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Aid and growth

Does official development assistance
assist development?

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Abstract

The Millennium Development Goals were initiated to make countries take action for reduced poverty and better living standards for the poor and vulnerable in the world. One of the goals includes increasing Official Development Assistance to 0.7 percent of GDP. Only a few countries fulfill this and there are doubts whether aid reduces poverty and promotes growth or not. In this paper aid has been analyzed with multiple linear regression by researching the impact of the independent variable Average ODA during 1999-2003 on the dependent variable Average growth in GDP per capita during 2004-2008. The results did not show sufficient evidence that ODA promotes growth, as impact is either very small or not significant. However, results do not show negative impact of aid on growth and it is possible that results will change with increased variables. According to macroeconomic theory ODA should spur growth and research must continue in this field. Official developmental assistance can have positive effects on growth, it should be combined with other types of aid, from for example NGOs and the Millennium Development Goals needs to be taken in to consideration when allocating aid.

Keywords: Multiple linear regression, aid, growth, Official Development Assistance, macroeconomics, development, Millennium Development Goals, poverty, inequality.

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Abbreviations

AIDS - Acquired Immune Deficiency Syndrome

BRIC – Brazil, Russia, India, China

HIV - Human Immunodeficiency Virus

LDC – Least Developed Country

MDG – Millennium Development Goal

ODA – Official Development Assistance

OECD – Organization for Economic Cooperation and Development

SPSS – Statistical Package for Social Sciences

UN – United Nations

WDI – World Development Indicators

1 Introduction

In the year 2000, the United Nations, with support from 189 countries, decided on a new plan to reduce world poverty and vulnerability for those poor in the world. Eight goals were stated to achieve this with global cooperation; 1) Eradicate extreme poverty and hunger, 2) Achieve universal primary education, 3) Promote gender equality and empower women, 4) Reduce child mortality, 5) Improve maternal health, 6) Combat HIV/AIDS, malaria and other diseases, 7) Ensure environmental sustainability and 8) Develop a global partnership for development. They are the Millennium Development Goals. The UN (United Nations) has always, since it was established in 1945, worked for human rights, peace and security and poverty reduction (UN:1), but these goals were new. They were, and are, special because thanks to the UN, many countries sat down together and agreed on real and reachable targets of what to do in order to reduce world poverty and inequality. They agreed on the amount of people that should be lifted out of extreme poverty, the amount of children that should get access to education, what needs to be done to reduce HIV/AIDS and other solid targets that should be reached in 2015. These are demanding targets, but they are necessary and with global cooperation they are reachable.

Globalization has increased interaction, dependence and consciousness of and between countries over the world. Inequality between countries and people has become unavoidable. While some parts of the world have high living standards (West/Central Europe, US) and some countries are growing rapidly (BRICs, South Asia), many countries are lagging behind (especially Sub-Saharan Africa).

SOME INFORMATION ABOUT WORLD INEQUALITY

- AVERAGE GDP PER CAPITA IN 2008 WAS 11'976 USD (calculated on 175 of 205 countries where there was data)
- 3/4^{THS} OF THE WORLD POPULATION HAD LESS THAN AVERAGE GDP PC (135 of 175 countries)
- THE RICHEST COUNTRY IN GDP PC IN THE WORLD IN 2008 WAS LUXEMBOURG, WITH 109'903 USD GDP PC
- BURUNDI WAS THE POOREST COUNTRY IN THE WORLD IN 2008 (WITH DATA), WITH 175 USD GDP PC
- THE AVERAGE LUXEMBOURGIAN HAD 763 TIMES MORE MONEY THAN THE AVERAGE BURUNDIAN. THIS MEANS THAT WHILE THE AVERAGE BURUNDIAN HAS A GLASS FILLED WITH GOLD, THE LUXEMBOURGIAN HAS A BATHTUB FILLED WITH IT SO SWIM IN.
- SWEDEN WAS THE 9TH RICHEST COUNTRY IN THE WORLD IN 2008, WITH 51'323 USD GDP PC, WHICH IS 140 TIMES MORE THAN THE 9TH POOREST COUNTRY NIGER

(Data source: World Bank)

Official development assistance, foreign aid, has become a strategy for reducing poverty and helping countries grow economically. One of the targets within the eighth MDG (Millennium Development Goal) is to increase official development assistance (ODA). According to the Millennium Declaration, donating countries should set 0.7% percent of their GDP to ODA, but only a few countries have managed to do this. The question is; does aid promote growth? If aid promotes growth, it is possible that it helps reducing poverty and reduces world inequality. According to macroeconomic theory aid should spur growth through several different channels, if the receiver is set on economic development. Aid is often motivated by donors' political and economic interests apart from being motivated by macroeconomic theory and growth promotion. What aid spurs growth? According to the UN and the MDGs, aid from the rich countries needs to be increased. The world needs to take responsibility for reducing poverty and aid is one strategy for doing this. It is stated in the Millennium Declaration that:

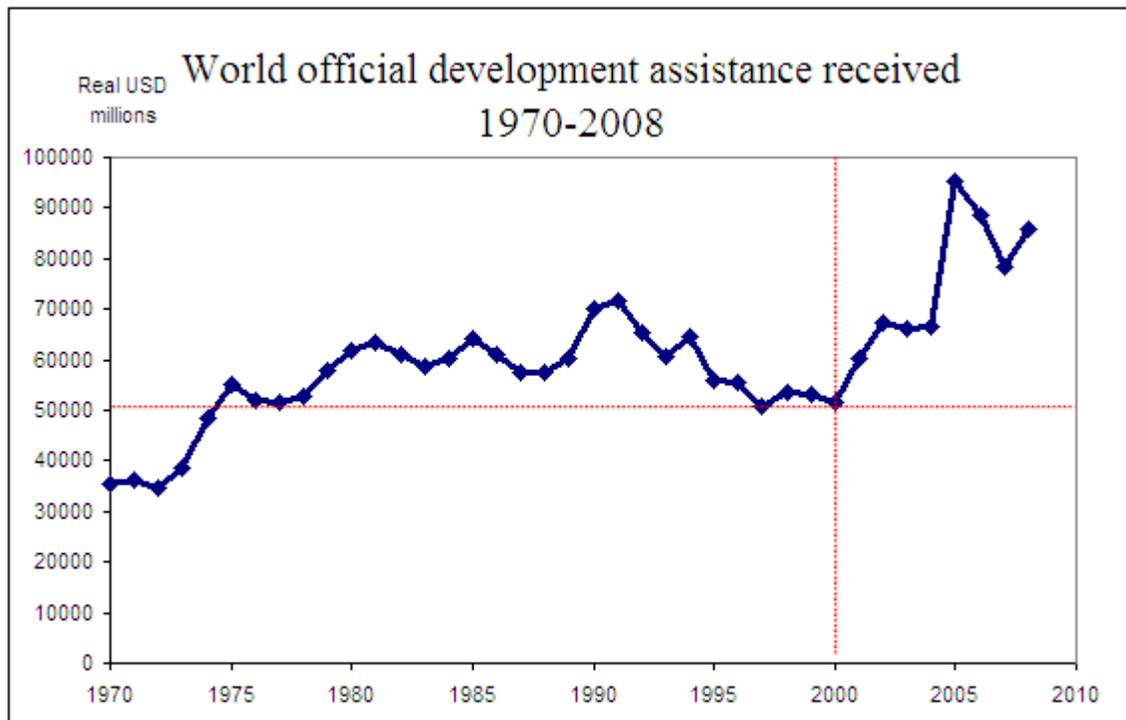
“...we have a collective responsibility to uphold the principles of human dignity, equality and equity at the global level.”

(UN Millennium Declaration, 2000)

So, already developed countries should be involved in developing countries' development, but why? For economic reasons, the rich world would gain on having richer trading partners. The economic growth that leads to reduced inequality can increase trade, access to goods and technique and reduce the risk of war and terrorism (UN Millennium Declaration, 2000). For humanitarian reasons people do not *like* inequalities.

ODA can be a means for donors to control receivers. Alesina & Dollar found in their study that donors choose receivers according to political strategies, such as benefitting former colonies and/or trade partners, where there are natural resources to use or where there are risks of terrorism (Alesina & Dollar, 2000).

In the 1960s ODA reached 4.6 billion USD, while in 1999 it was 56 billion USD (Todaro & Smith, 2003, p 648) and 119.8 billion USD in 2009 (UN, MDG report, 2009).



(Real million USD, 2007 index. Source World Bank.)

The graph shows how ODA has evolved since 1970s and that there has been an increase in ODA especially since the 2000s, when the MDGs were initiated.

This paper focuses on the eighth goal, as it brings together the MDGs, with their aim to reduce world poverty and inequality and improve the lives for hundreds of millions of people. The eighth MDG is interesting as it highlights how relevant economics is for achieving these goals. The aim of this paper is to analyze if aid since the MDGs were initiated has led to economic development for the receivers. To test this, multiple linear regression method is used, with the program SPSS (Statistical Package for the Social Sciences). 117 countries that received aid in 1999-2003 have been examined. Average growth in GDP per capita is examined during the period 2004-2008. All data is taken from World Bank data base.

The paper is structured as follows; section 2 briefly goes through the background of the MDGs and what they are about, with a focus on the eighth goal. Section 3 shows and discusses what theory says about aid and growth, why aid exists and what aid is. Section 4 provides a historical background to aid as a tool for reducing poverty and promoting economic development and looks at what today's empirical research have found. Section 5 presents the empirical method for examining effects of aid on growth, which countries have been examined and what variables have been included. Section 6 presents the results from the regressions and section 7 discusses the future of aid, aid research and economic development.

2 MDG Background – Why ODA?

What are the Millennium Development Goals and why is increased official development assistance part of these goals? In order to give the reader a deeper picture of what the MDGs stand for and how the world has advanced towards reaching the goals this section explains the goals and discuss the motivations for increasing aid.

The Millennium Development Goals “are not only development objectives; they encompass universally accepted human values and rights such as freedom from hunger, the right to basic education, the right to health and a responsibility to future generations.”

(Ban Ki-moon, MDG report 2008, foreword)

The aim of the MDGs is global cooperation for reduced poverty and reduced vulnerability for the poor. The reason why the goals were initiated by the UN was that there was an increased need for global cooperation for fighting poverty and increasing the feeling of responsibility for one another in the world (UN:MDG;why).

The first of the eight goals is to *eradicate extreme poverty and hunger (MDG 1)*. The targets for this goal are to halve the proportion of people living in extreme poverty¹, achieve full and productive employment and halve the proportion of people suffering from hunger. The target to halve the proportion of people living in extreme poverty seems likely to be achieved in 2015, mostly thanks to rapid economic growth in China. The other targets seem less likely to be reached, especially due to economic stagnation in sub-Saharan Africa and East Asia (UN, MDG report, 2009).

The second goal is to *achieve universal primary education (MDG 2)* with the target to ensure full primary education for all children. As this goal affects the other MDGs; mothers education reduce child mortality, parental literacy improve child nourishment, has positive effects on HIV prevention and increase the probability of decent employment, it is of special importance (UN, MDG report, 2009). According to the UN

¹ 1-1,25 USD per day

MDG report major breakthroughs have been done especially in sub-Saharan Africa, but not enough to meet the target by 2015. According to UNESCO, 29 million children in “school age” will still be out of school by 2015. To reach this target, 3,8 million teachers need to be recruited for sub-Saharan Africa alone (UN, MDG report, 2009).

The third goal is to *promote gender equality and empower women (MDG 3)*, with the target to eliminate gender disparity in all levels of education. It does not look like it will be met by 2015 according to the MDG report, as cultural attitudes that promote early marriage, tie girls to the house and attach greater value to educating boys create barriers and keep women from their human rights (UN, MDG report, 2009).

The goal to *reduce child mortality (MDG 4)* looks like it can be met in 2015. Child mortality has steadily declined since 1990. In 1990 the global under-five mortality rate was 93 children per 1000 children, which has been improved to 67 per 1000 children in 2007. This is thanks to focused actions such as immunization campaigns against measles and concentrated efforts in countries with hard-to-reach areas (UN, MDG report, 2009).

Improve maternal health (MDG 5) involves reducing the maternal mortality ratio by three quarters (1990-2015) and to achieve universal access to reproductive health. For the same reasons as the third goal (gender equality) this does not look like it will be reached by 2015 (UN, MDG report, 2009).

Combat HIV/AIDS, malaria and other diseases (MDG 6) involves reversing the spread of HIV/AIDS, reduce death caused by malaria and other diseases and to achieve universal access to treatment of HIV/AIDS. Whether the goal will or will not be reached in 2015 is uncertain. Newly infected and deaths from HIV/AIDS has declined since the 1990s, due to improved access to antiretroviral drugs, but the knowledge of how to prevent HIV/AIDS is still very low, especially in Eastern Europe and Central Asia. Progress has been done in the fight against malaria, due to funding and increased control (UN, MDG report, 2009).

The seventh goal is to *ensure environmental sustainability (MDG 7)*, which includes integrating sustainable development into country policies and programs, reduce biodiversity loss, halve proportion of people without sustainable access to safe drinking water and basic sanitation and to achieve significant improvements in the lives of at least 100 million slum dwellers. It does not look like these targets will be reached by 2015; green house gas emissions are increasing, biodiversity is still threatened and deforestation and irrigation of water continues and increases. The one target that looks like it will be met by 2015 is access to safe drinking water (UN, MDG report, 2009).

The eighth MDG is closely related to economic policy and development economics. *Develop a global partnership for development (MDG 8)*, combines the other goals, as it both affects the achievement of all goals and is dependant of them. There are several targets within this goal. One of them is to develop an open, rule-based, predictable, non-discriminatory trading and financial system for the least developed countries. This target exists as this is the way to help countries help themselves. Today only the LDCs (least developed countries) have true preferential trade status but they can only benefit from this 80-90 percent, due to non-tariff barriers, such as rules of origin and administrative procedures (Fact Sheet, Goal 8, UN). Trade barriers remain high for Asian LDCs, who are the largest exporters of labor-intensive goods.

“70 per cent of the world’s poor live in rural areas and depend on agriculture, but cannot lift themselves out of poverty as they cannot compete against subsidized production.”

(UN Chronicle, the Millennium Campaign).

The target to deal comprehensively with the debt problems of developing countries through national and international measures, in order to make debt sustainable in the long run has been successful, according to the MDG report (2009). External debt has fallen for the average developing country from 13 percent of export earnings in the year 2000 to 7 percent in 2006 (Fact sheet, Goal 8, UN).

Another target within the eighth goal is to, in cooperation with private sector, make available benefits of new technologies, especially information and communications (Fact sheet, 2008). According to the MDG report it looks like this target will be met by 2015. Increased access to world technology; Internet, cellular phones and land lines makes cooperation and participation easier and increase knowledge transfer, why this is important for poverty reduction and economic development.

Of special importance and interest for this paper is the target to *address the special needs of least developed countries and to provide more generous official development assistance*. Developed countries should donate 0.7 percent of their GDP, which only Sweden, Norway, Denmark, Luxembourg and the Netherlands do so far (OECD:1).

In 2009 ODA was \$119.8 billion, which is equivalent to 0.3 per cent of developed countries' combined national income and the highest figure ever met (MDG Report, 2009). ODA has increased since the MDGs were initiated, but the economic crisis reduced aid and its effects. The 2009 MDG report explicitly states that unfavorable economic climate should not be an excuse not to reach the goals and that the MDGs instead should be more integrated in economic policy to fight poverty and find sustainable ways of surviving the economic crisis (MDG report, 2009). Aid has been more targeted to the poorest countries, but donors need to rapidly increase aid, especially to Africa, according to MDG report from 2009.

So, the situation for the moment is, according to the most recent MDG report, that only one of the eight MDGs is likely to be reached in 2015 (goal 4), three goals will be partly reached (goal 1, 6 and 8) and the other four goals will not be reached if not major changes is made by those countries that agreed on working together and cooperating for reduced poverty.

“The MDGs [...] recognize explicitly the interdependence between growth, poverty reduction and sustainable development; [...] and bring together, in the

eighth Goal, the responsibilities of developing countries with those of developed countries...” (UNDP: MDG)

If the MDGs are reached by 2015 more than 500 million people will be lifted out of extreme poverty; more than 300 million people will no longer suffer from hunger; 30 million children will be saved from dying before age 5; 350 million more people will have access to safe drinking water; 650 million more people will have access to basic sanitation; hundreds of millions more women and girls will go to school, have access to economic and political power, work and have greater security and safety (UN:MDG;why). Behind these numbers are people who get a chance of living better lives, with better standards of living, invest in their families and friends, invest in their future and contribute to society, economic growth and sustainable development. According to the UN, increased aid is one action necessary to achieve this (UN:2). The next section will show through what channels aid should spur growth.

3 Theoretical framework

It might seem easy to accept aid, cash to the national accounts, but it also means admitting to being a poor country, accepting other countries' political influence and letting go of independence. Why do countries accept aid and why do others donate? Macroeconomic theory explains how aid should spur growth through the following channels: If a country lacks capital, foreign aid can *substitute for capital to investments*. Foreign aid can affect *fiscal policy* by increasing public spending on growth promoting efforts without having to increase taxes. Foreign aid can *finance imports* of goods that are needed for producing goods for exports. Foreign aid can *reduce national debt* and *lift countries out of the poverty trap* (Schnabbel, 2006; Todaro & Smith, 2003, Rajan & Subramanian, 2008 etc). Foreign aid can contribute to development by taking capital starved countries to steady state or through increasing ultimate growth rate by raising steady state (Rajan & Subramanian, 2008, p 644). This section will go through these theories and look at the motivations for aid. The dilemma to aid is that it seems to not always work and it seems to not always be motivated by theory. Only a few countries follow humanitarian or democratic arguments when donating and in the long run most countries want something in return (Todaro & Smith, 2003, p 653). That will be discussed in the next section (section 4).

3.1 What is foreign aid?

Foreign aid includes a wide range of transfers between countries. It can go from one country to another, which is defined as *bilateral aid*. It can go from several countries through an organization (such as UN, World Bank, IMF or regional development banks) to one or several countries, which is defined as *multilateral aid*. It can come as loans, grants, goods or services. Aid can also come as *private assistance* from Non-Governmental Organizations (such as the two Swedish groups Hand in Hand and Diakonia and international groups such as Save the children, Oxfam and Amnesty International) (Todaro & Smith, 2003, p 647).

A common problem with ODA and the reason why researchers sometimes create their own definitions of aid is that it includes many different types of aid, such as disaster relief, budgetary support, tied and untied aid, loans etcetera, even though these measures does not promote growth. For example disaster relief is not based on the theoretical motivations for ODA and it is not meant to increase investments. Aid that goes to countries that have just experienced a natural disaster will create a negative correlation between aid and growth (Rajan & Subramanian, 2008, p 644). The research team Minou & Reddy has a solution to this by separating developmental aid from non-developmental aid (Minou & Reddy, 2010). Developmental aid is, according to Minou & Reddy's definition, growth promoting aid, which is:

“aid expended in a manner that is anticipated to promote development, whether achieved through economic growth or other means.”
(Minou & Reddy, 2010, p 29)

Non-developmental aid is, according to Minou & Reddy's definition, the type of aid that does not have direct targets for development. More about what they found in their study in the next section (section 4) of this paper.

3.2 Theoretical motivations for aid

According to macroeconomic theory a country that lacks capital has high marginal productivity on capital, meaning that the costs for investments are relatively low. Many developing countries meet an imperfect market, meaning that even though they lack capital and have relatively high marginal productivity on capital they cannot attract capital. If this is the case, ODA can *substitute for capital to investments* (Boone, 1996, p 290). This theory is based on the *Harrod-Domar model*. Economic growth depends on the savings rate, $\frac{\Delta Y}{Y} = \frac{s}{k}$, where k is the capital/output ratio, s is the savings rate and Y is GDP (Schnabel, 2007, p 172). As k is fixed (in steady state) the only way of increasing growth rate is through raising s . The saving rate is a key constraint for growth. The model is widely used and has been for decades, to motivate ODA. For example the World Bank

uses it to decide the necessary aid quantity and suggest levels of savings to achieve growth (Schnabbel, 2007, p 174). The critique to this theory (from some researchers e.g. Doucouliagos & Paldam) is that aid is fungible. This means that the effects of increased investments might be crowded out by decreased savings or that savings are not used for domestic investments but for investments abroad, if they come as foreign aid (Doucouliagos & Paldam, 2009, p 448).

A developed Harrod-Domar model is the *two gap model* which says that limited growth is not only due to inadequate domestic savings, but also a foreign exchange constraint (Schnabbel, 2007, p 175). Export earnings are not enough to *finance imports that are necessary for production*, which can be financed by foreign aid instead. The two gap model says that domestic savings and/or import purchase capacity are not sufficient for growth, so foreign resources can fill this gap. Import purchase capacity is needed for production and foreign exchange (Easterly, 2003). The aim to this aid is that countries become self-sufficient and the aid will be phased out (Todaro & Smith, 2003, p 656). The critique to this model (from some researchers e.g. Easterly 2003) is that aid substitutes for imports instead of exports, which is not growth promoting.

Another way for aid to spur growth is through *fiscal policy* (Boone, 1996, p 292). By receiving financial aid, the government can reduce distortionary taxes and still finance public goods and promote investments. Foreign aid can influence fiscal policy, by being directed towards export promoting actions such as improvements of monetary and social infrastructure (Schnabbel, 2007, p 180). The best growth promoting fiscal policy, according to several researchers (e.g. Dalgaard & Hansen), is spending on education. Good policies and stable institutions are important, but will promote growth only if human capital can use and develop them (Glaeser et al, 2004; Mamoon & Murshed, 2009). Human capital can even work as a substitute for institutions to achieve growth (Mamoon & Murshed, 2009). In China, for example, institutions work poorly to benefit the people but thanks to human capital, technological and economic development is reached. If aid is directed towards fiscal policy it should be through these channels.

Another theory of how aid will spur growth is through *the big push*, based on the theory that some countries are caught in a *poverty trap*. If a country is plagued by a low steady state, with low levels of per capita income and growth, low levels of saving and investment rates, bad infrastructure, low educational level, low access to world markets and other factors that affect growth negatively they might need a big push to get over the threshold and get to a higher steady state. Increased capital will raise income level, but as the country is stuck with a low steady state with low growth, the capital might not be enough to achieve any long term changes and the country will only go back to its low steady state (Schnabel, 2007, p 189). To prevent the country from falling back to its low steady state, the big push with a large amount of capital is necessary to make the country jump to the higher steady state.

A difficulty that many developing countries are struggling with is *debt overhang*. The debt is so large that it can never be paid back and only new loans can finance reimbursements or rents (Schnabel, 2007, p 190). ODA can help countries pay off loans. Otherwise debt overhang will lead to further reduced income, increased debt/income ratio, worsened economic climate and continued reduced investments, another reason for *big push*.

3.3 Why accept aid?

The aid literature is often focused on why donors give aid and what restrictions donors can or should have on receivers, but research is limited when it comes to why recipients accept aid and what demands they could set on donors. For many developing countries ODA is an important share of their balance of payments (Todaro & Smith, 2003, p 634). Without restrictions there is a risk that aid goes into the pocket of corrupt leaders (Todaro & Smith, 2003, p 658). Why should or should not donors set the rules? ODA that is aimed at economic development for receivers should be possible to tie, to make sure that it works. On the other hand, receivers are the vulnerable part as donors have the money and can set the rules. It might seem like a quick fix for the recipient, but it also means donor countries' interference in recipient countries' policy. What probably is the most

important for aid to promote growth is that receiving countries want national economic development. It is up to the governments to invest and decide on how to do it. It is important for aid to work that receivers actually use aid for investments and not personal spending.

3.4 Non-Governmental Organizations

ODA is not the only way promote growth for developing countries. Non-Governmental Organizations (NGOs) work in smaller projects to help poor improve their standards of living, which in turn can lead to economic development. ODA works in the opposite direction by helping the country finance investments in things such as education and their own development projects. According to Todaro & Smith, NGOs show tendencies of promoting growth efficiently (Todaro & Smith, 2003, p 658). Examples of NGOs are Save the Children and Hand in Hand, but there are many other groups such as religious groups, private foundations, charities, research organizations and more. A possible explanation to why this unofficial aid promotes growth efficiently is that the groups usually work on the field, with and within the projects they are supporting and that they have good control and knowledge of how to use their resources efficiently (Todaro & Smith, 2003, p 659).

The eighth MDG states that it is important that the private sector take part in reducing poverty and vulnerability for the poor. According to Ananya Mukherjee Reed & Darryl Reed there are four typical ways of business involvement in global partnership for development (Reed & Reed, 2009). One type of business partnership is *conventional business partnership* that is based on business involvement in country growth, with as little governmental involvement as possible (Reed & Reed, 2009). With free market companies can invest where marginal productivity is highest and this allows for interaction and cooperation.

Corporate social responsibility partnership is another type of business partnership that creates conditions and incentives for business to join. They are voluntary and concern

mostly projects such as job training, microcredit programs or humanitarian assistance such as disaster relief. Companies can be motivated to join for public relations values, market opportunities or gaining market information (Reed & Reed, 2009).

The third type of business partnership for development as described by Reed & Reed is *corporate accountability partnerships*. They are organizations that seek to impose greater social accountability on corporations. They use control measures such as hard law, soft law, boycotts and certifications programs and seek to impose control over corporations in areas such as labor conditions, environmental standards and corporate governance. One example is Green Peace.

The last type of business partnerships for development described by Reed & Reed is *social economy partnership*. They work mostly in the sectors that are popular for urban poor where little capital is required, such as recycling and fair trade movement. They can be non-profit organizations, community organizations, development organizations amongst other (Reed & Reed, 2009). One example is the Swedish NGO Hand in Hand.

Business partnership and NGOs are complements to ODA. Even though there are many questions concerning what kind of aid actually promote growth, more aid is better than less, according to Todaro & Smith (2003, p 660). Untied is better than tied, as receivers can adjust resources to where they are needed, even if there is a risk of corruption. If aid is supplemented by donor countries reduction of trade tariffs towards LDCs exports it will have even greater impact on development (Todaro & Smith, 2003, p 660), which is also part of the Global Partnership agreement in the MDGs. It is also important to notice that not all aid is aimed at economic growth. ODA can be tied to poverty reduction in the long run, such as improved education and/or HIV-prevention which will not create immediate growth.

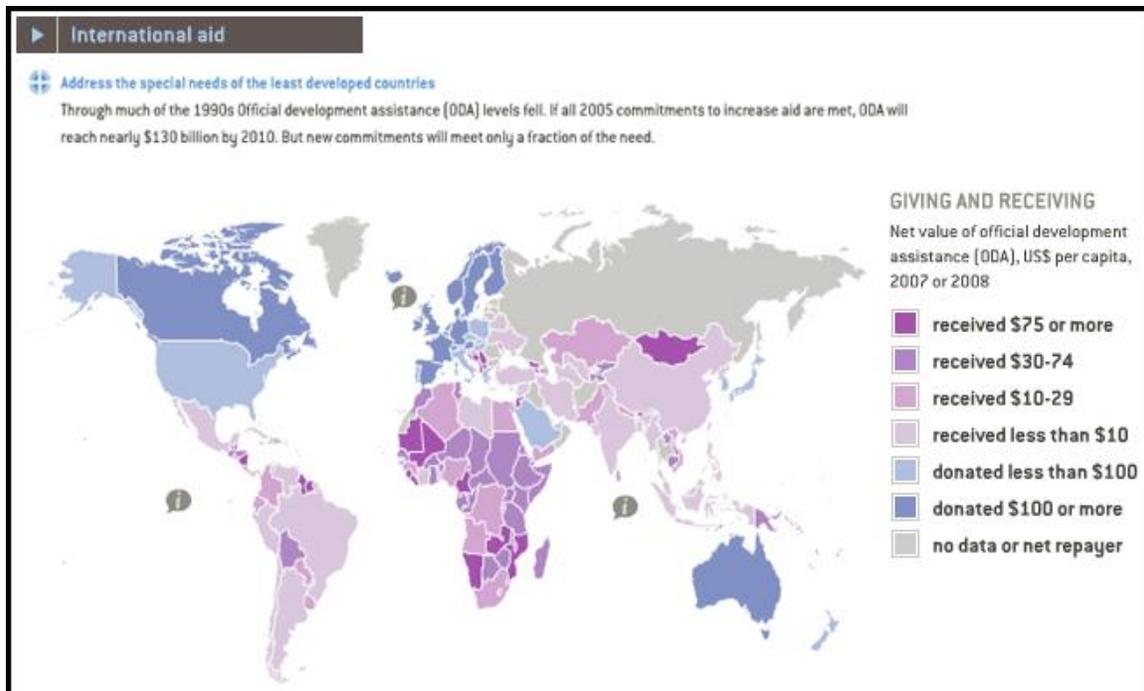
4 Aid and growth - A review of the empirics

Economic theory means making simple models of real life, in order to understand the basics of how real life works. Real life will always be more complicated than theory and this means a risk of missing out on important factors that affect the results. Predictions from theory do not always happen. Section 3 showed what aid is and how it should, according to macroeconomic theory, spur growth. How does aid actually affect the receiving country? Some economists argue that aid does promote growth (e.g. Minou & Reddy, 2010; Todaro & Smith, 2003; Burnside & Dollar, 2004; Dalgaard & Hansen, 2000) while others argue that aid does not promote growth (e.g. Doucouliagos & Paldam, 2009; Boone, 1996; Rajan & Subramanian, 2005, 2008). In order to understand how research about the effects of aid on growth is done, the possible obstacles and what researchers have found so far, this section will go through a small, but important part of the existing research.

4.1 Donors aid pattern. Who gets aid?

Aid is rarely allocated according to needs but more often allocated according to strategic considerations of donor countries (Todaro & Smith, 2003). Multilateral aid is usually more allocated according to receivers needs and promotes growth better than bilateral aid. It is not the LDCs that receive most of the aid, but rather those where the donors have the greatest possibilities of benefiting from aid. South Asia, where nearly 50% of the world's poorest live, receive only 3 USD per person, while the Middle East with five times higher income per capita receives six times more aid per capita (Todaro & Smith, 2003, p 649)². Some countries are largely dependent of aid, such as Guinea-Bissau and Mongolia that received more than a quarter and Nicaragua more than a third of their GNI in 1999 (Todaro & Smith, 2003, p 649).

² Numbers are from 1999!



Here, a world map downloaded from the World Bank, describing who were the main donors and recipients of aid in 2007-2008. The darker the color the more aid per capita the country gives or receives. Western Europe, Canada and Australia give the most, while parts of Western and Southern Africa, Mongolia and the Balkans receive most (World Bank Online Atlas).

Alesina & Dollar made a study in 2000 of who receives aid and for what reasons and found that aid is motivated by donor's political strategies rather than recipients needs (Alesina & Dollar, 2000). They found that foreign aid is often dictated by the donors' political and strategic considerations and that colonial past and political alliances influence whom the donor will set as receiver (Alesina & Dollar, 2000). They also found that bilateral aid has only weak association with poverty, democracy and good policies.

“Factors such as colonial past and voting patterns in the United Nations explain more of the distribution of aid than the political institutions or economic policy of recipients.”

(Alesina & Dollar, 2000, p 23)

According to Alesina & Dollars study non-democratic former colonies get twice as much aid as democratic non-colonies (Alesina & Dollar, 2000, p 23). The three main donors in absolute numbers are the United States, Japan and France. The US focuses its aid to

Egypt and Israel. France is allocating its aid towards UN friends and former colonies while Japan focuses its aid to UN friends and nearby countries where with investment and trade opportunities (Alesina & Dollar, 2000). The Nordic countries motivations for aid are democracy, poverty and openness which have proved better for promoting growth, according to Alesina & Dollar. Minou & Reddy found in their study that less than 15 % of US aid is directed towards pure development projects such as economic growth and poverty reduction, while the largest part of US aid goes to interests in Middle East (Minou & Reddy, 2010). Minou & Reddy found that multilateral aid has considerably larger effects on growth than bilateral aid (Minou & Reddy, 2010). Multilateral aid is spent in a more developmental manner while bilateral aid more often follows the interests of the donors, according to Minou & Reddy.

4.2 Donors aid pattern. What are the donors' motivations?

Donors often have political interest, such as possibilities of affecting the politics of the receiving country, control former colonies and/or control terrorism for their aid (Todaro & Smith, 2003, p 653). The major donor in absolute numbers, the US, has been involved in bilateral aid since the 1940s with the Marshall Plan³. Their focus was in the 1960s South and Southeast Asia, in the 70s Latin America, Middle East in the 80s and since the 1990s their focus has been on Islamist countries in order to prevent terrorism (Todaro & Smith, 2003, p 653). Donors' economic motivations are things such as future trade partners or tying aid to trade. Japan directs most of its aid towards neighboring countries, where they also have private investments and possibilities of expanding trade (Todaro & Smith, 2003, p 654). When donors turn grants into loans or tie aid to exports receivers have accumulated large repayment burdens which can lead to debt overhang⁴ (Todaro & Smith, 2003, p 657).

³ The Marshall Plan aimed at reconstruction of Western Europe, after World War II, to avoid spreading communism (Todaro & Smith, 2003, p 653).

⁴ Debt overhang and big push was discussed in section 3.

4.3 Some aid promotes growth

A majority of the studies on aid efficiency finds that aid is efficient in achieving what it is supposed to (Doucouliagos & Paldam, 2009). Burnside & Dollar looked at how aid has affected growth during the 1990s. They found that there is a strong relationship between aid to good⁵ policy countries and positive growth and that the allocation of aid to low-income countries during that period has favored good policy countries (Burnside & Dollar, 2004). One of their explanations for this result is that theory says that good policies promote growth, which would mean that aid to countries with good policies would work better than to bad policy countries. Another explanation they have to why aid works in good policy countries is that countries where aid works will be rewarded with more aid and encouraged to continue improving institutions and increase amount of aid that shows good results (Burnside & Dollar, 2004). Yet, these findings have been criticized by Dalgaard & Hansen, amongst others. According to Dalgaard & Hansen the fact that aid promotes growth in countries with good policies might simply be because of good policies and not because of aid. Dalgaard & Hansen use the same data as Burnside & Dollar, but control for policy when analyzing the data. What they find is that aid does spur growth regardless of the policy environment.

According to Gomanee et al the two gap model is relevant for identifying how aid may contribute to growth. They find in their study that aid has been efficient in promoting growth, thanks to increased investments, but poor policy factors are so strong that the effects from aid are crowded out. If institutions in the receiving country does not work sufficiently to promote growth, aid will not promote growth because government will spend on consumption instead of investment, which is the reason why aid works in good policy countries but less so in bad policy countries (Gomanee et al, 2005). Gomanee et al argue that the reason why Africa has lagged behind is not because of inefficient aid, but their own “lack of political will to push through major reforms (e.g. improving governance, tackling corruption, land reform) and a lack of resources for financing investment...” (Gomanee et al, 2005, Introduction).

⁵ Good policy promotes growth, through investments in human capital, production, health. Bad policies does not promote growth, health or education, work poorly and is poorly controlled.

As mentioned earlier in the paper, Minou & Reddy made a special distinction between developmental aid and non-developmental aid. They found that developmental aid, meaning aid that is meant for growth also leads to growth, while other types of aid that are not aimed at growth do not lead to growth (Minou & Reddy, 2010). According to Minou & Reddy the aid effectiveness literature makes two big mistakes as researchers make the assumptions that aid solely has contemporaneous or short term effects on growth and that different kinds of aid has the same effect on growth. According to Minou & Reddy the results from aid are distorted when non-developmental aid is included as it might have negative impacts on growth results. They define developmental aid as aid that goes to projects that promotes infrastructural upgrades, such as irrigation projects, rural roads, bridges and ports, health projects such as immunizations campaigns and clinics, educational improvements such as schools etcetera. Non-developmental aid is for example general budgetary support to authoritarian regimes, disaster relief or aid tied to social projects that only affect growth on long term (Minou & Reddy, 2010). Minou & Reddy found that developmental aid has a positive impact on growth for decades after the actual transfer and that especially multilateral aid has positive impacts on growth (Minou & Reddy, 2010).

4.4 Some aid does not promote growth

Some researchers have found that aid does not promote growth. Doucouliagos & Paldam last year made a meta-study of earlier studies on aid effects and found that aid in general does not promote growth. Doing a meta-study means putting together and analyzing results from other studies and making conclusions of the combined results. In a meta-study the researchers do not look at *the data* from the other studies, but rather focus on *the results* of the other studies.

According to Doucouliagos & Paldam the main reason that they did not find that aid promotes growth is that it only raises income level instead of increasing growth. If countries are already at steady state, increased capital will lead to decreased growth until

the steady state capital/output ratio is back to normal. The key to aid is that it should lead to raised growth, either by helping the country reaching their steady state, or by raising it⁶, as mentioned in section 3 of this paper. Doucouliagos & Paldam also explain the missed out growth with lack of learning-by-doing amongst donors. According to them, there is a micro-macro paradox, because even though about 50% of all development projects are successful, but on a macro level aid does not promotes growth, in their study (Doucouliagos & Paldam, 2009, p 438). Their explanation is that on a micro level, projects can be efficient because donors choose to give to already working, or at least planned projects that are more likely to be successful than projects started only because of aid (Doucouliagos & Paldam, 2009, p 438).

Basic growth theory says, and research shows, that investments in human capital and health lead to long term growth. The aid that finances investment in these areas will have the greatest results years later which can be another explanation to why short term studies and meta-studies of aid effects do not show positive effects of aid on growth (Doucouliagos & Paldam, 2009, p 439). When researching on long term effects, it is difficult to single out effects of aid from other effects on growth. As Burnside & Dollar found, Dalgaard & Hansen argues that aid to countries with “good” policies promotes growth, while aid to countries with “bad” policies harms the country’s economy, which confirms the theory that if aid is used for investments it will be successful in promoting growth.

Peter Boone looked at the effectiveness of aid on growth and found that:

“aid does not promote economic development for two reasons: Poverty is not caused by capital shortage, and it is not optimal for politicians to adjust distortionary policies when they receive aid flows.”
(Boone, 1996, p 322).

Boone found that effects of aid on growth are crowded out by decreased savings as it leads to increased government spending and not investments (Boone, 1996).

⁶ In case of poverty trap -> Big push!

Doucouliagos & Paldam could confirm this in their study, where they found that there is a crowding out effect of aid on savings; investments increased but savings were reduced (Doucouliagos & Paldam, 2009, p 449).

Rajan & Subramanian (2005, 2008) is another research team that could not find evidence that aid promotes growth. As Doucouliagos & Paldam, they made general cross country regressions of aid effects on growth. In Rajan & Subramanians' IMF-paper they show how different types of regressions produce different results and that it is possible to produce almost any results, depending on what statistics is chosen and how it is analyzed (Rajan & Subramanian, 2005). They emphasize that there is a risk of subjectivity affecting the results to benefit the researcher. According to Rajan & Subramanian researchers have an incentive to show that aid promotes growth as this means that the prevailing strategy is working (Rajan & Subramanian, 2005).

According to Rajan & Subramanian aid does not have a significant impact on growth no matter *what* it is used for (such as Minou & Reddy's development aid), who the *donor* is, who the *receiver* is or the *time* frame looked at (Rajan & Subramanian, 2008). The repeated issue that cross-country growth regression can be plagued by is noise in the data and/or omitted variables and this is also Rajan & Subramanians theory why they do not get positive results for effects of aid on growth. The longer the time period the larger the risk is of noise in the data and omitted variables (Rajan & Subramanian, 2008). On the other hand, cross-country analysis is useful for comparing countries and searching for general answers.

5 Empirical analysis

In this section the method chosen for this paper and the data material for the regression is presented. The data is collected from the World Development Indicators⁷ (WDI) from 2010, supplied by the World Bank.

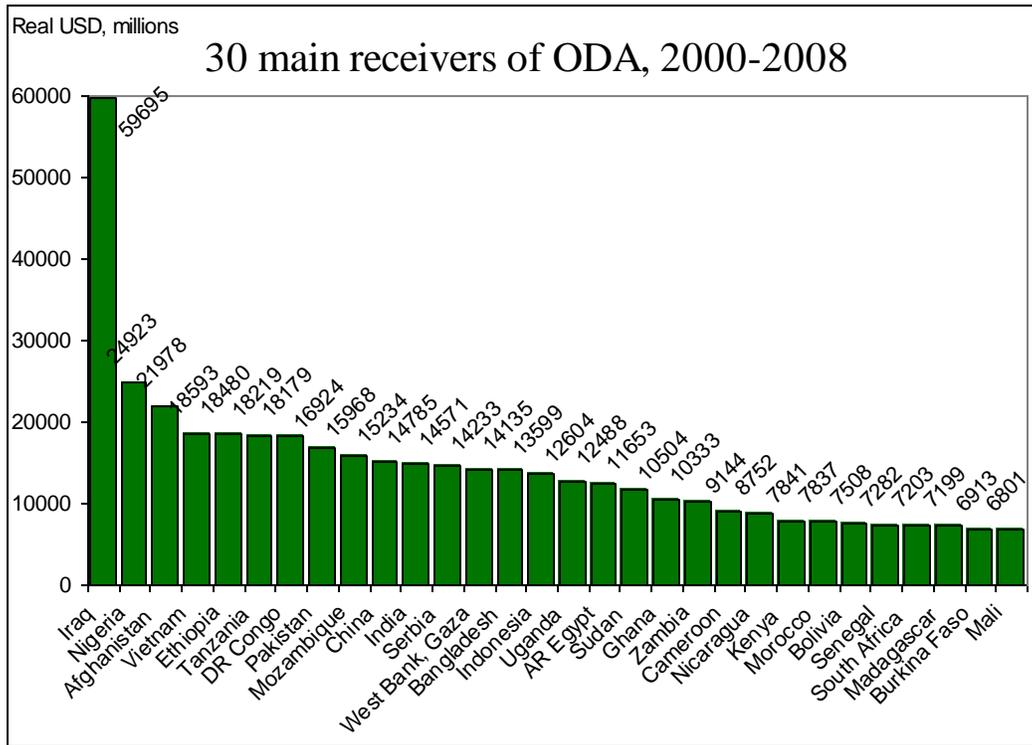
5.1 Time period

The time period is (1999-)2000-2008, which is the time since the MDGs were initiated and the world increased its' responsibility for reducing world poverty. Short periods should be at least four years as cyclical factors that are difficult to control for are avoided this way (according to e.g. Rajan & Subramanian, 2008, p 643). Aid probably affects growth during longer periods, but it becomes more difficult to separate the effects of aid on growth from other effects on growth when the time frame is prolonged. Other reasons for looking at this (short) time period are that at least some quick results are necessary for political support and continued (and increased) aid and that less research has been done on this period.

In order to avoid *reversed causality*, when the dependent variable (growth) affects the independent variables (e.g. ODA), the period for observing growth is 2004-2008, while the period for observing the independent variables is 1999-2003. Otherwise it is possible that growth affects aid, for example if donors reward countries where aid has worked with more aid. Economic growth might affect how much aid countries receive, which is controlled for by using this method. Aid in 1999-2003 can affect economic growth in 2004-2008, but economic growth in 2004-2008 can not affect anything that happened in 1999-2003.

⁷ "The World Development Indicators (WDI) provides a comprehensive selection of economic, social and environmental indicators, drawing on data from the World Bank and more than 30 partner agencies. The database covers more than 900 indicators for 210 economies with data back to 1960. [...] The new 'WDI 2010' focuses its attention on the world's progress towards achieving the Millennium Development Goals (MDGs)." (World bank 1)

5.2 Country selection



The country that in total received most ODA during this period was Iraq, while it was ranked the 83rd poorest (in GDP per capita of the world's 210 countries) in 2000. The country with the lowest GDP per capita in 2000 was Democratic Republic of Congo, with only 85 USD per capita. Compare this graph with the list of poorest countries and it is obvious that not only receivers' lack of capital is a motivation for ODA. (Source World Bank Data base)

During the period 1999 to 2003 there were 147 countries that received ODA. 30 countries had to be removed due to lack of data on other factors. Regressions were thereby made on 117 countries. There were also regressions made on the 30 poorest in 1999, of those 117. The reason to research all countries that received aid and not just a specific group is that the aim of the paper is to find how *aid in general* affects growth. The reason for making regressions on the 30 poorest countries is to see if aid works differently for those. According to theory aid should work best where there is a lack of capital and it is possible that the poorest have the most lack of capital. At least the poorest countries are those that need growth the most. A full list of countries used in regressions is in appendix A and B, with data of ODA received during this period.

5.3 Defining foreign aid

Defining aid can be up to the researcher, as seen in the study by Minou & Reddy. This paper aims at analyzing general aid, so the definition of ODA is that of the Organization for Economic Cooperation and Development (OECD);

“...flows to developing countries and multilateral institutions provided by official agencies, including state and local governments, or by their executive agencies, each transaction of which meets the following test:

- it is administered with the promotion of the economic development and welfare of developing countries as its main objective, and
- it is concessional on character and contains a grant element of at least 25 % (calculated at a rate of discount of 10%).

Grants are transfers made in cash, goods services for which no repayment is required.”

(Schnabbel, 2007, p 19)

5.4 Regression method

The regression method chosen for this paper is cross-country linear regression and the program worked in is SPSS (Statistical Package for Social Sciences). The technique explains how the independent variables, x_n , affect the dependant variable, y .

$$y = b_0 + b_1X_1 + b_2X_2 \dots + b_nX_n + \varepsilon$$

The error term ε embodies all other variables that influence y and should not be correlated with any of the X 's. The coefficients b_n explain how the independent variables affect the dependant variable. The larger the number (in absolute numbers) is of the coefficient the larger is the impact of that independent variable (X) on the dependant variable (y). If the coefficient shows a negative number it means that X will have negative effect on y . As an example, if b_1 is 0.5, an increase of one X_1 means an increase of 0.5 y . If b_2 is -3.5, the impact of X_2 on y is more important, and an increase of one X_2 means a decrease of 3.5 y (Barreto & Howland, 2006).

5.5 Dependent variable

The dependent variable is the variable that is affected by all the independent variables. This paper looks at how aid affects economic growth, so the dependant variable will be *economic growth measured as average growth rate of real GDP per capita during the period 2004-2008 (y)*. This period is chosen for the variable in order to analyze as recent data as possible. For a full list of the data, please check Appendix E.

5.6 Independent variables

The independent variables are those that affect the dependant variable. As the aim of the paper is to analyze how aid affects growth, the variable *Av AID* (X_n), is introduced to the model. It is calculated as average net ODA received per year during 1999-2003, in real USD values (2007 deflator).

In order to reduce risk of *omitted variables* other factors that could also have affected growth during this period are included in the model. Initial level of GDP per capita in 1999 (X_n) might affect growth no matter what aid does, is introduced to the model as *INI GDP pc*.

Economic policy variables are included based on previous empirical studies, such as Gomanee et al (Gomanee et al, 2005, Data and Estimation Issues); *Av INFL* (X_n) is inflation rate that is included to avoid potential cyclical effects. *Av OPEN* (X_n) is measured as the average per year export of goods and services as share of GDP, during the period 1999-2003. Openness is included as this should affect growth during this period and that it is part of MDG eight to reduce trade barriers.

Another economic policy variable has been included, which is savings. *Av SAV* (X_n) is measured as average per year gross domestic savings as percentage of GDP during the period 1999-2003. Savings (and investments) should affect growth positively and it should be controlled for as it might be affected by aid.

The level of education is another factor that can affect growth and that should be controlled for to find the effects of aid on growth. *Av EDU* is measured as average per year primary school enrollment as share of children in school age.

Dummy variables are included to control for specific effects of specific regions (Doucouliagos & Paldam, 2009). Country specific effects can affect the results, and here countries from special regions are grouped together. For example specific factors might exist only in Africa that affects the results and if this is not controlled for the true effect of aid on growth will not be found. IN order to control for these effects, meaning that this false correlation is avoided, dummy variables for *AFR* (Africa), *ASIA*, *LAT* (Latin America) and for *Ex-COLONY* (ex-European colonies) are included.

5.7 Limitations

The sample for the regressions in this paper is large which increase the risk of omitted variables. But with smaller samples the result is less general and is less likely to work on all world countries. If smaller sample is chosen results will be for only that particular group. As this paper seeks to find the effects of aid in general on growth in general, examined countries should be as many as possible. At the same time it increases the risk of *omitted variables* and *country specific effects* that might distort the results.

6 Results

In this section, results from the regressions is presented and analyzed. Discussion follows in the next (and last) section.

6.1 Regression results

The first regression is made on the 117 countries that had full data. Three dummies have been included; Africa, Asia and Latin-America.

Regression 1		
3 dummies, 117 countries		
	Coefficient	Significance
(Constant)	1.026	.000
Av AID	6.704E-12	.533
INI GDP pc	-7.156E-6	.006
Av INFL	-7.109E-5	.664
Av OPEN	-.029	.310
Av SAV	.075	.031
Av EDU	.024	.374
AFR	-.020	.106
ASIA	.002	.925
LAT	.012	.392
R Squared, of model		.163
Sig. of model		.020

The regression shows that aid has had a very small, positive and not statistically significant effect on these countries' growth. It is not statistically significant at 1-, 5- or 10 percent level as probability value > 0.1 ($p=0.533 > 0.1$). The coefficient for Av AID is 0.0000000000067 which is very small to motivate aid for growth. The constant is Av GDP pc growth, which is the dependent variable.

The regression also show that average savings during the period 1999-2003 has had a statistically significant ($p < 0.05$) and positive impact on growth and that initial GDP per capita has had a statistically significant and very small, negative impact on growth. Savings and investments is a basic requirement for growth, according to macroeconomic theory and this should affect any country positively. The impact initial GDP per capita has on growth is barely relevant, as the number is so small. It is possible that initial GDP per capita has negative impacts on growth as it puts more pressure to increase GDP per capita to achieve growth. A country with low GDP per capita need smaller changes to achieve growth than a country with higher GDP per capita, which is what the results show.

As stated in the eighth MDG, openness is an important factor to growth. In this regression it has a negative but not statistically significant impact on growth. This means that this negative impact is not reliable.

The small R^2 shows here that the results from the regression are not reliable. This R^2 means that the model only can explain 16.3 % of the growth in GDP pc in 2004-2008. It is likely that this is caused by omitted variables as there are so many countries included to the model. There are more things that explain growth than the factors chosen for this model. Average inflation should control for cyclical effects of the economy. If more factors would have been included it is possible that the results would have been more reliable. Still the model in total is statistically significant, meaning that the other numbers in the regression are trustable. In conclusion, this model cannot predict the effects of aid, or of any other independent variable, on growth. To see in detail what was found in the regressions, see Appendix C.

The second regression shows the results from effects of aid on growth for the 30 countries with the lowest GDP per capita that received ODA in 1999-2003. It is possible that the poorest countries in the world have a greater need for capital than the average country receiving ODA. As ODA is not always motivated by economic theory such as lack of capital, maybe aid works better in those countries where the need for capital is greatest. The dummy for Latin-America was removed as none of the 30 poorest countries in 1999-2003 were Latin-American. A full list of countries used in this regression is in Appendix B.

Regression 2		
2 dummies, 30 countries		
	Coefficient	Significance
(Constant)	1.024	.000
Av AID	2.301E-11	.018
INI GDP pc	-4.171E-5	.507
Av INFL	.000	.168
Av OPEN	.036	.285
Av SAV	.081	.106
Av EDU	.003	.859
AFR	-.009	.505
ASIA	.023	.215
R Squared, of model		.543
Sig. of model		.017

The results in this regression show a very small and positive impact of ODA on growth. For several reasons these results are more reliable than in the first regression. The coefficient for effects of aid on GDP pc growth is statistically significant at a five percent level ($p=0.018<0.05$). This is a vague sign that aid does promote growth. The impact of aid on growth is significant, but affects growth with only 0.0000000023 %.

Average savings in 1999-2003 has had a positive and statistically significant impact on growth, at a ten percent significance level. For the 30 poorest countries in the world (receiving aid) in this period, the impact of savings on growth has been greater than for the general aid recipient country.

The results from this regression are more reliable than from the first regression as R^2 has increased and p-value is still below 0.05. R^2 shows that 54% of the times the model can predict the results. It is possible that this model shows that the results are more reliable when the number of countries is reduced, only because of reduced risk of omitted variables and country specific effects.

In the third regression a dummy for ex-European colonies was included in order to see if such a control action would change the results. If omitted variables cause insignificant results, increased amount of variables should improve the results.

Regression 3		
3 dummies, 30 countries		
	Coefficient	Significance
(Constant)	1.015	.000
Av AID	2.346E-11	.018
INI GDP pc	-1.838E-5	.794
Av INFL	.000	.282
Av OPEN	.035	.310
Av SAV	.068	.208
Av EDU	.007	.684
AFR	.000	.964
ASIA	.032	.154
Ex-colony	-.010	.452
R Squared, of model		.556
Sig. of model		.027

The results are similar to that of Regression 2. The effect of aid on growth is positive and small. The only variable that shows statistically significant values is average aid. It is statistically significant at a five percent significance level ($p=0.018<0.05$). Openness and savings are positive for growth, but results are not reliable as they do not reach significance level of ten percent.

None of the dummies are significant at any percentage level, meaning that no conclusions can be made concerning them.

R^2 is slightly raised, which is normal when the amount of variables is raised. This means that 55.6 % of the increase in growth is explained by the 0.00000000234 % increase in aid.

6.2 Discussion of the results from regressions

To conclude from the results of these three regressions, there is minor evidence that aid promotes growth. In the first regression the value for aid on growth is positive but not statistically significant. In the second and third regression the impact of aid on growth is positive and statistically significant but very small. It is plausible that aid works better for those countries where capital is needed the most. In order to argument for aid working better for the poorest countries, higher numbers for the coefficient would support this theory better. It is possible that aid does work better for the poorest countries, but the model needs to be developed to be reliable, probably with more variables.

Almost none of the dummies in any of the regressions (except for Africa in the first regression) had significant impact on growth, which means that these regressions could show that it does not matter for growth what region of the world the country is situated in.

7 Concluding remarks - Where are we today?

In the year 2000, the United Nations, with support from 189 countries, decided on a new plan to reduce world poverty and vulnerability for those poor in the world. The eight Millennium Development Goals were stated to achieve this with global cooperation. The United Nations has always, since it was established in 1945, worked for human rights, peace, security and poverty reduction (UN:1), but these goals were new. They were, and are, special because thanks to the UN, many countries sat down together and agreed on real and reachable targets of what to do in order to reduce world poverty and inequality. They are demanding targets, but they are necessary and with global cooperation they are reachable.

The eighth MDG, Develop a global partnership for development, combines the other goals, as it both affects the achievement of all goals and is dependant of them. It is also closely related to economic policy and development economics. There are several targets within this goal and one of them is to address the special needs of least developed countries and to *provide more generous official development assistance*. The target is that the developed countries should donate 0.7 percent of their GDP, which only Sweden, Norway, Denmark, Luxembourg and the Netherlands have met (OECD:1). What this paper has examined is if ODA is a good strategy for achieving growth. Does ODA lead to economic development?

It might seem easy to accept aid, cash to the national accounts, but it also means admitting to being a poor country, accepting other countries' political influence and letting go of independence. Macroeconomic theory explains how aid should spur growth. If a country lacks capital, foreign aid can *substitute for capital to investments*. Foreign aid can affect *fiscal policy* by increasing public spending on growth promoting efforts without having to increase taxes. Foreign aid can *finance imports* of goods that are needed for producing goods for exports. Foreign aid can *reduce national debt* and *lift countries out of the poverty trap* (Schnabel, 2006; Todaro & Smith, 2003, Rajan & Subramanian, 2008 etc). Foreign aid can contribute to development by taking capital

starved countries to steady state or through increasing ultimate growth rate by raising steady state (Rajan & Subramanian, 2008, p 644).

The dilemma to aid is that it should work in theory but empirical research does not always support this theory. Real life will always be more complicated than theory and this means a risk of missing out on important factors that affect the results. Some economists argue that aid does promote growth (e.g. Minou & Reddy, 2010; Todaro & Smith, 2003; Burnside & Dollar, 2004; Dalgaard & Hansen, 2000) while others argue that aid does not promote growth (e.g. Doucouliagos & Paldam, 2009; Boone, 1996; Rajan & Subramanian, 2005, 2008).

During the period 1999 to 2003 there were 147 countries that received ODA. 30 countries had to be removed due to lack of data on other factors. Regressions were thereby made on 117 countries. There were also regressions made on the 30 poorest in 1999, of those 117. The reason to researching all countries that received aid and not just a specific group is that the aim of the paper is to find how *aid in general* affects growth. The reason to making regressions on the 30 poorest countries is to see if aid works differently for those. According to theory aid should work best where there is a lack of capital and it is possible that the poorest have the most lack of capital. At least the poorest countries are those that need growth the most.

The aim of the paper was to find if aid in general promotes growth and results from regressions could barely support that aid promotes growth. In the first regression the value for aid on growth is positive but not statistically significant. In the second and third regression the impact of aid on growth is positive and statistically significant but very small. It is plausible that aid works better for those countries where capital is needed the most. Even though results show positive relationship between aid and growth it is not large enough to be relevant. It is possible that aid does work better for the poorest countries, but the model needs to be developed to be reliable.

There are several aspects that should be considered in these regressions and from their results. First of all, it would be interesting to see more studies that distinguish between developmental and non-developmental aid and examine the effects of those different types of aid. Not all aid is aimed at economic growth. ODA can be tied to poverty reduction in the long run, such as improved education and/or HIV-prevention which will not create immediate growth. As not all aid is aimed at quick results-growth this needs to be included in future discussions of aid efficiency.

There are other interesting discussions to come in this field. Something that should be further researched is whether aid is *efficient*, meaning if aid leads to the results that it aims for. How aid is allocated affects efficiency. It will be interesting to see research about whether different country groups manage aid better than others, both concerning receivers and donors. It will also be interesting to follow the discussion about how general aid affects growth on longer periods. If aid goes to national investments in things such as education and the social sector it will take longer time.

When it comes to looking at general aid, in order to make these regressions more valid, more variables should be included. In these regressions GINI-coefficient could not be included due to lack of data (missing GINI-coefficients for many of the LDCs), but as research is improved it will (hopefully) be easier to find data and then it would be interesting to see how aid, or different types of aid, affect GINI-coefficients.

So, why is general aid efficiency on growth relevant? It is relevant because aid should spur growth for the macroeconomic factors mentioned in this paper. ODA needs to spur growth also on short time periods, in order to get political support for ODA. The UN stated, in the MDGs that aid should be increased. Rich countries have a responsibility towards the LDCs, both in helping them access world market by reducing trade barriers and helping them grow by different measures, which is for example ODA.

The prevailing inequalities between people of different regions and countries are unacceptable. We do not *like* inequalities and poverty because it is inhumane. It is not fair

that some people (e.g. Swedes) easily get education, have good health and social and economic security, while others (e.g. Burundians) live tough lives with none of these things. Economic development for the LDCs will lead to reduced world inequality. If ODA can contribute to achieving the MDGs it needs to continue and to be questioned in order to make it more efficient. For aid to be successful it should be combined with the MDGs. Aid should be targeted towards economic growth, poverty reduction, gender equality and education. Procedures of aid allocation, tied or untied aid, both goals and results, should be transparent. Official developmental assistance can have positive effects on growth and it should be combined with other types of aid, from for example NGOs and when doing so the Millennium Development Goals needs to be taken in to consideration.

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8 Appendix

8.1 Appendix A – Countries receiving ODA 1999-2003

Countries receiving ODA 1999-2003			
Country	Av net ODA rec, real USD		
China	2030846000	Albania	501518000
Serbia	1908958000	Rwanda	489966000
Indonesia	1875960000	Sri Lanka	465166000
Vietnam	1875204000	Sudan	443634000
Congo, Dem. Rep.	1874920000	Tunisia	411602000
Tanzania	1773096000	Niger	398358000
India	1766150000	Macedonia, FYR	380186000
Mozambique	1761034000	Mauritania	379830000
Pakistan	1687002000	Sierra Leone	377514000
Egypt, Arab Rep.	1686424000	Papua New Guinea	375412000
Bangladesh*	1568720000	Lebanon*	370012000
Ethiopia	1467538000	Benin	360480000
West Bank & Gaza	1298500000	Lao PDR	354418000
Uganda	1150602000	Guatemala	346382000
Bosnia & Herz*	1034902000	Algeria	343364000
Nicaragua	1010892000	Turkey	336470000
Zambia	1002964000	Georgia	330380000
Ghana	954324000	Eritrea	327700000
Bolivia	945612000	Guinea	321234000
Cameroon	821084000	Armenia	314804000
Jordan	808890000	Timor-Leste*	312646000
Morocco	770836000	Nigeria*	300596000
South Africa	761666000	Azerbaijan	295048000
Honduras	756640000	Chad	282280000
Philippines	713388000	El Salvador	277002000
Cote d'Ivoire	695646000	Kyrgyz Republic	276458000
Iraq*	673186000	Thailand*	271584000
Senegal	657118000	Mongolia	270860000
Burkina Faso	623620000	Haiti*	269736000
Malawi	619320000	Zimbabwe	265538000
Kenya	608620000	Brazil	252382000
Mali	599962000	Ecuador	242784000
Peru	559532000	Kazakhstan	234958000
Cambodia	556410000	Korea, Dem. Rep.*	219598000
Yemen, Rep.	545654000	Somalia*	216632000
Madagascar	539126000	Namibia	216310000
Angola*	533414000	Uzbekistan	209550000
Colombia	531850000	Burundi	205822000
Nepal	520836000	Mayotte*	195018000
		Tajikistan	193940000
		Syrian Arab Rep.	193220000
		Iran, Islamic Rep.	174244000
		Moldova	165222000

Cape Verde	157224000
Dominican Rep.	155682000
Croatia	142468000
Guyana	135398000
Myanmar*	134994000
Micronesia, Fed. Sts.*	133798000
Argentina	126404000
Guinea-Bissau	119606000
Congo, Rep.	110210000
French Polynesia*	106128000
Central African Rep.	106122000
Djibouti	100870000
Mexico	99324000
Liberia	97250000
New Caledonia*	94984000
Malaysia	91056000
Slovenia	90958000
Venezuela, RB	90574000
Bhutan	90350000
Cuba*	89192000
Solomon Islands	86562000
Togo	82852000
Lesotho	80220000
Chile	80036000
Paraguay	79408000
Marshall Islands*	74096000
Gambia, The	71218000
Bahrain	58662000
Vanuatu	54138000
Turkmenistan*	51684000
Botswana	50752000
Sao Tome and Princ*	50684000
Samoa*	46706000
Fiji	44760000
Oman	41472000

Nthlnds Antilles*	40354000
Gabon	39476000
Comoros	37056000
Swaziland	36294000
Jamaica*	35382000
Belize	35306000
Suriname	34846000
Palau*	33906000
Panama	32070000
Equatorial Guinea	31266000
Tonga	31086000
Maldives	31036000
Mauritius	28768000
St. Lucia	26790000
Costa Rica	25332000
Uruguay	25114000
Kiribati*	24826000
Dominica	22556000
Saudi Arabia*	19896000
Malta	19566000
Seychelles	17732000
Grenada	14938000
St. Kitts and Nevis	12946000
Antigua and Barbuda*	11938000
St. Vincent & Gren.	11174000
Barbados*	5194000
Trinidad and Tobago	1520000
Libya	1322000
Macao SAR, China*	68000
Nor. Mariana Isls.*	32000

*not used in regression due to lack of data

Source: World Bank database

8.2 Appendix B – Countries with lowest GDP pc in 1999

Countries with lowest GDP per capita in 1999, real USD	
Country	GDP pc 1999
Congo, Dem. Rep.	93.34
Burundi	112.15
Ethiopia	120.89
Tajikistan	130.28
Sierra Leone	148.52
Malawi	149.81
Guinea-Bissau	157.27
Liberia	168.50
Niger	171.07
Chad	172.18
Eritrea	206.59
Rwanda	215.63
Nepal	216.80
Burkina Faso	226.26
Mali	227.78
Mozambique	236.42
Uganda	247.51
Madagascar	249.63
Ghana	251.74
Central African Republic	255.68
Togo	263.62
Kyrgyz Republic	267.03
Tanzania	267.23
Cambodia	268.51
Zambia	306.44
Lao PDR	309.85
Gambia, The	317.31
Benin	330.14
Sudan	334.49
Moldova	346.02

Source: World Bank Database

8.3 Appendix C

8.3.1 Regression 1 – 3 dummies, 117 countries

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.404 ^a	.163	.093	.049639101201775

a. Predictors: (Constant), LAT, Av OPEN, Av INFL, ASIA, Av EDU, Av AID, Av SAV, INI GDP pc, AFR

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.051	9	.006	2.316	.020 ^a
	Residual	.264	107	.002		
	Total	.315	116			

a. Predictors: (Constant), LAT, Av OPEN, Av INFL, ASIA, Av EDU, Av AID, Av SAV, INI GDP pc, AFR

b. Dependent Variable: Av GROWTH GDP pc

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.026	.030		34.704	.000
	Av AID	6.704E-12	.000	.067	.626	.533
	INI GDP pc	-7.156E-6	.000	-.321	-2.832	.006
	Av INFL	-7.109E-5	.000	-.040	-.436	.664
	Av OPEN	-.029	.029	-.120	-1.021	.310
	Av SAV	.075	.034	.236	2.184	.031
	Av EDU	.024	.026	.091	.894	.374
	AFR	-.020	.012	-.185	-1.630	.106
	ASIA	.002	.017	.010	.094	.925
LAT	.012	.014	.095	.859	.392	

a. Dependent Variable: Av GROWTH GDP pc

8.3.2 Regression 2 – 2 dummies, 30 countries

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.737 ^a	.543	.369	.01993309321

a. Predictors: (Constant), ASIA, Av INFL, Av SAV, Av OPEN, Av EDU, INI GDP pc, Av AID, AFR

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.010	8	.001	3.121	.017 ^a
	Residual	.008	21	.000		
	Total	.018	29			

a. Predictors: (Constant), ASIA, Av INFL, Av SAV, Av OPEN, Av EDU, INI GDP pc, Av AID, AFR

b. Dependent Variable: Av GROWTH GDP pc

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.024	.027		38.496	.000
	Av AID	2.301E-11	.000	.482	2.562	.018
	INI GDP pc	-4.171E-5	.000	-.118	-.675	.507
	Av INFL	.000	.000	-.256	-1.427	.168
	Av OPEN	.036	.033	.219	1.097	.285
	Av SAV	.081	.048	.306	1.687	.106
	Av EDU	.003	.017	.030	.179	.859
	AFR	-.009	.014	-.153	-.679	.505
	ASIA	.023	.018	.230	1.280	.215

a. Dependent Variable: Av GROWTH GDP pc

8.3.3 Regression 3 – 3 dummies, 30 countries

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.746 ^a	.556	.356	.02013126404

a. Predictors: (Constant), Ex-colony, Av EDU, Av INFL, Av SAV, ASIA, Av OPEN, INI GDP pc, Av AID, AFR

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.010	9	.001	2.785	.027 ^a
	Residual	.008	20	.000		
	Total	.018	29			

a. Predictors: (Constant), Ex-colony, Av EDU, Av INFL, Av SAV, ASIA, Av OPEN, INI GDP pc, Av AID, AFR

b. Dependent Variable: Av GROWTH GDP pc

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.015	.029		34.650	.000
	Av AID	2.346E-11	.000	.491	2.581	.018
	INI GDP pc	-1.838E-5	.000	-.052	-.265	.794
	Av INFL	.000	.000	-.211	-1.107	.282
	Av OPEN	.035	.034	.211	1.041	.310
	Av SAV	.068	.052	.254	1.301	.208
	Av EDU	.007	.018	.074	.414	.684
	AFR	.000	.018	-.013	-.046	.964
	ASIA	.032	.022	.323	1.480	.154
	Ex-colony	-.010	.013	-.181	-.767	.452

a. Dependent Variable: Av GROWTH GDP pc

8.4 Appendix D – Definitions and sources of data

Variable	Description	Source
GROWTH	Average growth of real GDP per capita, 2004-2008	The World Bank
INI GDP pc	Initial level of real GDP per capita, 1999	The World Bank
Av AID	Average real ODA received, 1999-2003	The World Bank
Av OPEN	Average exports of goods and services, per cent of GDP, 1999-2003	The World Bank
Av EDU	Average enrollment in primary school, per cent, 1999-2003	The World Bank
Av INFL	Average inflation rate, GDP deflator, annual %, 1999-2003	The World Bank
Av SAV	Average gross domestic savings, per cent of GDP, 1999-2003	The World Bank
AFR	Dummy for Sub-Sahara, 1 = yes, 0 = no	The World Bank
ASIA	Dummy for East Asia, 1 = yes, 0 = no	The World Bank
LAT	Dummy for Latin America, 1 = yes, 0 = no	The World Bank
Ex-colony	Dummy for Ex-European colonies, 1 = yes, 0 = no	The World Bank

8.5 Appendix E

8.5.1 Regression 1 – 3 dummies, 117 countries

Country Name	Av GROWTH GDP pc	Av AID	INI GDP pc	Av INFL	Av OPEN	Av SAV	Av EDU	AFR	ASIA	LAT
Albania	1,05	501518000	1119	3,79	0,20	0,03	1,06	0	0	0
Algeria	1,02	343364000	1783	9,28	0,36	0,41	1,08	0	0	0
Argentina	1,07	126404000	7841	7,83	0,17	0,20	1,15	0	0	1
Armenia	1,12	314804000	584	1,94	0,26	-0,02	0,99	0	0	0
Azerbaijan	1,23	295048000	594	5,26	0,39	0,23	1,00	0	0	0
Bahrain	1,05	58662000	11910	4,18	0,83	0,34	1,07	0	0	0
Belize	1,00	35306000	3028	-0,64	0,53	0,08	1,11	0	0	1
Benin	1,01	36048000	330	3,54	0,15	0,05	0,93	1	0	0
Bhutan	1,08	90350000	730	5,45	0,29	0,32	0,79	0	0	0
Bolivia	1,03	945612000	1005	3,73	0,20	0,10	1,14	0	0	1
Botswana	1,02	50752000	3371	6,92	0,48	0,51	1,07	1	0	0
Brazil	1,03	252382000	3600	9,58	0,12	0,17	1,47	0	0	1
Burkina Faso	1,01	62362000	226	2,63	0,09	0,03	0,46	1	0	0
Burundi	1,00	205822000	112	9,38	0,07	-0,07	0,64	1	0	0
Cambodia	1,08	55641000	269	0,79	0,51	0,08	1,12	0	1	0
Cameroon	1,01	821084000	624	2,11	0,21	0,19	0,96	1	0	0
Cape Verde	1,05	157224000	1156	1,98	0,28	-0,16	1,18	1	0	0
Central African Republic	1,01	106122000	256	1,90	0,15	0,05	0,71	1	0	0
Chad	1,01	28228000	172	2,70	0,17	-0,02	0,70	1	0	0
Chile	1,03	80036000	4726	4,24	0,33	0,24	1,00	0	0	1
China	1,10	2030846000	883	1,21	0,24	0,40	1,11	0	1	0
Colombia	1,04	53185000	2336	11,94	0,17	0,13	1,18	0	0	1
Comoros	0,99	37056000	378	5,33	0,15	-0,05	1,15	1	0	0
Congo, Dem. Rep.	1,03	187492000	93	277,33	0,22	0,05	0,53	1	0	0
Congo, Rep.	1,02	11021000	1005	11,29	0,78	0,47	0,89	1	0	0
Costa Rica	1,05	25332000	4077	9,61	0,46	0,19	1,08	0	0	1
Cote d'Ivoire	0,99	69564600	642	2,23	0,44	0,21	0,74	1	0	0

		00								
Croatia	1,04	1424680 00	4550	3,92	0,41	0,17	0,94	0	0	0
Djibouti	1,02	1008700 00	774	1,76	0,38	0,00	0,35	1	0	0
Dominica	1,03	2255600 0	3766	1,23	0,50	0,12	1,03	0	0	1
Dominican Republic	1,07	1556820 00	2614	10,92	0,37	0,14	1,11	0	0	1
Ecuador	1,04	2427840 00	1277	3,90	0,29	0,21	1,16	0	0	1
Egypt, Arab Rep.	1,04	1686424 000	1376	3,52	0,18	0,14	0,94	0	0	0
El Salvador	1,03	2770020 00	2174	2,18	0,26	0,02	1,10	0	0	1
Equatorial Guinea	1,08	3126600 0	2153	14,96	0,99	0,79	1,03	1	0	0
Eritrea	0,98	3277000 00	207	15,74	0,11	-0,32	0,59	1	0	0
Ethiopia	1,08	1467538 000	121	2,19	0,12	0,09	0,59	1	0	0
Fiji	0,99	4476000 0	2153	3,34	0,62	0,15	1,06	0	1	0
Gabon	1,01	3947600 0	4287	8,14	0,59	0,50	1,36	1	0	0
Gambia, The	1,03	7121800 0	317	13,32	0,43	0,11	0,91	1	0	0
Georgia	1,10	3303800 00	625	5,83	0,26	0,13	0,95	0	0	0
Ghana	1,04	9543240 00	252	25,51	0,42	0,06	0,80	1	0	0
Grenada	1,04	1493800 0	3763	1,33	0,47	0,17	0,99	0	0	1
Guatemala	1,02	3463820 00	1698	3,74	0,24	0,08	1,05	0	0	1
Guinea	1,01	3212340 00	372	5,19	0,25	0,16	0,66	0	0	0
Guinea-Bissau	1,00	1196060 00	157	1,07	0,29	-0,08	0,85	1	0	0
Guyana	1,03	1353980 00	955	5,18	0,94	0,10	1,21	0	0	1
Honduras	1,04	7566400 00	1101	12,27	0,51	0,14	1,07	0	0	1
India	1,07	1766150 000	443	3,54	0,13	0,24	0,95	0	0	0
Indonesia	1,05	1875960 000	777	12,06	0,36	0,29	1,16	0	1	0
Iran, Islamic Rep.	1,05	1742440 00	1532	21,66	0,24	0,37	1,09	0	0	0
Jordan	1,05	8088900 00	1735	0,61	0,44	-0,01	1,00	0	0	0
Kazakhstan	1,07	2349580 00	1116	11,68	0,48	0,26	1,00	0	0	0
Kenya	1,03	6086200 00	412	3,80	0,23	0,09	0,96	1	0	0
Kyrgyz Republic	1,04	2764580 00	267	15,61	0,40	0,11	0,96	0	0	0
Lao PDR	1,06	3544180 00	310	37,61	0,30	0,18	1,10	0	1	0
Lesotho	1,04	8022000 0	403	7,50	0,43	-0,26	1,12	1	0	0
Liberia	1,03	9725000 0	169	8,03	0,22	-0,03	1,06	1	0	0

Libya	1,04	1322000	6239	19,64	0,40	0,30	1,17	0	0	0
Macedonia, FYR	1,05	3801860 00	1712	3,65	0,42	0,05	0,99	0	0	0
Madagascar	1,03	5391260 00	250	8,45	0,25	0,09	1,07	1	0	0
Malawi	1,04	6193200 00	150	35,43	0,29	0,01	1,32	1	0	0
Malaysia	1,04	9105600 0	3786	2,75	1,13	0,44	0,97	0	1	0
Maldives	1,05	3103600 0	2225	0,74	0,88	0,46	1,32	0	0	0
Mali	1,02	5999620 00	228	3,88	0,29	0,12	0,64	1	0	0
Malta	0,77	1956600 0	9438	4,47	0,86	0,16	1,06	0	0	0
Mauritania	0,78	3798300 00	419	4,26	0,37	-0,03	0,87	1	0	0
Mauritius	1,03	2876800 0	3576	5,21	0,62	0,25	1,02	1	0	0
Mexico	1,02	9932400 0	5647	11,80	0,28	0,21	1,11	0	0	1
Moldova	1,06	1652220 00	346	21,80	0,52	-0,02	0,96	0	0	0
Mongolia	1,07	2708600 00	459	11,40	0,57	0,15	1,03	0	1	0
Morocco	1,03	7708360 00	1266	0,57	0,29	0,23	0,97	0	0	0
Mozambique	1,05	1761034 000	236	8,97	0,22	0,06	0,78	1	0	0
Namibia	1,02	2163100 00	2116	11,24	0,44	0,14	1,16	1	0	0
Nepal	1,02	5208360 00	217	6,28	0,20	0,12	1,14	0	0	0
Nicaragua	1,03	1010892 000	753	6,72	0,23	0,02	1,05	0	0	1
Niger	1,03	3983580 00	171	2,63	0,16	0,04	0,36	1	0	0
Oman	0,78	4147200 0	7985	6,04	0,53	0,36	0,91	0	0	0
Pakistan	1,03	1687002 000	526	9,11	0,15	0,16	0,71	0	0	0
Panama	1,07	3207000 0	3908	0,68	0,69	0,24	1,10	0	0	1
Papua New Guinea	1,02	3754120 00	688	9,78	0,65	0,32	0,61	0	1	0
Paraguay	1,03	7940800 0	1396	10,48	0,40	0,12	1,17	0	0	1
Peru	1,07	5595320 00	2021	2,45	0,16	0,18	1,21	0	0	1
Philippines	1,03	7133880 00	941	5,81	0,51	0,17	1,09	0	1	0
Rwanda	1,06	4899660 00	216	2,27	0,08	0,01	1,07	1	0	0
Senegal	1,01	6571180 00	471	1,74	0,28	0,09	0,69	1	0	0
Serbia	1,06	1908958 000	1137	51,43	0,20	-0,02	1,05	0	0	0
Seychelles	1,05	1773200 0	7335	3,81	0,81	0,23	1,08	1	0	0
Sierra Leone	1,03	3775140 00	149	7,53	0,17	-0,10	0,77	1	0	0
Slovenia	1,05	9095800 0	9595	6,77	0,53	0,24	1,02	0	0	0

Solomon Islands	1,05	8656200 0	1255	6,28	0,25	-0,22	0,92	0	1	0
South Africa	1,03	7616660 00	2972	7,74	0,29	0,19	1,08	1	0	0
Sri Lanka	1,06	4651660 00	828	8,41	0,36	0,17	1,10	0	0	0
St. Kitts and Nevis	1,05	1294600 0	7510	2,42	0,45	0,21	1,11	0	0	1
St. Lucia	1,02	2679000 0	4603	1,73	0,51	0,13	1,04	0	0	1
St. Vincent and the Grenadines	1,05	1117400 0	3048	-2,96	0,47	0,14	1,17	0	0	1
Sudan	1,07	4436340 00	334	9,01	0,13	0,12	0,49	1	0	0
Suriname	1,04	3484600 0	1938	52,29	0,22	0,01	1,16	0	0	1
Swaziland	1,02	3629400 0	1274	5,31	0,87	0,09	0,93	1	0	0
Syrian Arab Republic	1,02	1932200 00	1169	4,88	0,35	0,25	1,09	0	0	0
Tajikistan	1,06	1939400 00	130	25,59	0,72	0,06	0,98	0	0	0
Tanzania	1,04	1773096 000	267	7,92	0,17	0,09	0,79	1	0	0
Togo	1,00	8285200 0	264	0,14	0,32	0,02	1,11	1	0	0
Tonga	1,00	3108600 0	1524	6,79	0,15	-0,21	1,11	0	1	0
Trinidad and Tobago	1,07	1520000 00	5956	5,64	0,53	0,33	0,97	0	0	1
Tunisia	1,04	4116020 00	1964	2,69	0,45	0,23	1,14	0	0	0
Turkey	1,04	3364700 00	3824	43,39	0,23	0,18	0,99	0	0	0
Uganda	1,05	1150602 000	248	3,98	0,11	0,07	1,30	1	0	0
Uruguay	1,07	2511400 0	7041	8,89	0,19	0,13	1,10	0	0	1
Uzbekistan	1,07	2095500 00	543	41,76	0,28	0,21	0,99	0	0	0
Vanuatu	1,04	5413800 0	1282	2,65	0,44	0,08	1,15	0	1	0
Venezuela, RB	1,07	9057400 0	4734	26,32	0,28	0,33	1,03	0	0	1
Vietnam	1,06	1875204 000	377	4,34	0,55	0,27	1,06	0	1	0
West Bank and Gaza	1,03	1298500 000	1501	2,76	0,16	-0,27	1,04	0	0	0
Yemen, Rep.	1,01	5456540 00	512	15,02	0,38	0,22	0,77	0	0	0
Zambia	1,03	1002964 000	306	23,35	0,28	0,06	0,82	1	0	0
Zimbabwe	0,95	2655380 00	649	139,76	0,28	0,11	1,00	1	0	0

8.5.2 Regression 2 – 2 dummies, 30 countries

Country Name	Av GROWTH GDP pc	Av AID	INI GDP pc	Av INFL	Av OPEN	Av SAV	Av EDU	AFR	ASIA	LAT
Congo, Dem. Rep.	1.030236 34	1874920 000	93.337 96	277.3254 4	0.22374	0.05153	0.52914	1	0	0
Burundi	1.004743 71	2058220 00	112.15 467	9.38329	0.07352	-0.06948	0.63732	1	0	0
Ethiopia	1.084203 17	1467538 000	120.88 911	2.18675	0.12336	0.09069	0.59065	1	0	0
Tajikistan	1.058140 37	1939400 00	130.28 182	25.59323	0.72334	0.06173	0.98085	0	0	0
Sierra Leone	1.034290 89	3775140 00	148.51 601	7.52730	0.17480	-0.09979	0.77311	1	0	0
Malawi	1.043105 14	6193200 00	149.80 996	35.43047	0.29098	0.00883	1.32145	1	0	0
Guinea-Bissau	1.001917 72	1196060 00	157.26 908	1.07296	0.29004	-0.08463	0.85011	1	0	0
Liberia	1.031219 50	9725000 0	168.50 400	8.02869	0.22283	-0.03315	1.05681	1	0	0
Niger	1.025428 05	3983580 00	171.07 411	2.63326	0.16397	0.04405	0.35995	1	0	0
Chad	1.013322 35	2822800 00	172.17 682	2.70028	0.17439	-0.02449	0.69653	1	0	0
Eritrea	0.978838 06	3277000 00	206.59 042	15.73876	0.11294	-0.32269	0.59060	1	0	0
Rwanda	1.057828 23	4899660 00	215.62 610	2.27161	0.07989	0.00830	1.07020	1	0	0
Nepal	1.019053 89	5208360 00	216.79 735	6.28405	0.20379	0.12383	1.14047	0	0	0
Burkina Faso	1.014584 10	6236200 00	226.25 668	2.63447	0.09090	0.02504	0.45909	1	0	0
Mali	1.023306 38	5999620 00	227.77 928	3.88397	0.28965	0.12005	0.63629	1	0	0
Mozambique	1.052149 25	1761034 000	236.41 548	8.97234	0.22414	0.06371	0.77535	1	0	0
Uganda	1.053124 82	1150602 000	247.50 879	3.98126	0.11402	0.06896	1.30287	1	0	0
Madagascar	1.029457 30	5391260 00	249.63 452	8.45108	0.24663	0.09357	1.06774	1	0	0
Ghana	1.040740 23	9543240 00	251.74 349	25.50844	0.41882	0.06096	0.80306	1	0	0
Central African Republic	1.011294 64	1061220 00	255.68 272	1.90280	0.15287	0.05190	0.71414	1	0	0
Togo	0.995032 92	8285200 0	263.61 804	0.14018	0.31771	0.01579	1.10600	1	0	0
Kyrgyz Republic	1.038087 41	2764580 00	267.02 812	15.61278	0.39808	0.10863	0.96297	0	0	0
Tanzania	1.042007 75	1773096 000	267.23 030	7.92178	0.16804	0.09448	0.78661	1	0	0
Cambodia	1.084573 65	5564100 00	268.50 534	0.78687	0.50986	0.07770	1.11930	0	1	0
Zambia	1.034048 61	1002964 000	306.44 411	23.34711	0.27762	0.06469	0.82424	1	0	0
Lao PDR	1.057669 55	3544180 00	309.84 527	37.60987	0.30032	0.18131	1.10000	0	1	0
Gambia, The	1.029857 32	7121800 0	317.31 197	13.32337	0.43093	0.11086	0.90616	1	0	0
Benin	1.008594 49	3604800 00	330.14 150	3.54436	0.14746	0.05400	0.93364	1	0	0
Sudan	1.066826 38	4436340 00	334.48 926	9.01434	0.12786	0.12467	0.49069	1	0	0
Moldova	1.058691 03	1652220 00	346.01 588	21.79977	0.51588	-0.02391	0.95672	0	0	0

8.5.3 Regression 3 – 3 dummies, 30 countries

Country Name	Av GROWT H GDP pc	Av AID	INI GDP pc	Av INFL	Av OPEN	Av SAV	Av EDU	AFR	ASIA	LAT	Ex-colony
Congo, Dem. Rep.	1.03023634	187492000	93.33796	277.32544	0.22374	0.05153	0.52914	1	0	0	1
Burundi	1.00474371	205822000	112.15467	9.38329	0.07352	-0.06948	0.63732	1	0	0	1
Ethiopia	1.08420317	1467538000	120.88911	2.18675	0.12336	0.09069	0.59065	1	0	0	0
Tajikistan	1.05814037	193940000	130.28182	25.59323	0.72334	0.06173	0.98085	0	0	0	0
Sierra Leone	1.03429089	377514000	148.51601	7.52730	0.17480	-0.09979	0.77311	1	0	0	1
Malawi	1.04310514	619320000	149.80996	35.43047	0.29098	0.00883	1.32145	1	0	0	1
Guinea-Bissau	1.00191772	119606000	157.26908	1.07296	0.29004	-0.08463	0.85011	1	0	0	1
Liberia	1.03121950	97250000	168.50400	8.02869	0.22283	-0.03315	1.05681	1	0	0	0
Niger	1.02542805	398358000	171.07411	2.63326	0.16397	0.04405	0.35995	1	0	0	0
Chad	1.01332235	282280000	172.17682	2.70028	0.17439	-0.02449	0.69653	1	0	0	1
Eritrea	0.97883806	327700000	206.59042	15.73876	0.11294	-0.32269	0.59060	1	0	0	1
Rwanda	1.05782823	489966000	215.62610	2.27161	0.07989	0.00830	1.07020	1	0	0	1
Nepal	1.01905389	520836000	216.79735	6.28405	0.20379	0.12383	1.14047	0	0	0	0
Burkina Faso	1.01458410	623620000	226.25668	2.63447	0.09090	0.02504	0.45909	1	0	0	1
Mali	1.02330638	599962000	227.77928	3.88397	0.28965	0.12005	0.63629	1	0	0	0
Mozambique	1.05214925	1761034000	236.41548	8.97234	0.22414	0.06371	0.77535	1	0	0	1
Uganda	1.05312482	1150602000	247.50879	3.98126	0.11402	0.06896	1.30287	1	0	0	1
Madagascar	1.02945730	539126000	249.63452	8.45108	0.24663	0.09357	1.06774	1	0	0	1
Ghana	1.04074023	954324000	251.74349	25.50844	0.41882	0.06096	0.80306	1	0	0	1
Central African Republic	1.01129464	106122000	255.68272	1.90280	0.15287	0.05190	0.71414	1	0	0	1
Togo	0.99503292	82852000	263.61804	0.14018	0.31771	0.01579	1.10600	1	0	0	1
Kyrgyz Republic	1.03808741	276458000	267.02812	15.61278	0.39808	0.10863	0.96297	0	0	0	0
Tanzania	1.04200775	1773096000	267.23030	7.92178	0.16804	0.09448	0.78661	1	0	0	1
Cambodia	1.08457365	556410000	268.50534	0.78687	0.50986	0.07770	1.11930	0	1	0	1
Zambia	1.03404861	1002964000	306.44411	23.34711	0.27762	0.06469	0.82424	1	0	0	1
Lao PDR	1.05766955	354418000	309.84527	37.60987	0.30032	0.18131	1.10000	0	1	0	1
Gambia, The	1.02985732	71218000	317.31197	13.32337	0.43093	0.11086	0.90616	1	0	0	1
Benin	1.00859449	360480000	330.14150	3.54436	0.14746	0.05400	0.93364	1	0	0	1
Sudan	1.06682638	443634000	334.48926	9.01434	0.12786	0.12467	0.49069	1	0	0	1
Moldova	1.05869103	165222000	346.01588	21.79977	0.51588	-0.02391	0.95672	0	0	0	0