World Bank lending with a focus on Sub-Saharan Africa. The assumption tested in this research is that World Bank lending has a positive effect on development. In order to frame the data analysis, chapter four first provides a narrative account of lending efforts aimed toward promoting development in this region.

## CHAPTER 4

### HISTORY OF WORLD BANK LENDING IN AFRICA

The focus of this chapter is a narrative description of the history of World Bank lending in Africa. Early lending practices as well as the process in establishing an additional institution will be discussed in the context of focusing on this continent. The International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA) serve as the primary institutions for analysis.

Slow growth and lagging development are issues that have been grappled with throughout the past 60 years by the Bretton Woods institutions. In part through efforts of United Nations (UN) agencies and other forms of collective action, there is a heightened global concern of the causes and consequences of slow growth and poverty. The consequences have become glaringly obvious as we look at the differences not only in gross domestic product per capita (GDP/capita), but also factors such as education and health of the people in Less Developed Countries (LDCs). The World Bank has been one of the international institutions making efforts to encourage growth and development in LDCs. Specifically, the IBRD and the IDA are interested in promoting development and growth in LDCs, with the Sub-Saharan African countries making up a large portion of this group. Currently with 184 collective members and combined cumulative lending in 2003 of \$525 billion, the IBRD and IDA have the capacity to achieve this mandate.

#### Early IBRD Lending

The World Bank as it is known today began with the IBRD when it opened for operations on June 25, 1946. IBRD lending consists of traditional hard loans, with maturity dates less than 20 years and with a 3-5 year grace period. According the Bank lending decisions are made only on economic considerations and, ostensibly, the use of loans cannot be restricted to use by any specific member country. Loans must be made to or guaranteed by a member country.

The IBRD's primary focus on reconstruction reflected that at that time "requirements of European reconstruction were urgent, visible, and basic to the establishment of a functioning world economy" (Mason and Asher 1973, 52). The first four loans were made for reconstruction projects: \$250 million in 1947 guaranteed by the French government, \$195 million to the Netherlands, \$40 million to Denmark, and \$12 million to Luxembourg. However, the United States through the Marshall Plan, soon took over the bulk of reconstruction funding for Europe and the Bank began focusing on development lending.

The first development loan of \$16 million was made in 1948 to Chile for two projects, hydroelectric equipment and the production of agricultural machinery. This marked the first of many loans that were granted in amounts far less than what original applications requested. The pattern of early development lending and the application approval process proved the World Bank to be fairly conservative in its practices.

Examples of the Bank's early conservatism abound. An application from Chile for the first development loan requested \$40 million, and while it received \$16 million in lending it came with strings attached. This set the precedent for the Bank to send "operational missions," as it did in Colombia, to choose projects worthy of lending, to set up offices

verify information from country reports, such as it did in Chile, and, as in India, to appoint people to supervise lending projects. Colombia's application in 1948 for \$78 million was considered and it was granted \$5 million for their first development projects. It was becoming clear through the practices of the Bank a proposed project had to be deemed necessary and or viable to be considered for lending. In fact, the "scarcity of prepared projects is one reason for low level lending in African countries" (Mason and Asher 1973, 194). As we will see, this was not the only explanation for low level lending to African states.

It had become apparent by the 1950s the Bank was not going to fund just any project nor would it let the project out of their hands completely once the loan money was disbursed. The Bank was also not just going to lend to any country either. Among considerations by the Bank were such issues as what projects were deemed worthy of lending, there was also a trend forming in which the Bank would be fairly conservative in whom it would choose to lend money. The concepts of creditworthiness and ability to repay loans stood in the way for many LDCs that were newly independent and could not meet requirements set by the Bank. Countries in Sub-Saharan Africa and other regions had little or no creditworthiness and could not show positive payment history on previous loans as they had not yet been approved for any or did not have a great track record in managing domestic finances. In the early days the Bank was able to provide lending for development projects but unable to provide these loans to the LDCs that perhaps needed them the most, many of those being in Sub-Saharan Africa.

The first African country to receive lending was Ethiopia. The first two projects approved for lending in 1950 were for the rehabilitation of the road system in the amount

of \$5 million and foreign exchange for a Development Bank in the amount of \$2 million. The following year a third project, \$1.5 million for rehabilitation and extension of telephone and telegraph systems, was approved. A few years into Bank operations in mid 1951 total lending had been approved for seventeen countries, including six European countries. South Africa raised the number of African lending recipients in 1951 to a total of two, entering a loan agreement for two projects on January 23rd. The first loan was approved for the Electricity Supply Commission, South Africa the guarantor, for electrical power development in the amount of \$30 million, the second for the expansion of transport facilities in the amount of \$20 million. South Africa entered into a few more loan agreements during the mid 1950s for the same projects, expansion of transport facilities and electrical power development. Ethiopia received a loan for the importation of equipment to two vegetable crushing plants during this same time period. By June 30, 1957 Ethiopia's total lending agreements had reaching almost \$8 million and South Africa had entered into agreements totaling almost \$94 million. The bigger picture, however, shows that lending to African countries was only 4.1 percent of total lending. The five largest borrowers at this time, in order, were Australia, France, India, Brazil, and Italy. The United Kingdom was seven on this list approved for \$118.8 million in lending projects.

It was not until late 1958 that a third African country, Sudan, entered into a lending agreement with the IBRD. Sudan was approved for \$39 million for a railways and water transport project and in the next two years a total of \$35 million for two irrigation projects. By June 30, 1961 the three African countries had signed agreements for a total of \$170 million in principal loan amounts. The IBRD had approved a total amount of

almost \$4 billion, and the percent of this lending approved for projects in African countries rose by only 0.1 percent to 4.3 percent. It was this same year the IDA began granting credits to LDCs unable to secure lending from the IBRD.

The IBRD through lending had clearly made efforts to assist countries with development. However these loans were traditional “hard” loans that the LDCs in most need of development assistance were unable to qualify for under current loan requirements. The newly independent African states without formal ties to colonial powers were in dire need of development assistance. Unfortunately it was clear at this time the Bank was not going to lend on a large scale to African countries at perhaps the most crucial point in their development timeline.

#### New Era for the World Bank: IDA Lending

The need for “softer” loans, lower interest loans with longer grace periods, was becoming apparent as countries were denied traditional “hard” loans due to either sub-standard quality of proposed projects, a lack of creditworthiness, or both. The original idea behind another entity other than the IBRD filling this much needed role in development originated as early as 1948 with a proposal by the Economic and Social Council for a United Nations Economic Development Administration (UNEDA). An International Development Authority was also proposed as an option by the United States’ International Development Advisory Board. The IDA did not officially come to fruition until the late 1950s however, with the introduction of a U.S. Senate resolution in March 1958. Senator A.S. Mike Montgomery (D-Oklahoma) was the author of the resolution that called for an agency that would not only offer soft loans with lower

interest rates and longer repayment options but would also give the United States a place to transfer foreign currencies held from surplus agricultural commodities (Weaver 1965). The IDA opened its doors on November 8, 1960 and began operations by offering an alternative to countries denied IBRD lending for the purpose of development.

The term “credits” is used for the resources granted by the IDA. Recipients must meet certain criteria to be eligible to receive IDA credits; eligible recipients of the loans and extended credit must be countries. This differs from IBRD policy in which a country is the recipient of lending, however credit is granted to any entity so long as the recipient country is also the loan guarantor. IDA credits are considered to be soft loans, with 10 year grace periods, longer maturity terms of 35 to 50 years, and zero interest, although there is a small annual service fee attached to the loans. As of 2004, three criteria are used to determine if a country is eligible to receive IDA credits. The first criterion is that a country must be below a “poverty” line to qualify for credits. Poverty is defined as having a gross national product per capita falling under \$875 (current US\$). The second is that a country must have a lack of creditworthiness to borrow on market terms. Eligible countries must be unable to borrow at market terms from other banking institutions. The third criterion is a country must have a good policy performance. Poverty is given considerable weight, and each year a country’s policy performance is evaluated based on 20 criteria. Countries are rated and ranked based largely on these 20 criteria in order to determine level of policy performance. The ratings currently fall under four clusters: economic management, structural policies, policies for social inclusion/equity, and public sector management and institutions (World Bank 2004a).



The most recent change was in 1998 when the performance criteria were extended to include institutions in addition to government policies. A governance factor is also included in determining a country's performance rating. Creditworthiness is taken into account for "blend" countries, many of those being in Sub-Saharan Africa. A country that is considered creditworthy for IBRD lending and also eligible for IDA credits must be evaluated to determine how effective each type of resources will be in reducing poverty. Sub-Saharan African countries at the current time also have priority in the allocation process. These three criteria are used to determine which countries receive certain amounts of IDA credits on a three year rolling basis. The process the IDA utilizes to determine how to allocate resources is called the Performance-Based Allocation (PBA) system. The process itself is evaluated, and it has certainly evolved since the IDA began operations in 1960 reflecting current trends in research from both within the Bank as well as outside, in addition to current needs of recipient countries. As of the current year, 81 countries are considered eligible for IDA credits.

Ghana, in February 1962, became the fourth African country to receive IBRD lending as the guarantor for a Volta River Authority power project. It was around this same time the IDA began allocating its resources, granting a total of approximately \$583 million in credits, with \$45 million designated for African countries. It seems the IDA was quickly filling the need for more lending to these LDCs unable to meet IBRD standards. By 1965, IBRD lending had reached 10 African countries, 8 of those in Sub-Saharan Africa. Total African lending was \$390 million, making up approximately 7.1 percent of total IBRD lending of \$5.5 billion, an increase from the 4.3 percent four years prior. The IDA this same year allocated a total of \$995 million, with seven African

countries receiving \$55 million. By this year there were three African blend countries: Ethiopia receiving \$42.9 million from the IBRD and \$13.5 million from the IDA, Nigeria receiving \$121.3 million from the IBRD and \$35.5 million (not yet effective at the date of the report) from the IDA, and Sudan receiving \$65.6 million from the IBRD and \$8.5 million from the IDA.

In comparison to other developing regions, Africa was still behind in gaining resources from both the IBRD and IDA. In 1966 African countries signed 10 IBRD loan agreements for a total of \$141 million, and were allocated 5 IDA credits totaling \$28.4 million. This represents 15 percent of total IBRD and IDA lending, and reflected a steady increase of total Bank funding to this region. While Central and South America were granted the same number of loans, the total dollar amount flowing into that region was \$382.2 million, over twice the amount going to African countries. Asia and the Middle East as a single region was granted a smaller number of loans at thirteen, and received almost three times as many dollars as African countries. By 1970, the total number of African loans and credits reached 45 representing resources of \$443 million, 19 percent of the Bank's total resources. The total number of loans and credits in Asia was the same, however the total dollar amount flowing into Asia was now a little less than double the amount, representing 38 percent of total resources. Another thing to consider is that India, as the country receiving the most total resources, received \$267.5 million, or 31 percent of Asia's share of total Bank resources. Latin America and the Caribbean also had more dollars flowing into the region representing 31 percent of total Bank resources, with fewer loans and credits. However, two of the three largest Bank recipients, Brazil and Mexico represented 38 percent of total resources to that region.

Africa's total resources are much more evenly allocated among countries, showing the need for resources of that region as a whole rather than just for a few select countries. By 1975 the needs of this region were recognized by the Bank, as resources allocated to Africa crept closer to resources allocated to other developing regions. Africa received 18 percent of the total Bank resources, whereas Latin America & the Caribbean received 21 percent, and South Asia received 20 percent.

It is apparent that within total bank lending, IDA lending and IBRD lending in Africa have clearly taken different paths. By 1970, Africa was allocated IDA credits for a total of \$161.2 million, representing 27 percent of total dollars allocated by the IDA that year and almost half the number of total credits. African states entered into loan agreements with the IBRD totaling \$281.7 million, representing only 17 percent of total loan agreements entered by the IBRD that year. The percentage of total dollars lent to Africa in 1975 by the IBRD decreased to 15 percent, whereas the percentage of total IDA dollars allocated to Africa remained at 27 percent. Fifteen years later, by 1990, Africa was allocated over 50 percent of total IDA credits and was granted only 7.5 percent of total dollars in lending from the IBRD.

The proportion of IDA loans of the total lending to Africa is also important to consider. In 1967, the number of loans and credits to Africa increased by 5, and the dollar amount flowing into the region increased by \$27.6 million. However, the number of IDA credits increased from 5 credits to 12 credits, whereas the number of IBRD loans actually decreased. The shift began with the number of loans and credits, but soon was also marked by the dollar amounts the IDA and IBRD lent to African countries. The mix of total allocated resources in dollars within this region was 36 percent IDA credits and 64

percent IBRD loans. The mix in 1975 shifted to 40 percent IDA credits and 60 percent IBRD loans. It was becoming clear that countries in Africa were in increasing need of softer loans as the total dollar amount allocated in IDA credits to Africa surpassed the dollar amount in IBRD loans. By 1990 IDA credits made up 71 percent of total Bank lending to this region. This trend continued to the present decade, in 2002 IDA credits represent over 98.9 percent of total Bank lending in Africa.

While the numbers clearly show the IDA is the main source for African lending, there is an underlying interpretation that reflects Africa's consistent lack of economic development and continuing need for soft loans. While some Sub-Saharan African countries have "graduated" from receiving IDA credits over the years, five out of the seven later returned to the list of recipient countries in the late 1980s to early 1990s. "Graduating" requires that a country no longer meets the three criteria to be eligible for IDA credits. Only nine countries have ever graduated and returned, with Sub-Saharan African countries representing over half that group. Cameroon stopped receiving IDA resources in 1981, retuning to the recipient list in 1994. Nigeria stopped receiving credits from 1965-1989, representing the longest period of "graduation" from IDA credits. Zimbabwe went the shortest period of time without receiving IDA credits, nine years. The two successful graduates in this region are Mauritius and Morocco, both graduating in 1975, represent a small proportion of Sub-Saharan African countries able to graduate from receiving IDA resources; there have been 23 total countries that have graduated (World Bank 2004b).

In fact, five of the top ten IDA borrowers in 2003 are African countries. Three of those countries, Democratic Republic of Congo, Uganda, and Ethiopia are in the top five

IDA borrowers, averaging 421.5 million dollars each. The other two African countries, Tanzania and Nigeria average 240.1 million each for this year (World Bank 2004b). This only further reflects the needs of Sub-Saharan Africa countries for the softer IDA credits, whether it's due to worsening economic status, slow policy performance, or lack of creditworthiness. In short, Africa continues to be in need of resources designated for the poorest countries with some of the worst conditions in the world.

### Lending Project Sectors

The types of projects the Bank lends money for falls under different sectors. The percent of loans falling under each sector has in fact shifted from 1948 to today reflecting the changes in how the Bank defines development in different periods of time. The first development loans were made in the sectors of electrical power development, agricultural machinery, and flood control. Lending for electrical power development projects was very popular with the IBRD, mostly to Mexico, India, and several Latin and South American countries. Other early lending projects varied across other sectors, ranging from development bank financing to irrigation and railway rehabilitation. In the late 1960s lending branches out to include education, communications, engineering, and industry projects. By 1975, lending for projects falling under the agriculture sector made up 31.5 percent of total lending. Lending in the transportation and industry sectors make up the next two largest sectors, 16.8 percent and 13.4 percent respectively. We also see the emergence of new lending sectors, such as tourism, urbanization, and population planning. This reflects the trend of the Bank shifting from lending for rural development

projects such as irrigation and agriculture to more poverty oriented lending, education and health examples of these types of projects (Ayres 1983).

Five years later in 1980, the agriculture sector was surpassed by energy and transportation as the sector of loans that received the most Bank lending. Only 20.4 percent of lending fell under agriculture, and 21.4 percent and 21.7 percent of lending fell under energy and transportation respectively. Other sectors that saw an increase in the percentage of total lending were development bank financing, seeing an increase of 1.5 percent, urbanization, seeing a slight increase of 0.3 percent, and water and sewage, seeing an increase of approximately 2 percent. Additional new sectors by this time included technical assistance, non-project, and small scale enterprise. The Bank was branching out not only in the amount of lending, but also in the sectors in which it chose projects for lending. Non-project lending was also a new endeavor for the Bank during this decade.

During the 1980s, agriculture, energy, and transportation would remain the three sectors for which most lending was granted, but by 1990 non project lending became the third largest sector. Public-sector management was an additional new sector by this year. In 1990, agriculture lending made up 17.7 percent, energy lending was at 16 percent, non-project lending made up 14.7 percent, and transportation lending made up 13.5 percent of total lending. Lending in the population, health, and nutrition sector saw an increase of total lending over these ten years by 3.2 percent and the urban development sector saw an increase of 2.1 percent in this same time period.

By the mid 1990s we see additional sectors of environment, mining/extractive, social sector, multi-sector, and the newly labeled financial sector. The non-project sector is

excluded from the list by this year. The creation of the new multi-sector category does skew sector comparisons across years, as it seems many loans previously assigned to one sector now would be considered multi-sector. Multi-sector lending made up 14 percent of total lending in 1995, becoming that largest. Energy made up 12.6 percent of total lending, followed by agriculture with 11.8 percent, financial with 11.4 percent, and transportation with 9.5 percent. Education became the fifth largest lending sector with 9.5 percent of total lending, an increase from past years.

The number and type of sectors saw a major shift by the year 2000. New sectors by this year include economic policy, oil and gas, private sector development, and social protection. The Bank by this time had clearly expanded lending to include all facets of development, ranging from rural, agricultural project lending to urban development, to include private and public sectors, the environment, economic policy, education and health, water sanitation and utilities.

It is interesting to note that in the year 2000, African lending was largely focused on the economic policy sector. The top five sectors of African lending in 2000 are, in order: as follows: economic policy, public sector management, transportation, private sector development, and agriculture. There is also heavy lending for education and social protection.

### Other Development Efforts

While lending is the primary method of the Bank's development efforts, there are other areas in which the Bank advances development policies. The first World Development Report was issued in the late 1970s, and the Bank also furthers its development efforts with its country reports. Country reports are produced for those countries which received heavy Bank lending. The importance of these reports, according to Ayres (1983), cannot be found in the finished product but rather in the process of preparation. The true purpose, he claims, of these reports is opening communication between the Bank and the recipient country in order to perhaps better facilitate the lending process and eventually help lead toward increased performance and economic development.

One of the latest non-lending efforts the Bank is focused on is the implementation of Millennium Development Goals. There are eight goals which were adopted in 2001. The first, to eradicate extreme poverty and hunger specifically calls to reduce the percentage of people living on less than \$1/day by half. The second goal is for universal primary education. The third is to promote gender quality and empower women, which translates in this case to gender equality in primary and secondary education. The fourth goal is to reduce child mortality rates and the fifth is to improve maternal health. Combat HIV/AIDS, malaria, and other diseases is the sixth goal, calling for a halt and reduction in the spread of these diseases. The seventh goal is to ensure environmental sustainability. This includes, but is not limited to increasing access to safe drinking water and reversing the loss of resources such as forests. The final millennium development goal is more broad, to develop a global partnership for development. This calls for an open trading and financial system, continuation of Highly Indebted Poor Country (HIPC)



initiatives, addressing the special needs of landlocked states, ensuring access to affordable medicines, and making available new technologies, specifically communication and information technologies.

The most recent report in 2004 reveals the status of regions in achieving these goals by the year 2015. Sub-Saharan Africa is the only region in the Status 2004 report that will not achieve any of the goals based on performance since 1990. There are a few sub-categories in which this region has made some progress but at the current rate will still not meet the goal by 2015: halting HIV/AIDS, universal primary education, and gender equality in primary education (not secondary). This region received a status of no or negative change in 11 out of the 17 reported goal sub-categories in this report. Malaria is a pandemic, access to clean drinking water has not improved, maternal health measured by maternal mortality rate has not improved, and there has been no improvement in reducing poverty or hunger. While the Millennium Development Goals effort is a more recent endeavor, the lack of progress thus far in Sub-Saharan Africa highlights the need for continued and increasing support in this region. (Sahn and Stifel 2003; World Bank 2004c, 2004d)

An additional non-lending effort that coincides with the eighth Millennium Development Goal is the Highly Indebted Poor Country Initiative. This initiative attempts to encourage long term growth through the forgiveness of debt in addition to other development assistance. The concept behind the initiative is that countries with high debt ratios are unable to efficiently allocate resources due to constraints from high debt payments. Eligibility is determined by credit. A country must be considered unable

to qualify for other types of lending and can only have sufficient credit to qualify for concessionary lending from the IDA and International Monetary Fund.

There are three stages in the initiative. The first stage is a 3 year track period where the country must exhibit good performance while it develops a Poverty Reduction Strategy Paper. It is at the end of this stage one of two decisions is reached; the country is either not eligible to be considered for debt relief or a “decision point” is reached in which the country continues to the next stage of the process. If a decision point is reached, another track period follows in which the country considered must show progress in implementing policies agreed upon at the completion point. It is during this second track period in which interim debt relief can be provided by the IDA and other creditors. Once this stage is completed, full debt relief is received from the IDA within 20 years. At this time there are 25 countries that have reached their completion points, 20 of those being Sub-Saharan African countries. The effectiveness of this initiative is a point of debate. Debt relief as a mechanism of promoting growth may be acceptable to some however the impact of the extent and timing of the debt relief is questionable (Easterly 2002).

In sum, the Bank has engaged in a myriad of lending and non-lending development efforts. The overall record of the Bank in its efforts for economic development in Sub-Saharan Africa, however, has yet to be systematically assessed. Sub-Saharan Africa among other regions is often a dummy variable in cross-country growth regressions and any further analysis is often in the context of the region as an exception to the analysis.

Chapter five presents the research design used to assess the impact of World Bank lending on development. In order to assess to effectiveness of bank lending in this

region, a cross-country approach using data gathered for a sufficient period of time is necessary. Inclusion of all Sub-Saharan African countries for a time period that begins after the establishment of the IDA up to today is recommended to accurately capture the effects of lending on wealth. A country's level of wealth can be vulnerable in the short-term to factors outside the parameters of this research project. The effect lending has on wealth may lag one to several years; assessing the effect using cross-country data that includes 25 years or more increases the validity and significance of the research in capturing this effect.

## CHAPTER 5

### RESEARCH DESIGN

The research hypothesis for this study is that borrowing from the International Bank for Reconstruction and Development (IBRD) and International Development Association (IDA) promotes economic development. The World Bank has established itself as the primary development partner (World Bank 2004e) and in addition has “established a hegemonic position as the dominant source of economic and policy analysis” (Sender 2002, 187). As the Bank approaches its 60th year of operation and Sub-Saharan Africa continues to lag in growth, evaluating the effects of lending in this region is of increasing concern. This study includes factors identified in growth and development literature in addition to a measure of IBRD and IDA lending.

#### Dependent Variable

The dependent variable, level of wealth, is measured by gross domestic product per capita (GDP/capita). GDP/capita is a common proxy for wealth in economic models, as it measures the welfare for each individual in an economy. The assumption is that higher levels of GDP/capita translate to higher levels of living standards. Development certainly is a concept with many facets other than income; however measuring income on a per capita basis allows us to measure welfare across countries and cultures. This also allows for estimating the impact of the independent variables on overall wealth of a country.

The mandate of the World Bank is to promote development. As displayed in table 8, growth rates in this region are volatile. In addition consider figure 1, which shows that GDP/capita, regardless of growth rates in the past several decades, began at a lower level and remains at a levels far below the average GDP/capita of high income countries. Development is best captured by GDP/capita given these considerations.

There is a debate in economics as to the appropriate method of reporting GDP/capita. Reporting GDP/capita in US dollars is widely accepted, however some researchers report GDP/capita using the purchasing parity power (PPP) measure (Vreeland 2003; Neumayer 2002). The assumption made in reporting GDP/capita in PPP dollars is that it captures the true value of local currency, as it considers exchange rates as well as price levels.

Kargbo (2003) finds support for the use of PPP as a guide for exchange reform in Africa. However it is noted PPP is critiqued as an appropriate measure in economies that have more volatile exchange rates and price levels. Alba and Park (2003) recognize that many economists agree the theory of PPP may have more validity in the long-term rather than the short-term; they find some degree of empirical support for the validity of PPP. It is not yet clear how valid the use of PPP is in measuring development, in particular for this region. Sub-Saharan African economies certainly fall in the category referred to in the critique made of PPP and its applicability to more volatile economies. Vreeland (2003) finds PPP data reported by the World Bank is not highly correlated with PPP data in the Summer and Heston data set; this supports the claim that PPP data is not always reliable. Moreover, PPP data are not available for all countries and years considered here.

The use of GDP/capita in current US dollars for the purpose of this study is considered to be valid in capturing the concept of average level of wealth and avoids potential pitfalls in using the PPP measure. The source for this variable is the World Bank's World Development Indicators (WDI) (2003) and is reported in current US dollars.

### Independent Variables

The main independent variable is borrowing from the IBRD and IDA. It is the sum for each year of IBRD loans at market rates and IDA credits at concessional rates in current US dollars. It is expected that borrowing from the IBRD and IDA will have a positive impact on level of wealth. The source is the World Bank's WDI (2003) and data is reported in current US dollars. Data from the Bank is not without flaw (Vreeland 2003), however as the primary source for this variable it is the most accurate and complete available.

Human capital as a determinant of growth has received increasing amounts of attention as research has been focusing more on human aspects of development (Sen 1999; Easterly 2002). The proxy for human capital in this study is education. Education is measured in rates of female secondary education. The use of female enrollment rather than male or total enrollment is justified by the assumption that female enrollment will be at least equal to that of male enrollment. Female enrollment therefore serves as a more sensitive proxy for a population's overall level of education. Female secondary enrollment data is from the World Bank's WDI (2003) and is defined as the ratio of gross female enrollment regardless of age to the population of that age group corresponding

with the level of education shown. The enrollment data available for Sub-Saharan countries is less than optimal. Data is complete for the 1990s and prior to that is available twice a decade. The rates of school enrollment show a constant increase during the 1970s and 1980s therefore mean substitution is utilized to maximize the efficiency of this variable. In the case where the missing data is for 1997-1999, the enrollment rate for the last available year, 1996, is substituted.<sup>2</sup>

Easterly (2002) discusses the “explosion of education” from 1960-1990 that saw increases in the primary, secondary, and college enrollment and concomitant education spending in several LDCs. However, despite the seemingly phenomenal increases in education spending there seems to be little significant connection between education and growth. To illustrate, countries such as Angola, Ghana, and Sudan experienced high rates of human capital (education) growth, yet saw little, if any, increases in economic development. Japan on the other hand experienced high growth rates and modest growth in human capital. There are a number of possible explanations. People may simply leave communities in LDCs as they become more educated (i.e., “brain drain”). The incentives to remain in the LDCs unfortunately are not as great. However, many cross country growth studies have shown a link between schooling and development (Bils and Klenow 2000). This variable is included as the proxy for human capital, drawing heavily on previous literature, and is expected to have a positive moderate impact on wealth.

An additional independent variable is the type of regime. The measure for regime type in this study is the 21 point polity index from the Polity IV Project. The use of this

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<sup>2</sup> This is the case for Central African Republic, Malawi, Nigeria, Sierra Leone, Uganda, and Zambia. The 1996 school enrollment rate is substituted for 1997-1999 under the assumption school enrollment has experienced a positive constant change in these countries and using the 1996 rate for the following three years is a more conservative estimate of actual enrollment rates for these years. Congo, Dem. Rep. is missing 1999; the same measure is taken in this case.

index as a proxy for regime type is supported in two ways. The importance of political freedom is identified in the literature (Savvides 1995). Przewroski (2004) discusses the conditions under a dictatorship versus those under a democracy and finds that conditions under a democracy are better for economic development. The index simultaneously captures regime type and conditions such as political freedom and civil liberties. It is a combination of two indices. The first index is a measure of institutionalized democracy. There are three elements considered; the presence of procedures and institutions that are conducive to citizen participation, existence of institutionalized executive constraints, and civil liberties for all citizens. The second index is a measure of institutionalized autocracy. Autocracy is measured by political characteristics and relies on the assumption that mature autocracies prevent competitive political participation. The two indices are combined to form the 21 point scale ranging from -10 (strongly autocratic) to +10 (strongly democratic).

The variable polity2 from the Polity IV project is employed using mean substitution to account for years in the polity variable in which the country is coded outside the scale for foreign interruption, transition, or anarchy. This variable, as stated in the Polity IV code book, is recommended for use with time series data and therefore is appropriate for use in this study.<sup>3</sup> This scale considers many political factors not recognized in simply identifying a regime as a democracy or not a democracy. The expectation is that a positive score on this scale will have a positive impact on level of wealth, assuming 0 as the midpoint.

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<sup>3</sup> Marshall and Jaggers (2002) are the source for this definition; further explanation of elements included in the two scales and method for obtaining polity2 variable can be found in the Polity IV manual.



Savings and investment were both used in the early economic models as primary determinants of economic development. A common critique of these models is the assumption they made regarding the relationship between investment and savings. Savings for Solow (1956) translates directly to investment in new capital. The critiques often focus on this assumption made in the Solow growth model. Based on early growth models, policies were implemented in many states to increase savings with the expectation it would lead quickly to development. Many states however, such as the Soviet Union forced savings at such high rates it impeded development rather than promoted development. It soon became clear the link between savings and investment in new capital is not direct as Solow posits. Increasing savings as Easterly (2002) reminds us does not lead automatically to increased development at the model's predicted rates.

It is still widely accepted that a country's savings rate does matter for development. This study follows the broad assumption made in early growth models in assuming that savings allows a state to devote most of those resources to investment in capital, both physical and human. Savings is expected to have a positive moderate impact on level of wealth. The source of gross domestic savings is the World Bank's WDI (2003) and data is reported in current US dollars. Gross domestic savings is defined by the World Bank as gross domestic product less total consumption, as reported in World Bank and OECD national accounts data and files.

Investment as a primary focus in growth models has also fallen prey to similar critiques. The Harrod-Domar model developed in the mid 20<sup>th</sup> century assumed investment was the key determinant for development. Investment was treated similarly to savings in Solow's model. Of course these models assumed investment stemmed from

the domestic economies savings capacity and did not include foreign direct investment (FDI). Investment is necessary to funnel resources to research and development in existent industries as well as create new industries. Vreeland (2003) measures investment as private and public domestic investment, excluding FDI.

Investment in this study attempts to capture the portion of investment that is not supplied by the domestic economy. FDI augments a domestic economy's investment from savings and allows for the economy to increase without using its own resources. Capital is therefore increased from an outside source as opposed to domestic capital investment. FDI contributes to an economy when a domestic economy may not have sufficient resources to invest in its own economy. It is assumed this is the case for many Sub-Saharan African countries. FDI is expected to have a positive impact. The source for this measure is the World Bank's WDI (2003). The definition of net foreign direct investment is net inflows of investment that acquire more than 10 percent or more of the voting stock in a business operating in the country. It is total equity capital, reinvestment of earnings, other long-term capital, and short term capital and is reported in current US dollars.

Debt is also seen as a factor in development. High debt service payments have the potential to cripple an economy. The recognition of the potentially damaging effects of high debt ratios is evident through implementation of the World Bank's HIPC Initiative. A common critique is that debt forgiveness programs are accused of having a "too little, too late" attitude. The World Bank's HIPC Initiative forgives 100 percent of IDA debt within 20 years of the completion date. In the interim countries must cope with IDA debt payments for a minimum of two decades while being bound to debt service payments to

other lending institutions. The debate on the effectiveness of debt forgiveness will continue as additional research is increasingly devoted to answering this question.

Debt is expected to have a negative impact on level of development. Obligations to make debt service payments often trump the interests of investment in capital; this is especially the case when resources are limited. The impediments to growth can be devastating if debt obligations increase and resources remain either constant or experience a decrease. Debt is measured as total debt service reported in current US dollars. The World Bank's WDI (2003) is the data source defining total debt service as the sum of principal and interest payments actually paid in currency, goods, or services on long term debt, interest payments on short term debt and repayments to the IMF.

Aid is also included as a factor in development. Recent studies on the impact of aid and development point toward a link of aid and policy. Burnside and Dollar (2000) find aid has more impact on an economy with a good policy environment. The caveat to this assumption can be found in many Sub-Saharan African economies; countries plagued by poverty and lack of any cohesive policy environment are excluded from this framework of effective aid (Ndulu 2002).

Aid can also be interpreted as an augmentation to savings. 'Corrosive' effects of aid on an economy have been identified, such as perpetuating dependence. A country may be less likely to increase rate of savings if they are receiving foreign aid. However it is still found in studies that aid has contributed to increased spending in Africa (Ndulu 2002).

The expectation in this study is that aid has a moderate positive effect on level of wealth. This supports the findings that aid has contributed to increased spending in this

region. The assumption that effective aid reflects on the policy environment is avoided in this study. Further research into the effectiveness of aid as a function of the policy environment in this region is needed before such assumptions can be made. Aid is identified as net official development assistance and official aid (ODA & official aid) and is the net sum of loan disbursements, grants and other aid by agencies of the Development Assistance Committee (DAC), multilateral institutions, non-DAC countries, and official donors. The source is World Bank's WDI (2003) and data is reported in current US dollars.

An additional independent variable that is considered in two of the four models is population. There are two arguments surrounding the impact of population on development. One argument contends that increased population strains the economy and leads to decreases in wealth. This follows the bleak predictions of Malthus that eternal poverty will result as a function of increased population size. Solow also considered wealth on a per capita basis to be inversely impacted by population growth. This argument is based largely on the view that people are a burden on the economy.

The second argument views increases in population as a contribution to wealth rather than a burden. Schumpeter, among others, considers increases in population to be increases in human capital. An increase in the number of people translates to an increase in productivity and technological progress. As a result, wealth is increased.

This debate is taken into account by the inclusion of population in two out of the four specified models. The two models that consider population consider the following independent variables on a per capita basis: IBRD and IDA lending, domestic savings, FDI, debt, and aid. Education and regime remain unchanged in all four models.

## Methodology

This study is a pooled cross-sectional time series. The data is gathered for the Sub-Saharan African region, as defined by the World Bank, represented by 46 countries. The years included in the study are 1974-1999, a 25 year period that captures development from post-colonialism to the recent decade.

The first data set referred to as the full data set is the data set excluding countries for missing variables, or data missing from most of the years for a given variable. This data set has unbalanced panels. Unbalanced panels are a common problem with this type of data and simply refer to missing data for select years for some countries. For example, Angola has complete data for only the years 1989-1999 and Ethiopia has complete data for only the years 1982-1999. In this research, missing data is often explained by more recent independence for many countries, interruptions in regimes, outbreaks of war and violence (Somalia), or other factors of instability that led to an inability to collect data. The second data set is referred to as the corrected data set and corrects for unbalanced panels by simply excluding the countries with missing years of data.<sup>4</sup>

The first model estimates the coefficients with generalized least squares (GLS) regression assuming for heteroskedasticity and autocorrelation (AR1). The full data set with unbalanced panels is used in this model and population is not considered.

The second model also estimates the coefficients with GLS regression assuming heteroskedasticity and autocorrelation (AR1). The full data set is utilized and population is considered. The five independent variables reported in current US dollars (IBRD and IDA lending, domestic savings, FDI, debt, and aid) are divided by population to estimate the per capita effect of the variables on GDP/capita in this model.

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<sup>4</sup> Refer to Appendix for list of countries in each data set and data issues identified by country.

The third model uses the corrected data set with additional countries excluded to correct for unbalanced panels. Prais-Winsten regression with panel-corrected standard errors is utilized to estimate the coefficients. Prais-Winsten regression is appropriate for helping to control for autocorrelation, a common problem associated with the use of pooled cross-sectional time series data. The autocorrelation parameter in this model is assumed to be panel specific. The use of panel-corrected standard errors in this model helps to control for heteroskedasticity, another common problem with the use of this data.

The fourth model also uses Prais-Winsten regression with panel-corrected standard errors to estimate the coefficients. The same assumptions are made in this model as in model three. This model estimates the coefficients for the corrected data set using the per capita measures of the five specific independent variables to control for population.

The inclusion of these four models will increase the validity of the results measuring the effectiveness of World Bank lending on wealth. In addition it attempts to decrease the effect of limited availability of data in this region. The expectation is that the effects of the independent variables will be sustained across models.

## CHAPTER 6

### RESEARCH ANALYSIS

This chapter provides an analysis of each of the four models following a discussion of the descriptive statistics for each of the two data sets used in the research. The full data set includes 35 countries and the corrected data set includes 27 countries, both from a total of 46 countries identified by the World Bank.

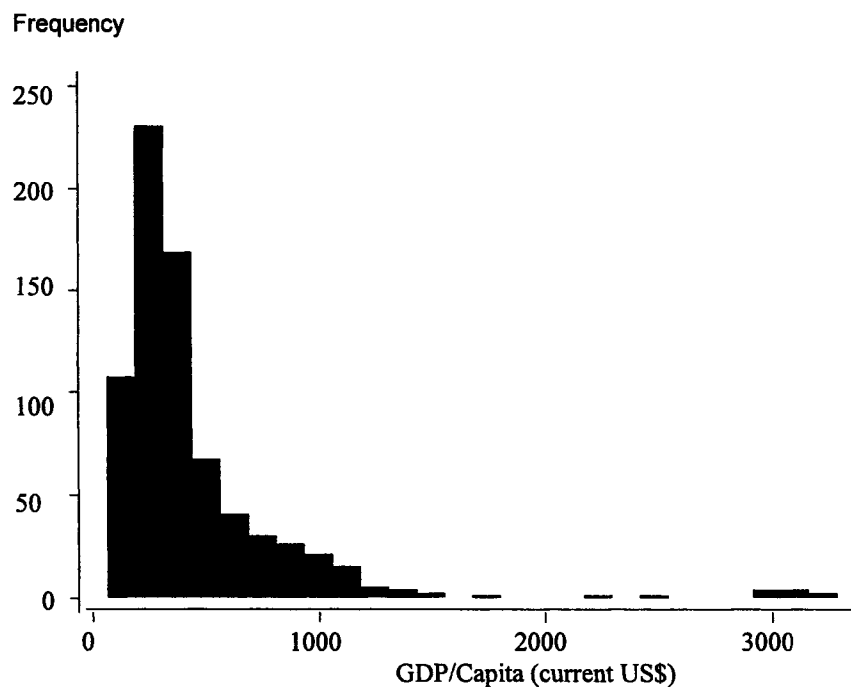
#### Descriptive Statistics

In this section a brief descriptive analysis of the two data sets is provided. Table 10 displays statistics for the full data set; table 11 displays statistics for the corrected data set. Both tables identify the mean, range, lowest value, and standard deviations for each of the variables including the per capita measures of select independent variables.

The differences between the summary statistics for the two main data sets are minimal. The mean value for GDP/capita in the full data set is \$455.24 and increases to just \$479.24 in the corrected data set. The dispersion of this variable is greater in the corrected data set, as the standard deviation and range are somewhat smaller. Despite the minimal differences, the data has similar properties. The mean GDP/capita is under \$500.00 in both data sets with a standard deviation of approximately the same value, and the distribution is negatively skewed. In both data sets the probability of the GDP/capita being less than approximately \$1100 is 95 percent, and the probability of the GDP/capita

falling below approximately \$3000 is 99 percent. These probabilities are captured in figure 2 displaying the frequency of GDP/capita for observations in the corrected data set. It is clear that most countries for each year during the 25 year time period have GDP/capita's of less than \$1100.

Figure 2: GDP/capita Frequency (corrected data set)



Source: Author's Calculations.

The differences in IBRD and IDA lending are minimal as well. The mean of IBRD and IDA lending in the full data set is \$495 million with a large range of \$3.49 billion. IBRD and IDA lending is clearly not constant across Sub-Saharan African countries, despite the fact that that the highest GDP/capita for this region during the specified 25 years is \$3819.26 and 95 percent of countries fall below approximately the \$1100 mark.

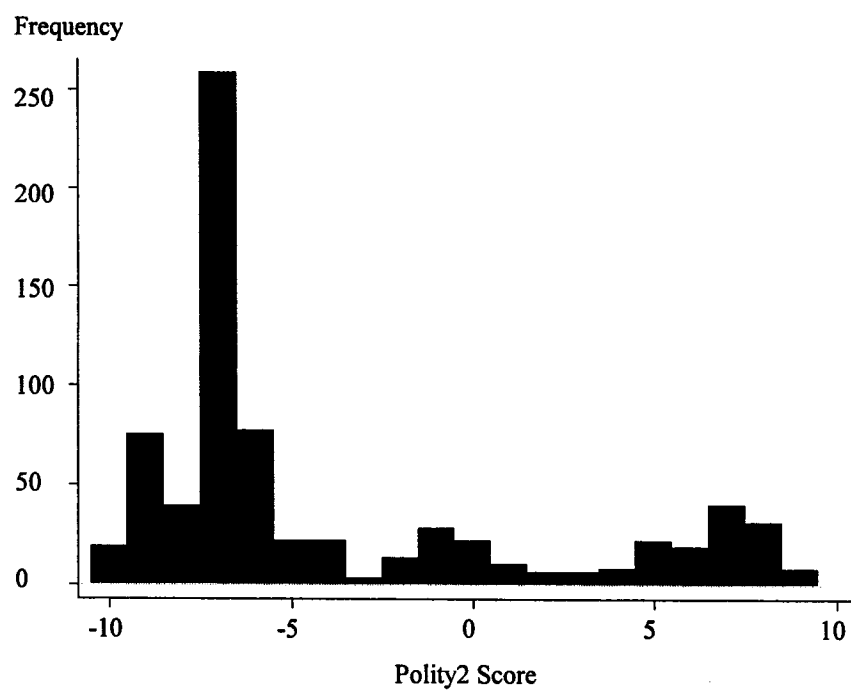


The standard deviation for IBRD and IDA lending is \$656 million in the full data set and the data also is distributed with a negative skew.

The mean score for regime is -3.46 in the full data set and shows a slight negative change of .4 in the corrected data set. The standard deviation is 5.71 in the full data set and shows a negative change of .21 in the corrected data set. One important trend this data shows is that in the full data set the probability of a country having a score of -7 or worse is 50 percent and the probability of scoring zero or below is 75 percent. Recall a score of 0 is neither democratic nor autocratic, as the values from each of the separate 10 point scales cancel each other to achieve a zero score. A score of -7 is close to the -10 score that represents a country that is highly autocratic. Figure 3 displays the frequency of regime, defined by polity2 scores, for the corrected data set; most observations have a score in the autocratic range of -10 to 0.

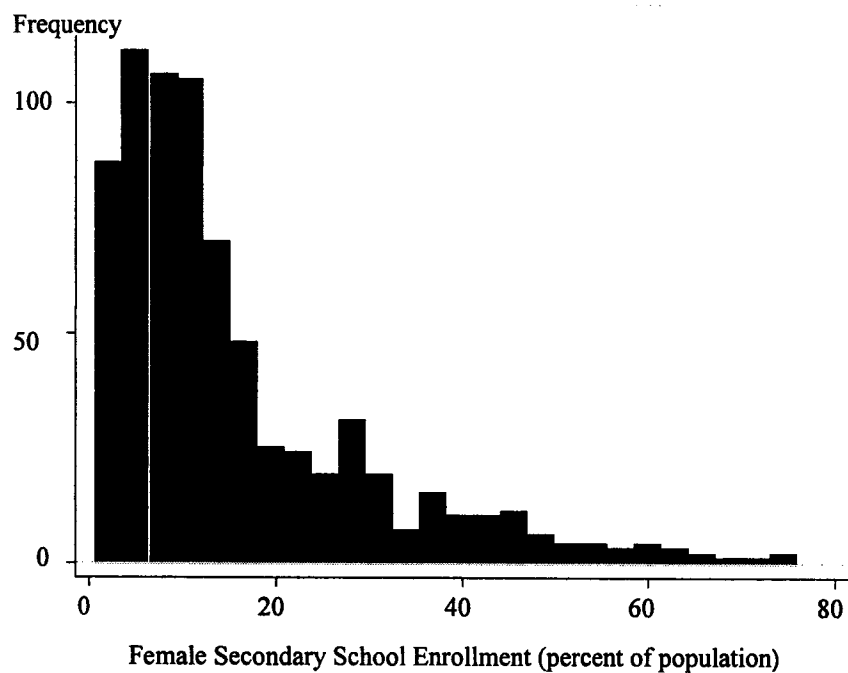
Not surprisingly, education has a large range of in both data sets of approximately 75 percent, with the lowest value falling below 1 percent in both data sets. The mean percentage of female secondary enrollment is approximately 15 percent in both data sets with a probability of seventy five percent that enrollment will be 19.8 percent or less. Figure 4 captures the frequency of enrollment and supports this probability; most observations have a female secondary school enrollment of under 20 percent of the population.

Figure 3: Regime Type Frequency (corrected data set)



Source: Author's Calculations.

Figure 4: Education Frequency



Source: Author's Calculations.

FDI has minimal differences between the two data sets and is largely affected by the exclusion of countries with higher investment dollars. The mean in the full data set is \$54.8 million with a standard deviation of \$194 million. The lowest value is -\$739 million.

ODA and official aid also has minimal differences with the lowest and highest values remaining the same in both data sets. The mean in the full data set is \$266 million with a range of over \$2 billion and standard deviation of \$264 million.

Domestic savings has minimal differences likely due to excluding countries with the lowest savings. The range is over \$20 billion in both data sets and the mean in the full data set is \$586 million with the lowest value of -\$444 million. The standard deviation in the full data set is \$1.52 billion.

Debt has a range of \$4.42 billion with the lowest value of zero and mean of \$219 million in the full data set. The standard distribution in the full data set is \$441 million. The distribution for this variable is negatively skewed.

Most of these variables have high variance and many have a negatively skewed distribution. This illustrates that countries in this region are not similar to each other in many aspects, some important aspects captured in by the variables included in this research.

The descriptive statistics for the independent variables that are measured on a per capita basis also have minimal differences between the two data sets. The mean value for the IBRD and IDA lending/capita in the full data set is \$57.05 and increases by \$.03 in the corrected data set. FDI/capita has a mean value of \$7.70 in the full data set and \$7.36 in the corrected data set, also a minimal change. ODA and official aid/capita has a

mean value of \$42.87 in the full data set and decreases by \$.48 in the corrected data set. Domestic savings/capita has mean value of \$69.79 in the full data set and decreases by \$5.40 in the corrected data set, revealing that countries with higher savings rates are likely excluded from the corrected data set. The mean value of debt per capita is \$25.57 in the full data set and decreases by \$1.42 in the corrected data set. The ranges for these variables are smaller due to the control for population however the standard deviations are proportionally large, much like the total dollar measures of these same variables.

Simple correlations are analyzed for each of the four models. A correlation of the variables in the corrected data set excluding the population effect (model 3) yields the following results. The two variables that are the most highly correlated are GDP/capita and education with correlation of .68. This correlation is expected as the relationship of education and wealth is considered to be moderate to strong. IBRD and IDA lending are found to be moderately correlated to the following variables: debt, ODA & aid, and FDI with respective values of .64, .62, and .55. Savings and debt are found to have a correlation of .60, and two other relationships are found to have correlations above a value of .50 (FDI/debt and FDI/savings).

The correlations are found to be similar in the full data set excluding the population effect (model 1). There is a minimal difference between the following variables: GDP/capita and education are correlated at a value of .73 (0.5 increase). All other correlation values remain the same or experience slight decreases.

A correlation of the variables in the corrected data set controlling for the population effect (model 4) reveals two correlations that have a value higher than .60; education and GDP/capita are correlated at a value of .68 and domestic savings/capita and GDP/capita

are correlated at a value of .88. There are two other correlations at a value of .53: the first is education and domestic savings/capita and the second is ODA and official aid/capita and IBRD and IDA lending/capita.

A correlation of the variables in the full data set controlling for the population effect (model 2) reveals similar results, with a few additional high correlation values.

Education and GDP/capita are correlated at a value of .73 and domestic savings/capita and GDP/capita are correlated at a value of .89. Debt/capita and GDP/capita are correlated at a value of .64, followed by education and savings/capita and education and debt/capita both at .60. The other correlation at value above .50 is domestic savings/capita and debt/capita at a value of .54.

These identified correlations are expected and in addition to analyzing simple correlations, the Lewis-Beck test is also performed on each model to test for multicollinearity (see Lewis-Beck 1989). The results for this test will be discussed in the analysis of each of the four models.

In the following four models the results are considered within and across each model. Common problems with the use of pooled cross sectional time series data are addressed specifically when identifying the methods used to estimate the coefficients. Outliers are not considered in these models; the justification for this relies on the fact that the region itself is considered in most development and growth models as an outlier. Addressing further potential outliers within the region only adds to the exclusion of these countries in research.

## Model 1

The first model uses the full data set excluding the population effect and estimates the coefficients with GLS regression. The GLS regression is analyzed with the assumption of the presence of heteroskedasticity and autocorrelation. The number of observations in this model is 839, and includes the 35 countries as identified in Appendix I. The GLS estimation in this model is found to be statistically significant with a chi square of 101.22. The constant in this model is 160.04 and is also found to be significant. The standard error of the constant is 18.39. A Lewis-Beck test, regressing each of the independent variables on the others, reveals a lack of evidence for multicollinearity in the data.<sup>5</sup>

Contrary to expectations, it is found in this model the impact of the primary independent variable, IBRD and IDA lending, has a statistically significant estimated negative impact on GDP/capita. IBRD and IDA lending has an estimated coefficient or net effect on GDP/capita of -.000000049 and is statistically significant at a  $p < .05$ . The apparent small size of the coefficient appears suspect. However, when the mean dollar effect is calculated it is very clear the results do not support the assumption tested in this research.<sup>6</sup> A few examples of the substantive effect illustrate this point. Benin in 1999 has a negative impact of IBRD and IDA lending in dollars (based on the lending in dollars that year) of \$28.15. This impact is seven percent of the GDP/capita in 1999 of \$393.95. Similarly, Mauritania in 1997 has a four percent negative impact of IBRD and IDA lending (\$18.53) on the GDP/capita of \$451.47. These examples illustrate the

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<sup>5</sup> The highest  $R^2$  value is .36 with domestic savings and debt.

<sup>6</sup> The effect of the mean IBRD and IDA lending on GDP/capita is \$24.26. While this is not a large impact, it is not significantly positive and therefore does not support the assumption tested in this research.

results; the assumption that World Bank lending positively impacts Sub-Saharan African development is rejected in this model.

Education has an estimated coefficient of 10.31 that is also statistically significant at  $p < .001$ . This supports the hypothesis that increased human capital positively impacts wealth. Human capital is seen by many as a key for future development, as the skills people acquire are necessary for increased technological progress. However, it is difficult to determine the impact of the effect of the “brain drain” in the region given the data. The phenomenon known as the “brain drain” impacts LDCs in several key aspects. The first is that countries that spend resources on education lose some of the benefits once the educated person crosses the border. A second is the loss of human capital needed to contribute to development. These two aspects must be considered as having the potential to reduce the impact education has on wealth. However given the levels of education in earlier decades and the results in this model, the benefits of increasing education far outweigh the potential costs of “brain drain” in this region.

Domestic savings has an estimated coefficient of .0000000303 and is also found to be statistically significant. Statistical significance is expected, however the minimal size of the impact goes against earlier growth models that stress increased savings as the primary antidote for slow economic development. This further supports the claim that while savings is considered important, it is not likely a primary determinant of wealth.

Critiques of early models that stressed savings as the key for development focus on many flaws associated with the models' assumptions. The first is the assumption in many of these models that savings automatically translated into investment for new capital (human or physical). This assumption relies on the country's ability to use savings in the

most efficient manner. The experiences of most countries do not support this assumption. A second critique is that the policy recommendations by many states in reaction to these models had disastrous results for some, a prime example being U.S.S.R. and its forced savings policies. The key element in this policy prescription is that the state will be able to use the forced savings through encouragement of individual investment. The bottom line is that savings must be used efficiently by the state to translate to development, savings alone cannot promote development.

Regime is not found to have a significant impact on GDP/capita. The implications for the results of this variable question the hypothesis that a country's political regime impacts their level of wealth. Aspects of the type of regime that can explain wealth include the extent of financial regulation, the existence of legal institutions (including property rights), and the bureaucracy involved in entrepreneurship among others. The tie of political regime to wealth is complex and deserves more attention as economists increasingly focus on the impact of institutions on wealth.

ODA and official aid also is not found to be significant. This result supports the argument that aid serves only as a short term solution to increase wealth. Rather than promoting development, does aid simply give a country more wealth in the short term? This question is controversial and relies on the argument that aid may simply give the country incentive to continue with the policies and institutions that contributed to poverty in the first place. An additional question that stems from this controversy is whether it matters if aid is a quick fix if the alternative is to "starve out" the LDCs. For countries in the region, the answer is likely no. Given the 25 year time period of data in this research,



it is appropriate to suggest ODA and official aid does not have a significant long term impact on development.

FDI is also not found to have a significant impact on development. The unexpected result can perhaps be explained by the volatile nature of FDI in this region, as outside investors are likely to quickly withdraw investment due to factors such as political instability, violent conflicts, etc. A further and more likely explanation is the existence of enclave industries. Foreign investment may be targeted at enclave industries resulting in a burden rather than a benefit for the economy. In addition to regime, ODA and official aid, and FDI, the impact of debt on development is also not significant.

## Model 2

The second model uses the full data set controlling for the population effect and includes 27 out of the 46 countries in this region. This model also uses GLS assuming for heteroskedasticity and autocorrelation to estimate the coefficients. The coefficient estimates differ from the results in model 1 suggesting the results in model 1 are sensitive to the population effect. Additionally, the magnitude of the statistically significant coefficients increases in this model. The model is statistically significant with a chi-square of 588.30. The constant in this model decreases from model 1 to 142.08. The  $R^2$  value, however, is .21. This suggests the model is underspecified. A Lewis-Beck test on the data used for this model reveals no reason to suspect multicollinearity.<sup>7</sup>

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<sup>7</sup> The highest  $R^2$  value is .36 found in two cases: education and domestic savings/capita and education and debt/capita.

Two of the independent variables found to be significant in model 1 no longer are significant when controlling for the effect of population; IBRD and IDA lending/capita and regime are not significant in this model.

The remaining five independent variables are found to be statistically significant. However, education is the only variable that remains significant across these two models suggesting the positive impact on development is robust. The coefficient decreases only slightly to 8.54.

In order of magnitude, the four remaining significant variables are found to have the following coefficients estimates: domestic savings/capita has an estimated coefficient of 1.34, debt/capita has an estimated coefficient of .47, FDI/capita has an estimated coefficient of .35, and ODA and official aid/capita has an estimated coefficient of .27. While domestic savings/capita, FDI/capita, and ODA and official aid/capita are found to have the expected positive impact, contrary to the hypothesis debt/capita in this model has is also found to have a positive impact on development. The expected relationship for debt and debt/capita was negative as increased total debt service payments reduce overall resources.

This model reveals the robust impact of education on development as well as the sensitivity of the other independent variables to the population effect. The most important result across these two models for this research is the continued lack of a significant positive impact of IBRD and IDA lending/capita.

### Model 3

The third model uses the corrected data set and does not control for the population effect. This model also uses Prais-Winsten regression with panel-corrected standard errors to estimate the coefficients. Panel-corrected standard errors are used to help control for heteroskedasticity, a common problem with pooled cross sectional time series data. Prais-Winsten regression is used to control for autocorrelation, another common problem with this type of model. The assumption of panel specific autocorrelation is made in this model. A Lewis-Beck test of the data used in this model finds no evidence to suspect multicollinearity.<sup>8</sup>

IBRD and IDA lending is found to be statistically significant in this model and like model 1 has a negative impact on GDP/capita. The estimated coefficient of  $-.000000111$  is slightly larger than the GLS estimation in model 1. This further supports the assertion made across the first two models; IBRD and IDA lending does not have a significant positive impact on development. It also raises the concern that higher levels of borrowing from the World Bank actually result in lower GDP/capita on average.

Also supporting the results found in model 1, education and domestic savings are found to be statistically significant in this model. The estimated coefficient of education is slightly higher at 13.14 while the estimated coefficient for domestic savings remains unchanged from model 1 at  $.0000000307$ . The remaining four independent variables are not statistically significant.

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<sup>8</sup> The highest  $R^2$  value is .41 with IBRD and IDA lending and debt.

#### Model 4

The fourth and final model uses the corrected data set controlling for the population effect. Prais-Winsten regression with panel-corrected standard errors is also used in this model to estimate the coefficients. The modeling assumptions made in model 3 also apply to model 4. The  $R^2$  value of this model is .69; the model is able to explain 69 percent of the variance in GDP/capita. A Lewis-Beck test reveals there is no reason to suspect multicollinearity.<sup>9</sup>

The results in this model differ slightly from those in model 2, even though the population effect is considered in both models 2 and 4. Education is again found to be statistically significant with a coefficient of 10.77. Two other variables are also found to be statistically significant in this model; domestic savings/capita with an estimated coefficient of 1.35 and ODA and aid/capita with an estimated coefficient of .69 are both found to be significant. The remaining four variables are not found to be statistically significant in this model.

While IBRD and IDA lending/capita is not found to be statistically significant in models 2 or 4, the results provide sufficient evidence to reject the hypothesis that World Bank lending has a positive impact on development in Sub-Saharan Africa. The concluding chapter addresses limitations to this research and its implications. As the development partner of this region, the Bank appears to be ineffective at promoting Sub-Saharan development through its lending programs.

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<sup>9</sup> The highest  $R^2$  value is .28 in two cases: IBRD and IDA/capita and ODA and aid/capita and education and domestic savings/capita.

Table 10: Descriptive Statistics: Full Data Set (N=839)

Variable	Mean	Range	Lowest Value	Standard Deviation
GDP/capita	\$479.24	\$3,746.45	\$72.81	\$511.42
IBRD & IDA Lending	\$495,000,000	\$3,490,000,000	\$0	\$656,000,000
Regime	-3.46	21	-10	5.72
Education	15.87%	75.51%	0.49%	14.43%
FDI	\$54,800,000	\$3,209,000,000	-\$739,000,000	\$194,000,000
ODA & Aid	\$266,000,000	\$2,028,420,000	\$1,580,000	\$264,000,000
Domestic Savings	\$586,000,000	\$20,644,000,000	-\$444,000,000	\$1,520,000,000
Debt	\$219,000,000	\$4,430,000,000	\$0	\$441,000,000
IBRD & IDA Lending/Capita	\$57.05	\$205.42	\$0	\$46.73
FDI/Capita	\$7.70	\$409.49	-\$204.34	\$23.51
ODA & Aid/Capita	\$42.87	\$228.76	\$.27	\$31.62
Domestic Savings/Capita	\$69.79	\$1670.43	-\$256.79	\$183.85
Debt/Capita	\$25.57	\$294.21	\$0	\$36.81

Source: Author's calculations.

Table 11: Descriptive Statistics: Corrected Data Set (N=728)

Variable	Mean	Range	Lowest Value	Standard Deviation
GDP/capita	\$455.24	\$3,216.82	\$72.81	\$419.77
IBRD & IDA Lending	\$489,000,000	\$3,490,000,000	\$0	\$655,000,000
Regime	-3.86	20	-10	5.51
Education	15.52	75.28	0.72	13.72
FDI	\$50,000,000	\$2,699,000,000	-\$739,000,000	\$178,000,000
ODA & Aid	\$239,000,000	\$2,014,200,000	\$1,580,000	\$223,000,000
Domestic Savings	\$622,000,000	\$20,572,000,000	-\$372,000,000	\$1,610,000,000
Debt	\$228,000,000	\$4,430,000,000	\$0	\$465,000,000
IBRD & IDA Lending/Capita	\$57.08	\$176.49	\$0	\$45.93
FDI/Capita	\$7.36	\$375.88	-\$204.34	\$23.39
ODA & Aid/Capita	\$42.39	\$228.76	\$.27	\$31.41
Domestic Savings/Capita	\$64.39	\$1670.43	-\$256.79	\$173.69
Debt/Capita	\$24.15	\$294.21	\$0	\$32.35

Source: Author's calculations.

Table 12: Summary of Model Statistics

Variables	Model 1 (GLS)	Model 2 (GLS) with Per Capita Measures of Independent Variables	Model 3 (Prais- Winsten)	Model 4 (Prais- Winsten) with Per Capita Measures of Independent Variables
IBRD & IDA Lending	-.000000049** (.0000000169)		.000000111* (.0000000252)	-
Regime	.299 (.754)	.072 (.718)	.522 (1.122)	-.519 (1.088)
Education	10.312* (1.323)	8.54* (.981)	13.138* (2.754)	10.768* (1.747)
FDI	.0000000131 (.0000000246)	-	-.00000000242 (.0000000236)	-
ODA & Official Aid	.0000000204 (.0000000181)	-	.0000000399 (.0000000315)	-
Domestic Savings	.0000000303* (.0000000497)	-	.0000000307* (.0000000398)	-
Debt	.00000000269 (.000000015)	-	-.0000000132 (.0000000147)	-
Constant	160.042* (18.389)		209.74* (27.485)	192.491* (26.103)
IBRD IDA Lending/Capita	-	-.017 (.167)	-	-.374 (.296)
FDI/Capita	-	.353*** (.179)	-	.125 (.243)
ODA & Aid/Capita	-	.271*** (.127)	-	.687** (.229)
Domestic Savings/Capita	-	1.338* (.072)	-	1.35* (.095)
Debt/ Capita	-	.473*** (.192)	-	.314 (.254)
N	839	839	728	728
R <sup>2</sup>	-	-	.21	.69
Chi <sup>2</sup>	101.22*	588.3*	89.5*	396.93*

\* p<.001, \*\*p<.01, \*\*\*p<.05 (two tailed test)

Estimates of standard error are reported in parentheses under the coefficient estimates.

Source: Author's calculations.

## CHAPTER 7

### CONCLUSION

The World Bank asserts itself as a development partner for Sub-Saharan Africa. The results found in this thesis, however, challenge the effectiveness of its lending policies. The results in this study are useful for three important reasons.

First, this research raises questions regarding the effectiveness of lending policies of the World Bank in this region. Rodrik (1995) discusses the role of multilateral lending and discusses the World Bank as one of many multilateral lending institutions. He discusses alternative functions that include institutions as information gatherers and their political nature compared to states. These two alternative functions of institutions are among other possibilities that reflect the true functions and benefits of multilateral lending institutions. Additional research assessing the effectiveness of lending in specific sectors could contribute to these findings in narrowing the focus of assessing lending policies in this region. In addition, further research focusing on alternative benefits of IBRD and IDA lending policies is recommended.

Second, while this research focuses only on World Bank lending, the larger question of what effect lending in general has on developing economies remains a controversial one. The argument regarding the impact of aid can be applied toward lending; does lending money to LDCs only extend the time for which country must make fundamental institutional changes to increase growth and development? In the case of



the World Bank, carefully chosen lending sectors and projects would have the potential to contribute to establishing new or changing existing institutions. The failure of lending to promote development in Sub-Saharan Africa therefore suggests a twofold explanation. Lending itself may simply function as aid does for a LDC, allowing the country to prolong meeting a crucial development “turning point.”

In addition, the ability for the World Bank to choose projects for lending enables the Bank to carefully select those that will likely best serve the development interests of the LDC at hand. The World Bank is then able to surpass limitations lending has on promoting development through targeting “problem areas” in LDCs. There have been several shifts in the proportion of lending under specific sectors as discussed in chapter four, suggesting there has been an effort to address the changing needs of LDCs over time. Utilities and transportation were the sectors of primary focus early on, following the example of countries such as the United States that experienced rapid development upon the establishment of a transportation road system. This suggests the premise the Bank may rely upon for identifying the sectors of need is previous development and growth patterns. These patterns may have worked in the past, but as mentioned in chapter two the context under which LDCs are expected to develop is vastly different.

A third reason this research is useful is that it supports continued recognition of the need to focus on growth and development in this specific region. Many countries in Sub-Saharan Africa are worse off today than they were a half century ago. Research recognizes that perhaps the assumptions about economic development that stem from predictions in early growth models do not offer viable policy solutions in this region. It is important to recall that many growth studies include dummy variables for Africa as a

continent or Sub-Saharan Africa as a region and some find they are statistically significant. This region is considered by many to be an outlier in growth and development models. While treating this region as an outlier is common practice it contributes to the neglect of the focus on the specific causes of poverty in this region. This further supports the claim for additional attention to economic development in this region.

The use of four models to test the independent variables helps to discern which variables can be considered robust. The results suggest human capital and domestic savings are the two independent variables that sustain significance across the models; the remaining variables fail to sustain significance. A crucial point to make for this research is that IBRD and IDA lending is found to have a statistically significant negative impact on wealth in models 1 and 3 and is not found to have any statistically significant impact in models 2 and 4. The results across the four models support rejecting the assumption tested in this research that borrowing from the World Bank promotes development.

The limitations of this research must also be recognized. The primary limitation is perhaps external validity given the focus on Sub-Saharan African countries. The uniqueness of this region in many aspects previously identified in chapters two and three makes these findings of questionable applicability to other regions in the world. However, this limit is acceptable given the growing focus of growth and development policies towards this region in response to slow growth. The absolute growth of wealth in this region is so marginal over the last half century it is staggering in comparison to the growth of gross domestic product (GDP) in high income countries.

A further limitation of this research that relates to the variable of IBRD and IDA lending must also be noted. The variable for World Bank lending combines annual lending to countries from both of these institutions, yet as explained in chapter four there are distinct differences in the lending practices. Further research assessing IDA lending independent from IBRD lending will offer an additional assessment of World Bank lending, as the two institutions differ in both their lending policies and lending projects in Sub-Saharan Africa. As noted in chapter four, IDA lending has increased over time as IBRD lending proportionally decreased in this region. Measuring the effectiveness of each institution independent from the other will provide a more accurate assessment of the impact of World Bank lending in this region. This will enable policy makers to better focus Bank resources aimed toward the goal of development.

Levine and Zervos (1993) recognize flaws in the validity of data in cross-country growth regressions. They question whether the data gathered represents the reality of what happened in a country. This point is certainly applicable to the data used in these models for various reasons. The data could be flawed due the practicality and costs of collecting data in these countries as well as the fact that GDP may also be affected by the existence of dual economies in many countries. Some informal economic activity may be counted in GDP; some may not (de Soto 1989). Other variables that may be affected by this issue include education. School enrollment data relies on an accurate population count as well as accurate count of people attending a school on a daily basis. Different agencies and researchers report different data for many of these variables and it has been found not all of the measures sufficiently correlate with each other within the same variable (Vreeland 2003).

The availability of data is also of concern in this study. Sub-Saharan Africa is made up of 46 countries, yet due to data availability constraints only 27 countries are included in the corrected data set. Thirty-six countries are included in the full data set, however with unbalanced panels. This study acknowledges the limits of data validity and availability but also recognizes the need for research focusing on this region. The limits of the data must be dealt with in order to complete research focusing on this region. Appropriate actions are taken in the statistical analysis in attempt to compensate for these limits.

A more general limitation of this research is due to the exclusion of other recognized determinants of growth. This research attempts to determine the impact of IBRD and IDA lending on wealth in Sub-Saharan Africa and includes other independent variables most likely to impact wealth in this region. Other considered factors of development include income inequality (Ram 1995), government size (Ram 1986), trade liberalization, domestic policy environment, natural resources, energy, and other factors identified in chapter two such as climate and land-locked area. This limit is recognized, but it must be noted that the goal of this research is to assess the impact of a specific policy in this region and the results show that the other factors of wealth included in the models are sufficient in meeting this goal.

An additional limitation that addresses the variables assessed in this research surrounds the question of endogeneity. Many early growth models consider several determinants of growth to have an endogenous relationship with GDP/capita. This argument is particularly strong for human capital. A possible solution for this concern

would be to further test these models with various lagged values of the dependent variable.

In conclusion, the results of this research should be considered as a contribution in assessing the effectiveness of World Bank lending in this region. Given the results in this research and the bleak conditions in this region, it is of utmost concern to focus on assessing potential development factors in order to better prescribe growth policies and end the trend of diverging economies that characterizes the global community today.

## APPENDIX I

Country	Data concerns
Angola*	Complete data for 1989-1999, missing 1995 savings data.
Benin**	Complete data.
Botswana**	Complete data.
Burkina Faso**	Complete data.
Burundi**	Complete data.
Cameroon**	Complete data.
Cape Verde	Missing polity2 data for all years.
Central African Republic**	Complete data (refer to footnote 1).
Chad	Missing savings data for 1979-1981.
Comoros*	Complete data for 1981-1999.
Congo, Dem. Rep.**	Complete data (refer to footnote 1).
Congo, Rep. **	Complete data.
Cote d'Ivoire**	Complete data.
Equatorial Guinea	Missing savings data for 1986-89, and 1999, missing education for 1986-1998.
Eritrea*	Complete data for 1994-1999.
Ethiopia*	Complete data for 1982-1999.
Gabon	Missing education data for 1974-1997.
Gambia**	Complete data.
Guinea*	Complete data for 1987-1999.
Guinea-Bissou**	Complete data.
Kenya**	Complete data.
Lesotho**	Complete data.
Liberia	Missing savings data for all years.
Madagascar**	Complete data.
Malawi**	Complete data (refer to footnote1).
Mali**	Complete data.
Mauritania**	Complete data.
Mauritius*	Complete data for 1981-1999.
Mozambique*	Complete data for 1984-1999.
Namibia	Missing IBRD and IDA lending data for all years.
Niger**	Complete data.
Nigeria**	Complete data (refer to footnote1).
Rwanda**	Complete data.

Sao Tome & Principe	Missing polity2 data for all years.
Senegal**	Complete data.
Seychelles	Missing polity2 data for all years.
Sierra Leone**	Complete data (refer to footnote1).
Somalia	Missing FDI and aid data for all years, missing data for decade of 1990s for most variables including GDP/capita.
South Africa	Missing education data for 1974-1989, missing aid data for 1974-1992, missing FDI data for 1974-1993, missing debt data for 1974-1993.
Sudan	Missing savings data for 1988-1995.
Swaziland**	Complete data.
Tanzania*	Complete data for 1989-1999.
Togo**	Complete data.
Uganda**	Complete data (refer to footnote1).
Zambia**	Complete data (refer to footnote1).
Zimbabwe**	Complete data.
* Included in only the Full Data Set.	
** Included in Full and Corrected Data Sets.	

## REFERENCES

- Alba, Joseph D. and Donghyun Park. 2003. "Purchasing Power Parity in Developing Countries: Multi-Period Evidence Under the Current Float." *World Development* 31(12):2049-2060.
- Amin, Samir. 1977. *Imperialism and Unequal Development*. London: Monthly Review Press.
- Arestis, Philip and Panicos Demetriades. 1997. "Financial Development and Economic Growth: Assessing the Evidence." *The Economic Journal* 107(442):783-799.
- Ayres, Robert L. 1983. *The World Bank and World Poverty. Banking on the Poor*. Cambridge, MA: The MIT Press.
- Barro, Robert J. 1991. "Economic Growth in a Cross-Section of Countries." *The Quarterly Journal of Economics* 106(2):407-443.
- Barro, Robert J. and Jong-Wha Lee. 1994. "Sources of Economic Growth." *Carnegie-Rochester Conference Series on Public Policy* 40(1994):1-46.
- Barro, Robert J. and Xavier Sala-i-Martin. 1995. *Economic Growth*. McGraw-Hill, Inc..
- Bils, Mark and Peter J. Klenow 2000. "Does Schooling Cause Growth?" *The American Economic Review* 90(5):1160-1183.
- Baumol, William J. 1986. "Productivity Growth, Convergence, and Welfare: What the Long-Run Data Show." *The American Economic Review* 76(5):1072-1085.
- Bils, Mark and Peter J, Klenow. 2000. "Does Schooling Cause Growth?" *The American Economic Review* 90(5):1160-1183.
- Bird, Graham. 1996. "The International Monetary Fund and Developing Countries: A review of the Evidence and Policy Options." *International Organization* 50(3):477-511.
- Bloom, David E., David Canning, and Jaypee Sevilla. 2004. "The Effect of Health on Economic Growth: A Production Function Approach." *World Development* 32(1):1-13.
- Bloom, David E. and Jeffrey D. Sachs. 1998. "Geography, Demography, and Economic Growth in Africa" *Brookings Paper on Economic Activity* 1998(2):207-295.



- Boyer, Robert. 1996. "The Convergence Hypothesis Revisited: Globalization, but Still the Century of Nations?" In *National Diversity and Global Capitalism*, eds Suzanne Berger and Ronald Dore. Ithaca: Cornell University Press.
- Bradshaw, York W. and Ana-Maria Wahl. 1991. "Foreign Debt Expansion, The International Monetary Fund, and Regional Variation in Third World Poverty." *International Studies* 35(3):251-272.
- Burnside, Craig and David Dollar. 2000. "Aid, Policies, and Growth." *The American Economic Review* 90(4):847-868.
- Collier, Paul and David Dollar. 2001. "Can the World Cut Poverty in Half? How Policy Reform and Effective Aid Can Meet International Development Goals." *World Development* 29(11):1787-1802.
- Collier, Paul and Jan Willem Gunning. 1999. "Explaining African Economic Performance." *Journal of Economic Literature* 37(March 1999):64-111.
- Collier, Paul and Jan Willem Gunning. 1999. "Why Has Africa Grown Slowly?" *The Journal of Economic Perspectives* 13(3): 3-22.
- Day, Kathleen. 2004. "Riggs Investigation Prompts Inquiry Into 3 Oil Firms." [Electronic version]. Washington Post, August 5, 2004, page E01. Retrieved September 2, 2004 from <http://www.washingtonpost.com/ac2/wp-dyn/A41049-2004Aug4?language=printer>.
- de Soto, Hernando. 1989. *The Other Path. The Economic Answer to Terrorism*. New York: Basic Books.
- De Long, J. Bradford. 1988. "Productivity Growth, Convergence, and Welfare: Comment." *The American Economic Review* 78(5): 1138-1154.
- Easterly, William. 2002. *The Elusive Quest for Growth. Economists' Adventures and Misadventures in the Tropics*. Cambridge, MA: The MIT Press.
- Galtung, Johan. 1971. "A Structural Theory of Imperialism." *Journal of Peace Research* 8(2): 81-117.
- Hamoudi, Amar A. and Jeffrey D. Sachs. 1999. "Economic Consequences of Health Status: A Review of the Evidence." Working paper no. 30. Cambridge, MA: Harvard Center for International Development.
- IBRD/World Bank. 2001. *African Poverty at the Millennium*. Washington D.C.
- Kargbo, Joseph M. 2003. "Cointegration Tests of Purchasing Power Parity in Africa." *World Development* 31(10):1673-1685.

- Krueger, Anne O. 2000. "Conflicting Demands on the International Monetary Fund." *The American Economic Review* 90(2):38-42.
- Landes, David S. 1990. "Why are We So Rich and They So Poor?" *The American Economic Review* 80(2):1-13.
- Landes, David S. 1998. *The Wealth and Poverty of Nations: Why Some of are so Rich and Others So Poor*. New York: W.W. Norton.
- Levine, Ross. 1997. "Financial Development and Economic Growth: Views and Agenda." *Journal of Economic Literature* 35(2):688-726.
- Levine, Ross and David Renelt. 1992. "A Sensitivity Analysis of Cross-Country Growth Regressions." *The American Economic Review* 82(4):942-963.
- Levine, Ross and Sara Zervos. 1993. "What Have We Learned about Policy and Growth from Cross-Country Regressions?" *The American Economic Review* 83(2):426-430.
- Lewis-Beck, Michael. 1989. *Applied Regression*. Beverly Hills, CA: Sage.
- Marshall, Monty G. and Keith Jaggers. 2002. *Polity IV Project Dataset User's Manual*. Retrieved on May 3, 2004 from <http://www.cidcm.umd.edu/inscr/polity>.
- Mason, Edward S. and Robert E. Asher. 1973. *The World Bank Since Bretton Woods. The Origins, Policies, Operations, and Impact of The IBRD and the Other Members of the World Bank Group*. Washington D.C.: The Brookings Institution.
- Masters, William A. and Margaret S. McMillan. 2001. "Climate and Scale in Economic Growth." *Journal of Economic Growth* 6:167-186.
- Ndulu, B.J. 2002. "Partnerships, Inclusiveness, and Aid Effectiveness in Africa." In *Social Institutions and Economic Development. A Tribute to Kurt Martin.*, ed. Valpy Fitzgerald. Norwell, MA: Kluwer Academic Publishers.
- Ndulu, Benno J. and Stephen A. O'Connell. 1999. "Governance and Growth in Sub-Saharan Africa." *The Journal of Economic Perspectives* 13(3):41-66.
- Neumayer, Eric. 2002. "Is Good Governance Rewarded? A Cross-national Analysis of Debt Forgiveness." *World Development* 30(6):913-930.
- Passé-Smith, John T. 2003. "The Persistence of the Gap Between Rich and Poor Countries, 1960-1998." In *Development and Under-development. The Political Economy of Global Inequality.*, eds. Mitchell A. Seligson and John T Passé-Smith. Boulder: Lynne Reinner.

Pincus, Jonathan R. and Jeffrey A. Winters. 2002. *Reinventing the World Bank*. Ithaca: Cornell University Press.

Polity IV Project. Polity IV Annual Time-Series Data Set. Retrieved May 3, 2004 from <http://www.cidcm.umd.edu/inscr/polity>.

Pradhan, Sanjay. 1996. "Evaluating Public Spending." World Bank Discussion Paper 323. Washington D.C.

Przeworski, Adam. 2004. "Democracy and Economic Development." In *The Evolution of Political Knowledge*, ed Edward D. Mansfield and Richard Sisson. Columbus: Ohio State University.

Ram, Rati. 1986. "Government Size and Economic Growth: A New Framework and Some Evidence from Cross-Section and Time-Series Data." *The American Economic Review* 76(1):191-203.

Ram, Rati. 1995. "Economic Development and Income Inequality: An Overlooked Regression Constraint." *Economic Development and Cultural Change* 43(2):425-434.

Rapley, John. 2002. *Understanding Development*. Boulder: Lynne Reiner.

Rodrik, Dani. 1995. "Why is There Multilateral Lending?" Annual World Bank Conference on Development Economics. Washington D.C.

Sahn, David E. and David C. Stifel. 2003. "Progress Toward the Millennium Development Goals in Africa." *World Development* 31(1):23-52.

Savvides, Andreas. 1995. "Economic Growth in Africa." *World Development* 23(3):449-458.

Sen, Amartya. 1999. *Development As Freedom*. New York: Alfred A. Knopf, Inc..

Sender, John. 2002. "Reassessing the Role of the World Bank in Sub-Saharan Africa." In *Reinventing the World Bank*, ed. Jonathan R. Pincus and Jeffrey A. Winters. Ithaca: Cornell University Press.

Solow, Robert M. (1956) "A Contribution to the Theory of Economic Growth." *The Quarterly Journal of Economics*, 70(1):65-94.

UNAIDS 2004. n.d. "Sub-Saharan Africa" Retrieved October 10, 2004 from <http://www.unaids.org/Unaid/EN/Geographical+area/By+Region/Sub-Saharan+Africa.asp>.

Vreeland, James Raymond. 2003. *The IMF and Economic Development*. Cambridge: Cambridge University Press.

Weaver, James H. 1965. *The International Development Association. A New Approach to Foreign Aid*. New York: Frederick A. Praeger.

World Bank. Various Years. *Annual Report*. Washington D.C.

World Bank. 2003. *World Development Indicators*. Washington D.C.

World Bank. 2004a. n.d. "How IDA Resources are Allocated." Retrieved July 27, 2004 from  
<http://web.worldbank.org/WBSITE/EXTERNAL/EXTABOUTUS/IDA/0,,contentMDK:20052347~menuPK:116699~pagePK:83988~piPK:84004~theSitePK:73154,00.html>

World Bank. 2004b n.d. "IDA-Frequently Asked Questions." Retrieved July 27, 2004 from  
<http://web.worldbank.org/WBSITE/EXTERNAL/EXTABOUTAS/IDA/0,,contentMDK:20189587~menuPK:413944~pagePK:83988~piPK:84004~theSitePK:73154,00.html>.

World Bank. 2004c. n.d. "Achieving MDGs in Africa" Retrieved August 17, 2004 from  
<http://www.worldbank.org/afr/mdgs.htm>.

World Bank. 2004d. n.d. Retrieved August 17, 2004 from  
[http://un.org/millenniumgoals/progress\\_17aug.pdf](http://un.org/millenniumgoals/progress_17aug.pdf).

World Bank. 2004e. n.d. "The World Bank in Africa". Retrieved August 17, 2004 from  
<http://www.worldbank.org/afr>.

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