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JÖNKÖPING UNIVERSITY

Rationality of Aid Donors

A Disaggregated Study of Aid Allocation

Master thesis within Economics

Author: Johan Karner

Tutor: Börje Johansson and James Dzansi

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Author:	Johan Karner 861123
Tutor:	Börje Johansson and James Dzansi
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Abstract

This paper is concerned with the allocation of foreign aid. It intends to investigate the factors influencing the decision of aid donors. What sets this study apart from previous articles on this subject is the use of a disaggregated approach. While previous studies have almost exclusively focused on the total aid flow, this paper divides the total flow into six sub-groups according to the type of aid (budgetary support or sector specific) and to which sector it is dedicated. Using this approach enables us to see if donors make different considerations for different types of aid. Since a rational donor is likely to put different weight on certain factors depending on where the aid funds is going, this approach might be more suitable when evaluating the behavior of donors. Data for 125 recipient countries during 1995-2009 is put in panel data form and regressions are run for each of the six sub-groups respectively. The main finding is that there are in fact differences, between sub-groups, in terms of what factors that influence donors; for example it seems like budgetary support is given mainly to less (relatively) developed country compared to sector specific aid. Hence this paper shows that aid allocation could preferably be studied on a disaggregated level.

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1 Introduction

Huge sums are donated as foreign aid every year; even so the debate about its merits is very limited in the public arena. Within academics however it is another matter, here there has been an extensive debate about the effects of aid. Hence there should be a great deal of solid academic research for governments to lean on when deciding how to allocate there aid budget. As we will see it is not that simple, the studies reach somewhat inconclusive results. In fact scholars even fail to agree on how to measure aid effectiveness, should one look at poverty rates, growth rates or maybe the implementation of donor preferred policies. Even in the areas where the overwhelming majority of authors are in agreement it is not certain that their guidelines will be followed by donors, which are under public pressure to dole out more aid. Hence it is far from certain that the funds given as aid is in fact producing any visible results in developing countries

This leads to the question of why aid is given in the first place. One would like to think that donors give aid for purely altruistic motives i.e. because they honestly believe that it will have a long lasting positive effect for the lives of poor people in recipient countries. In reality the motives are most likely less clear cut. Naturally public pressure plays an important part in allocation decisions. Historical or colonial ties between donors and recipients explain a large share of the aid flows (see Alesina and Dollar, 2000). Political considerations are also a significant factor when giving aid. Roodman (2007) for example finds that USA has a habit of distributing disproportional levels of aid to political allies. So the essence is that aid is not solely given out of the goodness of heart of the donors.

This paper will largely diverge from these two issues and accept the (heroic) assumption that aid does have a positive effect for recipients or rather it will assume that the donors give aid according to this belief. Instead the focus will be on the allocation aspect of the aid debate. Namely; how do donors allocate there aid flows? Once a donor has decided to give aid; which factors determines how much aid a country will receive and which type of aid is given to different countries? Put differently the aim is to find out if donors distribute the aid in an efficient and predictable manner. As will become evident from the following discussion it can also be the case that even if aid in the first place is given for other underlying reasons than poverty reduction it might still be allocated in such a way as to achieve this.

In general studies[1] that have sought to evaluate donor allocation have argued, discouragingly, that donors in general do a rather poor job in allocating aid efficiently. However these studies almost exclusively consider the overall aid flows of each donor i.e. they aggregate all types of flows as well as all as aid to every sector. This can in be a slightly flawed approach. A more appropriate approach would be to consider disaggregated flows i.e. define subgroups depending on the sector for

[1] See for example:.Alesina and Dollar (2000) and Roodman (2007)

which the aid is dedicated and then see what factors that determines its allocation. Optimally such an approach should give a fairer indication of the performance of aid donors, since it provides a more detailed description of the factors that determine the allocation. This paper is intended to add to the literature within this area by using disaggregated allocation data for aid flows.

1.1 Background

As touched upon above, the merits of giving aid as a mean of reducing overall poverty are far from certain. Even if a number of studies[2] exist that claim to prove the positive effects of this type of development assistance equally many articles fails to find signs of any effect at all[3]. Despite this uncertainty, government agencies continue to refer to academic support when they dole out large aid funds. Doucouliagos and Paldam (2009) in their meta study describe the potential pitfalls of academic studies concerning aid. They argue that there are indications of bias in the sense that authors as well as journal editors prefers to publish positive result i.e. promoting the benefits of aid, after controlling for this fact their meta study provides results that show that no unambiguous evidence of any positive effects, in terms of economic growth, from aid exist. This bias could influence donor to believe that the academic support for aid is stronger than it actually is.

With this as a starting point it might seem like we could conclude the paper already at this point, because what is the point of discussing how aid should be best allocated if it is not likely to yield any positive results anyway. The natural answer to this is that aid will continue to flow since donor and recipients are stuck in system of aid dependency (Bräutigam and Knack, 2004). Although aid might not be the right way to solve the underlying problem in the long run it is both necessary and irreplaceable in the short run, or in other words it might help to deal with the consequences of poverty and poor growth such as malnutrition, deceases, poor education etc while at the same time being insufficient to affect the underlying causes of poverty and poor economic growth (Dreher, Nunnenkamp and Thiele ,2008). Following this line of reasoning, aid effectiveness should be evaluated on a different standard rather than just its overall impact on poverty or growth. Efficiency should be measured in terms of sub goals; rate of malnutrition, school enrolment and so on. In affect this is already being done through the use of Millennium Development Goals as a reference point (ibid).Given the complexity and ambiguity surrounding the issue of aid efficiency it is my view that it is more suitable to use country or case specific studies and this will therefore be left for other studies. Here it suffices to note that aid might provide substantial benefits on the micro level but that these micro level benefits not necessarily translate into macro level effects. This failure of extrapolating the micro level benefits can be due to various

[2] See for example: Sachs (2005) and Hansen and Tarp (2000)

[3] See for example: Easterly, Levine and Roodman (2004)

reasons present in the recipient country that can not be fixed by simply giving more aid.

The main point of the above reasoning is that if aid efficiency should be studied on the micro level, or put differently a disaggregated level, then so should allocation. Instead of looking at the allocation of the total aid funds from each donor it would be more appropriate to study the disaggregated flows, according to which sector(s) the aid is dedicated to.

Most studies[4] that aim to evaluate donors' aid allocation or simply study which factors that influence the amount of aid received have in the majority of cases looked upon the flow of total Official Development Assistance (ODA)[5]. Then the actual distribution have been compared with the distribution each author have considered to be the most efficient in terms of reducing overall poverty (or increasing growth rates as a means of reducing poverty). According to this author that approach is not the most suitable. In addition to the micro-macro mismatch discussed above there are other reasons why a disaggregated approach might be more suitable. Measuring total flows is likely to show an unpredictable pattern of allocation and the inclusion of all types of aid may also be responsible for the discouraging results, provided by Alessina and Weder (2002), Wood (2006) and Collier and Dollar (2004) among others that donors do not discriminate against corrupt and badly governed recipients. The reason for this can be that for aid to some particular sectors or purposes it could be rational for donors to ignore such factors as corruption and government efficiency. For example actions against AIDS and other health related issues may well require aid funds and in those cases it might be irrational to withhold aid due to fears about high levels of corruption.

Please note that it is in no way my intention to question the findings of previous studies, I merely intend to propose an alternative approach to test the allocation of aid flows.

In addition to disaggregating aid flows in terms of towards which sector the aid is dedicated one could also consider different types of aid, in particular aid that is tied to a specific sector or aid given directly into the recipients budget (either in the form of general budget support or debt related aid). Donors giving larger share of their aid directly to the budget of recipients should in general be more concerned with the perceived levels of corruption and the efficiency of the governments (Cordella and Delll Arricia, 2007). As Easterly (2002) showed, this is usually not true for debt related aid which tend to be given to the least "suitable" recipients.

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[4] See for example: Alessina and Weder (2002), Roodman (2007) and Wood (2006)

[5] Formally ODA flows refer to aid that fulfil certain criteria it should; be given by the public sector (either bilaterally or multilaterally), promote economic development and welfare and at least 25 % should be in the form of grants (OECD).

What these last paragraphs have tried to indicate is that aid allocation just as aid efficiency should be studied within subgroups of total aid i.e. is aid dedicated to the education sector more likely to go to countries that are in need of investment in their education sector, is aid going directly into the budgets of recipients should be more responsive to such factors as corruption and the quality of governance. Of course it might be the case that all subgroups of aid, in the same way as total aid flows, are simply allocated according to other factors altogether, ignoring both corruption and the need of the recipient. It is the aim of this paper to investigate this by looking at disaggregated aid flows in search of a more predictable pattern

1.2 Purpose

The main purpose of this paper is to investigate whether donors consider different factors depending on what type of aid and to which sector they are giving aid. If there are differences, are they consistent and do they reveal any patterns that would indicate rationality on behalf of the donors?

The paper also intends to provide an insight on, what factors that determine donors' decision about how their aid funds should be distributed? Special attention is put on the question whether donors tend to allocate their funds according to the needs of the recipient countries or if they also take factors such as corruption and government efficiency into account. Put differently, is there any rationality behind the way aid funds are distributed by the donors.

What this study will add to the already vast amount of research done on this topic is a disaggregated approach. Instead of following previous studies which have almost exclusively looked upon the allocation of total flows, this paper intends to disaggregate aid flows into different subgroups depending on which sector the aid is dedicated to as well as distinguish between budgetary support and aid towards a particular sector. This approach will hopefully provide a better image of how aid donors allocate their funds while at the same time being more in line with the argument that aid efficiency should be measured at a disaggregated, micro, level.

2 Literature and Theoretical overview

Over the years there has been considerable amount of studies looking at both the efficiency and allocation of development aid. This section will briefly discuss the main findings and theories presented in previous studies both in terms of the aid efficiency and allocation.

Before reviewing the relevant articles one should be aware of the potential problem of bias noted by Doucouliagos and Paldam (2009) namely that authors and editors prefer to publish positive results when it comes to aid. They control for this bias by taking into account both the amount of "positive and negative" articles and their influence in terms of citations. In the end they argue that the existing literature do not show any evidence of a correlation between aid and economic growth.

It can be useful to have this finding in the back of your head when reading the discussion below.

2.1 Aid Efficiency

Even if this paper is chiefly concerned with the allocation side of the story it is necessary to also review articles looking at the efficiency of aid. Because without a discussion of under what circumstances (if any) aid is effective it would be hard to put forward any argument of how aid should be allocated

Slightly simplified it is possible to talk about three different standpoints in the efficiency debate; The first argues that aid has a positive effect under almost any circumstances, The second mean that aid is only effective in countries with the "right policies" and the third group take the negativistic view by stating that aid is not effective, no matter the circumstances in the recipient country.

Sachs (2005) is probably the most vocal promoter of the first standpoint. He argues that simply increasing aid flows would lift millions more out of poverty. In his book he provides example of several successful aid projects and argues that if these could be extended to a larger scale the benefit would be immense. Hansen and Tarp (2000) similarly claim to find that aid is positively linked with growth independent of the policy environment. In a more recent paper Arndt, Jones and Tarp (2010) present a regression model which they claim to be the most robust study so far on the aid-growth issue. This claim is based on their thorough inclusion of regional as well as donor specific effects. Furthermore they also extend the coverage of initial levels of factors such as education and geographic conditions that is likely to affect the efficiency of aid. Lastly they perform various validity and robustness checks to confirm their findings. In the end they find that there is a positive and significant correlation between aid flows and economic growth, in the long run. Admittedly they say that aid could probably do better but all in all they reject the strong scepticism that has dominated the academic debate in recent years. Arndt, Jones and Tarp (2010) also mention the micro –macro paradox namely that aid seems to have a positive effect on the micro level but not on the macro level. This argument is developed further in Dreher, Nunnenkamp and Thiele (2008) where the authors argues that aid efficiency should be evaluated in terms of sub objectives. Their paper does this by focusing on the effects of education aid on school enrolment levels. It turns out that education aid is indeed positively correlated with higher levels of primary school enrolment. Similarly Mishra and Newhouse (2009) find that health aid is successful in terms of reducing infant mortality, even though the effect is relatively small.

In general the studies that have received the most attention is the ones subscribing to the second standpoint, arguing that aid at best can be said to have an impact on growth conditional upon other factors. Burnside and Dollar (2000) argue that for aid to have a positive effect it needs to be distributed in way that promotes the implementation of good policies. Before going into what constitutes good policy, ac-

cording to Burnside and Dollar, one should note that the underlying assumption made in their paper is that aid can either be consumed or invested. In the Burnside and Dollar paper aid is deemed efficient in terms of poverty reduction if it is invested rather than used for unproductive government consumption. So in that sense aid is most efficient when there are few policies that negatively affect the productivity of capital and hence the incentives to invest.

Enforcement of property rights and an efficient government bureaucracy is considered to be crucial features for creating incentives to invest. Intuitively it is clear that without enforcement of property rights investments carries a much higher risk, however I will not diverge further into a discussion about property rights and investments since that would take us away from the actual subject at hand. Government efficiency is also thought to be of central importance. Note that the formulation also refers to well developed and well functioning institutions. Even if aid funds is dedicated to a specific sector and thereby to some extent controlled by the donors, the government bureaucracy and the quality of institutions will to a large extent determine the success of the project. There are both practical issues that necessitate government involvement such as building permits, coordination of various government agencies and so on, as well as a time aspect. A slow working bureaucracy will results in delays and in most cases a demand for more funds to be put into the project (investment).

In addition to institutional factors Burnside and Dollar also includes economic indicators such as inflation levels, budget surplus and openness for trade. From their neoclassical viewpoint they argue that a stable and open economy will have higher returns on capital and will thus provides incentives to invest rather than consume aid funds, which in their model is equal to a more efficient use of aid. Without going into the specifics of the rather complicated econometric models applied in their paper the result show that aid had a positive effect in countries with "*good fiscal, monetary and trade policies*".

The articles following the third standpoint take on a more sceptical view of the benefits of aid as they have failed find evidence that aid has a positive effect on economic growth under any circumstances. Easterly, Levine and Roodman (2004) show that the Burnside and Dollar model does not hold when replicated with a longer time span. In fact most studies which finds a conditional effect on growth have been criticized for a lack of robustness i.e. the results have failed to be replicated when a different or extended dataset have been applied. This especially well illustrated in Roodman (2007) where the author test the robustness of seven aid-growth papers, among them Burnside and Dollar (2000), Collier and Dollar (2002) and Hansen and Tarp (2000). Roodman finds that all results presented in the surveyed articles are fragile and particularly sensitive to sample expansion. However he does not reject the usefulness of aid rather he states that the fragility of the results merely show that aid is not an important factor for economic development. Another problem with most studies within the aid growth area according to Rajan and Subramanian (2008) is endogeneity i.e. that aid flows are directed towards

countries that are doing particularly badly or particularly well in terms of growth (spurious correlation). After controlling for this they find that there is no relation between aid and growth no matter of the policy or geographical situation prevailing in the recipient country.

2.2 Aid Allocation

As mentioned above Burnside and Dollar (2000) have become very influential and the argument aid should be allocated in favour of countries with "good" policies is generally accepted by donors, at least in theory. Despite this most studies are unable to find any clear tendencies that (overall) donor's allocate more aid to "good policy" countries. Easterly and Pfutze (2008) argues that donors are unresponsive to political (reform) changes as well as levels of corruption; rather they tend to dole out aid to the same countries year after year. Even more discouraging is their finding that in recent years there has been an increased tendency of aid being given to corrupt and autocratic countries and not always because their need might be greater. On the other hand Alesina and Dollar (2000) find some encouraging signs that countries that democratize receive more aid. There are also some differences in the behaviour of different types of donors. Donors without any colonial ties do seem to be slightly better at discriminating against corrupt recipients. Dollar and Levin (2006) mention that multilateral donors show a weak tendency of being better at promoting and rewarding good policies compared to bilateral donors. In addition to that they also note that it seems like donors in general have become more selective over the last two decades

Donors can be said to face a trade-off faced between giving aid to the most in need while at the same time providing incentives for reforms (Svensson, 2000, and Bourguignon and Sundberg, 2007) and overall donors tend to focus more on the needs. According to Collier and Dollar (2004) it would be optimal for the donors to consider both the needs and the quality of policies/institutions of the recipient countries. Wood (2006) adds that donors should not only consider the initial poverty level but also the projected decline in poverty in absence of aid. They find that the poorer a country is the lower is the required quality of policies that would justify giving aid, or put differently the effect of aid is increasing with poverty (albeit at a diminishing rate) and decreasing in quality of policies. So according to Collier and Dollar aid should optimally be allocated to countries with severe poverty but good policy environments. In such countries aid would be most efficient in reducing poverty. Their findings show that aid is not allocated in this fashion rather it is given mainly to countries with bad policy records and less severe poverty situations in hope of promoting a change for the better, in other words aid tampers out with reform, leading to perverse incentives. Wood (2006) adds that donors should not only consider the initial poverty level but also the projected decline in poverty in absence of aid.

So even if one accept the notion that aid is more effective in countries with "good" policies it is not the same as arguing that aid promotes good policies. Svensson

(2000) writes that aid can lead to perverse incentives when it comes to implementing reforms. This comes from the finding that aid tends to tamper out with reform i.e. donors tend to "punish" recipients that actually manages to improve their policies. Bräutigam and Knack (2004) similarly finds a correlation between high dependency on aid and deterioration in the quality of governance in Sub-Saharan Africa. The same perverse incentives is also noted by Easterly (2002), who finds that debt related aid is delaying the acute need for reform in the recipient countries resulting in the failure of reducing the debt level in the long run. So in essence aid might be more effective in good policy surroundings but it should not be used by donors as a tool to improve policies.

Corruption is another issue that has been thoroughly studied within the aid allocation literature. Naturally the general assumption stressed in the literature is that high levels of corruption will cause aid to have a lesser effect on either growth or poverty reduction. Funds are diverted away from their intended purposes. Perhaps even more seriously corruption scandals may cause the public in donor countries to question the whole idea of giving foreign aid in the first place (Alesina and Weder, 2002). Despite the intuitively negative consequences of corruption and donors pledges to discriminate against highly corrupt recipients studies have generally showed that more corrupt countries do not receive less aid (see for example Easterly and Pfutze 2008). One possible rational for these findings could be found in the so called grease the wheal line of reasoning (Leff, 1964) which in essence see corruption as way to get around the slow moving bureaucracy. To put it bluntly; donors may be more concerned with getting things done than avoiding waste of resources due to corruption. Furthermore imposing constraints on aid flows due to corruption or other institutional shortcomings is probably neither politically or socially acceptable since it might be just those countries that are in greatest need of outside help (Jelovac and Vandeninden 2008). Again we come back to the trade off between the acute need of the recipient countries and giving aid to where it is most likely to be efficient.

As we have seen above studies of aid allocation have in general been unsuccessful in finding any specific factors, apart from historical or political ties, that determine how donors allocate their aid funds. Some studies have been able to derive specific factors that seem to influence the donors' decision. Berthélemy and Tichit (2002) find that growth rates, foreign direct investment flows, gross primary school enrolment and infant mortality have significant effects on aid allocation. Infant mortality is also found to be significant, along with civil rights, in Trumbull and Wall (1994).

2.3 Disaggregated Studies

So far this framework section of the paper have solely looked upon allocation of total aid flows, but as mentioned above this paper will also consider the allocation of different types of aid. Types in this case refer to aid given directly to the budget in the recipient country or aid dedicated to a particular sector. Cordella and Dell Arri-

cia (2007) develop an optimizing model where both the behaviour of the donor and recipient is taken into account. The purpose is to investigate under what circumstances budget support is preferable to project aid and vice versa. They distinguish between them in terms of how easy it is for the donor to monitor the use of the aid funds and have much of the control of the disbursements that is in the hands of the donors. According their model project aid is preferable when aid funds are large relative to the recipients own resources[6] and the preferences for development are not aligned with the donors'. On the other hand budget support is more suitable for countries with relatively small aid dependency and a preference for development that is closely aligned with the donor. Consequently they argue that budget support should be offered to "relatively richer and more developmentally oriented countries". Intuitively this makes sense, poorer countries with policies that are not developmentally oriented is less likely to use the unconditional aid funds in the way donors intended and should therefore receive more aid in project form. Jelovac and Vandeninden (2008) for their part notes that imposing conditions on aid or tying it to a specific sector might not be accepted by a country that is less developmental oriented, in which case it would not receive any aid at all. In such a situation they argue that it is better to give unconditional transfers to their budgets than to do give no aid at all. On the other hand Svensson (2000) argues in favour of the tied project aid approach. He believes that if a commitment to development on behalf of the recipient is lacking then tied project and delegation of the part of the aid budget to an international agency will benefit the welfare of the poor. This is supported by Killick (2004) who notes that donors do not in general "punish" recipients that do not implement the conditions stipulated in relation with the acceptance of programme based aid. Ouattara and Stobl (2008) proceed by empirically testing the effectiveness of different aid modalities on economic growth. They divide aid flows into four categories; Project aid, Programme aid, Technical assistance and Food\commodity aid. Their result indicates that project aid has a positive and significant effect on growth while programme aid has a negative effect on growth. The other two categories do not seem to have any statistical effect at all on growth. Good policies do not "enhance the growth effect of either of the categories. Rajan and Subramanian (2007) also test different types of aid and conclude that none of the sub-categories of aid have any significant impact on growth.

This section have provided a rather broad overview of the main findings in the aid literature as well as a description of the related theories that needs to be kept in mind when analysing the results of the coming analysis. Following the findings made in the meta study by Doucouliagos and Paldam (2007) the general conclusion is that aid does not have any significant effect on economic growth. Studies that have indicated such a positive relationship have in most cases been proven to

[6] This is due to the fungibility problem of aid, namely that recipients of aid may redirect there own resources away from the sectors receiving aid. This is considered as a major problem, in the aid literature, but since it is outside the scope of this article it will not be thoroughly discussed. See Pack and Pack (1990) for a discussion of the fungibility problem.

be non robust, with results that can not be replicated. However more recent studies employing ever more complex econometric techniques have hinted that there is a robust and positive correlation between aid and growth, so the debate over aid efficiency is far from over. Nevertheless, the notion that aid works best in good policy areas is generally accepted.

As for the allocation issue, the findings are more in line with each other. Donors seem to be relatively insensitive to the quality of policies as well as the pace of reform in recipient countries. Similarly there are no indications that donors discriminate against highly corrupt recipients. Hence the actual allocation is quite far from the optimal allocation proscribed in the literature.

Disaggregated studies have mainly considered the distinction between budgetary aid and project or sector specific aid. Budgetary aid is thought to be more suitable for relatively richer and more developmental oriented recipients, while sector specific aid is more suitable for less developmental oriented recipient since it let the donors retain control over how the money is spent. The question is whether less developmental oriented countries would accept the conditions incorporated in sector specific. If not, then budget aid is always preferable to giving no aid at all.

In this paper the arguments discussed above is applied to a disaggregated framework. The notion that aid works best in good policy areas is generally accepted, but is that true for all types of aid? Similarly one might think that for aid dedicated to particular sectors it is rational for the donors to disregard (while still being aware of) factors such as corruption and inefficient governments. This line of thinking in combination with the encouraging findings that aid for particular sectors is in fact generating positive effects, is an indication that aid allocation should be studied at a disaggregated level, which will be the purpose of the reminder of this paper.

3 Data

To be consistent with previous studies in this area, the aid data is collected from OECD's Creditor Reporting System (CRS) data base, which includes data from 22 bilateral and 24 multilateral donors. This is, as far as this author knows, the most extensive and publicly available database for aid flows. It is also preferable since it allows for the data to be disaggregated. Two aspects of this database are important to keep in mind before continuing. Firstly it completely relies on figures reported by the donors. The extent and quality of there reported figures vary widely. Furthermore as shown by Easterly and Pfutze (2008) donors are not always consistent or even correct when assigning the destination of aid flows. They also note that transparency is rather poor and it is hard for outsiders to really know where exactly the money is going. Despite this it is still the best available database for aid flows. The second point to notice is that the aid figures drawn from the CRS database for are commitment figures. The commitment amount may in some cases diverge by more than a third from the actual amount that is disbursed. When studying the effectiveness this would be a serious issue, but for the purpose studying al-

location patterns commitment figures are still preferable (Ouattara and Stobl 2008).

The data for aid flows are divided by population, so we end with aid per capita. Using aid per capita instead of the absolute value is a way to take into account the fact that small countries tend receive disproportionably large levels of aid since donors are interested in giving aid to where it has the largest impact per person (Trumbull and Wall, 1994).

Data on aid commitments are collected for 141 recipient countries for the time period 1995 -2009. Following the spelled out purpose of this paper, to study the disaggregated aid flow, the data is decomposed in two steps: Firstly a distinction is made between budget support and Project\Programme based aid (from this point on referred to as sector aid). In other words the distinction is between funds given unconditionally to the recipient's budgets and funds earmarked to a specific sector. As a second step the data is further disaggregated into six subgroups. See table 3.1 below for an overview of the subgroups into which the total aid flows are divided. Note that only the last six subgroups are used as dependent variables in the regressions. From table 3.1 it can be seen that some of the subgroups could have been further disaggregated, but for the purpose of readability and completeness this was not done.

Table 3.1: Disaggregated aid subgroups, used as dependent variables in the analysis.

Aid Subgroups	**Description**
Budget aid	Includes both general (unconditional) budget support and debt related aid (debt write offs, forgiveness, restructuring etc)
Sector aid	Includes aid to education, health, economic infrastructure, social infrastructure, producing sectors, support to Non Governmental Organizations (NGO) and "other multisector aid"
Budget support	General (unconditional) budget support
Debt related aid	Debt forgiveness, relief and restructuring
Education aid	Aid dedicated to educational sector
Health aid	Aid dedicated to health sector
Economic infrastructure	Aid dedicated to banking\financial, communication, energy and transport

	sectors
Producing sectors	Aid dedicated to agricultural, construction, fishing, forestry, mining and tourism sectors. Plus trade policies and regulations

A word of caution concerning these subgroups is in order. The categorisation is entirely done by the donors reporting to the CRS database, which mean that the categorisation can be misleading in some instances, either due to lack of transparency on behalf of the donor or overlapping aid projects that could potentially belong in several categories.

In addition to aid commitments, data on various economic indicators and poverty levels have been collected. An overview of these variables are provided in table 3.2

Assessments of the corruption levels in the receiving countries are taken from Transparency International's Corruption Perception Index (CPI). The index has been criticized over the years. Despite this it is widely used in academic research and more importantly it is used by donors, this more than compensate for the questionable reliability of the index. The author wish to stress that had other measures of corruption been publicly available for significantly many countries they would have been incorporated as well. The range of the index is 0-10 where a higher number indicate less corruption.

Government efficiency is according to Burnside and Dollar a crucial factor for the success of aid so an indicator for this is included. The variable measuring government efficiency is derived from Worldwide Governance Indicators (WGI)[7] from the World Bank. This index have also been criticized (see Thomas, 2009) but it is still commonly referenced to by the World Bank and hence it is also quite natural to believe that it is considered by donors in their assessments of potential aid recipients, which for the sake of this article is in fact more important than the actual quality of the index. The range of the index is from -2.5 to 2.5 where a higher number indicate a more efficient government.

Another factor noted in Burnside and Dollar is the quality of fiscal policies. If this factor is affecting the efficiency of aid it should also affect the allocation of aid hence it is included in the model. They used both inflation and budget balance in order to evaluate fiscal policies. The intention was in this paper was to do the same, however the variable measuring inflation was removed by SPSS when run-

[7] See Kaufmann, Kraay and Mastruzzi (2010) for a description of the methodology behind the Worldwide Governance Indicators.

ning the regression due to too many gaps in the data. Therefore only budget balance is included.

Poverty level is measured by the share of inhabitants living on less than 1.25 dollar per day. Data showing the poverty gap or even GDP per capita could as well have been used. In fact a poverty level of 2 dollars is commonly applied in recent studies. It is however this author's belief that a lover poverty level provides the best measure of which country that is considered relatively poor(er) by donors. Collier and Dollar (2004) also showed that switching to a 2 dollar poverty headcount does not alter the results.

Given that one of the subgroups of interest is aid dedicated to the education sector it is natural to include variables related to education in the regression. Both primary school enrolment and literacy are included. The reason for sticking with the narrow focus of primary school enrolment rest on two standpoints; most aid projects within the education sector seem to focus on primary education and the fact that the quality of higher level education is hard to estimate without specific knowledge about each country while the benefits of primary schooling compared to no schooling are undoubtedly significant (Dreher, Nunnenkamp and Thiele, 2008).

Agricultural and industrial value added as percentage of GDP is included in order to provide a rough description of the structure of the economy in the recipient country. This could have an impact on which sectors that receive aid.

Since health issues are likely to influence donors in a major way they need to be incorporated into the model. In the end though the only health related variable for which there was enough data available was malnutrition. Malnutrition is in itself a cause of other dieses thus it is a highly relevant variable to include. The exclusion of other variables such as infant mortality and in particular HIV\AIDS infection rates is a limitation of the regression.

Table 3.2: Explanatory variables, used in the analysis and their respective sources.

Variables	Description
Budget Balance	Budget balance as % of GDP (World Bank)
Government efficiency	World Government Indicators Estimates the efficiency of governments' ability to formulate and implement policies and rules. (World Bank). Higher values more indicate efficient

	government
Poverty 1.25	Poverty headcount, % of people living on less then 1,25 dollars a day (World bank)
Agri value added	Agriculture value added as % of GDP (World Bank)
Industry value added	Industry value added as % of GDP (World Bank
Literacy rate	Measured as % literate people i.e. higher value means less illiteracy. (World Bank)
Malnutrition	"*Prevalence of child malnutrition is the percentage of children under age 5 whose weight for age is more than two standard deviations below the median for the international reference population ages 0-59 months*" (World Bank)
School enrollment	Percentage enrolment in primary education (World Bank)
Corruption	Corruption Perception Index (Transparency International) Higher values indicate less corruption.

Some limitations related to the selection of variables are worth mentioning. In particular note that no data for colonial, historical or political ties (between donors and recipients) have been collected despite the importance such factors most likely play in allocation decisions (see Alesina and Dollar, 2000) The reason is the difficulty of finding a good way in which to control for this factor. Following the outline in Burnside and Dollar (2000) dummies for French colonies, Egypt and Central America were tried but turned out insignificant and were therefore removed. Furthermore, as noted above some relevant variables where excluded from the regression due to insignificant number of observations. Instead of excluding the variables one could have altered the dataset by reducing the number of countries and\or years. This might have allowed for the inclusion of more variable, however I opted in favour for keeping maximum number of countries (and years) since I wanted to get a broad sample. Lastly one could also potentially question the approach of using the same variables for every subgroup. Partly the decision to do so was due to the lack of data but also as a way to keep it consistent. Because even if this paper look at different subgroups of aid flows and argues that different factors should determine the allocation of aid to different sectors it is also very likely that

some central factors will determine overall aid flows and thus affect the amount of aid within every subgroup.

4 Method

In order to test which of these factors that might influence the allocation of aid a regression analysis will be applied to the dataset. At first a cross sectional regression was considered due to the warnings made in by Easterly (2002) that debt related aid is generally unpredictable and tend to go to the least "suitable" countries, thus the inclusion of it could thus complicate matters a bit. Another problematic aspect of debt related aid is the fact that it is one off events meaning that the amount recorded in the CRS database vary significantly from year to year, which would affect the regression results. Therefore it might have been preferable to exclude debt related from the analysis, but given its growing share in donors' aid budgets it is too relevant to be discarded from the analysis. Instead this fact led me at first to consider using a cross sectional approach with budget aid and sector aid respectively as dependent variables. However, the rather limited scope for drawing any strong conclusions based on a cross sectional approach led me to settle for a panel data setup as well as further disaggregated aid data.

The next step is structure the data into panel data form. In the end the dataset covers 125 countries, excluding those with "too" many missing values, with a time span of 15 years (1995 – 2009). Note that the explanatory variables collected from the World Banks are in most cases drawn from census or questionnaires distributed with irregular intervals. This means that there are gaps in the data. Due to this observations are excluded pair wise, which limits the number of available observations but not to the extent that it should affect the results.

An OLS regression model is then applied using each of the subgroups respectively as the dependent variable.

All significance tests are performed at the 10 % level.

5 Analysis and Results

This section will discuss the results from the regressions. Before going on to the actual result one need to think about the potential problem of multicolinearity among the explanatory variables. It is not far fetched to suspect some degree of multicolinearity between for example poverty level and several of the other variables or say between literacy rates and primary school enrolment. However preliminary investigation revealed that none of the included explanatory variables had a correlation higher than 0.79 which would have warranted further investigations.

First the results for budgetary aid is presented, disaggregated into two subgroups: General Budget Support and Debt related aid. Remember that theory suggests that

aid to recipients' budgets should mainly be given to relatively richer countries with efficient governments, in order for it to be efficient. Table 5.1 and 5.2 show the corresponding regression results when using general budget support and debt related aid respectively as the dependent variable.

Table 5.1: Regression results, with General Budget Support as the dependent variable

Variables	**Coefficient estimates**	**t-stat**	**P-value**
Budget balance	3.10	.632	.532
Government efficiency	28.29	2.557	**.015**
Poverty 1,25	8.65	2.480	**.018**
Agri value added	-1.49	-.805	.427
Industry value added	-.18	-.126	.900
Literacy rate	5.18	1.497	.144
Malnutrition	-11.28	-2.315	**.027**
School enrollment	-7.07	-1.846	**.074**
Corruption	-17.60	-2.466	**.019**

Table 5.2: Regression results, with Debt Related Aid as the dependent variable

Variables	**Coefficient estimates**	**t-stat**	**P-value**
Budget balance	- 2.45	-1.951	**0.91**
Government efficiency	-79.44	-3.308	**.001**
Poverty 1.25	.57	.424	.672
Corruption	9.97	.187	.851
Agri value added	.69	.624	.533
Industry value added	.87	.828	.408
Literacy rate	.67	.439	.660
Malnutrition	-.67	-.273	.785
School enrollment	-1.29	-1.271	.204

Table 5.1 above shows the results when removing debt related aid and only looking at unconditional transfers to government budgets. The coefficient for government efficiency is positive and significant, which is an indication that more efficient governments receive more general budget support. This finding is encouraging since it is likely that an efficient government will make better use of funds received. Of course it is not straight forward to state that the suggestion made in Cordella and DelArricia (2007) about how to allocate budget aid is followed, since they refer to the developmental preferences of the of the recipients and it is not necessarily the case that an efficient government will implement policies and reforms according to the donors whishes. This was indicated in Dreher, Nunnenkamp and Thiele (2008) where they studied aid to education and found that targeting aid towards the education sector did not increase the public expenditures on that sector, furthermore public expenditure was totally inefficient in raising the school enrollment. So in the end all we can say is that donor seem to discriminate in favor of recipients with a government that get things done. Whether the actions of the governments are actually the ones desired by the donors and\or beneficial for the reduction in poverty can not be confirmed by this study.

Poverty is also positive and significant which indicates that poorer countries receive more general budget support confirms the finding in previous studies (Svensson, 2000, among others) that donors are relatively good in responding to the overall needs of recipient countries. The negative sign for malnutrition seem at first to be contradicting this last statement; however it might just indicate that aid to countries with large needs in specific sectors receives more aid that is dedicated to that specific sector rather than general transfers to the government budget. Similarly this could also be related to the developmental preferences of the recipient government. A country with great needs in terms of malnutrition or the health sector in general would receive less budget aid and more aid specifically destined for that sectors if their developmental preferences were assumed to be low (or different from the donor), thereby explaining the “wrong” sign for malnutrition (Cordella and Del Aricia, 2007).

Despite the warnings made in Dreher, Nunnenkamp and Thiele (2008) that public expenditure is unsuccessful in raising the primary school enrollment, donors dole out more budgetary support to countries with lower school enrollment. As will see below this irrationality becomes even more clear when one notice that countries with lower school enrolment also get less aid to that particular sector.

Corruption is negative and significant i.e. more corrupt countries get more budget support. This is disappointing since corruption is often ripe in the public sector so a lot of aid resources are likely to be wasted. However the fact that government efficiency is positive make it possible to argue that donors care about the government ability to implement policies while accepting that funds will probably be lost due to corruption. An efficient but corrupt government may still be able to get things done hence in the long run it might provide long lasting results but at a higher cost due to funds lost to corruption.. This negative sign for corruption re-

turns in regressions for economic infrastructure and production sectors as well so it might be the case that donors accept corruption as part of the system and thus simply regard it as a unavoidable cost. Hence it does seem like general budget support may not be allocated in the outmost optimal way, see the negative sign for corruption, but at least it seem to be possible to see some form of intuitive explanation behind the allocation.

From table 5.2 it is quite clear that debt related aid is allocated by factors not at all captured by the included variables. This is inline with findings in Easterly (2002). Surprisingly Budget balance is only just significant at the 10 % level, albeit with the right sign. Indicating the countries with larger budget deficits get more debt related aid. This is natural from the perspective that aid should go to the most in need. However Easterly (2002) also showed that it might not be efficient in the long run to forgive debts of the most debt ridden countries since the most likely outcome is that they will simply take new loans and end up in the same situation yet again.

Only government efficiency can be said confidently to be significant, but it is negative so less efficient governments receive more debt related aid. There is some logic to this finding, less efficient governments may be worse at handling there economies leading to greater public pressure for donors to forgive their debt, yet again confirming the fears raised by Easterly (2002). of perverse incentives for aid recipients. In general previous studies have also failed to find a predictable patterns to debt related aid (ibid)

The second step of disaggregation is to divide total sector aid into four different subgroups, described in table 5.1 above, for which separate regressions were run. Table 5.3 below show the results for the first of these subgroups, education aid.

Table 5.3: Regression results, with Education aid as the dependent variable

Variables	Coefficient estimates	t-stat	P-value
Budget balance	-14.77	-4.876	**.000**
Government efficiency	-3.37	-4.953	**.000**
Poverty 1,25	-12.06	-5.610	**.000**
Agri value added	1.23	1.080	.288
Industry value added	2.10	2.340	**.025**
Literacy rate	-13.77	-6.451	**.000**
Malnutrition	19.51	6.497	**.000**
School enrollment	15.19	6.435	**.000**
Corruption	24.28	5.519	**.000**

Looking at aid dedicated to the education sector seems to at least support the merits of considering the disaggregated flows. All variables except agricultural value added are significant. This fact seem suspiciously strong, however no problems or peculiarities with the data have been detected, but it might still be wise to be rather cautious when interpreting these results.

Firstly, we can note that the sign for school enrollment variable seem to be quite confusing, indicating that countries with higher school enrollment gets more aid even though one would expect the opposite. Optimistically this could be viewed as an indication that donors reward or pursue aid projects that yields results in terms of primary school enrollment. In other words aid donors are efficient in the sense that they allocate aid funds to projects that works. This is contradicting some of the previous findings (see for example: Svensson 2000) stating donors tend to allocate aid in ways that create perverse incentives. On the other hand it fits well with the findings, in Dreher, Nunnenkamp and Thiele (2008) that aid for education increases the primary school enrollment. Another possibility is that countries with lower levels of school enrollment also suffer from more acute problems as a consequence of this and will therefore receive more aid dedicated to solve these more acute needs at the expense of the education sector. Yet another slightly less optimistic interpretation could be that countries with higher primary school enrollment receive more aid because the funds are used to provide higher levels of education which is more expensive. What is truly behind this finding can only be thoroughly explained in studies focusing on a particular country or evaluating a specific aid project.

The positive and significant sign for malnutrition, countries with higher rates of malnutrition receive more education aid; this might to some extent be explained

by programs in which aid funds are used to provide parents with incentives to send their children to school. These programs usually consist of a promise of one hot meal a day for the children in return for attending school. Looking at the detailed level of the aid data, in the CRS database, it seems like these programs are sometimes registered under education aid and sometimes under health related aid (which also may explain the significance of school enrollment in the health aid regression below). Overall malnutrition is significant and positive for all subgroups of total sector aid implying that this is a strong determinant of aid independent of the sector.

Literacy rate has the expected negative sign. More illiterate countries get higher amounts of aid dedicated to the education sector which is a little bit inconsistent with the positive sign for school enrollment. One possible rationale behind this inconsistency is that primary school enrollment covers only children whereas literacy rates refers to a much broader age span so a country can have a low rate of literacy and at the same time a relatively high rate of primary school enrollment.

The corruption variable is positive i.e. less corrupt countries receive more education related aid. So it seems like when it comes to education donors are sensitive to the perceived risks of corruption and tend to discriminate against corrupt countries. If this due to the importance that donors assign to the education sector or the fear of backlash from any exposure of corruption scandals related to children's education is hard to disentangle from this test and would need further investigation.

Government efficiency on the other hand is negative; less efficient governments receive more aid. This would indicate that inefficient governments might be less inclined to implement educational policies and programs of their own making the need for aid more crucial (note that corruption is not a factor in government efficiency, hence the result is not as contradicting as it might seem). Donors might be inclined to give aid that has clearly defined conditions attached to it in order to ensure that the funds are actually spent on the education sector.

Notably the variable for poverty is significant but with a negative sign. It would have been expected to find that poorer countries had greater need of improvement in their education and would thus receive more aid dedicated to this sector. This finding shows that the opposite is true, poorer countries receive less education aid. It is possible that poorer countries have more urgent needs than improving education; hence they might receive more aid dedicated to other sectors. That argument is however contradicted by the fact that poverty is insignificant in all of the following regressions.

Lastly, table 5.3 also shows a positive and significant result for industry value added (as % of GDP). Intuitively this finding is not surprising. A relatively larger industrial sector means that the importance of having at least a basic education is

essential for the ability to acquire other skills that is required for work in the industrial sector.

To sum up; looking at the disaggregated flow of aid related to education one end up with result that put donors in a rather positive light (surprisingly). Donors seem to be allocating aid funds to projects that actually work while at same time discriminating against highly corrupt recipients. However the somewhat suspiciously strong correlations as well as the rather strong assumptions behind some the underlying explanations mean that without deeper analysis into specific aid projects and recipient countries one should exercise some caution when drawing conclusions from the above results.

Next we move on to looking at aid dedicated to the health sector. Before going on to discuss the results it is worth mentioning that other health related variables such as HIV\Aids infected, infant mortality and maternal mortality were also considered but turned out to be highly insignificant or to have too few available observations and they were therefore removed from the regression. In particular infant mortality would have been constructive to include since it has been showed to be a significant explanatory variable for aid allocation in both Trumbull and Wall (1994) and Berthelemy and Tichit (2002), but there were simply too few observations available. Table 5.4 displays the results related to Health aid.

Table 5.4: Regression results, with Health aid as the dependent

Variables	**Coefficient estimates**	**t-stat**	**P-value**
Budget balance	-3.81	-1.470	.151
Government efficiency	13.80	.723	.475
Poverty 1.25	-.15	-.166	.869
Agri value added	-.17	-.156	.877
Industry value added	.71	.779	.441
Literacy rate	-2.03	-1.683	.102
Malnutrition	2.38	1.888	**.068**
School enrollment	2.08	1.830	**.076**
Corruption	-22.71	-.598	.553

At first the above result may seem quite disappointing at least from an efficiency point view, with both corruption and government efficiency being insignificant. However for health related aid it might simply be a matter of need versus incentives. As argued in for example Svensson (2000) donors in general seem to favor need over suitability. So in a sense it is quite expected that factors such as corrup-

tion play less of a role for aid dedicated to the health sector. The reason for this could be that health aid is often given in the face of urgent needs and it might be harder for a donor to deny aid to a cause that indirectly would save human lives. Furthermore a rather large part of the health aid can be and is done through cooperation with NGOs without the direct involvement of government agencies (ibid). So there is some logical sense behind donors' ignorance of corruption and government efficiency when it comes to allocating health aid.

Malnutrition turned out to be barely significant at the 10 % level. This is somewhat perplexing since food aid is a special subgroup within the CRS database and was not included in this test. Of course one could make the argument that malnutrition increases the risk of other deceases and health related issues thus implying that countries with a high prevalence of malnutrition also have a relatively higher need of funds dedicated to the health issues.

School enrollment is also positive and significant at the 10 % level. The most probable reason for this is as mentioned above, the overlapping of projects intending to get parents to send their kids to school in exchange for one hot meal a day. These projects are sometimes recorded as education and sometimes as health aid.

The last to subgroups considered here are both more related to physical investments promoting the economy of the recipient countries**.** Table 5.5 and table 5.6 show the results for Economic Infrastructure and Producing Sectors aid respectively.

Table 5.5: Regression results, with Economic Infrastructure aid as the dependent

Variables	**Coefficient estimates**	**t-stat**	**P-value**
Budget balance	-4.12	-1.564	.213
Government efficiency	30.13	2.508	**.012**
Poverty 1.25	.26	.388	.698
Agri value added	2.21	3.966	**.000**
Industry value added	2.03	3.842	**.000**
Literacy rate	-.36	-.467	.640
Malnutrition	5.43	4.424	**.000**
School enrollment	1.29	2.533	.011
Corruption	-76.18	-2.861	**.004**

As can be seen at the top of this table we have the opposite signs for government efficiency compared to education aid. Since economic infrastructure includes aid to

sectors such as transport, energy and banking, where the governments' involvement is generally extensive, the efficiency of the government bureaucracy is an important factor for outside investors. Naturally aid donors are not quite the same thing as outside investors but given that aid funds are in many cases used to finance large projects within these sectors the considerations taken should be roughly the same. So it is reasonable to assume that donors prefer to give aid (economic infrastructure aid) to countries where the government can be expected to formulate and implement regulations (policies) in an efficient and speedy manner.

Considering the inclusion of aid flows destined for communication, energy and transport sectors the scope for corruption can be assumed to be rather large. Despite this corruption is negative indicating the same perverse incentives found above namely, more corrupt countries get more aid. Once again this can be taken as a sign that donors cares about governments ability to get things done even if part of the funds are likely to be lost to corruption, corruption is simply seen as a part of the price. Relating back to the comparison between aid donors and outside investors, one thing that differs is that aid donors are generally less focused on economic profit for themselves. Investors will probably hesitate to finance big projects if the risk of loosing resources due to corruption is considered high. This in turn create a greater need for aid as a mean of financing the projects, leading to more corrupt countries receiving more aid within this subgroup.

The finding that both agricultural and industry value added are significant and positive is actuality just what one would expect, even though it is a bit contradictive. A country that wants to develops its industrial sector need investments in economic infrastructure. Going from an agricultural economy to one relying more on the industrial sector require large investment in transport, energy and communication. As this process continues investments to improve communication network as well as the financial sector will become crucial for the success of the economy. Similarly in a country where the industry share of GDP already is relatively large there will be more available investment projects that need financing. Put in other words, independent of the structure of the economy, in the recipient country, there is a constant need for investment in economic infrastructure.

Malnutrition is positive and significant. It is hard to find any explicit rationale for this finding in this subgroup. Intuitively one could make the argument that children are malnourished since their parents can not find jobs causing them to cut back spending on food. Using aid funds to improve the economic infrastructure may help the economy and create more jobs by expanding the industrial sector. Thereby allowing more peoples to find jobs and be able to buy enough food to alleviate the problem of malnutrition. However this explanation is far fetched and cannot really be supported by the data applied in this paper. All that can be said is that this is a further indication that malnutrition seem to be the most important factor for the allocation decision. Furthermore, Shlomo Reutlinger (1977), in his study of malnutrition, argues that foreign aid will only be effective in reducing

malnutrition if the aid is directly aimed at increasing the food consumption of the undernourished.

Table 5.6: Regression result, with Producing Sector aid as the dependent variable

Variables	**Coefficient estimates**	**t-stat**	**P-value**
Budget balance	8.42	.935	.831
Government efficiency	7.19	1.578	.115
Poverty 1.25	.40	1.580	.114
Agri value added	.64	3.031	**.002**
Industry value added	.39	1.963	**.050**
Literacy rate	-.53	-1.811	**.070**
Malnutrition	1.26	2.711	**.007**
School enrollment	.19	.994	.320
Corruption	-17.05	-1.687	**.092**

Begin by noticing that malnutrition is once again positive and significant. In relation to production sectors it is hard to know what conclusions to derive from this other then that malnutrition seems to be affecting aid flows independent of which sector the aid is dedicated to.

Corruption is barely significant at the 10 % level and negative, the weak significance allow us to state that corruption is far from an important factor within this subgroup. To an extent corruption is likely to be seen by donors as unavoidable due to the large role of bureaucracy in the producing sectors. Land rights, building permits, extraction rights etc are common hurdles in the included sectors and also “good” ways of extorting bribes and kickbacks. So in essence it would be very hard for donors to give any aid at all to producing sectors if they were to have no tolerance for some funds being lost due to corruption.

Literacy rate is also negative and significant. A reason for this estimate can be an assumption that countries relying more on sectors like agriculture, fishing, forestry and mining, and thus receiving more aid within this subgroup, might have lower literacy rates overall simply because the skill level required is lower in these sectors.

The positive and significant correlation for both agricultural and industry value added is quite natural considering aid to both agriculture and industry is included

in the producing sector subgroup. An economy relying heavily on the agricultural sector would need aid funds to help enhance the efficiency of the agricultural sector as well as financial help to develop other parts of the economy. Conversely countries with a stronger reliance on the industrial sector have in many cases neglected making investments in the basic sectors (agricultural, fishery, forestry and mining) despite the amount of people that still depend on these sectors for their livelihood.

One final aspect of the result in table 5.6 needs to be mentioned, the rather disappointing finding that government efficiency is not significant. Since the government is in the end central for the performance of the producing sectors this finding indicate that donors (once again) is more focus on the current need of the country instead of allocating aid in way that yields the best results in the long run.

As the results presented above show the hope of revealing a clear and logical pattern of allocation was not really accomplished. Nevertheless some crucial findings are worth remembering. The fact that poverty rates are insignificant in most subgroups is surprising since poverty reduction is usually assumed to be the overreaching object of foreign aid and as stated in Collier and Dollar (2004) aid should optimally be given to countries with high levels of poverty. So it seems like donors consider other factors as more important than the crude measure of poverty rates. On such factor that appears to be more influential is malnutrition which turns out positive and significant in most cases. Another question raised in the beginning of this paper concerned the allocation of aid going directly to the countries budgets compared with aid going to particular sectors. The allocation is only partly in line with the optimal allocation suggested in Cordella and Del Arricia (2007). Budget support tends to be going to poorer countries but at the same mainly to countries with efficient governments which hopefully mean that the funds will be used efficiently. Corruption is negative were it is significant (exception Education aid) so it seems like donors in general either accept corruption as an unavoidable part of the system or that highly corrupt countries simply have greater needs and as has been showed before donors tend to favour need over creating incentives for reforms.

6 Summary and Conclusions

The intention of this paper was to use a disaggregated approach to study aid allocation. Given that aid efficiency is preferably measured in terms of sub-objectives it seemed natural that the same thinking should also be extended to the allocation side of the story. Previous studies have showed that using total flows put donors in a rather unflattering view when it comes to how their funds are distributed. The hope was that by looking at different subgroups of the aid flow it would be possible to get a better understanding of the factors that are influencing donors' decisions and describe how aid, to different sectors and of different types, are allocated. From the analysis it seems like that particular objective was only partly fulfilled. Looking at aid flows on a disaggregated level did reveal that donors weigh factors differently depending on the type of aid and to which sector it is allocated. How-

ever, no consistence patterns could be found. Nevertheless, some findings are worth highlighting.

Interestingly, poverty is insignificant everywhere except for general budget support and education (where it is negative), so recipients that are relatively poorer compared to other aid recipients receive more aid directed into their budgets but not more aid to specific sectors. This is somewhat surprising since poverty reduction is usually seen as the main goal of foreign aid. Relating back to the theory section, it was also stated that general budget support should preferably go to relatively well developed recipients with good governance and low levels of corruption. From table 5.1 it is clear that general budget support instead tends to go to less developed countries; high poverty, low school enrolment and high levels of corruption, but with efficient governance. On the other hand, aid flows dedicated towards the four sectors, considered in this paper, tend to be insensitive to the efficiency of governance. It is only within the economic infrastructure subgroup that government efficiency is positive (and significant) which is rational considering the importance of the government in this sector.

Hence it seems like in contrast to what theory suggests the findings in this paper show that budget support is mainly given to relatively poorer countries and countries with low levels of school enrolment while sector specific aid is mainly given to relatively richer countries with higher levels school enrolment. However the results also show that there are differences between aid allocations to different sectors. Health aid is influenced purely by need, indicated by the only included health related variable (malnutrition), whereas Education aid is essentially given mostly to richer countries with lower corruption and less absolute needs in terms of school enrolment levels. Both Economic Infrastructure aid and Producing sector aid is clearly influenced by the structure of the economy in the recipient countries, but only Economic Infrastructure aid is influenced by government efficiency. These differences supports the main argument of this paper, aid allocation should be evaluated at a disaggregated level.

Overall there is a lack of any consistent patterns in the distribution of aid but there is one pattern that does emerge, namely the finding that counties with high rates of malnutrition receive more Sector Specific aid but less General Budget support and countries with low levels of school enrolment receive more General Budget Support but less sector specific aid. Why this pattern appears is quite difficult to see and might warrant in dept studies.

Corruption seems to be largely ignored by donors. It turns out either negative (more aid given to more corrupt recipients) or insignificant, with the exception of Education aid. This is equal to a waste of resources if aid funds are diverted from their intended purposes. Especially the negative results in the Economic Infrastructure subgroup and in General Budget support is disappointing, since one would expect that donors would be more sensitive to levels of corruption when the aid is directed either directly into the budget of government or sector in which the

government is likely to play a large role. Donors however appear largely at peace with that and merely accept that corruption is rife and that it is best to just accept it as a price that has to be paid. To some extent they may have the right mindset, having a zero tolerance of corruption is neither politically or practically possible. Nevertheless there is a danger that exposure of corruption scandals involving aid funds will cause public pressure to cut aid budgets so there is reasons for donors to become more aware of the problem of corruption. So in a sense this study confirms previous findings that donors focus mainly on needs at the cost of corruption and government efficiency. The difference is that this study has also indicated that these factors are considered for some types of aid.

All in all, the disaggregated approach to study aid allocation employed in this paper has enabled me to argue that there is in fact some rationality (even if it might be quite far from optimality) behind the actions of the donors. Donors do not treat all types of aid in the same way. Instead different considerations are taken depending on which type of aid that is being allocated and towards which sector it is dedicated. Therefore it is my belief that the approach introduced in this paper can be used and significantly improved in future studies aimed at evaluating donors' allocating performance. Because the allocation of overall aid funds will in all likelihood continue to be governed in part by factors such as historical or colonial ties and political allegiances. So instead of asking whether total aid is going to the most in need or the best reformer one should ask if aid dedicated to for instance the education sector is going to the countries with the greatest need within that sector or countries that have initiated successful reforms in that particular sector. The optimality of aid allocation should be evaluated on a disaggregated level.

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Appendix 1

Table A1.1: Descriptive statistics of aid subgroups, values given in USD per capita

Aid Subgroup	Minimum	Mean	Maximum
Budget aid	0	9.99	492.44
Sector aid	0	32.57	515.87
General Budget support	0	5.21	335.56
Debt related aid	0	4.81	492.43
Education aid	0	6.8	292.22
Health aid	0	3.43	162.68
Economic infra-structure	0	10.75	376.19
Producing sectors	0	6.54	358.56

Appendix 2

Table A2.1: Included countries

Afghanistan	Comoros	India	Mongolia	Sri Lanka
Albania	Congo, Dem. Rep.	Indonesia	Morocco	St. Lucia
Algeria	Congo, Rep.	Iran, Islamic Rep.	Mozambique	St. Vincent and the Grenadines
Angola	Cote d'Ivoire	Iraq	Myanmar	Sudan
Argentina	Croatia	Jamaica	Namibia	Suriname
Armenia	Cuba	Jordan	Nepal	Swaziland
Azerbaijan	Djibouti	Kazakhstan	Nicaragua	Syrian Arab Republic
Bangladesh	Dominica	Kenya	Niger	Tajikistan
Barbados	Dominican Republic	Kiribati	Nigeria	Tanzania
Benin	Ecuador	Kyrgyz Republic	Oman	Thailand
Bhutan	Egypt, Arab Rep.	Lao PDR	Pakistan	Togo
Bolivia	El Salvador	Lebanon	Panama	Tonga
Bosnia and Herzegovina	Equatorial Guinea	Lesotho	Papua New Guinea	Trinidad and Tobago
Botswana	Eritrea	Liberia	Paraguay	Tunisia
Brazil	Ethiopia	Libya	Peru	Turkey
Burkina Faso	Gabon	Macedonia, FYR	Philippines	Turkmenistan
Burundi	Gambia, The	Madagascar	Rwanda	Uganda
Cambodia	Georgia	Malawi	Samoa	Uruguay
Cameroon	Ghana	Malaysia	Sao Tome and Principe	Uzbekistan
Cape Verde	Guatemala	Maldives	Senegal	Vanuatu
Central African Republic	Guinea	Mali	Seychelles	Venezuela, RB
Chad	Guinea-Bissau	Mauritania	Sierra Leone	Vietnam
Chile	Guyana	Mauritius	Solomon Islands	Yemen, Rep.
China	Haiti	Mexico	Somalia	Zambia
Colombia	Honduras	Moldova	South Africa	Zimbabwe
Afghanistan	Comoros	India	Mongolia	Sri Lanka