THE EFFECT OF AID SYNERGIES ON GROWTH

The conditionality between governmental aid and non-governmental aid

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1. Introduction

Development aid is back on the political agenda. During the 2010 government elections in the Netherlands Geert Wilders, a politician from the PVV, argued that the Netherlands should stop providing collective development aid. 'Since 1960 the Netherlands has spent over 106 billion euros on development aid. And can we prove that the aid has been effective? Unfortunately not!' [1] The Netherlands are one of the biggest providers of foreign aid. However, the new government under prime-minister Rutte will lower the amount of development aid with one billion euros[2]. The amount of tax money assigned to development aid will no longer be justified by the public if the effect of aid cannot be determined. More often aid is perceived as 'not effective', as 'promoting corruption' and as being 'spent on organization costs'. But is it money down the drain?

Many researchers have tried to answer this question by investigating the effect of aid on gross domestic product. These studies show mixed results and are not able to provide hard evidence of the effectiveness of aid.[3] However, these researches focused their attention on 'Official Development Aid', only one of the three types of development aid. Research done concerning the effect of humanitarian aid and NGO aid on economic growth is scarce. NGO aid has been researched but not in respect to GDP growth - for example, with respect to the number of poor people the NGO projects have reached or the number of children going to school. These studies conclude that a huge number of projects implemented by NGOs achieve their immediate objectives (Riddell, 2007). Due to these kinds of results, providing aid at micro level caught the eye of the public. This resulted in a huge expansion of aid provided by NGOs; the total number of NGOs increased by 23,3% between 1999 and 2004[4].

However these three 'worlds of aid' (Official Development Assistance, NGO aid and humanitarian aid) are not three separate entities, but are becoming more and more interlinked (Riddell, 2007). NGOs receive on average 10 billion US dollars from governments each year to provide and support development and humanitarian aid (Riddell, 2007). Moreover, NGOs tend to work in the same countries as their official 'backdonors' because NGOs can be more effective if they complement the effort of their bilateral donors (Koch, Dreher, Nunnenkamp and Thiele, 2008). This raises the following questions: Can governmental aid be more effective if they also work in the same countries as NGOs? Does governmental aid by itself not foster economic growth and will it if that aid is

[1] http://www.forum-voor-de-vrijheid.nl/showthread.php?t=5220
[2] http://www.trouw.nl/nieuws/politiek/article3314667.ece/Minder_landen_krijgen_ontwikkelingshulp.html
[3] Chapter 4 will discuss the literature concerning aid effectiveness
[4] Tabel 2.2.1

combined with NGO aid? Due to a lack of research done concerning the effectiveness of NGOs, the growing NGO sector and the complementary behavior of NGOs toward governmental aid, the following research question will be investigated in this thesis:

Are there positive synergy effects between governmental aid and non- governmental aid, meaning that in areas where these types of aid are clustered governmental aid is more effective in reducing poverty?

To empirically find an answer to the research question, a new database for NGO expenditures had to be constructed. Yontcheva and Masud (2005) and Koch et al. (2008) also constructed a NGO database but the data was not publically available and only concerning the year 2005. The new database was set up by extracting the expenditures from the annual reports of the NGOs or by contacting the NGOs directly. The database contains the expenditures of 44 international NGOs between 2000 and 2009.

To investigate this research question, the same research method as Burnside and Dollar (2000) is used. Thus, the effect of governmental and NGO aid conditioned on policies is also estimated to compare the results with Burnside and Dollar (2000). The regressions show that governmental aid and NGO aid by themselves do not have a significant positive effect, or even a negative effect, on growth. However when governmental aid is conditioned on policies or NGO aid, it has a significant positive effect. Therefore it can be concluded that governmental aid and non-governmental aid show synergy effects and governmental aid conditioned on NGO aid will be more effective in reducing poverty.

The outline of this research will be as follows: Chapter 2 will explain the 'world of aid' by defining the different types of aid. Chapter 3 discusses why there is the need for different types of aid and how they complement each other. Chapter 4 provides a literature review on research done concerning aid effectiveness, and tries to fill the literature gap of governmental aid conditioned on NGO aid. Chapter 5 will give an overview of the descriptive statistics of the data in the sample and the research method used, and chapter 6 will show the results from the panel regression. The last chapter draws conclusions.

2. Defining aid

'What precisely is foreign aid? At its broadest, it consist of all resources – physical goods, skills and technical know – how, financial grants (gifts), or loans (at concessional rates) –transferred by donor to recipients.' (Riddell, 2007)

This broad definition of foreign aid leaves many questions unanswered and is rarely used by those working in the business of foreign aid. *Development aid* or *development assistance* are terms used more often and are defined as that part of foreign aid whose purpose is to contribute to human welfare and development in poor countries (Riddell, 2007). Foreign aid can be divided into three categories;

(i) Official development aid provided by governments or multilateral organizations
(ii) Development aid provided by non-governmental organizations (NGOs) and civil society organizations (CSOs)
(III) Humanitarian and emergency aid provided by NGOs, official donors and UN agencies

The focus of this research will be on the first two of these; official development aid and aid provided by NGOs.

2.1 Official Bilateral Development Aid

In 1960 an influential committee was formed by leading governments to promote and coordinate aid from donor governments; The Development Assistance Committee (DAC) (Riddell, 2007). In 2009 the committee consists of twenty-four members; governments and multilateral organizations. The main goals of the DAC are to reduce poverty in partner countries, to achieve the millennium development goals and to improve aid effectiveness[5]. The aid provided by the DAC donors[6] is defined as Official Development Assistance and is defined in box 2.1.

In 1970 the DAC countries agreed that ODA should account for 0,7% of the donors' national income (GNI). Nowadays the ODA/GNI ratio is a key indicator to determine the level of development aid and is often used to compare the expenditures of countries on foreign aid. In 2005, the 15 members of the European Union agreed to reach the 0,7% target by 2015[7].

[5] http://www.oecd.org/about/0,3347,en_2649_33721_1_1_1_1_1,00.html
[6] Appendix B provides an overview of the DAC donor countries
[7] http://www.oecd.org/document/19/0,3746,en_2649_34447_45539475_1_1_1_1,00.html

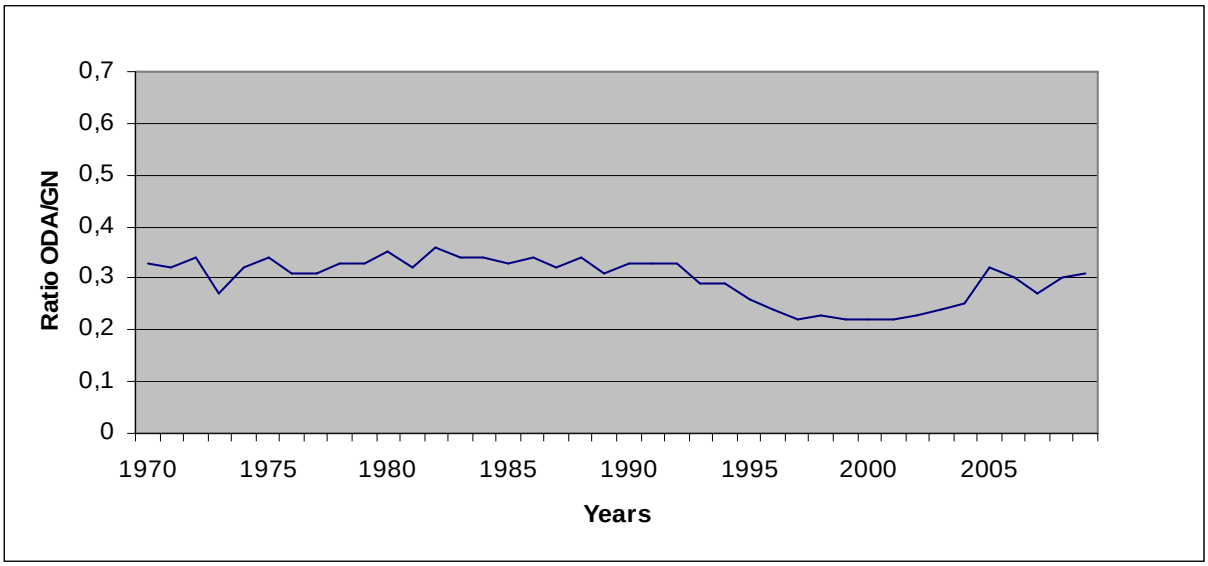
Box 2.1 The Definition of Official Development Assistance

Official Development Assistance (ODA) is defined as those 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 tests: i) it is administered with the promotion of the economic development and welfare of developing countries as its main objective; and ii) it is concessional in character and conveys a grant element of at least 25 per cent.

Source: OECD (2010)

Figure 2.1.1 shows the ratio of the total ODA provided by the DAC donor countries to the GNI of all DAC donor countries. Despite the agreement the ratio has been below 0,7% since 1970. With the exception of the Netherlands, Luxembourg and the Scandinavian countries, no DAC donor country managed to reach the target in 2006[8].

Figure 2.1.1 Ratio of ODA to GNI, 1980-2009



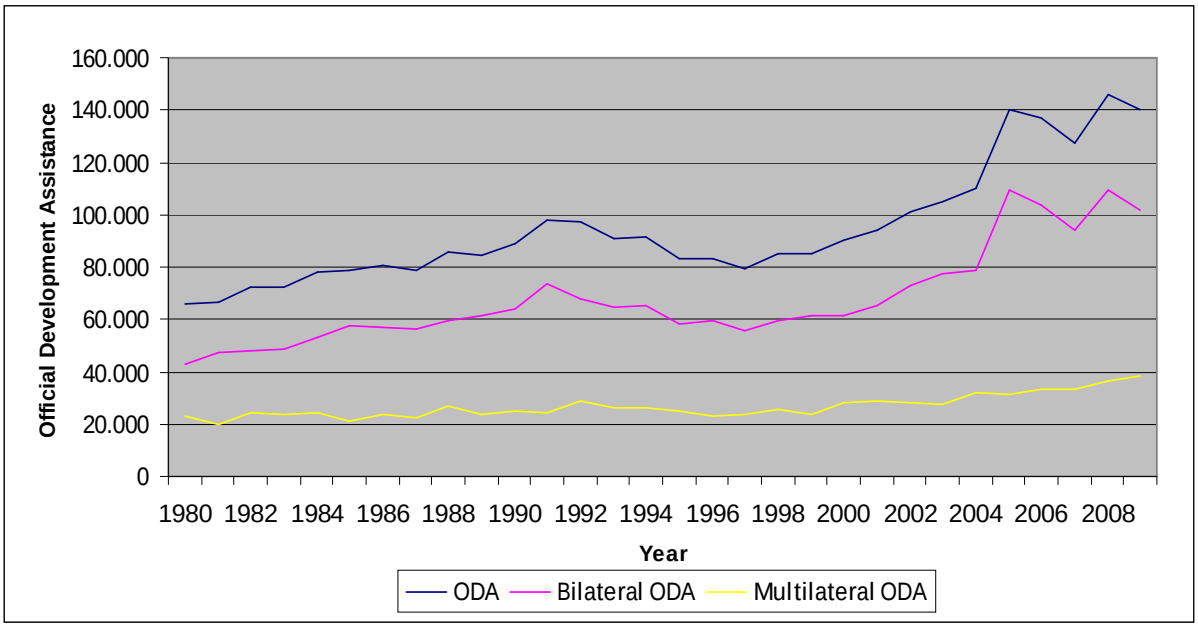
Source: OECD (2010)

ODA consists of multilateral and bilateral aid. Multilateral aid is given by the donor country to international organizations such as the United Nations, the World Bank and Development Banks. The International organization in its turn distributes the money among the developing countries. In contrast, bilateral aid is provided directly to the government of the aid recipient country. Figure 2.1.1

[8] http://www.ssb.no/uhjelpoecd_en/arkiv/art-2008-01-23-01-en.html

exhibits the amounts of ODA, bilateral ODA and multilateral ODA from 1980 to 2009. On average, ODA consists of 71,3% bilateral aid and 28,7% multilateral aid.

Figure 2.1.2 Net ODA by DAC member countries 1980-2009
(Net disbursements in constant 2008 million US dollars)



Source: OECD (2010)

Figure 2.1.1 shows a varied record of aid-giving; periods of rapid expansion (mid- to late 1980 and the post 1997 period) and three periods of decline (early 1980s, from 1990 to 1997 and a short dip in 2006). The decline in the early 1980s was due to stagflation and the application of neo-liberal orthodoxies in the industrialized countries. It was believed that big and interventionist governments were the cause of the economic failure. The results of this were the downsizing of the public sector and a new approach to aid-giving; aid was now conditioned on neo-liberal policies in the aid recipient country. When the 1980s began, ODA fell sharply and all major bilateral donors reduced their aid budgets. (Riddell, 2007)

From mid – to late 1980 foreign aid started a period of rapid expansion; from 1980 to 1990 ODA was rising by approximately 1/3 in constant prices. The first reason for this increase in aid-giving was the end of the economic crisis in the industrialized countries and a resulting expansion of the public sector. The second reason was the changed approach to aid-giving due to the worsening conditions in third world countries. The industrialized countries came to the understanding that 'conditioned aid' was not working and that the need for aid was urgent. (Riddell, 2007)

The decline from 1990 to 1997 was the result of the ending of the Cold War, since it marked the end of political aid. Large fiscal deficits in the industrialized countries and rising concerns about the aid dependency of recipient countries and the environment to which aid funds were directed also resulted in decreasing official development aid. (Riddell, 2007)

In the new century many agreements (for example the 'International Development Goals' and the 'Millennium Development Goals') have been reached to reduce poverty and extend ODA. Many important publications by the UN (Human Development Reports), the World Bank (World Development reports) and the OECD/DAC have also refocused the aid on poverty. However, the most rapid increase in ODA was following the attacks on 9/11 in the United States when politics once again became interlinked with aid-giving (Riddell, 2007). In 2006 Official Development Aid experienced its first fall since 1997; ODA decreased by 5,1% to 103,9 billion US dollars. However, until then it was still the highest level recorded, with the exception of 2005. The fall was predicted, as ODA in 2005 was boosted to a high level due to the large Paris Club[9] debt relief operations. Excluding the debt relief, ODA fell by 1.8% in 2006[10].

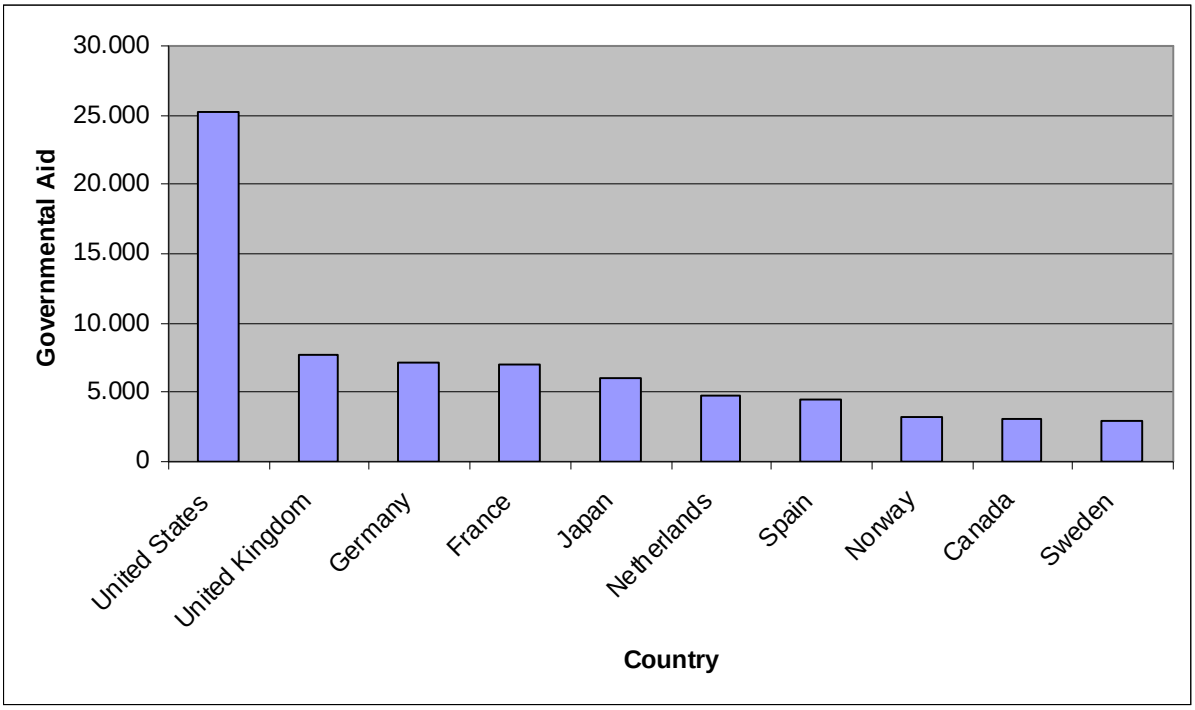
The bilateral part of Official Development Assistance will be the focus of this research and is named 'governmental aid'. Figure 2.1.3 gives an overview of the amount of governmental aid by each DAC donor in 2009. The total amount of governmental aid in 2009 was 83.601,96 million US dollars. The largest part of governmental aid in 2009 is provided by The United States (25173,63 million USD), The United Kingdom (7656,82 million USD) and Germany (7096,67 million USD).

Note that countries can be both a governmental aid donor and a governmental aid recipient. In figure 2.1.3 the amount of governmental aid of the biggest official DAC members is shown. However, governmental aid is also offered by non-DAC members, for example Turkey. 665,31 million US dollars was contributed by Turkey in 2009, while it also received 558,14 million US dollars of governmental aid (OECD database). Governmental aid donors in this research are defined as the official DAC members.

9 "The Paris Club is an informal group of official creditors whose role is to find coordinated and sustainable solutions to the payment difficulties experienced by debtor countries. As debtor countries undertake reforms to stabilize and restore their macroeconomic and financial situation, Paris Club creditors provide an appropriate debt treatment. Paris Club creditors provide debt treatments to debtor countries in the form of rescheduling, which is debt relief by postponement or, in the case of concessional rescheduling, reduction in debt service obligations during a defined period (flow treatment) or as of a set date (stock treatment).'"http://www.clubdeparis.org/en/

10 http://www.oecd.org/document/17/0,2340,en_2649_33721_38341265_1_1_1_1,00.html

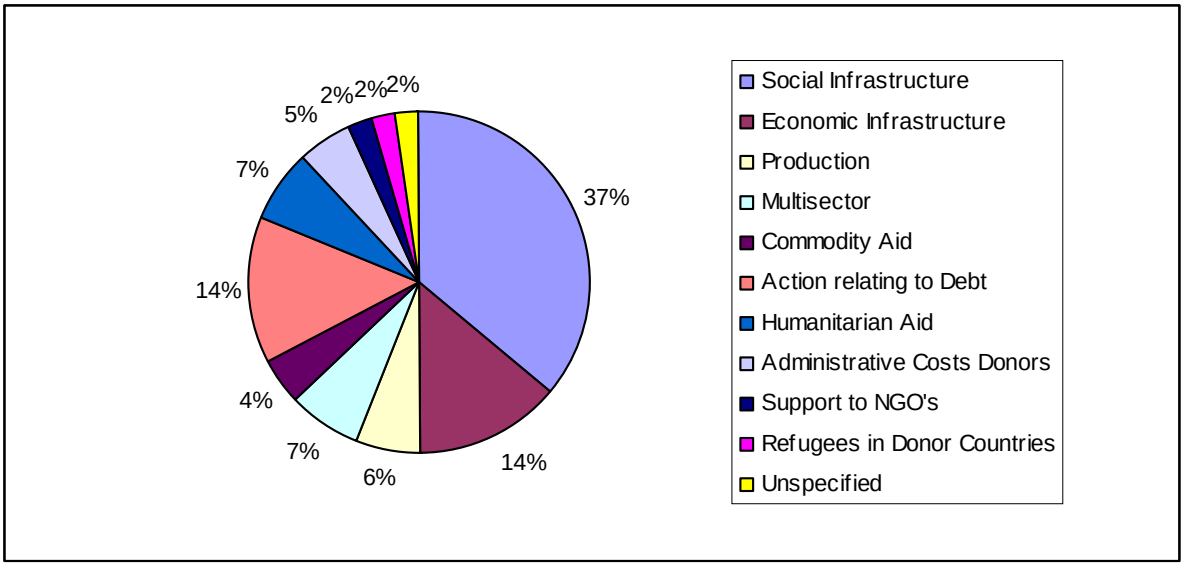
Figure 2.1.3 Top 10 Governmental Aid by Donor 2009
Net disbursements in current 2009 USD Millions



Source OECD (2010)

Figure 2.1.4 shows how governmental aid is allocated over different sectors. The percentages are averages over the years 2000 until 2009. The largest part of governmental aid is funded to social infrastructure (37%), economic infrastructure (14%) and action relating to debt (14%).

Figure 2.1.4 Average Governmental Aid per Sector 2000-2009



Source: OECD (2010)

The figure also shows that a part of governmental aid is supported to NGOs (2%). This sector refers to governmental aid that is paid to national and international non-governmental organizations and other private organizations. The next chapter will focus on this relationship between governmental aid and NGO aid.

2.2 International Non-Governmental Development Aid

A broad range of organizations are commonly referred to as NGOs. Although there is no generally accepted definition of an NGO, box 2.2 represents the definition of non-governmental organizations given by 'The Organization for Economic Co-operation and Development' (OEDCD).

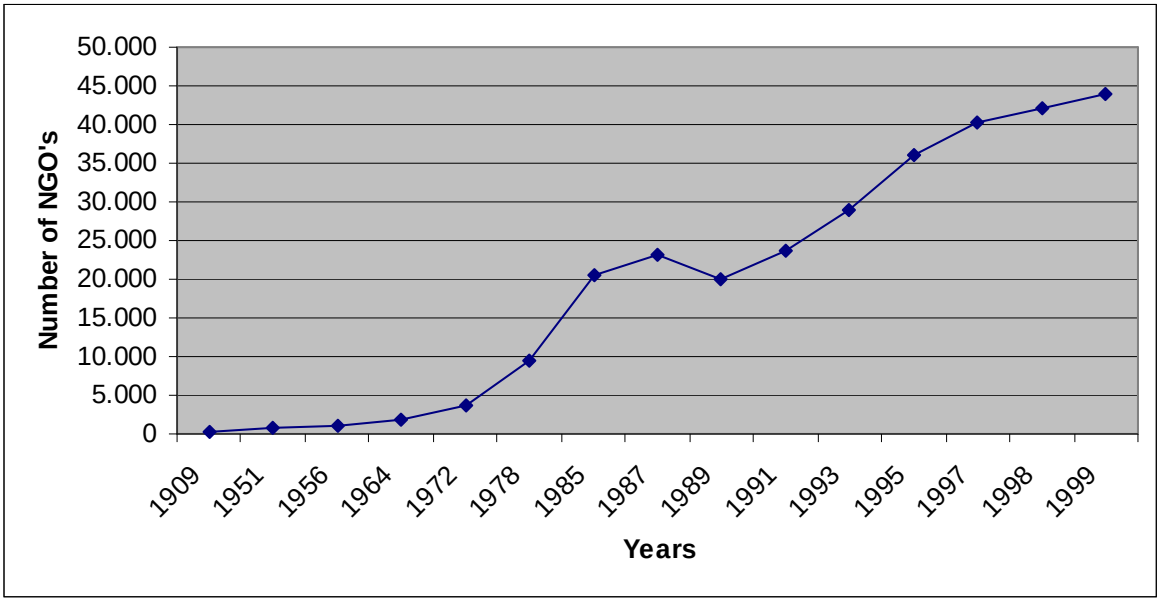
Box 2.2 The definition of non-governmental organizations

Private non-profit-making agencies, including co-operative societies and trade unions, which are active in development and national in the sense that their funds are fully or mainly obtained from sources in the donor economy.

Source: OECD (2010)

The definition in box 2.2 could include a whole range of organizations, from locally-based to global. Therefore it is essential to define the NGOs of interest in this research: *International Non-Governmental Development Organizations.* International NGOs (INGOs) are NGOs which operate in more than one country and work outside their country of origin. In contrast, national NGOs are mainly focused on activities in one country, are based in the region in which they work and are staffed locally (Agg, 2006; Riddell, 2007). Development NGOs are organizations working on development issues and are not primarily focused on emergency and humanitarian operations. The common point of view of development NGOs is that poverty is not only caused by shortage of skills, assets and basic services but also by policies, processes and institutions. These could limit opportunities for people and communities, make poverty seem less important and restrict development. For this reason, development NGOs undertake projects and programs for poor people and communities but also activities including advocacy, awareness-raising, lobbying and educational work (Riddell, 2007). Most NGO development projects and programs are funded with aid money. The three main sources of aid money are governments, private donations and private foundations (Riddell, 2007). International non-governmental development aid will be named 'NGO aid' in this research.

Figure 2.2.1 The Number of NGOs between 1909 and 1999



Source: Union of International Associations. www.uia.org/statistics/organizations/ytb299.php, accessed in January 2011.

While statistics about global numbers of NGOs are generally incomplete, figure 2.2.1 gives an overview of the increase in the total number of NGOs from 1909 until 1999. The figure shows a remarkable increase in the number of NGOs in the 1980s. This expansion in the number of NGOs is mainly caused by the increase in the number of (international) development NGOs. In the 1980s the NGO sector was seen as a key actor in international development cooperation and NGO aid was preferable to governmental aid (Agg, 2006). This is in line with the previous part of this research where a decline in governmental aid was found to be due to neo-liberal policies.

Table 2.2.1 gives an overview of the number of NGOs and the growth of NGOs in 1990, 2000 and 2003. The table indicates that the policy sector experienced the largest growth between 2000 and 2003. This is in line with the governmental aid flows in that period since aid-giving became more interlinked with politics after the attacks on 9/11 in the United States. The table also shows that 'economic development & infrastructure', 'research', 'law, policy advocacy' and 'social services' are the largest NGO sectors in absolute numbers. Since social infrastructure and economic infrastructure are also the largest governmental aid sectors, NGO aid and governmental aid focus their aid-giving on the same sectors. Note that not only the number of NGOs increased but also the amount of total development aid from international NGOs. From 1970 to 1985 total development aid increased ten-fold and in 1992 international NGOs channeled over 7,6 billion US dollars to developing countries (Riddell, 2007).

Table 2.2.1 Number of NGOs by sector

Purpose	1990	2000	2004	Growth (%) 1990-2000	Growth (%) 2000-2003
Culture and Recreation	1169	2733	3666	12,4	34,1
Education	1485	1839	3212	23,8	74,7
Research	7675	8467	12387	10,3	46,3
Health	1357	2036	2925	50	43,7
Social Services	2361	4215	6434	78,5	52,6
Environment	979	1170	1781	19,5	52,2
Economic Dev & Infrastructure	9582	9614	15221	0,33	58,3
Law, Policy Advocacy	2712	3864	7090	42,5	83,5
Religion	1407	1869	3082	32,8	64,9
Defense	244	234	425	-4,1	81,6
Politics	1275	1240	2780	-2,7	124,2
Total	30.246	37.281	59.003	23,3	58,3

Source: Union of International Associations, Guide to Civil Society Networks (2004)

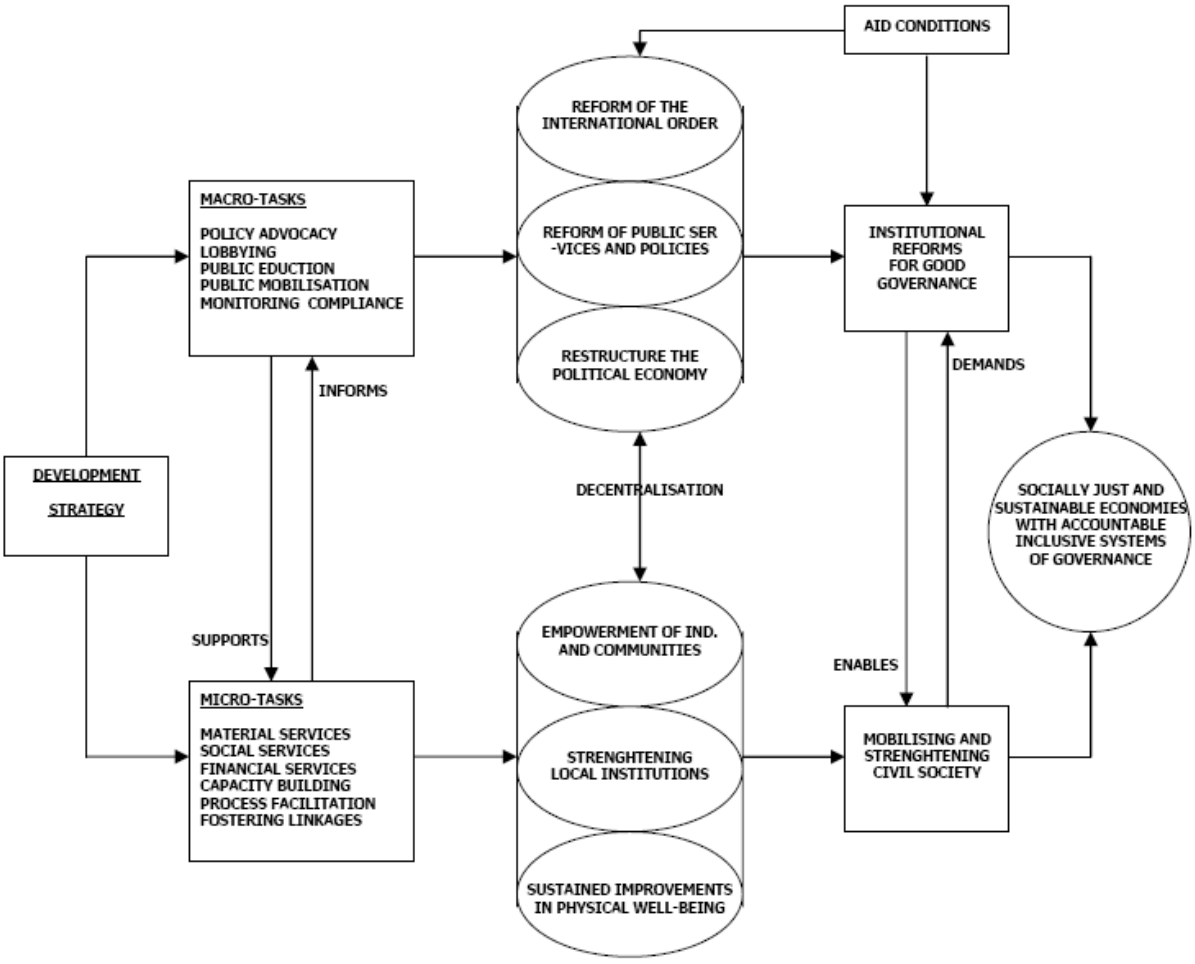
3. The Development Framework

Governmental aid and NGO aid both provide foreign aid. This raises the question; why is there the need for different types of aid? Each type of aid provider fulfills his own role in the development process; NGO aid on a micro level and governmental aid on a macro level. This chapter will clarify these different roles of NGO and governmental aid through the development framework, their comparative advantages and the complementary behavior between them.

3.1 The Development Framework

Figure 3.1 gives an overview of the development framework introduced by Fowler (1997). The circle on the right-hand side of the scheme illustrates the ultimate goal of development aid; 'socially just and sustainable economies with accountable inclusive systems of governance' (Fowler 1997)

Figure 3.1 Framework of Development Action



Source: Fowler (1997)

Both on the macro level and the micro level there are three types of reform which eventually should change the underlying causes of poverty.

3.1.1 The macro level

The first type of macro level reform is the international order. By reforming the international order, the political and economic order should become more in favor of developing countries. Lifting the trade barriers and reducing the debt burden are examples of reforming the international order. Reform of the public services and policies is the second macro level reform. Through changing the relationship between the poor and the government, the poor are able to claim a larger voice in making public policy.

The last reform is restructuring the political economy to improve the macro-situation of the poor. For example by exposing corruption and removing regulations against the informal sector (Fowler 1997). Moreover, a better political economy ensures that foreign aid will be more effective (Collier and Dollar, 2001).

To achieve these macro level reforms, the following tasks should be undertaken; policy advocacy, lobbying, public education and monitoring compliance[11]. Box 2.1 gives an example of a specific task on the macro level; public education.

Box 3.1.1 Example macro level

The government of Australia donated money and goods from 1992 to 2002 to expand the quality and quantity of education in Papua New Guinea. During those ten years 272 textbooks for secondary schools were provided, the number of teachers was extended to 1000, 200 scholarships to Australia were provided to 2000 students in secondary schools and the first elementary schools were built. The quality of education was improved by the transfer of skills, the implementation of a new curriculum and the distribution of new learning materials.

Source: Riddell, 2007

3.1.2 The micro level

Development aid at the micro level aims to 'mobilize and strengthen civil society' by empowering individuals and communities, by strengthening the local institutions and by improving peoples livelihoods and physical well-being in sustainable ways. These reforms are achieved by building up

[11] The call for access to information about the effect of government policies.

the human, natural, physical, financial, and social assets for the poor. Box 3.1.2 gives an example of building up the 'human assets' also known as 'human capital'

Box 3.1.2 Example micro level

Child Fund International is one of the international NGOs included in the sample of the research. The main goal of Child Fund is to 'help deprived, excluded and vulnerable children living in poverty have the capacity to become young adults, parents and leaders who bring lasting and positive change to their communities'. One of the projects of Child Fund is breeding dairy goats in Kenya. The organization supports 35 HIV positive women and men by training them to breed these goats. The dairy goats are able to improve the nutritional standards for the children of the HIV positive men and women through the supply of goat milk. The goal of the project is to build a dairy goat farm with 45 dairy goats. By farming and selling the goats, the group of 35 HIV positive people will be able to earn a living.

Source: website Child Fund [12]

The World Bank Report of 2000/2001 'Attacking Poverty: Opportunity, Empowerment, and Security' argues that poverty could be reduced by facilitating empowerment, enhancing security and promoting opportunity. Promoting opportunity is achieved by building up the tangible assets for the poor such as jobs, credit, water and schools. Building up these assets for the poor will result in more opportunities, an increase in the independence of this group and also make poor people less vulnerable to risks. Thus, building up the assets of the poor will be one of the keys to reducing poverty since building up the assets will reduce inequality (The World Bank Report, 2001).

3.2 Comparative advantages

Aid-giving is provided by NGOs and governments on both a micro and a macro level. Box 3.2.1 shows an example of governmental aid on the macro level and box 3.1.2 shows an example of NGO aid on the micro level. However, NGOs also fulfill macro tasks such as lobbying and education. Similarly, governmental aid also provides tools for agriculture, water services and heath care.

The question now still remains of why there is the need for different types of aid when NGO aid and governmental aid both function on the macro and micro levels? This need is due to the comparative advantages of NGO aid on a micro level and governmental aid on a macro level. Table 3.2.1 shows a short overview of the comparative advantages of NGO aid and governmental aid.

[12] http://www.mychildfund.org/site/apps/nlnet/content2.aspx?c=dnJJKRNjFiG&b=5587119&ct=8828031&notoc=1, accessed December 17 2010.

The comparative advantages of governmental aid in table 3.1 show in which areas governmental aid is relatively more effective than NGO aid. The first area is introduced by Cassen (1994) and is the linkage between the donor government and the aid-recipient government. He argues that the governments of countries could have a strong link through the possible linguistic and personal similarities caused by colonial or historical ties.

Table 3.2.1 Comparative advantages: Governmental aid and NGO aid

GOVERNMENTAL AID	NGO AID
Close linkages with recipient governments	Flexibility
Political power	Proximity to members and client
International role	Popular participation
Technical assistance	Reaching the poorest
	Innovation
	Cost effectiveness

The second comparative advantage is political power which could be used to demand better institutions, governance and lowering of corruption in the aid-recipient country. This concept is also known as 'conditioned aid' (Riddell, 2007). Donor governments can also play an important role on an international level through promoting regional stability and cooperation, by being part of trade negotiations, and by providing the combination of giving aid and military peacekeeping (Riddell,2007). The last area in which governmental aid has a comparative advantage is technical assistance. Donor governments have been providing technical assistance since the start of official aid. In 2004, technical cooperation expenditures accounted for 36% of total governmental aid. Technical assistance is able to fill skill and knowledge gaps on the condition that this knowledge is highly available within the donor country (Riddell, 2007). These comparative advantages result in a relatively more effective providing of governmental aid on macro-economic themes like developing infrastructure, improving policies and promoting trade.

The first three comparative advantages of NGO aid in table 3.2.1 are introduced by a working paper of the UN Industrial Development Organization (UNIDO) in 1997. The study argues concerning NGOs:

"Proximity to their members or clients, their flexibility and the high degree of people's involvement and participation in their activities, [...} leads to strong commitments, appropriateness of solutions and high acceptance of decisions implemented."

The advantage of flexibility is also mentioned by Fowler (1988). He notes that NGOs are less 'uniform' and 'rigid' than governments. Therefore NGOs are more flexible and have the ability to quickly respond to environmental factors.

Riddell (2007) describes the strength of NGO activities, which is their reaching of the poor communities, not just the poor countries as governmental aid does. NGO aid is channeled to the initiatives which remain outside the reach of governmental aid. Agg (2006) also argues that NGOs are smaller, more flexible and better able to reach the poorest people.

Innovation is the next comparative advantage of NGO aid. Hulme and Mosley (1996) for example show that NGOs have been innovative concerning the financial services of the poor (microcredit). Vivian (1994:190) described the innovative comparative advantage as follows:

"While government plans are typically concerned with the political aspect of the distribution of development projects, NGOs need not be. This gives them greater room for maneuver and would conceivably make it more possible for them to explore new types of project and to fail in them without the loss of legitimacy that such experimentation would cost the government. "

The last comparative advantage is cost-effectiveness. Evidence suggests that large NGOs are able to provide some services more cost-effectively than governments. An example of this evidence is provided by (Hasan, 1993, p.66): the Orangi Pilot Project's cost of developing sanitation systems in Karachi is less than one-third of the equivalent cost in the commercial or government sectors.

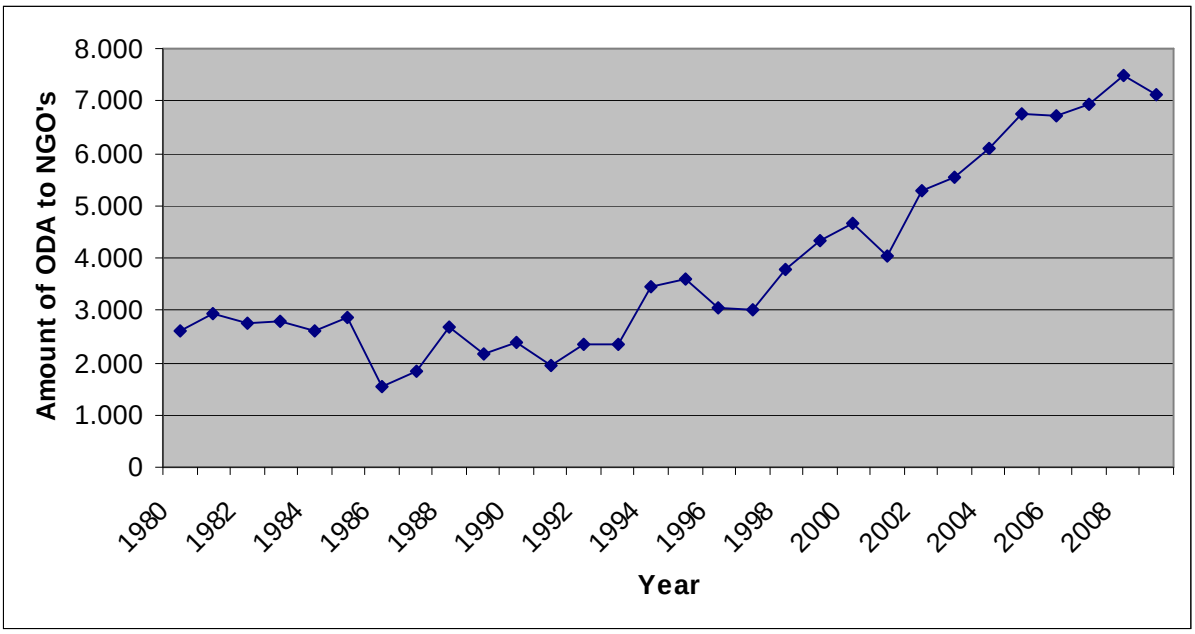
The flexibility, proximity to member and clients, popular participation, reaching of the poorest, innovation and cost-effectiveness of NGOs all make NGO aid relatively more effective on the micro level.

3.3 Complementary behavior

Section 3.2 describes the comparative advantages of NGO aid on a micro level and governmental aid on a macro level. The fact that both types of aid are more effective on different levels indicates that the different types of aid could also be complementing each other and thereby causing synergy effects. There is not much literature on this topic, however some studies have researched the complementary behavior of non-governmental organizations. Koch (2007) and Koch et al.(2008)

investigated the location choices of NGOs worldwide. Koch (2007) concluded that NGOs tend to work in the same countries as their official 'backdonors' because NGOs can be more effective if they complement the efforts of their bilateral donors. Koch et al. (2008) also investigated the NGO location choices but extended the dataset from 20 non-governmental organizations to 60. Although they rejected the hypothesis of the complementary behavior of NGOs to the bilateral donors, they did conclude that NGOs tend to replicate the location choices of the donors from whom NGOs get part of their funding. Most large international NGOs receive a significant proportion of their income from official sources (Agg, 2006). Therefore it could be concluded that International NGOs tend to replicate the location of the bilateral donors. The following figure also reports complementary behavior between ODA and NGO aid.

Figure 3.2 Official Development Assistance to NGO [13]
Net disbursements in constant 2008 million US dollars



Source: OECD (2010)

The figure shows the amount of official development assistance that is channeled through and given in support to NGOs. During the last three decades the amount of ODA to NGOs has increased. The fact that official bilateral and multilateral donors increase the direct funding of NGOs could indicate that NGOs play a distinct and possible complementary role in the aid process.

[13] Aid going to NGOs has been calculated by summing up 'support received from official sector' and 'ODA through private sectors' both a type of the Private flows transaction in database DAC 1.

4. Aid effectiveness theory

Governmental aid and NGO aid share the same goal; reducing poverty. But how effective is development aid at achieving this goal? The following chapter will summarize the literature on aid effectiveness. The first part will elaborate the relationship between aid and growth, since aid effectiveness is measured in economic growth. The second part is about the relationship between pro-poor growth and the synergy effects.

4.1 Aid and growth

Hansen and Tarp (2000) consider three generations of empirical cross-country work on aid effectiveness in less developed countries. In the first generation studies, foreign aid was seen as an extra to the capital stock of the developing country. One dollar of foreign aid would result in an increase of one dollar in total savings and investment. These studies were based on the Harrod-Domar growth model which explains economic growth by capital productivity and the level of savings. Following Hansen and Tarp (2000), there were also a few researchers with a less optimistic view of foreign aid. Papanek (1972), Griffin (1970), Griffin and Enos (1970), Rahman (1968) Weisskopf (1972) and Newlyn (1973) claimed that aid leads to lower domestic savings and in that way constrains growth. Chenry and Strout (1966) were also more skeptical and introduced import capacity as a separate potential constraint on growth in their two gap model.

The second-generation of empirical work focused more on the link between aid and growth. Hansen and Tarp (2000) conclude, based on a number of second-generation studies, that this link is positive.
The third generation studies also focused on the link between aid and growth but took a distinct step forward by using panel data and variables for economic policy and environment. The aid-growth relationship was seen as non-linear and the endogeneity of aid and other variables were also addressed explicitly in some studies.

The studies of Hadjimichael (1995), Boone (1996), Burnside and Dollar (2000) are some of the most influential research studies of the third generation. Hadjimichael (1995) researched the effect of structural reforms, exogenous factors and macroeconomic policies on savings, investment and growth in sub-Saharan Africa. He concluded that the differences in economic policies are the main cause of the poor economic performance of sub-Saharan Africa. Furthermore, the research recognized the positive growth impact of aid. Boone (1996) concluded that aid has no effect on investment and growth. He thereby started the debate concerning the relationship between aid and

growth and confirms the 'macro-micro paradox' introduced by Paul Mosley (1987). This paradox stems from micro-based aid evaluations with a significant growth effect and no or ambiguous results at macro level. Many researches have tried to explain this paradox. The Burnside and Dollar (2000) study is one of the most important ones since they included an interaction term between foreign aid and economic policies and thereby wrote the first conditioned aid study. They researched the following hypothesis: "Aid affects growth, but is conditional on the same policies that affect growth". Burnside and Dollar (2000) concluded that aid does have a positive effect on growth but is conditional on good policy. After the research done by Burnside and Dollar (2000) more conditional aid studies have been written. Durbarry, Gemmell and Greenaway (1998) found robust evidence that foreign aid has a positive effect on economic growth in low developing counties conditional on stable macroeconomic policy. Furthermore, Durbarry et al.(1998) found an optimum aid allocation in terms of growth effects: 40-45%. This indicates that at relatively low or high amounts of aid, aid does not result in faster economic growth. This could be an explanation for why earlier studies with samples that contained low aid amounts failed to identify significant aid–growth effects. There have also been papers reacting to the results of Burnside and Dollar (2000); such as Collier and Dehn (2001), Collier and Dollar (2001), Dalgaard and Hansen (2001), Guillaumont and Chauvet (2001), Hansen and Tarp (2001), and Lensink and White (2001). Some of these papers agree and some disagree with the results of Burnside and Dollar (2000). There is one main point which all conditioned aid theories agree on; governmental aid by itself has an average effect of zero on economic growth.

4.2 Pro-poor growth and synergy effects

Whether foreign aid is effective depends on the effect of economic growth on poverty reduction in the recipient country. The World Bank (2000) states that when countries become richer, on average the incidence of income poverty falls. For these reasons, "economic growth is a powerful force for poverty reduction" (World Bank, 2000; 45). This would mean that when there is positive economic growth, even though the rate of inequality is unaffected, the absolute number of poor people is reduced. However, cross-country studies have indicated that there is a vast difference amongst countries in the rate of poverty reduction. Ravallion and Datt (2002) estimated that initial inequality is one of the main determinants of these differences. As shown in section 3, NGOs have a comparative advantage in building assets for the poor and thereby reducing inequality. This implies that when governmental aid and NGO aid are bundled together, aid would be pro-poor and thereby reducing poverty.

This raises the questions: what is pro-poor growth and when is growth pro-poor? There are two

different definitions of pro-poor growth:

(I) *"Pro-poor growth means that poverty falls more than it would have if all incomes had grown at the same rate" (Baulch and McCullock, 2000; Kakwani and Pernia, 2000).*
(II) *"Pro-poor growth is growth that reduces poverty" (Ravallion and Chen, 2003).*

The first definition states that for pro-poor growth, the income of the poor must increase at a higher rate than the income of the non-poor. The problem with this definition is that in times of economic expansion and rising inequality, there can be large absolute gains for the poor although this is not pro-poor growth following definition 1 (Ravallion, 2004) . Due to this problem definition 2 will be used to define pro-poor growth. The pro-poor growth definition by Ravallion and Chen (2003) is based on how much a chosen poverty measure changes due to economic growth.

The answer to the second question 'what makes growth pro-poor?' is the rate of income inequality in a country. Ravallion (2004) argues that the higher the initial inequality in a country, the lower the rate at which income poverty falls, at any positive rate of growth. Epaulard (2003) named this effect the elasticity of the poverty rate to growth and concluded that the greater the inequality, the lower the elasticity and the higher the mean income, the higher the elasticity. Reducing initial inequality may have a triple effect; it reduces poverty for a given level of income, it will accelerate the impact of economic growth on poverty reduction and it may contribute to a higher growth rate (Heltberg, 2002).

The literature on pro-poor growth shows that pro-poor growth has a positive effect on reducing poverty. Chapter three showed that different types of aid have comparative advantages on different levels and that governmental aid and NGO aid seem to show complementary behaviour. This complementary behaviour could result in synergy effects since governmental aid conditioned on NGO aid creates a circle of lowering inequality: NGOs foster pro-poor growth by lowering inequality which results in higher long term growth rates and poverty reduction. Poverty reduction in itself will again lower inequality and a circle is formed. Since there is no literature and research done on the synergy effects of aid, the following sections will test whether this theory holds.

5. Dataset, Descriptive Statistics and Methodology

This chapter will first discuss the datasets for NGO aid and governmental aid. Since there is no accessible dataset for the expenditure of International NGOs per country, a new dataset has been constructed for this research. The second part of this chapter will give an overview of the descriptive statistics of the data in the sample and compare the results with the finding of Koch et al. (2008). The last section will describe the model and the features for this research.

5.1 Datasets

Information about the expenditures of INGOs in different countries can be found in the annual reports of the organizations. However, the data is usually organized by region or by the type of program (education/health/microfinance etc). In order to estimate the effectiveness of NGO aid and the possible synergy effects, NGO aid flows per country are required. Bouwhuis (2009) started to construct a new database with the expenditures of 27 international NGOs by country and year (2000-2007). For this research the dataset has been doubled by extending the number of NGOs (45) and the span of years (2000-2009). In total 128 international NGOs have been contacted and all organizations met the following requirements:

(I) The average annual budget (2000-2009) exceeded 1 million USD dollars[14]

(II) The INGO is not predominantly a humanitarian organization

Predominantly humanitarian organizations spend more than 50% of their annual budget on emergencies. By excluding these organizations from the database, the chance that the results will be influenced by outliers will be ruled out.

To collect the data, the following steps were taken: First, the annual report of the organization was searched since some INGOs do report the expenditures per country for some years. The second step was to contact the organization by sending an email request for data. If these first two steps did not obtain the satisfactory data, a more specific email was then sent to the (financial section of the) organization or the INGO was contacted by telephone. The last two options turned out to be the most effective ways to obtain the data. If, after following these steps, the organization could or would not provide the necessary data, this was due to a lack of time or because the organization did not possess the data for the initial years (2000-2004).

[14] The difference concerning the dataset between this research and Bouwhuis (2009) is that she only included international NGOs with an annual budget exceeding 10 million USD in 2005.

The NGOs included in the dataset are international NGOs from the DAC countries. Note that 18 out of the 45 organizations are stationed in Belgium. These INGOs have their expenditures for 2002-2009 reported on a common website[15] and the data is therefore easily accessible. This will probably not induce a selection bias problem for the regression results since the focus is on the amount of NGO aid received by country. Moreover, Belgian INGOs are expected to have the same 'way of working' as other INGOs from DAC countries. The data runs from 2000 until 2009 as the demand for NGO expenditure data before 2000 would have reduced the response rate of the NGOs.

The dataset of governmental aid (bilateral official development aid) is accessible through the website of OECD (2010). Appendices A and B give an overview of the DAC donor and DAC recipient countries included in the dataset for NGO and governmental aid. Note that in 2009 5,6% of Official Development Assistance was supported to NGOs (OECD,2010). This indicates a minor double counting between NGO aid and governmental aid (less than 6%) since governmental aid is a part of Official Development Assistance.

5.2 Descriptive Statistics

This section will show a few descriptive statistics from the NGO and governmental aid dataset used for the regressions. The results will be compared with the results of Koch et al. (2008), who studied the allocation of NGOs and therefore used a dataset of 60 NGOs. By comparing the descriptive statistics, something can be said about the representation of the NGO dataset of this research. Appendix D reports the descriptive statistics (observations, minimum and maximum value, mean and standard deviation) for all variables included in this research.

Table 5.2.1 gives an overview of the top ten recipients of NGO and governmental aid per capita. Five countries are included in both the NGO aid recipient top ten and the governmental aid recipient top ten; Guatemala, Dominica, Timor-Leste, Nicaragua and Palestine. Note that Guatemala is the biggest recipient on both lists with obviously larger average annual amounts than the other countries listed.

Table 5.2.1: Top 10 recipients of NGO aid and governmental aid per capita
Average per year between 2000-2009, in constant 2000 USD

Average annual governmental aid per capita in constant 2000 USD		*Average annual NGO aid per capita in constant 2000 USD*	
Guatemala	1238,63	Guatemala	106,03

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Cape Verde	183,77	Dominica	13,59
Palestine	162,07	Timor-Leste	4,04
Tonga	138,55	Nicaragua	3,59
Samoa	128,20	Bolivia	2,76
Timor-Leste	115,95	Palestine	2,58
Jordan	76,47	Belize	2,20
Dominica	73,13	Mongolia	1,99
Nicaragua	71,26	Kyrgyz Republic	1,93
Macedonia. FYR	66,18	Albania	1,83

Source: Governmental aid: OECD (2010) – NGO aid: data provided by NGOs

Table 5.2.2 also shows three countries which are included in both lists of total average NGO and governmental aid per year. Therefore tables 5.2.1 and 5.2.2 give some indication for the clustering of aid. The top ten of total NGO aid per year show similar results to the top ten of Koch et al. (2008); Kenya, India, Sudan, Uganda, Ethiopia and Bangladesh are represented in both ranking lists. The top ten of total average NGO aid per year shows two country which are also included in the ranking of Koch et al.(2008): Palestine and Nicaragua. Furthermore, India is ranked number one in table 5.2.2 as well as in the same table in Koch et al. (2008). Note that the most populous countries dominate in table 5.2.1 where absolute amounts are considered, and that small countries dominate in table 5.2.2 where relative amount are considered.

Table 5.2.2: Top 10 recipients of total NGO aid and governmental aid per year
Average per year between 2000-2009, in constant 2000 USD

Average annual governmental aid in constant 2000 USD		*Average annual NGO in constant 2000 USD*	
China	1.221.303.054,06	India	77.550.082,65
Vietnam	990.479.621,19	Kenya	43.500.459,14
Nigeria	937.862.353,72	Brazil	38.755.072,08
Tanzania	842.803.415,78	Sudan	37.372.287,38
Indonesia	737.961.964,50	Indonesia	35.698.504,19
Egypt. Arab Rep.	722.206.579,91	Uganda	33.535.366,84
Ethiopia	702.078.570,85	Peru	29.632.839,96
India	643.425.614,02	Ethiopia	29.528.902,29
Pakistan	629.544.085,57	Philippines	27.411.546,36
Sudan	616.079.561,44	Bangladesh	27.104.793,49

Source: Governmental aid: OECD (2010) – NGO aid: data provided by NGOs

Figure 5.2.1 and 5.2.2 shows the allocation of NGO aid by region and by income category. Most total NGO aid is allocated to the regions sub-Saharan Africa (39%), Asia & Pacific (27%) and Latin America (25%). These ratios are comparable to the allocation results of Koch et al. (2008); Africa (47 %), followed by Asia (29 %) and Latin America (17 %).

Figure 5.2.1 : Total NGO aid per region
Average per year between 2000-2009, in constant million 2000 USD

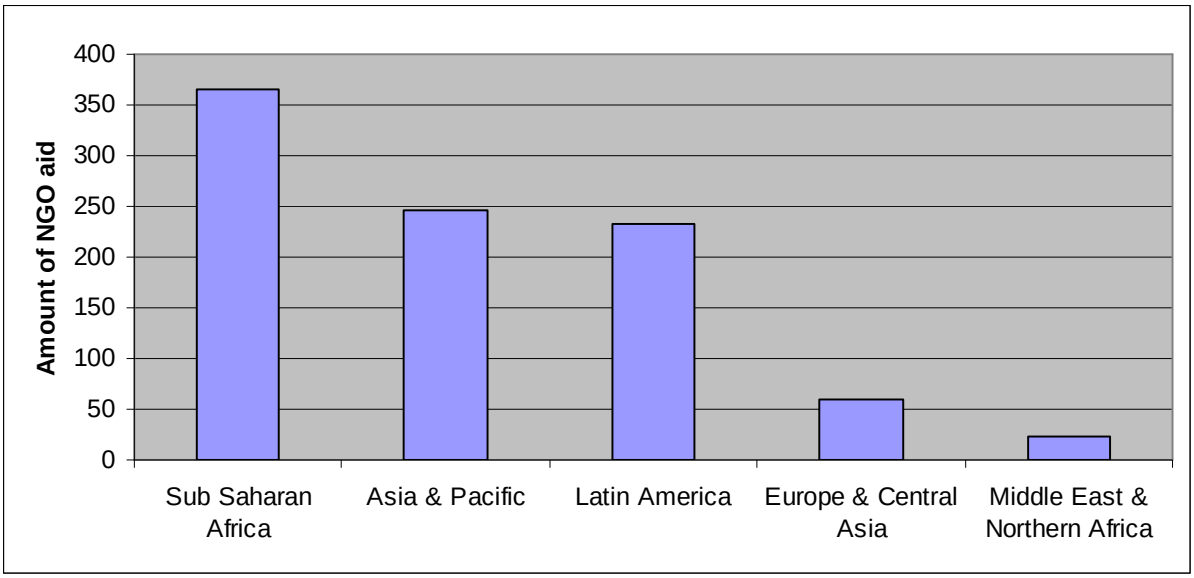
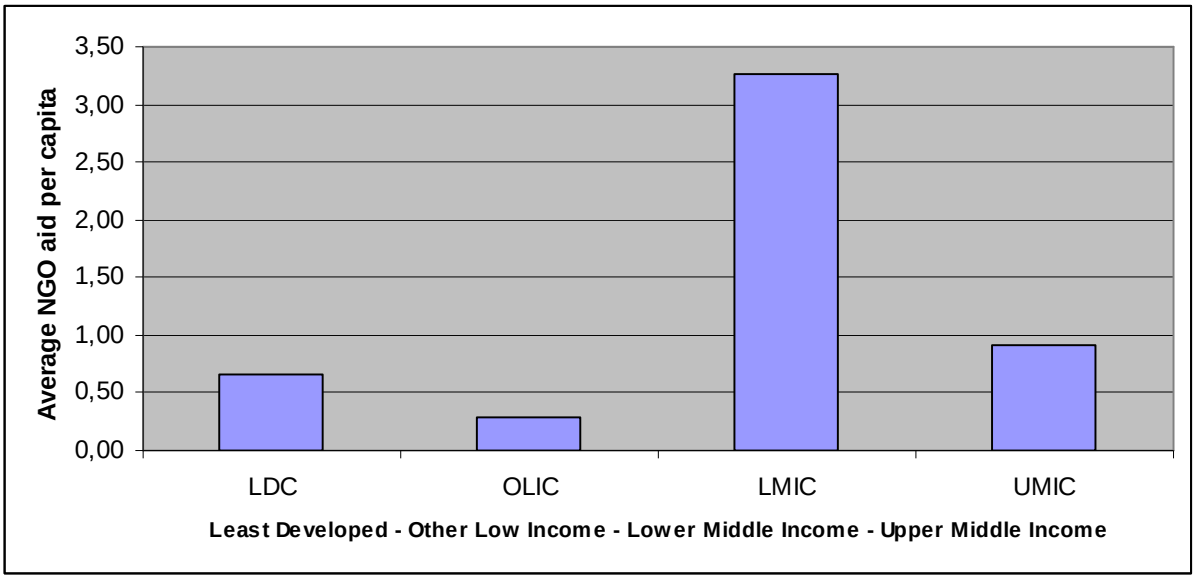


Figure 5.2.2 shows that Lower Middle Income countries receive the most average NGO aid per capita, followed by Upper Middle Income countries. The least developed countries take the third place in the allocation of average NGO aid per capita.

Figure 5.2.2 : Average NGO aid per capita per category income
Average per year between 2000-2009, in constant million 2000 USD



This is remarkable as the study of Koch et al. (2008) presents figures with the most average NGO aid per capita for Least Developed and Other Low Income countries. This dissimilarity could be caused by the differences in the dataset; Koch et al. (2008) uses the data of 60 INGOs only for

the year 2005. The dataset of this research is spread over ten years.

Except for figure 5.2.2, the figures show many similarities to the results of Koch et al. (2008); some of the same countries appear in the top 10 for NGO aid in this research and in that of Koch et al. (2008), the same number 1 is ranked in the top 10 of total NGO aid (India), the clustering of aid in the same countries is in line with the research of Koch et al. (2008) and the percentages of NGO aid to different regions are comparable to Koch et al. (2008). The dissimilarities between the two datasets are, as mentioned earlier, due to the different time span. However, the dataset will be a reasonable representation of international NGO expenditures.

5.3 Methodology

This research is part of the 'aid conditioned growth' literature. The 'aid conditioned growth' literature argues that aid on average does not have a significant effect on growth, but could have an effect if aid is conditioned on (for example) policies (Burnside and Dollar, 2000), export prices (Collier and Dehn, 2001) and climate shocks (Guillaumont and Chauvet, 2001). This study researches the effectiveness of governmental aid conditioned on NGO aid and is therefore part of the 'aid conditioned growth' studies. These studies use the same, or nearly the same, model as Burnside and Dollar (2000) who wrote the first 'aid conditioned growth' study. Equation 1 shows the model of Burnside and Dollar (2000):

(1) $$g_{it} = \beta_{g0} + y_{it}\beta_{gy} + a_{it}\beta_{ga} + p'_{it}\beta_{gp} + a_{it}\dot{p}_{it}\beta_{gap} + x'_{it}\beta_{gx} + \varepsilon^{g}_{it}$$

The model shows the relationship between the dependent variable growth (g_{it}) and the explanatory variables initial income (y_{it}), *aid* (a_{it}), macroeconomic policy variables (p'_{it}), the policy index ($\dot{p}_{it}$) and some control variables (x'_{it}) such as institutional quality and money supply.

For this research the term 'NGO aid' is added to the model and the general term 'aid' will be replaced by 'governmental aid'. Furthermore, in order to estimate the effect of governmental aid on growth conditioned on NGO aid, the interaction term is included. The last difference compared to the model of Burnside and Dollar (2000) is the 'log-log' shape of the equation. With a 'log-log' or 'log-linear' model, the dependent variables as well as all the explanatory variables are transformed to logarithms. There are several reasons to transform a model into a 'log-log' model. Firstly, the coefficient now shows a direct estimate of the elasticity between the dependent variable and the independent variable. Secondly, since the model measures percent changes, log models are invariant

to the scale of the variables. The third reason is heteroscedasticity; the transformation often reduces heteroscedasticity since it compresses the scale in which the variables are measured. Finally, the 'log-log' model creates a narrower distribution and thereby limits the effect of outliers (Pindyck and Rubinfeld, 1997). Equation (2) shows the model used in this research:

(2) $$log\ g_{it} = log\ \beta_{g0} + log\ x'_{it}\ \beta_{gx} + log\ govA_{it}\ \beta_{ga} + log\ p'_{it}\ \beta_{gp} + log\ govA_{it}\ \dot{p}_{it}\ \beta_{gap} + log\ ngoA_{it}\ \beta_{gngoA} + log\ ngoA_{it}\ \dot{p}_{it}\ \beta_{gap} + log\ govA_{it} * log\ ngoA_{it}\ \beta_{ggovAngoa} + \varepsilon^{g}_{it}$$

g_{it}	Real GDP growth per capita of country i during period t
x'_{it}	control variables; initial values of GDP, ethnic fractionalization, institutional quality, money supply and dummy variables for Sub-Saharan Africa, Europe and Central Asia and the tropics (in country i at time t)
$govA_{it}$	the level of government aid received as a fraction of GDP for country i at time t
$ngoA_{it}$	the level of non-governmental aid received as a fraction of GDP for country I at time t
p'_{it}	Macroeconomic policy variables: government consumption, openness and inflation in country i at time t.
$\dot{p}_{it}$	Policy index measured as a weighted average of government consumption, openness and inflation in country I at time t
$govA_{it} * ngoA$	The interaction term of NGO aid and governmental aid of country i at time t.

Real GDP growth per capita

The dependent variable of the model is real GDP growth per capita as a percentage. Section four shows that economic growth is a good indicator for the reduction of poverty. In addition, GDP growth data per country is available for most countries and years. Therefore most 'aid conditioned growth' studies use growth data as the dependent variable (Burnside and Dollar, 2000) (Boone, 1996; Durbarry et al., 1998). The data is extracted from the World Development Indicator (2010) from the World Bank. Since only positive values can be transformed into logarithms, the lowest negative value was taken (-33.073) and added to all data to create only positive numbers.

The control variables

The control variables consist of initial values of GDP, ethnic fractionalization, institutional quality, money supply and three geographical dummy variables. Initial GDP is taken from the World Bank Development Indicators (2010) and is measured by the logarithm of the GDP per capita in the year 2000. Measurement for the amount of ethnic fractionalization is taken from the research of Roeder (2001) and estimates the effect of ethnic diversity on economic growth. The data for institutional quality is the average of 'Voice & Accountability', 'Political stability, No violence', 'Government effectiveness', 'Regulatory quality', 'Rule of law' and 'Control for corruption'. These six governance dimensions are provided by the World Governance Indicators (WGI) from the World Bank and measure the quality of governance of 200 countries, based on 40 data sources (World Bank, 2010). The index ranges from -2.5 to 2.5 and the higher and more positive the number, the better the institutions and policies in that country. Since only positive values can be transformed into logarithms, the lowest negative value was taken (-2.450) and added to all data. The variable money supply is the amount of average annual money and quasi money as a fraction of GDP and is lagged for 1 year. The dummy variables represent the impact of the geographical location of the country on growth. A dummy variable for sub-Saharan Africa and Europe and Central Asia is included. The dummy variable tropics accounts for all countries which have more than 50% land in the tropics[16]. The list of countries is taken from 'Plants in Danger: What do we know?' published by IUCN in 1986. Note that the dummy variables are not logarithmic variables.

Macro economic policy variables

Government consumption and budget surplus are fiscal variables suggested by Easterly and Rebelo (1993). As the data on budget surplus is not publicly available, only government consumption is included in the regression. Inflation is the second policy variable included since Fischer (1993) proved that 'inflation reduces growth by reducing investment and productivity growth' (Fischer 1993). The data on government consumption and inflation is taken from the World Development Indicators (2010). The last policy variable is openness and is measured by the total import and export of a country divided by GDP. Sachs and Wagner (1995) investigated the effect of indicators of trade openness to growth. However Sachs and Wagner (1995) used a dummy variable which was not available for this research, therefore the sum of import and export of a country is used.

[16] To specify the criteria: all countries with more than 50% of their land mass between the Tropics of Cancer and the Tropics of Capricorn are labelled as 'Tropic'.

The policy index

The policy index is a weighted average of the macro economic policy variables. The policy index will be measured after the first base regression is estimated. The estimated coefficients of the government consumption, inflation and openness will be used to construct the policy index (see equation 3)

(3) *Policy index = constant + coefficient government consumption x government consumption – coefficient inflation x inflation + coefficient openness x openness.*

The interaction term

The interaction term of governmental aid and NGO aid is used to determine the possible synergy effects. The data for NGO aid is extracted from the dataset specially constructed for this research. The data of governmental aid, bilateral Official Development Assistance, is found in the OECD statistics (2010).

'Aid conditioned growth' studies faced the problems of heteroscedasticity and endogeneity in their models. The potential danger for heteroscedasticity is lowered in this research by using a 'log-log' model. The possible endogeneity of aid, meaning that aid depends on the independent variables in the model, is reduced by lagging the aid variables for one or two years. Burnside and Dollar (2000) and Easterly et al. (2004) used the two-stage least squared method to correct for endogeneity of aid. However, the results were similar to the results of the OLS estimation. Rajan (2005) showed that the use of lagged variables or instrument variables report the same results. Therefore governmental aid and NGO aid will be lagged for one and two years in this study. Furthermore, the Hausman test will be performed to decide whether a fixed or random effects model will be applied. However the tests do not reject the null hypothesis of no systematic difference between the estimates obtained from fixed and random effect. Therefore the least squares estimation is applied.

6. Regression Results

This part of the research will show and discuss the results of the panel regression (table 6.1). These results are divided in three subgroups: the estimation of the standard growth regression, the estimation of aid and policies on growth, and synergy effects between NGO aid and governmental aid.

6.1 Standard Growth Regressions

The variables in the standard growth regression are variables used in many aid-growth studies. The standard growth regression will be estimated and compared with the results in other aid-growth literature. Column (1) shows the results of the equation (1) presented in section 6.3. Column (2) presents the estimates including the aid variable, and column (3) includes the different type of aid over GDP. Column (1) presents a negative and significant repressor for initial GDP. This is in line with the neoclassical growth models where the starting level of income tends to be negatively related to real GDP growth per capita (Barro, 1990). Since a 'log-log' model is used, the estimate is the elasticity of real GDP growth per capita with respect to initial GDP. This means if initial GDP increases by 1%, real GDP growth per capita decreases by 0.012%, keeping the other variables constant. Ethnic fractionalization is expected to have a negative influence on growth, since ethnic diversity in a country affects growth negatively through poor policies, poor education, political instability and all other factors associated with slow growth (Easterly & Levine, 1997). However, the insignificant regressor in column (1) does not confirm this theory. The next variable, institutional quality has the expected positive effect on growth (0.061%). This is in line with Ritzen, Easterly and Woolcock (2000), who conclude that all the measures of institutional quality in their research have a positive influence on growth. The second institutional variable included is money supply, which proxies for the distortions in the financial system (King and Levine, 1993). This variable is lagged one year because of the concern for endogeneity. However, the variable is not significant for regression (1).

There are three dummy variables included in the model; sub-Saharan Africa, Europe and Central Asia and Tropics. The dummy variable 'Tropics' accounts for all countries which have more than 50% of their land in the tropics. All three variables are in line with the expectations (SSA; negative, ECA; positive and Tropics; negative) but the dummy variable sub-Saharan Africa is not significant.

The last variables added in column (1) are three policy variables; government consumption, inflation and openness. All three variables are highly significant and show the expected results. Government

consumption and budget surplus are fiscal variables suggested by Easterly and Rebelo (1993). As the data on budget surplus is not publicly available, only government consumption is included in the regression. When government consumption increases by 1%, growth decreases by 0.63% since a larger government hampers economic growth. Inflation is the second policy variable included and does not show the expected negative estimator. Note that when more variables are added to the model (column (2) and (3)) the regressor does show the expected negative number. The last policy variable is openness and is measured by the total import and export of a country divided by GDP. Sachs and Wagner (1995) investigated the effect of indicators of trade openness on growth and found a positive effect. The estimate in column (1) is in line with the conclusion of Sachs and Wagner (1995) since a 1% increase in openness leads to a 0.035% increase in economic growth.

Burnside and Dollar (2000) estimate the same variables as mentioned in the previous section except for the variable 'assassinations', which is used by several studies to capture civil unrest. Due to the lack of possibilities to capture the data for assassinations, the variable was not included in the research.

Column (2) includes the aid variable, measured by the amount of total ODA divided by GDP. The regressor is significant but negative, indicating a negative effect of Official Development Assistance on economic growth. This result is not in line with the estimations of Burnside and Dollar (2000) as they estimate a positive effect. The significant control variables in column (1) are also significant in regression (2). Note that the variable M2/GDP is significant at a 5% level unlike in column (1). Secondly, 'inflation' shows a negative number instead of a positive number (column (1)) indicating the expected negative effect of inflation on economic growth.

Column (3) shows the results of the regression with the different types of aid: governmental aid and NGO aid. Both variables estimate a negative effect on growth per capita and are not significant. The control variables which are significant in regression (2) are also significant in regression (3). Note that the coefficients have hardly changed since the different types of aid were included.

The R-square (measuring 'how well' a regression line approximates a real data point) in the first three regressions is lower than in other aid-growth studies. However, the R-square of a 'log-log' model cannot be compared to the R-square of a linear model. The R-square in a 'log-log' model shows the amount of variation in the logarithm of the dependent that is explained by the model - unlike the R-square in a linear model which shows the proportion of variation in the dependent

variable that is explained by the explanatory variables.

6.2 Aid, Policies and Growth

Burnside and Dollar (2000) wrote the first conditioned aid study by researching the effect of aid on growth, conditional on the same policies that affect growth. Since then, many more conditional aid studies have been done including this research. Burnside and Dollar (2000) constructed a policy index based on coefficients of openness[17], inflation and government consumption[18]. Since the base regression (1) does not estimate the predicted coefficient for inflation, the coefficients of regression (2) will be used to calculate the policy index:

(4) *Log policy index = 3.943 + 0.042 * log openness – 0.057 * inflation – 0.061* government expenditure.*

Columns 4 - 7 report the results of the regression which include the interaction terms governmental aid and policy and NGO aid and policy. Note that the policy variables are excluded, the policy index variable is included and insignificant variables of regression (3) are excluded from the model. The estimations of the interaction terms are split over two regressions since the inclusion of more than one interaction term could give biased results. Columns (4) and (5) show the results of the interaction term policy and governmental aid lagged for one and two years respectively. For both lags the regressors show a positive and highly significant result; a 1% increase in governmental aid conditioned on the policy index results in a 0.012% (1 year lag) or 0.013% (2 years lag) increase in growth. Note that the variable policy index is positive and highly significant and the variable governmental aid as a fraction of GDP is still negative but significant at a 5% level.

Columns (6) and (7) show the results of the interaction term policy and NGO aid lagged for one and two years respectively. For both lags the coefficient shows a positive and highly significant result; a 1% increase in NGO conditioned on the policy index results in a 0.013% (1 year lag) or 0.014% (2 years lag) increase in growth. Note that the variable policy index is positive and highly significant again. Also note that the variable NGO aid as a fraction of GDP is negative and significant for both lags.

[17] Burnside and Dollar (2000) use the Warner and Sachs (1995) openness index instead of the total import and export as measurement for openness.
[18] Burnside and Dollar (2000) use budget balance instead of government consumption to measure the size of the government. However data on government consumption is more easily accessible for 2000-2009.

6.3 Synergy effects between governmental aid and NGO aid

In this section the possible synergy effects between governmental aid and NGO aid will be estimated. Regressions (8) and (9) are quite similar to regression (3) with the exception of the insignificant variables which are excluded in the new model, and the respective one and two year lag of the aid variables. Governmental aid still shows the negative sign and is significant at a 10% level with two years lag. The coefficients of NGO aid are positive but insignificant.

Columns (10) and (11) include the interaction term of governmental aid and NGO aid with one year lag and two years lag respectively. The coefficients of the interaction term are highly significant and positive. A 1% increase in governmental aid conditioned on NGO aid results in a 0.008% (1 year lag) and 0.007% (2 years lag) increase in growth. Note that the variables governmental aid and NGO aid divided by GDP are all insignificant.

6.4 Summary and discussion

This section will summarize and evaluate the results of the variables of interest for this research.

First, the results for governmental aid and NGO aid divided by GDP. Governmental aid shows a negative coefficient for all regressions, of which three are significant. NGO aid shows five negative coefficients of which two are significant. The positive coefficients are not significant at any level. These results are in line with the conditional aid-growth studies which imply that, on average, aid does not have a significant effect on growth. The aid variables were also estimated with different lags to test whether a longer period of time would induce the significant effect of the aid variables on growth. However, all regressions show that increasing the lags does not have an influence on the significance of the aid coefficients.

Next, the interaction between policy and the two types of aid were estimated. The results are in line with Burnside and Dollar (2000), indicating a positive effect of aid conditional on policy on economic growth. Both governmental aid and NGO aid show significant and positive coefficients. The variable policy index, constructed for these regressions, also reports highly significant results.

The main results of this research are the highly significant interaction terms of the different types of aid for any level of lag. An increase in the interaction term governmental aid and NGO aid results in a 0.008% increase in economic growth with a 1 year lag and in a 0.007% increase with a two year lag. These results confirm the theory of sections three and four. Aid, on average, does not have a significant positive influence on economic growth. However, when governmental aid and NGO aid

are combined, aid does have a positive affect. This is caused by the ability of NGOs to reduce inequality since the aid provided by the governments will reach the poor. NGO aid thereby makes growth 'pro-poor' and in its turn will lead to less inequality. This circle is the result of the synergy effects between governmental aid and NGO aid and makes the combination an effective way of reducing poverty.

Before conclusions are drawn from these results, a few notes must be made. First, the dataset consists of 45 NGOs and runs from 2000 until 2009. By including more INGOs or by expanding the timeframe, different results could perhaps be estimated. Moreover, the INGOs have their headquarters in different donor countries, but 20 of the 45 NGOs are based in Belgium. This is not necessarily a problem since it is not expected that these INGOs are fundamentally different than NGOs from other countries. However, this can only be proven when the same numbers of NGOs are included from all donor countries.

Table 6.1: Regression results

Regression number	*Base*	*Aid effectiveness*		*Aid effectiveness conditioned on policy*				*Governmental aid effectiveness conditioned on NGO aid*			
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**
Constant	3.658 (0.065)***	3.934 (0.094)***	3.928 (0.096)***	2.432 (0.197)***	2.480 (0.208)***	2.339 (0.169)***	2.395 (0.209)***	3.661 (0.060)***	3.645 (0.063)***	3.265 (0.117)***	3.270 (0.124)***
Initial GDP	-0.012 (0.004)***	-0.020 (0.006)***	-0.009 (0.006)*	-0.012 (0.005)**	-0.011 (0.006)*	-0.011 (0.005)**	-0.008 (0.005)	-0.013 (0.005)**	-0.011 (0.006)**	-0.010 (0.005)*	-0.009 (0.006)
Ethnic fractionalization	0.004 (0.006)	0.004 (0.005)	0.004 (0.005)	.....	.....	.....	.....	.....	.....	.....	.....
Institutional quality	0.061 (0.020)***	0.056 (0.021)***	0.060 (0.021)***	0.044 (0.020)**	0.058 (0.021)***	0.040 (0.020)**	0.046 (0.021)**	0.064 (0.021)***	0.075 (0.021)***	0.068 (0.020)***	0.081 (0.022)***
M2/GDP (lagged for 1 year)	-0.014 (0.009)	-0.0230 (0.009)**	-0.025 (0.009)***	-0.028 (0.008)***	-0.026 (0.009)***	-0.025 (0.008)**	-0.023 (0.009)***	-0.014 (0.009)	-0.011 (0.009)	-0.022 (0.009)**	-0.019 (0.009)**
Sub-Saharan Africa	-0.019 (0.012)	-0.017 (0.012)	-0.019 (0.012)	.....	.....	.....	.....	.....	.....	.....	.....
Europe and Central Asia	0.030 (0.017)*	0.030 (0.017)*	0.030 (0.018)*	0.035 (0.016)**	0.037 (0.017)**	0.047 (0.015)***	0.039 (0.016)**	0.043 (0.016)***	0.044 (0.017)**	0.040 (0.016)**	0.041 (0.017)**
Tropics	-0.033 (0.012)***	-0.034 (0.012)***	-0.037 (0.013)***	-0.024 (0.011)**	-0.021 (0.012)*	-0.023 (0.012)*	-0.023 (0.012)*	-0.032 (0.012)***	-0.030 (0.012)**	-0.027 (0.012)**	-0.025 (0.012)**
Government consumption	-0.063 (0.012)***	-0.061 (0.012)***	-0.065 (0.012)***	.....	.....	.....	.....	-0.068 (0.011)***	-0.062 (0.012)***	-0.057 (0.012)***	-0.052 (0.012)***
Inflation	0.015 (0.007)**	-0.057 (0.019)***	-0.054 (0.020)***	.....	.....	.....	.....	0.016 (0.007)**	-0.017 (0.007)**	0.015 (0.007)**	0.016 (0.007)**
Openness	0.035 (0.010)***	0.042 (0.010)***	0.036 (0.010)***	.....	.....	.....	.....	0.032 (0.010)***	0.028 (0.011)***	0.053 (0.011)***	0.048 (0.012)***
Policy Index	.....	.....	.....	0.294 (0.052)***	0.271 (0.054)***	0.315 (0.055)***	0.290 (0.054)***	.....	.....	.....	.....
ODA/GDP	.....	-0.008 (0.004)**	.....	.....	.....	.....	.....	.....	.....	.....	.....
Governmental aid/GDP	.....	.....	-0.007 (0.005)	-0.008 (0.003)**	-0.008 (0.003)**	.....	.....	-0.006 (0.004)	-0.008 (0.005)*	-0.006 (0.004)	-0.007 (0.005)
NGO aid/ GDP	.....	.....	-0.001 (0.004)	.....	.....	-0.008 (0.003)***	-0.007 (0.003)**	0.003 (0.004)	0.005 (0.004)	-0.001 (0.003)	-0.001 (0.004)
Governmental aid * policy	.....	.....	.....	0.012 (0.003)***	0.013 (0.003)***	.....	.....	.....	.....	.....	.....
NGO aid * policy	.....	.....	.....	.....	.....	0.013 (0.003)***	0.014 (0.003)***	.....	.....	.....	.....
Governmental aid * NGO aid	.....	.....	.....	.....	.....	.....		.....	.....	0.008 (0.002)***	0.007 (0.002)***

Observations	847	791	779	850	774	870	765	838	734	838	734
R-squared	0.091	0.113	0.111	0.098	0.093	0.110	0.097	0.103	0.096	0.119	0.111

Note: The dependent variable is real GDP growth per capita. * Significant at the 10% level ** Significant at the 5% level *** Significant at the 1% level. The regressions have been modeled as fixed effect regressions based on the results of the Hausman Test for consistency between fixed and random effect models. Except for the dummy variables, all variables are logs and the calculation rules for logs are applied to the interaction terms.

7. Conclusion

This study is part of the 'aid conditioned growth' literature since it researches the effect of governmental aid conditioned on NGO aid. This study contributes to the existing literature by researching the synergy effects of aid, and by the construction of the dataset including the expenditures of 45 international NGOs. The model used for this thesis is based on previous 'aid conditioned growth' studies and is extended by adding the separate aid variables and the interaction term for governmental aid and NGO aid.

The aid variables governmental aid and NGO aid do not have a significant effect on growth. However, when governmental and NGO aid are conditioned on policies, aid does have a significant effect on growth. These results are similar to other 'aid conditioned growth' studies. The new hypothesis of this study is also confirmed; there are positive synergy effects between governmental and non-governmental aid. This means that in areas where both types of aid are given, governmental aid is more effective at reducing poverty.

These main results about aid synergies confirm the theory in this study: the synergy effect between the types of aid is caused by the complementary behavior of NGOs in building up assets for the poor. This results in lower inequality and pro-poor growth, and thereby creates the possibility for governmental aid to be more effective in reducing poverty.

Based on these results, some policy suggestions can be given. Firstly, donor countries should continue to channel aid through NGOs. Through supporting NGOs, the organizations are able to expand their activities in the countries of the 'official backdonor' and thereby foster the synergy effects between NGO and governmental aid. Secondly, Riddell (2007) suggests establishing a New International Aid Office for development aid. This office would oversee and ensure the effective functioning of foreign development aid. This office should identify the aid situation of a country and create an 'aid overview'; for example, how many national/regional/international NGOs are active in the developing country, the expenditures of NGOs in that country and the effectiveness of NGO aid and governmental aid in that particular country. Through the building up of a 'country specific aid file' more information is provided about NGOs and each country can be evaluated individually concerning their 'need for aid'. For example; if a country receives relatively large amounts of governmental aid that does not seem to be effective, a solution could be to invest in NGOs in that particular country in order to make the governmental aid more effective.

Finally, there will be some suggestions for further research. Firstly, by expanding the number of NGOs and the number of years in the dataset, the results concerning the interaction of governmental aid and NGO aid could become more robust. Secondly, the interaction between governmental aid and NGO aid is investigated in this research but it would be interesting to also include the other type of ODA; multilateral aid. Finally, this thesis consists of quantitative data but could be extended by adding qualitative data; interviews with NGOs, governments and the aid recipient countries. By including qualitative data, more of the aspects which influence the aid-growth relationship can be involved in the model.

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Appendix A: DAC aid recipient countries in the sample[19]

Least Developed Countries	*Other Low Income countries (per capita GNI < $935 in 2007)*	*Lower Middle Income countries and Territories (per capita GNI $936-$3 705*	*Upper Middle Income Countries and Territories (per capita GNI $3 705-$11455*
Angola	Côte d'Ivoire	Albania	Argentina
Bangladesh	Ghana	Algeria	Barbados
Benin	Kenya	Armenia	Belarus
Bhutan	Korea, Dem Rep.	Azerbaijan	Belize
Burkina Faso	Kyrgyz Rep.	Bolivia	Botswana
Burundi	Nigeria	Bosnia and Herzegovina	Brazil
Cambodia	Pakistan	Cameroon	Chile
Central African Rep.	Papua New Guinea	Cape Verde	Costa Rica
Chad	Tajikistan	China	Croatia
Comoros	Uzbekistan	Colombia	Dominica
Congo Dem. Rep.	Viet Nam	Congo Rep.	Fiji
Djibouti	Zimbabwe	Dominican Republic	Gabon
Equatorial Guinea		Ecuador	Grenada
Eritrea		Egypt	Jamaica
Ethiopia		El Salvador	Kazakhstan
Gambia		Former Yugoslav Rep. of	Lebanon
Guinea		Macedonia	Libya
Guinea-Bissau		Georgia	Malaysia
Haiti		Guatemala	Mauritius
Laos		Guyana	Mexico
Lesotho		Honduras	Serbia and Montenegro
Liberia		India	Oman
Madagascar		Indonesia	Panama
Malawi		Iran	Serbia
Maldives		Jordan	Seychelles
Mali		Moldova	South Africa
Mauritania		Mongolia	Suriname
Mozambique		Morocco	Trinidad and Tobago
Myanmar		Namibia	Turkey
Nepal		Nicaragua	Uruguay
Niger		Palestinian Administered Areas	Venezuela
Rwanda		Paraguay	
Samoa		Peru	
Senegal		Philippines	
Sierra Leone		Sri Lanka	
Somalia		Swaziland	
Sudan		Syria	
Tanzania		Thailand	
Timor-Leste		Tonga	
Togo		Tunisia	
Uganda		Turkmenistan	
Yemen		Ukraine	
Zambia			

[19] The countries included are based on the 'DAC List of ODA recipients'. Only small Island groups, countries with less than 1 million residents and countries not included in the list of Bouwhuis (2009) are excluded.

Appendix B: DAC Donor countries

Country	Member since
Australia	1966
Austria	1965
Belgium	1961
Canada	1961
Denmark	1963
Finland	1975
France	1961
Germany	1961
Greece	1999
Ireland	1985
Italy	1961
Japan	1961
Korea	2010
Luxembourg	1992
Netherlands	1961
New Zealand	1973
Norway	1962
Portugal	1961 (withdrew in 1974 and re-joined in 1991)
Spain	1991
Sweden	1965
Switzerland	1968
United Kingdom	1961
United States	1961

Appendix C: Summary NGO dataset [20]

NGO	Country of headquarter NGO [21]	Total amount of aid 2000-2009 USD	Most active countries [22]
11.11.11 - Koepel van de Vlaamse Noord-Zuidbeweging	Belgium	36.025.629	Congo Dem.Rep./ Philippines / Indonesia
Adra	United States	1.461.548.971	Peru/ Sudan/ Kyrgyz Republic
Atec - Beroep voor iedereen	Belgium	31.643.437	Guatemala/ Colombia/ Lebanon
Bevrijde Wereld	Belgium	13.508.334	Philippines/ Senegal/ Mali
Broederlijke delen	Belgium	86.630.953	Cameroon/ Bolivia/ Congo Dem.Rep.
Brot für die Welt	Germany	445.563.697	India/ Brazil/ Philippines
Cafod	United Kingdom	424.133.808	Sudan/ Indonesia/ Zimbabwe
Caraes - Caritate Aegrorum Servi	Belgium	30.507.556	Congo Dem.Rep./ Rwanda/ Tanzania
Care France	France	123.368.444	Romania/ Cote d'Ívoire/ Madagascar
Caritas België	Belgium	83.504.381	Congo Dem.Rep./ Burundi India
Caritas Switzerland	Switzerland	390.531.860	Serbia and Montenegro/ Bosnia Herzegovina/ Indonesia
CDI Bwamanda	Belgium	25.717.482	Congo Dem.Rep./ Benin/ Pakistan
Child Fund	United States	1.407.285.224	Brazil/ India/ Kenya
Church of Sweden	Sweden	127.542.457	Ethiopia/ South Africa/ India
Concern	Ireland	900.862.596	Zimbabwe/ Sudan/ Ethiopia
Cordaid	The Netherlands	1.526.843.382	India/ Indonesia/ Congo Dem.Rep.
Damiaanactie vzw	Belgium	106.576.413	Congo Dem. Rep/ India/ Bangladesh
Development and Peace	Canada	145.497.443	Brazil/ Congo

[20] The whole dataset in available upon request

[21] This column represents the country of the headquarters of the INGO. When the NGO name is followed by a country name in column 1, the data is only obtained from that specific country not the whole international organisation. When this is the case, the country mentioned in column 2 is the national office from which the data is received. For example Handicap International; the data received is from Handicap International France and Belgium, not the whole international organisation.

[22] This column represents the three countries in which the NGO is most active. The selection of the countries is based on the total expenditures of the NGO from 2000 to 2009.

			Dem.Rep./ Sri Lanka
DMOS - Dienst Missie En Ontwikkelingssamenwerking	Belgium	98.645.906	India/ Congo Dem.Rep./ Colombia
Fastenopfer	Switzerland	62.210.420	Congo Dem.Rep./ Philippines/ India
Fos - Socialistische Solidariteit	Belgium	43.398.597	Mozambique/ Nicaragua/ Cuba
GOAL	Ireland	658.930.761	Sudan/ Zimbabwe/ Ethiopia
Handicap International België	Belgium	143.025.643	Congo Dem.Rep/ Cambodia/ Angola
Handicap International France	France	409.274.741	Mozambique/ Cambodia/ Congo Dem.Rep.
Hivos	The Netherlands	519.494.868	India/ Indonesia/ Bolivia
International Planned Parenthood Federation (IPPF)	United Kingdom	647.846.980	India/ Pakistan/ Bangladesh
Koordinierungsstelle	Austria	845.886.833	India/ Nicaragua/ Brazil
Marie Stopes International	United Kingdom	923.011.375	South Africa/ Kenya/ Uganda
MEMISA BELGIE	Belgium	58.590.137	Congo Dem.Rep./ Uganda/ India
Mercy Corps	United States	1.135.332.813	Lebanon/ Iraq/ Indonesia
Misereor	Germany	1.428.307.299	India/ Brazil/ Philippines
Norwegian Peoples aid	Norway	518.233.230	Kenya/ Sudan/ Tanzania
Oxfam-Solidariteit	Belgium	85.262.091	Mozambique/ Palestine/ Israel
Plan België	Belgium	57.525.937	Burkina Faso/ Ecuador/ Togo
PROTOS	Belgium	51.780.014	Benin/ Haiti/ Ecuador
Steunfonds Derde Wereld	Belgium	6.447.712	Philippines/ Congo Dem.Rep./ Cuba
Swiss Aid	Switzerland	75.961.972	India/ Colombia/ Nicaragua
Swiss contact	Switzerland	232.507.331	Indonesia/ Bangladesh/ Peru
Terre des Hommes	The Netherlands	144.154.227	India/ Kenya/ Brazil
VIC - Vlaams Internationaal Centrum	Belgium	26.101.511	Mauritania/ India/ Philippines
Volens asbl/vzw	Belgium	37.124.271	Togo/ Benin/ Venezuela

Vredeseilanden	Belgium	74.354.284	Indonesia/ Tanzania/ Nicaragua
Water Aid	United Kingdom	252.059.838	Bangladesh/ India/ Ethopia
Wereldsolidariteit	Belgium	43.693.943	Togo/ Benin/ Venezuela
Woord en Daad	The Netherlands	196.410.028	India/ Haiti/ Colombia

Appendix D: Data description and statistics

Variable	*Observations*	*Min*	*Max*	*Mean*	*Standard dev.*	Description	Source
Growth	1233	-33,073	57,226	3,008	5,081	Annual real GDP per capita growth	Word Development Indicators (2010)
Initial GDP	1180	0	124.332,500	2.871,020	11.444,440	Annual real GDP per capita	Word Development Indicators (2010)
Ethnic Fractionalization	1169	0	0,984	0,525	0,264	Measurement for the amount of Ethnic Fractionalization	Roeder (2001)
Institutional quality	1268	-2,496	1,306	-0,464	0,634	Average of 6 governance indicators	Worldwide Governance Indicators (2010)
M2 Lag	1108	4,195	228,394	42,356	32,650	Average annual measure of money and quasi money as percentage of GDP (lagged for 1 year)	Word Development Indicators (2010)
ECA	1270	0	1	0,125	0,331	Dummy for Europe and Central Asia	Word Development Indicators (2010)
SSA	1270	0	1	0,346	0,476	Dummy for sub-Saharan Africa	Word Development Indicators (2010)
Tropics	1270	0	1	0,644	0,479	Dummy variable for countries which consist over 50% of tropics	IUCN (1986)

Government consumption	1113	1	63,778	14,460	6,413	The annual ratio of government consumption to GDP	Word Development Indicators (2010)
Inflation	1236	-33,532	515,776	10,960	29,429	The annual rate of CPI-based inflation	Word Development Indicators (2010)
Openness	1177	0,309	255,015	84,943	39,674	The annual rte of total trade (import + export) to GDP	Word Development Indicators (2010)
ODA/GDP	1115	-0,007	0,955	0,065	0,092	Average annual real ODA as a percentage of real GDP (net disbursements)	OECD (2010)
NGO Aid/ GDP	1125	0	0,025	0,002	0,003	Average annual real NGO ad as a percentage of real GDP	New NGO database constructed for this thesis
Governmental aid / GDP	1105	0	0,883	0,039	0,064	Average annual real bilateral ODA as a percentage of real GDP	OECD (2010)