Aid allocation by DAC members in contrast to non-DAC donors

Varying selection criteria for recipients of bilateral foreign assistance?

Master thesis

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Abstract

The development assistance field is changing due to the rise of new donors who operate independently from the Organisation for Economic Co-operation and Development's (OECD) Development Assistance Committee (DAC). Those donors, some of whom until recently received aid themselves, provide aid with allegedly different priorities, interests and motivations. This paper studies whether the aid allocation practices by different donors vary significantly in the targeting of donor interests, recipient need and recipient merit. Data of the OECD and AidData is used to analyse the flows with Probit and Tobit regressions, distinguishing the recipient-selection stage and the aid level stage. The aggregated groups of donors are compared with a Wald test, as well as the non-DAC donors grouped into smaller sections: Arab -, Asian -, Latin -, new-DAC, and European donors. China is tested separately to compare its aid level allocation to other donors, as recent global empirical studies have only tested the gatekeeping stage due to data unavailability. The study finds that the main difference between DAC - and non-DAC donors is found in the strength of the correlations, rather than its negative of positive direction. Interestingly, Arab donors show highly aligned aid allocation patterns with the DAC donors, and the results found argue for differentiation between China and other Asian donors in terms of aid allocation practices.

Key words – development aid, aid allocation, DAC, non-DAC, donors, donor motives, Probit, Tobit.

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Chapter 1: Introduction

Hillary Clinton urged, in capacity of United States (US) Secretary of State, developing countries to "be "smart shoppers" when accepting foreign aid from China and other new donors" (Bland & Dyer, 2011). She warned that "powerful emerging economies may be more interested in exploiting natural resources than promoting real development" (Bland & Dyer, 2011). This scepticism towards new donors has been shared in the media, particularly evident in the influential piece of Níam (2007) on non-western *rogue* aid, alleged to be intended for economic and geopolitical interests. However, research has shown that the 'traditional donors' use foreign aid too as an inherently political policy, strategically provided to satisfy a complex mix of donor and recipient interests (Mckinley & Little, 1979). Voting patterns in the United Nations General Assembly (UNGA) and historic ties impact the amount of allocated aid by these donors significantly. This begs the question whether foreign aid allocation is truly different from the traditional group of donors to the new ones.

Traditional versus emerging donors

Ever since 1961, the allocation of bilateral foreign aid has been coordinated and discussed by members in the Organisation for Economic Co-operation and Development's (OECD) Development Assistance Committee (DAC). The DAC comprises 23 European nations, the European Union (EU), Australia, Canada, Japan, New Zealand, the US, and South-Korea (OECD, 2020). It formats standards for aid such as for what Official Development Assistance (ODA) is, and coordinates efforts between members through policy programs, in an attempt to harmonize aid and minimize transaction costs. Due to the cooperation and negotiation on aid principles, members are said to be more unified in the manner in which aid is allocated, and on the conditions imposed. The DAC-donors are widely accepted as the 'traditional' donors, and the non-DAC donors are addressed as 'new' even though some have longstanding aid relations with recipients, albeit in a smaller quantities (Kragelund, 2008). Nevertheless, several non-DAC donors are 'emerging' in the sense that the aid volumes are increasing, and that allegedly a different approach to development aid is being promoted, centred around mutual benefits and non-interference principles. It needs to be noted, however, that both the DAC- and non-DAC donors show wide heterogeneity within the groups.

The variance of donors in the global foreign aid environment has increased considerably since the beginning of this century by the growth in significance of non-DAC donors. Several former aid-recipients have grown to become donors of development aid themselves such as India and Thailand. As indication, the four-year average of aid provided by the DAC compared to the non-DAC was 99% in 2000-2004, and fell to 86% in 2014-2018 (OECD, 2018; OECD, n.d.). That is an estimate because not all non-DAC countries who are known to

provide foreign aid report aid statistics to the OECD, including major new donors like China, India and Brazil. Whereas DAC donors are committed to provide the OECD with detailed reports on aid flows, non-DAC donors provide aid data as they please. Researchers have attempted to identify development projects by non-DAC donors through analysis of public reports and secondary sources, leading to more ambiguous aid data which is commonly perceived to be an underestimation of the total flows (Tierney, Nielson, Hawkins, Roberts, Findley, Powers, Parks, Wilson, & Hicks, 2011).

The Organisation for European Economic Co-operation (OEEC), the precursor of the OECD, was established to administer the development assistance of the Marshall Plan in Europe after the Second World War. The success led to the formation of the OECD in 1961, an international platform to address social, economic and environmental challenges. Western countries started to provide aid to low-income countries, which eventually led to an institutionalized North-South relationship. The last sixty years have shown varying interests to provide development assistance. In the sixties, public interest in aid led to investments in foreign development programs, stretching to farther countries and with more long-term goals than before. The amount allocated grew until the eighties when it took a dive due to the oil crisis followed again by a sharp decline in the nineties because of the end of the Cold War. During the Cold War, the foreign strategic benefits of foreign aid formed the main motivation to provide it, Radelet (2003, p.107) even argued that after the Cold War foreign aid lost its *raison d'être.* Attention was revived in the late nineties when the Millennium Development Goals (MDGs) were constructed in the United Nations, and so the aid commitments were raised in the meetings of 2002 and 2008 (Kremer, van Lieshout & Went, 2009). During this period, attention shifted towards the domestic behaviour of recipients, in terms of democracy, governance and rule of law practices. DAC donors were urged to pay attention to the recipients merit in relation to aid, as it was believed to influence aid effectivity.

Borneo (2017) puts forward proof of the change of focus towards recipient merit. He argues that as the world is continuously globalizing, traditional donor countries are increasingly experiencing the negative spill-over effects of underdevelopment and therefore more interested in enhancing development efforts in specific regions by encouraging good governance. Generally, recipient need, - merit and donor interests are used to classify aid allocation behaviour among donors. In essence, they relate to the political schools of realism, regarding donor interest, and idealism for recipient need and merit (Mckinley & Little, 1979). The non-DAC countries have very heterogenous timelines of aid provision, with some such as Saudi Arabia and China providing aid from the sixties onwards, and others starting only recently.

Aid allocation

The growing presence of non-DAC donors has given rise to both hope and fear (Guillon & Mathonnat, 2020). Hope for more efficiency as the countries have first-hand experience on modern development and might therefore be better at targeting recipient needs. Moreover, the on mutual benefits based South-South Cooperation (SSC) is perceived as more legitimate (Dreher, Nunnenkamp & Thiele, 2011; Shimomura & Ohashi, 2013). This is based on the interpretation that DAC donor aid conditionalities interfere with recipients' political and economic practices. Woods (2008) argues that new donors revolutionize the western style of aid provision by providing an alternative. By shifting the development aid field from unipolarity to multipolarity, the recipient countries would be empowered to pose demands on grants and loans (Woods, 2008; Shimomura & Ohashi, 2013).

On the other hand, academics have questioned the non-DAC principle of non-interference, as it is believed to diminish encouragements of good governance and human rights. DAC donors have made an effort to reward recipient merit since the late nineties by allocating more funds to countries with such standards in place (Paulo & Reisen, 2010). Autocratic governments such as Saudi Arabia and China deem the principle of non-interference more important, which gave root to the fear that the recipient merit efforts of DAC-donors would be undermined (Manning, 2006). Manning (2006) argues that even though non-DAC donors provide a wider range of financing options, there are three risks with this development. The first is that it could create debt traps, because of the ease of borrowing and the lack of conditions. Secondly, the dismission of conditions could postpone domestic adjustments, and lastly, resources would be wasted on over-ambitious investments due to pressures of the private sector. Be as it may, others regard the limited conditions on finances more opportunistic in the sense that they perceive it a chance to fill the void for otherwise left-behind countries to receive assistance (Chandy & Kharas, 2011).

There are considerable differences between members of the DAC and other foreign aid providers, though at the same time both groups show wide internal diversity and academics debate about whether and to what extent the differences affect actual aid allocation practices. Non-DAC donors present themselves to be less intrusive in recipients' internal affairs, and there is debate about whether that diminishes the pro-merit efforts of the DAC committee or empowers the recipient in question. However, before heading into discussions about how recipients are affected by distinct donors philosophies, it is relevant to check the assumption that DAC- and non-DAC donors in practice provide aid to recipients with significantly different characteristics. Or whether in the end aid is provided to roughly the same set of recipients. This study will attempt to answer the research question: *To what*

extent do non-DAC donors allocate foreign aid differently in terms of donor interests, recipient need and - merit than DAC-members?

Study design

To answer the research question, this paper will compare aid allocation by 23 DAC donors and 21 non-DAC donors to 139 recipients through quantitative econometric analysis of aid flows. The independent variables are theoretically informed characteristics of the recipient nation and the recipient-donor relationship, distinguished as either focused on donor interests, recipient need or recipient merit to categorize the potential motivations comprehensibly. For the DAC donors, data from the OECD database has been used, and for the non-DAC donors a combination of data of the OECD and AidData. AidData is a research lab at William & Mary's Global Research Institute with the goal of generating more granular and comprehensive data on foreign assistance projects for which a variety of sources is gathered including official governmental reports and media outlets (Tierney, et al., 2011). Aid allocation for this paper is measured both in the gatekeeping and level stage by running Probit and Tobit regressions to account for the left censor of countries not receiving any aid. The tests will be run for both sets of donors including subcategories of non-DAC donors to establish whether there are significant difference in the selection of recipients, and the amount of aid provided to recipients with specific characteristics.

Relevance

There is a substantial body of literature on the allocation behaviour of DAC members, because this data is transparently published and constitutes the majority of foreign aid. A much smaller body of research has been conducted for non-DAC donors, due to the lack of data transparency and the difficulty in comparison due to the different definitions of key concepts such as aid. Most of the studies are case studies, comparing the impact of two donors in a country, or shedding light on the practices of one particular donor. More insight in the motives and interests of new donors is crucial to understand the developments in the field of foreign aid, and to react fittingly. When there are differences found for allocation patterns on the basis on donor interests, the impact of this development on the recipient country can be identified as to establish how to respond. For example, if non-DAC donors prove to allocate aid mainly to recipients with natural resource abundance, DAC donors can decide to move to other countries to ensure a more even distribution of foreign aid. Likewise, when the non-interference stance of several non-DAC donors shows to neglect the pro-democratic efforts of DAC donors, aid organisations could change their methods to counter potential negative influences on merit practices. Establishing where the variance between donors is found helps to navigate the aid field by understanding the gaps and the opportunities for cooperation and development. Even if both sets of countries spend on the

same recipients, coordination is needed so as to not overburden the recipients' institutions, a side effect of aid fragmentation (Knack & Rahman, 2007). From that point of view it can pose fruitful to allocate aid in different manners. Studying whether a difference is present in the current aid allocation is the first step, after which follow-up research is needed to estimate the effects of this variance to decide on how to respond to the growing set of donors and to ensure a positive effect on development. The claim of Hillary Clinton in the start of this chapter about the connection between natural resources and aid targeting of non-DAC donors is not upheld by research of Dreher and Fuchs (2011) or Dreher et al. (2011). Rhetoric should be separated from reality by studying the financial flows.

Outline

First the studies on the allocation patterns of DAC-members will be considered to gain an understanding of the existing body of empirical analysis of aid allocation by this group. Then, the studies concerning non-DAC will be reviewed. By use of these studies in combination with the donor's characteristics and aid principles, hypotheses will be drawn on the allocation behaviour of both groups of donors. After the theory section, the methodology employed by this research will be explained in detail. Then the results are presented, and critically discussed and compared to earlier results. The conclusion shows how the results relate to the wider societal and scientific context and presents ideas for further development of aid allocation research.

Chapter 2: Literature Review

In the field of research on foreign aid, two main questions are being posed; 'who gives to whom and why?', and secondly 'what determines and influences the effectiveness of aid?'. Both questions have extensively been studied and the answers to the first category of questions will be laid out in this chapter. The empirical studies on aid allocation practices will be presented, critically analysed and compared to gain an understanding of which patterns have been found through econometric analysis of decades of aid provision by DAC and non-DAC donors. The body of research on DAC donors is extensive, with studies conducted as early as in the sixties looking into allocation practices. Those studies are presented in chronological order as to walk through the developments in the field. Since the turn of the century academic interest has grown for non-DAC donors, and efforts have been made to standardise their development aid to the DAC norms of ODA, in order to enable comparison between the two. However, global studies comparing DAC - and other donors have been few, as differentiating by means of case studies shows to be the preferred method of analysis. Based on the results of these earlier studies, hypotheses will be drawn in the next chapter, the theoretic framework.

Motivations for aid to developing countries

Maizels and Nissanke (1984) were one of the first to conduct large scale analysis of eighty recipients comparing the aid allocations of 1969-1970 and 1978-1980 to determine variation of motivations over time. The authors distinguished between recipient needs and donor interest related motivations to explain the variations of aid allocation from donor to donor, from bilateral to multilateral, and over time. The distinction of allocation motivations of donor interest, recipient need and recipient merit is common practice in aid allocation literature, which origin and interpretations will be explained in detail in the theoretic framework. Maizels and Nissanke (1984) found that, on average, multilateral aid providers allocate more to countries in need than bilateral donors, as measured in Gross National Product (GNP) per capita, balance of payment deficits, the Physical Quality of Life Index and population. Bilateral providers allocated relatively larger sums of aid to recipients with wider availability of strategic materials, arms transfers, and larger stocks of private direct investment. When the two time frames were compared, it showed that aid allocations in line with recipient need had augmented, and donor interest-related allocations went down for bilateral donors. Maizels and Nissanke (1984) identified this trend but recognized that foreign aid is affected by the donor's preferences which shift over time and so the trend is not expected to be continuous.

Another influential study was that of Alesina and Dollar (2000), who analysed allocation from DAC-donors to recipients from 1970 to 1994. Regression analyses were used to test bilateral allocations of aggregated and individual donors, based on the averages of five-year periods,

because development assistance per year is highly fluctuant. Panel regression by Ordinary Least Squares (OLS) were used to identify differences among donors. During the years studied, the DAC had twenty-one members, of which France, the United States and Japan were the main providers of foreign aid. The three donors amounted to more than half of the total share of provided aid, therefore their allocation practices significantly impact the average patterns of DAC-members. Alesina and Dollar questioned whether patterns in aid flows were dictated by donor interests, the needs of recipients or rather by the merits of recipients. Firstly, two variables were used to see to what extent donors allocated foreign aid to their own geopolitical interests. Those were whether and for how long a recipient had a colonial past, and whether the voting patterns in the United Nations General Assembly were similar to those of the donor. Colonial past strongly correlates with aid allocation by DAC-members (Alesina & Dollar, 2000; Chiba & Heinrich, 2019). Countries with relatively long colonial pasts, meaning more than one standard deviation more, receive 87% more aid on average. The correlation is even stronger for France, whom allocates 151% more to former colonies (Alesina & Dollar, 2000, p. 45). Colonial past is thereby the most important motivation for France to allocate aid. All DAC-members spend more on their own former colonies, than on other donors' former colonies. The second significant factor for all major players is the voting behaviour in the UNGA. The five biggest donors; US, Japan, France, Germany and the United Kingdom (UK), all donate more to recipients who vote along the same lines. For Japan, this indicator correlates strongest with aid flows, leading to an increase of 345% in assistance (Alesina & Dollar, 2000, p. 46). Whether this suggests that donors 'buy' votes is not clear, as it can also be interpretated as a sign of strategic alliance influencing the aid relationship. The 'UN friend' variable is second most influencing for the allocation of US aid, the first being the relation with the Middle East. In 24 years' time, the US spent one-third of its ODA on just two countries: Egypt and Israel. Alesina and Dollar (2000, p. 40) state that the increase of aid to Israel compared to similar countries is 'off the books' noting that Israel is relatively wealthy to receive aid.

Furthermore, the 'income of the recipient' correlates to larger aid flows of DAC-members, especially by Nordic countries. Likewise, the factors 'openness' (to trade) and 'democracy' too lead to significant increase of aid by virtually all members but France. It is noteworthy, however, that donors react more strongly to colonialism as seen in their amount of aid redirected to a country than to the merits of openness and democracy. Alesina and Dollar (2000) grouped the recipients in the bivariate of either former or no former colony of any DAC donor in the 20th century, and did the same for trade openness and democracy. The openness dummy was measured by scoring one or higher on Sachs, Warner, Åslund, and Fischer's Openness Index (1995), and democracy deemed 'more democratic' by the

threshold of five on Gastril's index (1990). On average a democratic recipient without colonial past would receive less foreign aid than a not-democratic country with colonial past and the same goes for openness compared to colonialism. As such, both recipient merit in the form of democratic practices as economic interests deem less important than the lingual, historic and geopolitical ties formed by colonial pasts. The US does target democracy, openness and poverty, whereas flows by France and Japan hold no significant relationships with these factors. By the conclusions of this analysis of the main donors, the foremost political-strategic motivation for aid is evident. Additionally, Alesina and Dollar (2000) performed time-series tests to measure the reaction in terms of aid flows to democratic changes in recipient countries. They found that during 'democratic episodes', the amount of aid went up in 75% of the cases, and that the reaction of donors to democracy is asymmetrical; when democracy decreases the aid decreases, yet in smaller quantities than it increases by good practices of democracy. Overall, DAC-countries reward recipients' democracy in foreign development assistance.

Berthélemy (2006) tested whether the motivations for donor interest, recipient need and merit coincided with one another. He divided the 22 DAC-donors in three categories based on the level of self-interest shown in their allocation practices throughout the 80s and 90s, as measured by export shares in relation to aid. After categorizing the donors, the groups were tested on variables for recipient need and merit to see whether the first variable of donor interest related to practices in the latter two. The two-step Heckman estimation was the selected method of analysis, with a Probit test for the selection-stage and a fixed effect regression for the level-stage. To operationalise the level of donor self-interest, Berthélemy (2006) disregards UN voting patterns as they can be both the result as the cause of strategic motivations, and as historic background in terms of colonialism varies widely between DAC-donors he argues that it does not provide a comparable result. Instead, he employs the variable 'trade intensity' to measure donor interests because all donors conduct trade with their aid recipients. By means of this variable, the DAC-donors were divided into a group of donors with a positive significant, non-significant, and negative significant relation between aid and trade intensity with the recipient. He interpreted these results in normative terms of altruism and egoism of donors. Thus, the countries with positive significant relations to trade intensity were put in the egoïstic cluster, and the negative significant donors in the altruistic -. The result of this division is presented in table 1.

Table 1 Berthélemy's categorisation of donors

Category	Donor countries
Altruistic	Austria, Denmark, Ireland, Netherlands, New Zealand, Norway, and Switzerland
Moderately egoistic	Belgium, Canada, Finland, Germany, Japan, UK, and the US
Egoistic	Australia, France, and Italy

Notes: Categories based on trade intensity. Adapted from Bilateral Donor's interest vs. Recipients' Development Motives in Aid Allocation: Do All Donors Behave the Same? By J. Berthélemy, 2006, *Review of Development Economics, 10*(2), p. 191.

Donors out of all clusters allocate significantly more to poorer countries, measured in Gross Domestic Product (GDP) per capita, except for Japan and Austria. Furthermore, on allocation for recipient's needs, all donors provided less assistance to recipients with larger populations. GDP per capita and population were the two variables used to measure recipient needs, and it shows that no matter the donor interest related aid provision, all donors give more to poorer countries, yet do not supply more to countries who are relatively more in need of aid due to their population size. The same was found for recipient merit variables; 'freedom', defined by civil liberties and political rights indexes of the Freedom House, had significant relations in both the altruistic and the egoïstic cluster. The second indicator 'growth of GDP' only affected allocations in few cases. For the merit-related 'Conflict' variable, there were in fact differences between the clusters, as the 'moderately egoïstic' group allocated significantly less to conflict-hit states, with the exception of the United States. Lastly, the control variable 'Aid of other donors' led to more aid mostly by countries in the moderate and egoistic cluster. All but one donor (Switzerland) provided more assistance to countries they had stronger trade relations with, yet at the same time all donors provide more assistance to poorer recipients as well. From these results one can conclude that there are relatively few common characteristics shared within the clusters of donors Berthélemy (2006) formed on basis on trade intensity and aid. This means that for these variables, the motivations of donor interests, recipient need, and merit are not interdependent.

Aid allocation of emerging donors

Now that the findings on aid allocation patterns of DAC donors have been laid out, this section will provide an overview of the studies on the emerging donors. The data set of emerging donors is less wide and transparent, troubling the ability to find consistent patterns. However, academics have made an effort to study non-DAC donors' aid allocation in relation to various variables, contrasting them to DAC donors. The majority of the research on the emerging donors consists of case studies, either from the perspective of the recipient or the

donor country. Other studies focus on the impact of emerging donors on the aid field in general. Due to the width of the field and the wide variances in characteristics of the emerging donors, only few have econometrically analysed the differences on macro-level.

One of the few taking such approach were Dreher, Nunnenkamp and Thiele (2011) who analysed the aid flows of sixteen non-DAC donors, and compared them to the average DAC-donor. The selected emerging donors were countries from the Middle East, Asia, Latin America, Africa and Europe. Two influential donors were excluded; India and mainland China, due to data unavailability. For the study, data provided by AidData was used. The project aid data varied widely per emerging donor in terms of time-span and quantity. Flows were analysed country-by-country, regionally and combined, and contrasted with the benchmark of the expenditure of all DAC-donors in the period 2001-2008. The data was analysed by running Probit and Tobit tests, the first to see at the gatekeeping stage to which recipients the donors chose to provide aid, and the second to find differences and similarities in the amount allocated. The results of the Tobit test will be discussed, as for the Probit there is a bias due to the divergence in the number of recipients on both ends. Additionally, a Wald test for equality was conducted to determine whether the found differences between old and new donors was significant.

The independent variables were again grouped into the three motivations of donor interests, recipient need and – merit. Donor interest was measured by similar UNGA voting, shared religion, share of exports and mineral and energy depletion. Mineral and energy depletion was measured as the product of unit resource rents and physical quantities of extracted energy and minerals. Interestingly, the UNGA voting relation was significantly negative for traditional donors, which opposes general findings, and for the emerging donors the outcome was insignificant. In fact, the emerging *and* traditional donors tested insignificant on all donor interest indicators. Only for the mineral and energy depletion, the variation between the two was significant, being negative for old donors and positive for the new -. Dreher et al. (2011) argue that the insignificant relation for natural resources can be explained by the lack of Chinese aid data employed in the study, as they expect this to be an important motivation for the country. These findings suggest that the pooled set of new donors either have other donor interests at heart than the indicators used in this study, or that the variance between the new donors is too wide to find a common pattern. Recipient needs were operationalised as GDP per capita and disaster affectedness. Both groups of donors spend significantly more aid on disaster affected countries. With wealth measured in GDP per capita, the old donors allocate significantly more to poor countries than new donors do. Lastly, merit was measured through political rights as computed by the Freedom House and the index for fragile states in accordance with the World Bank's Country Policy and Institutional

Assessment (CPIA) index. No relation was found between aid and corruption, however old donors avoid fragile states and recipients with low scores for political rights whereas new donors are neutral, showing significant differences at the 10% probability level. The control variables were distance between donor and recipient, and population size. With marked variance, the DAC donors favour larger countries better than non-DAC, for distance there was no notable gap between the donors as both prefer nearby recipients.

The high number of non-significant results for the non-DAC group displays the group's heterogeneity, which is specified in the second section of the study, when the variables are tested by regions of new donors. The emerging Eastern and central European donors were more indifferent to the distance with the recipient country and were, contrary to expectations, the only region to favour corrupt countries significantly. Asian donors, on the other hand, stand out by the six times higher elasticity rates for natural resource extraction than the average DAC-donor. This means that for every percent increase of the mineral or energy extraction in dollars, the allocated assistance increases with 6.4% rather than the 0.92% increase by old donors. Another interesting result was that both the Asian and Latin American donors considered spent less rather than more aid on countries with lower GDP per capita. Latin America's main point of difference was their allocation to fragile states, as they avoid those countries more than the others. For the Arab region, there were too many internal contradictions between the countries to find common ground on one of the measured variables, including the distance to the recipient. An overview of the results is presented in Table 2.

Even with these results it remains hard to tell why certain donors make different decisions regarding aid allocations than others. Notably, the non-DAC donors pooled together test insignificant for the majority of the indicators, in contrast to the DAC donors. As interpreted by Dreher et al. (2011) this can mean that other variables underpin motivations for foreign assistance. The other explanation is that the pool is too diverse to throw in one pot, which is more probable regarding the region-specific variations in allocation. The findings show that in terms of donor interests the similarities between the two sets of donors are striking, with the only significant variance established by the mineral and energy focus of Asian donors. On recipient need the donors show similar patterns, countering the hypothesis of Dreher et al. (2011) that the emerging donors would better target recipient needs as some of them have only recently changed the status of developing to developed nation. For allocation to reward recipient merit, different patterns are found depending on the region of the emerging donors. Asian and Latin-American donors provide more assistance to governments with lower indications of corruption, whereas Eastern and Central European donors grant significantly more aid to corrupt recipients than to others (Dreher et al., 2011). Interestingly, the DAC

donors provide more aid to corrupt countries than the Arab, Asian, and Latin American donors.

Recipient merit in detail

To test the relationship of aid to recipient merit, Petrikova (2016) argues that to ensure reliability of results more variables should be included than Dreher et al. (2011) did. She studied merit thoroughly by including: civil - and political rights, and social and economic rights, with the Cingranelli–Richards indicators, and the quality of democracy and good governance as gathered through World Bank indicators. Building on research by Doucouliagos and Paldam (2011) she expected DAC donors to be positively influenced by good practices, and non-DACs not to be influenced by merit practices neither negatively nor positively. That hypothesis in line with the conclusions drawn by Dreher et al. (2011). Petrikova applied a Heckman two-step model with Probit and General Method of Moments regressions to analyse the ODA flows of 24 DAC-donors and 25 non-DAC members. The emerging donors were divided in three groups: the OECD-members, Arab donors, and the SSC group and included data on China the gatekeeping stage. The donors were tested in singular rather than through pooled regressions, consequently no conclusions can be drawn on the statistical significance of variance between and within the groups. Conclusions were drawn by counting the number of countries within the group with significant and non-significant results. The time span of the research was 2002-2011 and the data from the OECD and AidData were combined. As Petrikova (2016) was mainly interested in the recipient merit aspects, all variables indicating donor interests and recipient need were measured as military aid per capita, colonialism (binary), the share of exports, region, religion, conflicts, disasters, population size, and GDP per capita.

The group of non-DAC members compared to the DAC members shows that for civil and political rights, the allocations are very similar, with the non-DAC donors even rewarding this merit slightly more than the other group. Economic and social rights is the variable that correlates negatively most frequently among the donors, meaning that countries allocate significantly more to countries who receive lower scores on this aspect. This holds true for both sets of donors, yet the percentage of new donors fitting this pattern is higher. For democracy, it is rewarded more frequently by the non-DAC donors. This last explanatory variable of good governance is interesting, as the non-DAC donors are mostly insignificantly correlated and the DAC donors have outliers on both ends of the spectrum. However, twice as many countries allocate more rather than less to recipients with good governance as measured by the World Governance Indicators (WGI) collectively. Contrary to the hypotheses, the non-DAC countries oftentimes reward recipient merit, with the OECD group focusing especially on democracy, the South-South group on political and civil rights, and the

Arab donors on good governance. For the instances where donors reward worse practices, Petrikova (2016, p. 173) denounces that as ‘a side-effect of political considerations rather than of deliberate intent’ because of the lack of consistency in rewarding and punishing recipient’s behaviour on merit on both ends.

Out of all control variables the aid received in the year before and shared region are the most consistently positive significant variables for the non-DAC. When looking at the differences within the group of non-DAC donors, the OECD group commits more aid to recipients who already receive aid of other donors, whereas the SSC group rather spends on others. This fits the argument that new donors fill gaps in aid provision and complement others’ aid effort. The non-DAC OECD members are less motivated by trade than the other new donors. Lastly, Arab donors are most affected by the recipients’ religion, preferring countries with Muslim majorities. DAC members also prefer to provide assistance to countries who received aid by them earlier. Caring for colonialism and commercial interests of recipients is more prominent among the biggest DAC-donors and DAC-donors of the South of Europe.

Case studies

Apart from the studies mentioned, there is little econometric analysis of the full set of non-DAC donors. Instead, various case studies have been performed on the motivations of one donor country or a group of donors within a region. To further explain the motivation of the emerging donors with the relatively large aid flows this section will zoom in on China and the Arab region donors. China is not covered in the research by Dreher et al. (2011) and only at the gatekeeping stage by Petrikova (2016).

China

China has a long history of providing foreign aid starting with aid to North Korea in the 1950s, and expanding to non-communist countries in 1956 (Dreher & Fuchs, 2011). The aid started off as ideological and political under the reign of Mao Zedong, and turned to be more economically motivated after his death in 1976. The study by Dreher and Fuchs covered the Chinese aid program from 1956-2006 using data from six different sources with the Fractional Logit model. Additionally, the most recent time frame of 1996-2005 was compared to the US, to the three biggest EU countries (Germany, France and UK), to ‘good donors’ (Canada, Denmark, Netherlands, Norway and Sweden), Japan, Korea and Arab donors (Kuwait and Saudi Arabia) with Wald tests. First, the general conclusions based on fifty years of data will be discussed. The effect of distance to the recipient and population size is insignificant for China. The number of aid projects in the recipient country fell as GDP per capita rose, an effect which grew stronger over time. There is no significant relation between natural disasters, democracy or export share and Chinese aid. For political donor interests China allocates less to countries who recognize Taiwan and more to ones that vote alike in

the UNGA. Economic interests on the other hand are less of interests, even so that recipients rich in oil receive less development assistance.

When comparing the allocation practices of China to DAC donors there are significant differences for merit variables. China tests insignificant to all merit variables, whereas the subsections of DAC donors are either insignificant or provide more aid to recipients with higher scores for government effectiveness, institutional quality, and less to corrupt countries. As such, the aid allocation of China seems indifferent to these internal affairs. In terms of donor interests there is a clear division between China and Arab donors, Japan and Korea, with the latter providing more rather than less support to recipients who recognize Taiwan. However, the quantitative effect of China's aid on this issue is bigger. Furthermore, the effect of natural resources on aid allocation has been thoroughly tested in this study, by including sixteen different indicators of natural resources. China only tested significantly positive in one instance, compared to Korea with eight instances, and so the authors conclude that China does not target natural resources in aid allocation. The authors conclude that "a surge in Chinese aid is nothing to fear" (Dreher & Fuchs, 2011, p.29).

A case study by Furuoka (2017) compared aid allocation practices of China and Japan to Africa. By means of three panel model methods (pooled OLS, the one-way fixed effects method and the two-way fixed effects methods) the flows were analysed. In terms of donor interests, the two countries showed predominantly similarities, as both countries significantly allocated more funds to recipients with larger markets. Contrarily, for recipient needs, China had non-significant results whereas Japan provided more to countries with lower GDP per capita, higher mortality rates, and lower educational enrolment ratios. The same pattern was found for variables indicating recipient merits, Japan provided more to countries performing better at the WGI indexes. The results have not been reported in table 2 due to the lack of figures presented in the research paper.

Arab nations

Little research has been performed on aid allocation by Arab countries, even though those donors have been actively providing development assistance ever since the oil boom. In fact, 13.5% of the worldwide aid allocated between 1974 and 1994 was by Arab donors (Neumayer, 2003, p. 135). In line with Neumayer's (2003) hypothesis, Arab donors allocate significantly more often -, and higher levels of aid- to Arab recipients, as well as countries belonging to the Islamic civilisation. The same goes for recipients that do not maintain diplomatic relations with Israel. The Islamic civilisation variable is an interesting difference to DAC-donors, as Alesina and Dollar (2000) did not find a significant religion-based correlation to aid for that group.

Concluding remarks

In conclusion, the body of empirical research on aid allocation of non-DAC donors is bounded, covering a limited number of donors due to a lack of available data. More studies on the subject are needed to make comprehensive claims about the broad group of new donors, if only because the work of Dreher et al. (2011) and Petrikova (2016) point to the wide heterogeneity among non-DAC donors. The authors use different variables and approaches, most notably by the difference of the former testing for equality between pooled donor groups, and the latter presenting the individual countries' allocations. Apart from several similar results there are striking differences in the results of the two studies, constituting a research gap. Firstly, Dreher et al. (2011) found that the non-DAC donors provide significantly more money to disaster-hit states, whereas Petrikova (2016) found the opposite, a significantly negative correlation. Other discrepancies are found in their findings on allocations regarding recipient merit, where Dreher et al. (2011) find that non-DAC donors provide more aid to better performing countries and Petrikova (2016) does not find differences. Lastly, export shares correlated positively for all donors analysed by Petrikova (2016) and insignificant by Dreher et al. (2011). On all three categories of aid allocation motivation differences have presented themselves among the two studies.

The practice of China has not been integrated in meta-data studies including various non-DAC donor groups even though the country is one of the largest non-DAC providers of foreign aid. To gain more insight in the practice of China the reports of Dreher and Fuchs (2011) and Furuoka (2017) were consulted. Both authors provide an overview of aid allocation patterns by China, yet do not compare those to Asian non-DAC donors. Therefore, it is not known to what extent China fits in with the non-DAC donors. China seems to vary significantly with prominent DAC donors in terms of showing no significant interests in donor's merits whereas it leads to more aid among DAC donors according to Dreher and Fuchs (2011). Other studies have found contrary results for the correlation between DAC donors aid allocation and merit indicators (Dreher et al., 2011; Petrikova, 2016).

Another gap is found in the results on aid allocation by Arab donors and their relation to the region. Neumayer's (2003) results provide evidence of a strong preference for the neighbourhood, a finding not supported by either Dreher et al. (2011) or Petrikova (2016). Over time more data has become available on non-DAC donors which increases the potential to define the similarities and differences to the DAC-members, and to see which blocks can be recognized among the non-DAC donors. The quickly growing and succeeding development programs beg for a revisit of the question whether the two groups of donors vary in aid allocation practices.

Table 2 Overview of literature review; studies and results

Study		Variables	Reported impact		
Maizels and Nissanke, 1984					
Donor:	Five largest DAC-donors		Bilateral aid		
			1969-70		1978-80
		GNP per capita	+		+
Time span:	1969-'70 and 1978-'80	Physical Quality of Life Index			
		GNP growth rate			
Type:	Bilateral and multilateral	Balance-of-payments	-		-
		Population			
Source:	OECD	Arms transfers	+		+
		Stock of private direct investment	+		
Method:	Cross country analysis -	Natural resources			
Alesina and Dollar, 2000					
Donor:	21 DAC-donors		Aggregated results		
		Colonialism	+		
Time span:	1970-1994	UN Friend	+		
		Israel and Egypt	+		
Type:	Bilateral	Religion			
		GDP per capita	+		
Source:	OECD	Population	-		
		Democracy	+		
Method:	Panel data - Ordinary Least Squares	Trade openness	+		
Berthélemy, 2006					
Donor:	22 DAC-donors		Altruistic	Moderate	Egoistic
		GDP per capita	-	-	-
Time span:	1980-1999	Population	-	-	-
Type:	Bilateral	Freedom			+
Source:	OECD	Conflict		-	
Method:	Panel data - Heckman's two step model: Probit and fixed-effects regression	Aid of other donors		+	+
Dreher, Nunnenkamp and Thiele, 2011					
Donors:	All DAC-donors, 16 non-DAC donors		DAC	Non-DAC	Equality test
		UNGA voting	-		
		Religion			
Time span:	2001- 2008	Share in exports			
		Mineral/energy depletion			Sig (+non-DAC)
Type:	Bilateral	Distance	-	-	
Source:	OECD and AidData 2.1	GDP p.c.	-		
		Disaster affectedness	+	+	
Method	Cross-section - Probit and Tobit analysis, Wald's test	Population size	+		Sig
		Corruption			
		Fragile states	-		Sig
		Political rights	-		Sig
Petrikova, 2016					
Donors:	All DAC-donors and		DAC	Non-DAC	

	25 non-DACs			OECD	South-South	Arab donors
Time span:	2002-2011	Exports	+	+	+	+
		Military aid per capita	+	+	+/non-sig	+
Type:	Bilateral	Colony	+		+	+
Source:	OECD and AidData	Region		+	+	
		Muslim				+
Method:	Panel data - Heckman two-step method with Probit and GMM regression[1]	Christian				-
		GDP per capita	-			
		Least Developed Countries		+	+/non-sig	
		Conflict		+/non-sig		
		Disasters	+	-		-
		Population size	+	+		+
		Presence other donors	+	+		
		Civil and political rights				
		Economic and social rights		-		-
		Democracy		+	+	
		Good governance	+			+
		Aid previous year	+	+	+	+
Dreher & Fuchs 2011						
Donor:	China		China	USA	Japan	Korea
		Distance			-*	-*
Time span:	1956-2006	Oil		-		
		Recognition of Taiwan	-	*	+*	+*
Type:	Bilateral	UNGA voting		+	+	
Source:	AidData	Export rates	+	+	+	
		Population	-	+*	*	
Method:	Cross-section - Fractional Logit model and Wald tests for equality	GDP per capita	-	-*	*	*
		Natural Disasters			+	
		Democracy				
Neumayer 2003						
Donor:	Arab countries		Arabic donors			
		Region	+			
Timespan:	1974-1994	Religion	+			
		Diplomatic	–			
Type:	Bilateral and multilateral	Relations with Israel				
		UNGA voting	+			
Source:	OECD	GDP per capita	–			
		Imports				
Method:	Cross-section - Heckman's two step estimator.	Population	+			
		Sub-Sahara Africa	+			
		Socialism				

Notes: An overview of all discussed studies in the literature review and their results per variable. As discussed in detail, Berthélemy's (2006) classification is based on donor interests as expressed in trade. Petrikova (2016) only run tests per individual donor meaning that in the instance of a tie between the number of donors with insignificant and positive results, both are presented. The figures of China by Dreher and Fuchs (2011) are based on the results of China compared to the other states, not individually.
*Significantly different to China

Chapter 3: Theoretical Framework

Now that the existing literature on the actual allocation practices have been presented the next section is dedicated to explicating why the aid allocations differ from donor to donor, and especially which assumptions are made about the donors' allocation practices based on their features. The definitions used will be explained in detail and decisions in theoretic approach substantiated.

Aid

The central concept to define is that of foreign aid; in international relations aid is the concessional transfer of resources from one government to another state, non-governmental organisation, or international organisation. As such, the definition excludes the significant amount of private aid originating from corporations and the civil society. Another important distinction is between bilateral aid, that of one state to another, and multilateral aid, where a group of states collectively present aid like in international organisations. The aid considered for this paper is bilateral aid, as it shows the interests of a particular donor country. Aid can be viewed as an extension of politics, the ideals and practices are shaped by the country's history as well as geopolitics, international events, and 'fashion' (Kragelund, 2019). When aid is targeted with a specific interest in mind, the allocation pattern will reflect those preferences. Research by Maizels and Nissanke (1984) found that on average bilateral aid allocation is largely targeted at donor interests, whereas multilateral aid focuses predominantly on recipient need aspects. As discussed, bilateral public aid can serve as a form of foreign policy to strengthen diplomatic ties, commercial interests, and/or humanitarian purposes. For the third category of private NGOs, on the other hand, the focal point tends to be on humanitarian interests and legitimacy towards sponsors (Edwards, 2014).

In the DAC, the definition of ODA was formed in 1969 to standardise and set targets for foreign aid (OECD, 2020). Aid is ODA when it is provided by official agencies, is concessional and is administered with the promotion of the economic development and welfare of developing countries as its main objective. This means that funds for military and commercial objectives is not included, and that the recipient should be on the list of eligible recipients, based on per capita income. The aspect of aid being 'concessional' is indicated by the percentage of grants and the interest rates of the provided financial resources (OECD, 2020). Most non-DAC donors do not present their aid in terms of ODA, and do not publish aid data in standardized formats. However, research institutions such as AidData do notify whether non-DAC aid is comparable to ODA whenever possible.

The DAC

This research will test the differences in aid allocation by DAC and non-DAC donors. It needs to be noted however that the two groups are fluid as countries are welcomed to join the DAC

(for OECD countries) or become an associate (for other countries). New members are assessed on “appropriate strategies, policies and institutional frameworks for development co-operation … an accepted measure of effort … [and should] have established a system of performance monitoring and evaluation.” (OECD, 2016, p.2). This means that the country should have an ODA/Gross National Income ratio over 0.2% or an ODA volume of above United States Dollars (USD) 100 million. Additionally, associates pay an annual fee and are called to implement recommendations, follow DAC guidelines, report their development statistics, participate in meetings, and allow peer reviews. Participants, contrary to associates and members, do not need to fill these requirements and merely pay an annual fee to take part in meetings, without being entitled to engage in formal decision-making. Meetings are held two to three times a year with the nations’ ministers of development. As for 2021, there are thirty DAC members, no associates, and seven participants (Azerbaijan, Bulgaria, Kuwait, Qatar, Romania, Saudi Arabia, and the United Arab Emirates). The participants have been treated as non-DAC donors in past research since the countries do not necessarily adhere to the recommendations posed by the DAC.

The DAC’s mandate is aligned with the UN 2030 Agenda for Sustainable Development and calls for “sustained, inclusive and sustainable economic growth and poverty eradication, improvement of living standards in developing countries, and to a future in which no country will depend on aid.” (OECD, 2017, p.1). The principles of the DAC are shown through the official recommendations for its members, such as the recommendation for development co-operation actors on managing the risk of corruption (0431). It recommends the implementation of a system in which, among others, training on anti-corruption is given, there is active and systematic assessment, a whistle-blowing mechanism, and a sanctioning regime. Another example is a series of recommendations to apply for environmental assessment of development assistance projects and programs, providing an environmental checklist for decision-makers (0246). As the DAC works with recommendations, there is no legal obligation for members to implement them, however through monitoring by the work group, peer reviews and benchmarking these standards are advocated.

Non-DAC

Aid by non-DAC donors has also been called South-South Cooperation, a term preferred by Kragelund (2019) as he argues that the countries should not be defined by what they are not, and because many do not perceive themselves to be donors. It needs to be noted that not all non-DAC donors are based in the Global South. Donors such as Liechtenstein, Iceland or Kuwait are better defined through other categories. However, the SSC is commonly used to define the development assistance of a set of important non-DAC donors such as China, India, and Brazil. The term refers to the exchange of resources, knowledge, and technology

between developing countries. The Bandung Conference in 1955 was the first official meeting for 29 nations and colonies in the Global South to present a non-aligned block in the Cold War. The attending nations composed about half of the world population and set out to gain influence in world politics and fight imperialism (Kragelund, 2019). One of the focal points of this newly formed collaboration was national and collective self-reliance, to be gained by practical and mutually beneficial cooperation on social and economic development among the Global South. These ideals are also unmistakably stated in the eight principles of Chinese foreign assistance as formulated by Premier Zhou Enlai :

1. Aid is provided on the principles of equality and mutual benefit.
2. China respects the sovereignty of recipient countries and never attaches conditions to its aid.
3. Aid is provided as interest-free or low-interest loans with extended time for repayment (if necessary).
4. The overall aim of Chinese aid is to make recipient countries self-reliant step-by-step.
5. China's projects are characterised by low costs and fast delivery times.
6. Chinese projects use equipment and material of the best quality at international market prices manufactured in China. The Chinese government undertakes to replace equipment if it is not up to standards.
7. Chinese aid seeks to build capacity in recipient countries to fully master the techniques related to the aid project.
8. Chinese experts will enjoy the same standard of living as the experts of the recipient country. (Kragelund, 2019, p.34)

The self-reliance refers to the non-conditional foundation of the cooperation, and mutual beneficially deems it acceptable to the 'donor' to gain from the deals which are two important differences with the DAC donors' perception of development assistance. As such, the SSC donors are more straight-forward in addressing donor interests at play in development assistance than the DAC. Brazil's mission statement for development assistance is the "transfer of knowledge through technical cooperation; sharing success and best practices in areas requested by partner countries" (Dreher et al., 2013, p. 1964). Referring to the recipient on basis of equality through the term partner is more common for non-DAC donors in general and that is why non-DAC countries dislike the term donor. When Sinha & Hubbard (2012, p. 15) studied the data availability of non-DAC donors, they found that some non-DAC donors do not disclose their development assistance flows to AidData initiative because they resist being seen as a donor by other donors and by their own citizens.

DAC versus non-DAC

Kragelund (2019, p. 64) put together a list of eight key differences between the aid of the DAC and non-DAC donors as is seen in table 3. DAC-members work by strategies and a clear institutional framework formed by the OECD and other international institutions like the

World Bank. Consequently, DAC donors make use of bilateral and multilateral channels and work together with other donors more often. Their official purpose of foreign aid is to foster social and economic development in recipient countries, by which they are not hesitant to impose conditionalities. Lastly, civil society is included in the process and ODA is strictly separated from other flows regarding trade and investments. For non-DAC donors, on the other hand, those streams tend to complement each other and are supplied in an integrated format. The governance structure of aid from non-DAC countries is more diverse, with competing and overlapping institutions, although bilateral channels are much preferred, and donor collaboration is scarce (Kragelund, 2019). An important point of difference is that non-DACs are vocal about respecting national sovereignty and thereby refrain as much as possible from imposing conditions. Due to these differences, the widest variety is expected between the DAC and the SSC donors.

Due to the heterogeneity among donors, they are often grouped into subsections to compute more meaningful results. For this research the groups: Arab -, new-DAC -, European -, Latin American -, and Asian donors are being formed. It is expected that the groups have different aid allocation practices due to specific aid principles and foreign interests. Most Arab donors are official participants of the DAC, which could lead to more aligned aid allocation practices. Yet, on the other hand, scholars have argued that due to the autocratic and region-minded focus of Arab nations, the aid allocation is incomparable to that of DAC donors (Neumayer, 2003; Níam, 2007). The new-DAC donor group refer to the countries which had not joined the DAC yet at the time of study, it is expected that those countries are more open to DAC principles on foreign aid. The European group is formed instead of an OECD-group because that would also include countries like Colombia and Chile which are more closely associated with the Latin group, and which supposed have widely different allocations to merit variables than the Europeans (Dreher et al., 2011; Petrikova, 2016). The European group is expected to be more actively engaged with DAC donors and therefore to be more closely related to DAC donor practices than the SSC groups. Hypothesis one is: '*New-DAC donors and European donors allocate more in line with DAC donors than the other non-DAC groups'*. Additionally, it is a priority to include China in this study, as it is a donor with large aid flows and has not been included in earlier meta-analysis studies. In the study by Dreher and Fuchs (2011) China was not compared to other non-DAC Asian donors. It is not clear whether China is comparable to other Asian states and there are several differences with other Asian donors in terms of aid budget and global involvement. As other non-DAC donors are grouped on basis of continent, the default assumption is similarity, hypothesis two: '*China allocates aid similarly to other Asian donors.*'.

Table 3 Kragelund's South-South versus DAC

Differences	South-South	North-South
Acceptance of DAC principles	ODA and OOF are mixed	Clear separation between ODA and OOF
Governance structure	Overlapping, competing institutions and embryonic strategies	Governed by strategies, policies, and clear institutional framework
Bilateral versus multilateral channels	Primarily bilateral channels	Both multilateral and bilateral channels
Donor collaboration	Occasional trilateral cooperation	Common donor meetings
Official purpose	Geopolitics and economic development at home and abroad	Social and economic development in recipient countries
Use of conditionalities	'No strings attached'	Widespread use of ex ante and ex post economic and political conditionalities
State versus civil society	Respect for national sovereignty	Involvement of civil society
Degree of connection to other flows.	Development finance facilitates trade and investments	ODA separated from trade and investments

Notes: Reprint from *South-South Development* by P. Kragelund, 2019, Routledge, p. 64.

Aid allocation motives

Donors can have various types of interest in mind when deciding to provide foreign aid to a country. Those interests are classified in different categories by academics, and the reasons to assume distinctions between traditional and emerging donors will be presented.

Recipient need

McKinley and Little (1979) conducted pioneering research by distinguishing donor motivations into models: the *recipient need model* and the *donor interest model*. With those models they studied the allocation practices by the United States in the seventies. The first model implies that aid helps the recipient countries to build their economies, as such aid ought to be proportional and a reflection of the relative needs. Even though the operationalisation of need varies widely in the literature, the motivation type is included in the majority of studies on aid allocation. Variables measuring the availability and access to nutrition and health care, and economic growth of the recipient state used to measure the extent which aid is used to satisfy the needs of recipients. Other studies have added education, population size and GDP per capita as variables to this category of motivations (Dreher, Nunnenkamp & Thiele, 2011; McGillivray, 1989). In this study GDP per capita is used as primary indicator of need for aid. Dreher et al. (2011) show in their analysis that

quality of life indexes are highly correlated with income per capita and consequently multicollinearity renders it unlikely to identify individual effects of the variables. Therefore, instead, disaster affectedness was selected as indicator of need because the empirical studies found varying results on the allocation behaviour of non-DAC donors towards this indicator. The recipient country's population is generally used as control variable which means it's added to the list of indicators. As population size affects the need for aid it is considered an indicator of recipient need.

For the donors it is expected that all tend to recipient needs to some degree. According to DAC standards, only aid to a specific group of low-income countries is recognized as ODA. Therefore, it is expected that the DAC donors are encouraged to provide more assistance to that set of countries, and that they provide more than non-DAC donors to countries with lower GDP per capita. For disaster-hit countries, previous literature poses that DAC donors provide more aid, yet for non-DAC donors there are varied findings. There is little reason to assume variance based on the characteristics of the latter. On allocation to countries with larger populations, Petrikova (2016) found a pattern among both DAC and non-DAC donors to provide more often to large countries at the gatekeeping stage, yet less at the level stage. Hypothesis three is: '*Both DAC and non-DAC donors provide more aid to recipients with more needs although the effect is stronger for the DAC - than the non-DAC donors'*.

Donor interests

The donor interest model, on the other hand, considers aid to be an instrument of foreign policy to establish national gains. Those gains come in different shapes and sizes, and can adhere to political, economic, military, security and/or migration-related interests. Aid can, for example, be given to foster geopolitical relations between the countries, or to reduce spill-over effects of underdevelopment such as migration to the donor country (Borneo, 2017). Development assistance combined with large amounts of military involvement of the donor in the recipient country is viewed as motivated by donor interest. Other features include similar voting patterns in the United Nations, post-colonialism, and aid for trade (Alesina & Dollar, 2000; Berthélemy, 2006; Knack & Smets, 2013). To account for geopolitical self-interests, this study uses the distance between donor and recipient to see whether donors use aid as foreign policy on the neighbourhood relations. Other indicators such as UNGA voting patterns are unavailable in accessible formats and post-colonialism signifies the self-interests of several DAC donors instead of all considered donors. Economic self-interests are measured with the export share between the donor and recipient, and natural resources of the recipient to indicate the potential import interests for the donors. Moreover, critics are vocal about the perceived interests of non-DAC donors with regards to natural resources and so it interesting to include the indicator.

Even though allocations can be motivated by the interests of the donor, it does not necessarily mean that the recipient country does not benefit from the aid. McKinley and Little (1979) hold critical views on the influence of aid on the relation between donor and recipient country as they point out that donors can impose conditions on the aid due to the imbalanced bargaining position. This effect is magnified as the donor can withdraw anytime, while the recipient quickly becomes dependent. Countries with mainly the donor interests at heart in allocation practices are therefore also named 'egoïstic', or it is interpreted as a form of realism (Berthélemy, 2006; McKinley and Little, 1979). However, donor interests are reflected in the assistance to different degrees and a long-term dependent relation does not need to be the case. For example, in the development assistance provided through the Marshall plan to Europe after the second world war, the United States had personal interests in developing a strong market in Europe and suppressing communistic groups (Kremer, van Lieshout & Went, 2009). Dreher, Klasen, Vreeland and Werker (2013) studied the impact of politically motivated aid on 'aid effectiveness', as measured by the World Bank evaluation system, and found that it only made for a detrimental effect when the recipient had excessive short term debt issues.

Departing from the notion that countries involved in SSC put more weight on trade relations, it is expected that Asian and Latin American non-DAC donors provide more aid to recipients with large export shares. The direction of the relation to aid is expected to be equal among DAC and non-DAC donors, in line with the literature, yet for the countries self-identified as Southern donors the effect is expected to be larger. For natural resources there are many popular sources claiming that China is targeting natural resources, however the results of Dreher and Fuchs (2011) do not support this assumption. Due to the view that SSC donors are more comfortable gaining from development assistance, it is expected that non-DAC donors provide more to countries rich in natural resources than the DAC. Lastly, distance is likely to correlate negatively with aid, with the exception of China, following the conclusions of Dreher and Fuchs (2011). All in all, hypothesis four is: '*All donors provide more according to variables indicating donor self-interest, however, non-DAC donors allocate more so'*. And hypothesis five is: '*China allocates more according to export share and natural resources than the DAC donors'.*

Recipient Merit

Donor interests and recipient needs were the main motivations for development assistance during the Cold War. Aid was provided to advance the Soviet Union's or United States' geostrategic interest (Ali, Banks & Parsons, 2015). Consequently, the total amount of aid flows fell in the decade after the Cold War. A new era of aid provision commenced as the western world and international organisations started to question the effectiveness of aid in

relation to good governance practices. Burnside and Dollar (2000) found that aid has a stronger positive effect in countries with strong institutions. The interest in governance grew and the World Bank started measuring it with the WGIs in 1996. Recipient merit is measured by allocation schemes over time to see whether donors provide more funds after transitions to more democratic governance, such as implementation of rule of law principles, human rights and fighting corruption.

Overall, DAC donors seem to provide significantly more funds to recipient countries with higher democratic and human rights standards (Doucouliagos & Paldam, 2011). Academics are mostly worried about the emerging donors' effect on rewarding those merits, as the principle of non-interference is pressed by non-DAC donors leading to the expectation of indifference towards a country's domestic political behaviour (Manning, 2006; Naìm, 2007). This could undermine the efforts of DAC donors to reward good governance practices. This is most visible in the non-conditional approach to development aid, contrasting with western countries who are vocal about internal political circumstances of recipients and pose conditions on the recipient's behaviour in international organisations like the International Monetary Funds (IMF) (Ravenhill, 2020). The feared consequence is that aid efforts of those donors will counter the pro-merit aid of western countries, while others like Woods (2008) suggest the new non-conditional approach benefits the independence of recipient countries.

The non-interference principle of some non-DAC donors leads to the expectation that those countries' aid is likely to correlate either negatively of insignificantly to recipient merit variables. The DAC countries have presented themselves more vocally against internal practices of aid recipient that could potentially harm aid effectiveness, although the literature has shown no statistical proof of that attitude in aid allocation practices (Dreher et al., 2011; Petrikova, 2016). Petrikova (2016) found that DAC donor provide slightly more to well performing recipients than non-DAC -. The non-DAC OECD members provided more aid to democratic countries, and it being a combination of the new-DAC – and European donors category it is expected that they provide more to democratic recipients. As Petrikova (2016) found that the South-South group provide more to recipient with stronger political and civil rights, it is expected that Asian - and Latin American donors allocate more to democratic recipients as well. To test the level of democracy in a recipient country, the WGI Voice and Accountability is employed as it measures the extent in which citizens are able to participate in selecting their government and freedom of expression. As such, hypothesis six is: '*DAC donors and the non-DAC groups European -, new-DAC-, Latin American - and Asian donors correlate positively with the voice and accountability indicator*'.

Furthermore, in terms of recipient merit related allocations, the results of Dreher et al. (2011) suggest that European non-DAC donors reward corruption whereas Latin-American donors provide more to countries with better practices. Nìam (2007) also argues that donors who control corruption to a lesser degree in their own country might favour more corrupt recipients. Especially China, Venezuela, and Saudi Arabia are mentioned in this respect. Latin American countries score generally higher on corruption indexes, yet Dreher et al. (2011) found evidence of strong aid allocation patterns in favour of better performing nations so this will be adopted in the hypothesis. The hypothesis for control of corruption is: '*European non-DAC donors, Arab donors and China provide less aid to recipients who perform better in controlling corruption, and DAC – and Latin American donors more.*' Only two WGIs were to be selected for recipient merit as the indicators often overlap and the selection of more would potentially form the risk of heteroscedasticity.

To distinguish between donors on the basis of aid allocation, the theoretic line of recipient need, recipient merit and donor's interest will be reflected in this research. This means that based on allocation patterns it is tested whether donor countries allocate significantly more ODA to countries with specific indicators in support of one of the three different motivations. Accordingly, the group of non-DAC and DAC members are analysed to find differences between these three clusters of motivations. The recipient need motivation is grounded in altruistic and humanitarian inspired aid provision, shown in the practice of allocating more to countries with the lowest living standards in terms of economy, education, health care, nutrition, and other basic human needs. Secondly, recipient merit is defined by the relation between assistance and governmental practices of the recipient country, rooted in the assumption that by providing aid to better governed countries, recipient countries will strive towards improvement to be rewarded for that merit. Lastly, providing foreign aid to secure donor self-interest is shown by allocation to countries who are strategic allies or commercially important. One motivation does not exclude or include another, as Berthélemy (2006) has shown. The theoretic framework of this study will largely conform to the line set out in earlier literature, yet strives to shed light on the new patterns arising from a macro point of view in the foreign aid policies. The hypotheses formed in this chapter are presented below:

> *H_1: New-DAC donors and European donors allocate more in line with DAC donors than the other non-DAC groups*.
>
> *H_2: China allocates aid similarly to other Asian donors.*
>
> *H_3: Both DAC and non-DAC donors provide more aid to recipients with more needs although the effect is stronger for the DAC - than the non-DAC donors.*

H_4: All donors provide more according to variables indicating donor self-interest, however, non-DAC donors allocate more so.

H_5: *China allocates more according to export share and natural resources than the DAC donors.*

H_6: DAC donors and the non-DAC groups European -, New-DAC-, Latin American - and Asian donors correlate positively with the voice and accountability indicator.

H_7: European non-DAC donors, Arab donors and China provide less aid to recipients who perform better in controlling corruption, and DAC – and Latin American donors more

Chapter 4: Methodology

This chapter outlines the methodological framework used in attempt to answer the questions raised in the past chapters. The first section will present the research design and statistical tests used, followed by the selection of the population, and the operationalisation of independent and dependent variables with reflection on the sources of the data. The chapter ends with critical reflection on the internal and external validity of the selected research methods.

Design

This research employs a non-experimental cross-sectional design to answer the posed research question. The decision to do a non-experimental approach is a given due to the nature of the data, as foreign aid, and variables such as disaster-affectedness or the level of GDP per capita are beyond the ability of the researcher to manipulate. Consequently, it is impossible to create an experimental and control group, as such the non-experimental research design has been selected. Choosing between qualitative or quantitative analysis was more challenging, as both methods are valid manners of explicating the variation between DAC-donors and non-DAC donors' aid allocation practices. I chose a quantitative method testing a large number (large N) of donors and recipients, because of the few studies published using this method for non-DAC donors, and secondly, to gain an understanding of which factors are generalisable among donors and which are not. Each donor allocates accordingly to its history, values, institutions, yet when claims are made over the full group they must be tested as such. Moreover, the ways in which non-DAC donors are divided into groups differs from study to study so the quantitative approach would allow to find common patterns in different subsections of the group of countries.

Statistical Analysis

Due to data unavailability and the volatility of aid, there are several gaps in the aid data. Additionally, the selected recipients vary per donor, and so a vast number of recipients do not receive any aid. When running a standard OLS regression the peak of observations at LN aid = 0 impact the validity of the model (Appendix B, table 12). However, when the OLS is censored not to include the observations in which aid = 0, selection bias will occur as the model does not predict to probability of providing aid versus proving no aid. The observed range of the dependent variable is censored, in this case by a left censor at Y = 0. There are two phases in aid allocation, the gatekeeping stage, and the level stage. In the first, the probability of receiving any assistance is measured through the Probit model with aid as bivariate. At the second stage Tobit regressions allow the implementation of left and/or right censors to exclude observations in the regression when the dependent variable reaches a certain value. As mentioned, an indication is made about the probability of being excluded

and the behaviour of the unobserved values of Y. In the postestimation tests the margins are predicted including both the observed and unobserved values of Y. As shown in the literature review, non-DAC donors generally allocate aid to a smaller number of recipients than DAC donors which is why the second stage provides more information on the motives of the donors than the gatekeeping stage.

An alternative method of analysis is the (estimated) Heckman's two step model which, contrary to the Probit and Tobit model, expects that the standard errors for both tests are correlated. However, the disadvantage to the Heckman two step model is that you need to select an exclusionary variable which is believed to influence the gatekeeping stage, and not the level stage. For all explanatory variables selected for this research, it is expected they influence both stages, which is why Probit and Tobit are preferred. The Heckman model is more appropriate for large datasets such as for lengthy timeseries datasets, yet for this cross-sectional design Probit and Tobit are equipped to provide robust results. Because of the nonlinearity of the model, the coefficients cannot directly be interpretated and so the average marginal effects are computed instead. This approach has been chosen for the marginal effects because the marginal effects at the mean are more likely to be skewed when the observations are further apart.

$$Pr\,(Y_{ij} > 0) = F\,(\alpha X_{ij} + \mu_{ij})$$

$$T = Y^*_{ij} = \beta Z_{ij} + v_{ij}$$

$$Y = \max[Y^*, 0] \begin{cases} Y^*, \text{ if } Y^* > 0 \\ 0, \text{ otherwise} \end{cases}$$

The Pr means the probability of selection which is also the Probit function. Y is the dependent variable, which can take on the form of Y and Y*. Y* is the censored outcome, the latent variable, which is existing but concealed, Y the uncensored variable. The amount of aid of i, the recipient and j, the donor. F represents the distribution of the observations in which α and β is the coefficient, or in this model the marginal effect. X/Z represents the independent variables employed in the study and *u*/*v* is the error term. For both tests the standard errors are being clustered at the donor level, this is because the observations of one donor are likely to share characteristics compared to a random observation.

Population

For the study, the most recent data was to be selected with the largest set of influential donors, measured in total amount of aid. For the DAC members data is available for every year in the last two decades but for the non-DAC the flows were marked by data gaps.

AidData's 3.1 dataset provides information for some non-DAC donors up to 2013, however the cut-off point of available data is for most donors 2010. That year is the most recent with data for Brazil, Chile, Colombia, Cyprus, Latvia, Slovak Republic, Thailand, and India. The years 2008-2010 cover 23 donors in total, compared to maximum thirteen donors in the years after. Moreover, the thirteen donors of which aid allocation data is available in 2019, such as Croatia and Kazakhstan are less controversial in aid literature than donors like China, India, and Brazil. Due to the volatility of aid, three years are selected to provide more reliable results, in the time frame of 2008-2010 there are two out of 23 donors of which no more than one year of aid data is available, whereas for the 2017-2019 span that holds for five out of thirteen. The chosen time frame for the study is 2008-2010, the average amount of aid per donor during these years is used for the analysis. Even though these are the same years of study as Petrikova (2016), the newer dataset used includes over five times the number of projects which enhances the internal validity of the analysis.

As discussed in the theoretic framework, the non-DAC donors are grouped by continent, with the exception of the donors which entered the DAC after 2010. Of those new-DAC donors it is expected that they compare to DAC donors more than the average non-DAC donor. China is tested separately, as the literature review did not conclude on whether it is comparable to other Asian donors. Moreover, due to the large aid flows and thereby large impact on worldwide development assistance the country is treated separately. A full overview of the donors is presented in Appendix A, table 10. After further inspection of the 23 non-DAC donors, South-Africa, Taiwan, and Liechtenstein did not have data on export share with other nations. As the independent variables are used as control variables, the countries are omitted from the sample. An exception is made for Taiwan, as the hypothesis require China to be compared specifically to Asian donors this will be tested apart from the other non-DAC donor groups. Otherwise, the Asian donors with which China is compared only include Thailand and India, affecting the internal validity. For these regressions, instead of including all independent variables as control variables, they are tested one at the time.

Operationalisation

Aid

The dependent variable is the aid flow from the donor to the recipient nation as the research is targeted to analyse whether several characteristics of the recipient nation have an influence on the aid flows. The criteria of ODA defined by the DAC are applied where possible to define foreign aid for this research; aimed at development, include at least 25% concessionality, and have an ODA-eligible recipient (OECD, 2020). DAC donors are required to report their aid flows to the OECD, and the data is published through the Common Reporting Standard (CRS). Additionally, several non-DAC donors recently started to provide

the OECD with figures on their bilateral aid flows. Too recently, however, to rely solely on this source and therefore metadata by AidData is consulted, as their base provides information on older flows. AidData is an independent research institution which estimates the foreign aid practices of non-reporting donors, based on media reports and direct contact with the donor on aid projects. As the aid flows are partly based on second-hand sources, the total is understated compared to the actual amounts allocated even though the most recent dataset AidData's (2017) Core Research Release 3.1 includes a total of 1,561,039 projects between 1947 and 2013 worldwide.

In some of the publications by AidData, international aid includes market-rated loans in addition to ODA or the flow type is not reported due to the lack of data transparency (Tierney, et al., 2011). In the more detailed datasets, such as the donor-specific Tracking Underreported Financial Flows (TUFF) publications, non-DAC donor flows are broken down to more specific categories to compare to ODA standards and present comparable figures. Their definition of "ODA-like" projects is that the intent ought to be development, the flow type a grant, grant-like, or a concessional loan and the recipient ODA-eligible (Tierney et al., 2011). Those flows are selected to provide the most comparable figure to ODA and are available for Qatar, Saudi Arabia, and China. This means that for most other non-DAC donors the project's type of flow has not been reported and may be different than ODA. The flows that were identified as non-ODA have been cut out of the dataset, such as aid to non-ODA-eligible recipients or loans at market rates, as it is certain that those projects are not comparable to DAC standards. However, the flows of which the type is not reported have been included in the dataset as otherwise the number of non-DAC donors with data would be too small to draw meaningful conclusions.

Contrasting to the Research Release, AidData's aid dashboard is updated every month and so includes data of after 2013. However, this data has not undergone a rigorous quality assurance process, and the dashboard does not specify international aid flows in smaller categories. Therefore, the static release was chosen as it also allows for more comparable, stable, and replicable results. The organisation has embarked on geocoding all the projects and building an open system to track the research flows between 1947-2013 which could explain why no new data on non-DAC aid has been released yet. Annual aid can be counted in terms of commitments or disbursements, and due to the fact that for non-DAC donors exclusively commitment flows are available this is the aid type employed. Furthermore, commitments are said to be influenced less by the recipient's administrative capacity and therefore are a closer reflection of donor's intentions (White & McGillivray, 1995).

Aid is highly fluctuant, especially for project-based data like the AidData dataset provides, and thus the average over three years has been taken to control for outliers and major fluctuations. During the data processing, it showed that the research release 3.1 contained calculation errors in the representation of the total amount of aid commitments in current US dollars. The commitment flows in constant 2011 USD were sound, yet the aid in current dollars showed large inconsistencies. It presented aid flows of tens of billions per recipient from all donors but Brazil and Chile, whereas the constant amounts reported hundreds of millions - at most - per project. Conceivably the data was skewed due to a problem with the decimals formatting, as when checking for the current and constant amounts of 2011 the variation was in a multiple of millions. At first, I set out to do the aid data in current USD, however due to this unreliability and inconsistent skewedness of data I decided to use constant USD. The other TUFF datasets of AidData did not show similar issues. For the deflation to constant 2011 USD, I used AidData's deflation methodology which measures the deflation by multiplying the inflation of the local currency with the change in exchange rates of the local currency to USD. The source of the inflation and change in exchange rates was the World Bank (2011) and the deflators for OECD countries were supplied by the OECD (2011), as the same deflation methodology is used.

Donor interests

For this research distance, exports and natural resources are selected due to the research gap exposed on those variables in the theory section. Distance shows to be an influential characteristic for most donors, with preference for the neighbouring countries or recipients within the same region as the donor. However, there are varying findings on the significance of distance for Arab donors which is why the variable is included. Distance is measured from the donor's capital city to every recipient's capital in kilometres, with data by Gleditsch and Wald (1999), based on the latitude and longitude of the capitals. Version six was used, posted in 2018 and the data was almost complete except for some dwarf island states (Gleditsch, n.d.). Secondly, to paraphrase Berthèlemy (2006), exports is arguably the most universal measure for donor interest as all donors have export relations to recipient countries. Measuring the share of a recipient in donor's exports shows the relative strength of the economic relation between the two. Moreover, the availability of natural resources is one of the most mentioned motivations for non-DAC donors to provide aid although the allocation research has not supported this assumption.

Recipient need

Inconsistencies among studies have been found for the variables disaster affectedness and population size, which is why they were selected, alongside GDP per capita as classical indicator of need for aid. Population size has been analysed by some as factor independent

of the three categories, and by others as recipient need variable. However, as the number of inhabitants of a country affects the relative demand for aid and others did not treat it as a control variable but rather as an extra non-assigned variable, it will be included in this category.

The Centre for Research on the Epidemiology of Disasters (CRED) is a non-profit institution working with international institutions such as the World Health Organisation and United Nations to do research on various kinds of disasters. Their database only reports an incident when either ten or more people have been reported killed, more than hundred are affected, a state of emergency has been called or a call for international assistance has been released. There is data available on three types of disasters: natural, technological, and specific disasters. The first category covers biological, climatological, geophysical, hydrological, and meteorological hazards. Technological disasters are linked to man-made accidents leading to among others spills, fires, radiation, explosions. Specific disasters are included for specific events like famine which have not been caused by natural phenomena directly. To decide which types of disaster to include in the research I examined the relation between the type of disasters and whether international aid was provided. It showed that for natural disasters, aid was provided in 12% of the records of CRED between 2008-2010, for technical disasters in .4% of the instances and for complex disasters 100% (as there were only two records in those years). As such, only natural and complex disasters were included in the research.

Recipient merit

The voice and accountability index and control of corruption index have been taken from the WGI dataset by the World Bank. By the definition of the World Bank (2007, p. 2), 'Voice and accountability captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.' As such, it measures the level of democratic influence and freedom to express their political views. The other variable, control of corruption, measures to what extent public power is abused for the purpose of private gain, both in petty and grand forms. The selected indicators are two out of six broad dimensions of governance. The WGI collects data from more than thirty data sources covering more than 200 countries since 1996. By applying the statistical tool of Unobserved Components Models (UCM) the data is standardized to provide aggregated measures of governance. The measures are presented in two formats, the first being in units of a standard normal distribution, with a mean of zero, and standard deviation of one. This format provides a range from -2.5 to +2.5 in which a higher value indicates better performance. The second format in which the data is reported is by indicating the performance of a country among all other countries in the world by a percentile rank from 0 to 100, higher values again indicating better governance. For this

research the first format is used as it reports country scores independently from other countries.

Time lag

The aid is measured in terms of commitments rather than disbursements, consequently the lag effect is rather small as the policy makers and politicians can decide on commitments based on recent information. However, aid could potentially affect the export share, natural resources and merit indicators which could result in reverse causality and therefore a time lag has been employed. The average of two years is taken for these variables to adjust for fluctuations. Emergency aid is usually administered directly after a disaster which is why for this variable the same years as the aid allocation data has been chosen.

Table 4 Variables, definitions, and sources.

Variables	Definition	Time	Source
Aid	ODA / ODA-like Commitments, in constant 2011 US dollars	Mean of 2008-2010	OECD CRS, AidData
	Donor interests		
Distance	Distance in kilometres between capital cities.	-	Gleditsch and Wald (1999), version 6: 2018.
Export share	Share of recipient in percent of donor's exports.	Mean of 2007-2008	World Bank (World Integrated Trade Solution)
Natural resources	Total natural resource rents in percent of GDP	Mean of 2007-2008	World Bank (2008)
	Recipient need		
Disaster affectedness	Total people affected due to natural and complex disasters per 1000 inhabitants	Sum of 2008-2010	Emergency Events Database of CRED
GDP per capita		2008	World Bank (2008)
Population size		2008	World Bank (2008)
	Recipient merit		
Corruption	In estimated standard deviations, from -2.5 to 2.5	Mean of 2007-2008	World Bank WGI
Voice and Accountability	In estimated standard deviations, from -2.5 to 2.5	Mean of 2007-2008	World Bank WGI

Reliability and validity

For the results of this research to be valid, internal and external validity need to be ensured. Internal validity depends upon whether the selected independent variables, such as GDP per capita or the level of corruption, affect the amount of aid provided. One could argue that other factors than the variables tested influence the amount of aid allocated to a recipient, however, those have been treated as extra independent variables in this field of research rather than as control variables. This is due to the fact that every variable influencing the amount of aid allocated is a motive for donors in its own right. Because of the scope of this study the number of independent variables is limited, and the decision was made to select the variables relating to the research gap exposed in the literature review. To ensure that the cause-effect relation between the independent and dependent variable is not reversed, a time lag has been implemented for some variables. Additionally, all variables will be checked for normality of distributions and converted to their natural logarithm when needed. To test for multicollinearity a covariate matrix is drawn.

The external validity expresses the extent to which results can be generalised. For the community of DAC-donors, all members are included in the sample and so external validity for this group has been ensured. For the non-DAC donors, a selection had to be made and even though as many donors were included as possible the results need to be interpreted in terms of the specific donors. The group of non-DAC donors has shown to be highly variant in earlier studies which is why one cannot assume the same patterns in a next donor. Through grouping the countries into smaller categories efforts have been made to establish better understanding of aid allocation practices across the scope of non-DAC donors. A liability is that in the years 2008-2010 aid by the DAC donors could have been influenced by the financial crisis at the time. According to Dang, Knack and Rogers (2013) the impact of financial crises on development assistance is that the amount of allocated aid falls from the moment a crisis hits until ten years thereafter. Moreover, the targeting of aid changes as social sectors are left mostly unaffected by crises. This could mean that for the selected years the DAC donors and some of the non-DAC donors provided more recipient need-based aid than average.

The data of OECD CRS is commonly perceived as reliable due to the cooperative report system and the country's administration as direct source. Data by AidData is not formatted solely on the basis of national administrative sources, but also by media reports and third-party publications on international assistance projects. By use of different sources, the full picture of aid projects is being formed and as many details are posted as found. Yet secondary sources do not provide the same level of reliability as the primary sources utilized by the OECD. This project-level data provides insight in the donor's development assistance,

however, it only covers one or two financing agencies within the particular government (Tierney, et al., 2011; AidData, 2017). As such, the flows are an underrepresentation of the true value of the flows. This applies to Brazil, Chile, Colombia, Cyprus, Czech Republic, Estonia, Hungary, Iceland, India, Kuwait, Latvia, Liechtenstein, Lithuania, Qatar, Romania, Saudi Arabia, Slovak Republic , Slovenia, South Africa, Thailand, United Arab Emirates (Tierney, et al., 2011; AidData, 2017).

Chapter 5: Results

In this section the data analysis and results will be presented for the different donors and independent variables. By addressing the statistical significance of the variables in correlation with aid, it can be determined which donors allocate aid similarly and differently on the aspects of recipient need, merit, and donor interests. First, an overview of the collected data is presented, after which the regression results are discussed. In the last section the results are interpretated and compared to previous findings in this field.

Descriptive statistics

When combining the data from the OECD and AidData, the 44 donors provided aid to a total of 151 recipients, equivalent to all ODA-eligible recipients during the studied time span. The DAC donors together provided to an average number of 118 recipients. As one notices in table 6, not one of the non-DAC donors included in this study provides to more individual recipients than the average DAC donor. Even China and Saudi Arabia, who allocate more aid than the average DAC-member, show less fragmentation in their aid allocation. In total, 83% of the total aid was provided by DAC donors and 17% respectively by non-DAC donors.

Table 5 Descriptive statistics

Variables	Observations	Mean	Standard Deviation	Minimum	Median	Maximum
Aid	6644	1,600,000	9,670,000	0	11,753	3,410,000,000
Distance	6637	8099.21	4198.8	155	7686	19918
Export share	6493	0.12	0.65	0	0.004	21.86
Natural resources	151	9.81	13.8	0	3.65	63.49
Disaster affectedness	151	10814.95	95523.66	0	9.86	1,114,150
GDP per capita	139	4761.32	7885.18	198.35	2890.36	80605
Population	143	31,600,000	115,000,000	9891	7,209,930	1,320,000,000
Control of corruption	144	-0.46	0.69	-1.81	-0.56	1.39
Voice and accountability	143	-0.35	0.87	-2.23	-0.25	1.2

The independent variables were collected for the 151 identified recipients, as well as for the individual recipient-donor interactions for distance and export share. An overview is presented in table 5, and the full dataset is provided in Appendix C, table 13. Although the World Bank-based data covered the majority of the recipients, it was not complete for the WGI's voice and accountability and control of corruption, and for the variables GDP per capita and population. The distance variable also includes missing observations due to the fact that some countries in this study are both donor and recipient of aid. In the regressions all variables are included as control variables and so all recipients with missing data have been omitted from the analysis. Accordingly, the number of recipient countries is 139 rather

than 151 per donor. There was also no data available on the export shares of the donor Taiwan, thus the country is only included in table 9.

Table 6 Aid data coverage

Donor	Years covered	Annual average in million constant 2011 USD	Number of recipients
Total DAC donors	2008-2010	88,533.21	151
Average DAC-donor	2008-2010	3849.27	118
Total non-DAC donors	..	17,892.69	145
Average non-DAC donor	..	777.94	33
Average Arab	..	1,885.64	47
Average European	..	3.69	18
Average new-DAC	..	12.33	23
Average Latin	..	26.37	40
Average Asian	..	555.85	43
China	2008-2010	8434.78	98
Brazil	2008-2010	67.06	81
Chile	2008-2010	2.1	21
Colombia	2008-2010	9.96	18
Cyprus	2008-2010	6.80	36
Czech Republic	2008-2010	19.89	20
Estonia	2008-2010	3.13	26
Hungary	2008	8.55	27
Iceland	2008-2009	8.89	4
India	2008-2010	1612.69	73
Kuwait	2008-2010	2117.57	48
Latvia	2008-2010	.78	6
Lithuania	2008-2009	5.94	10
Qatar	2010	435.50	4
Romania	2008-2009	1.79	10
Saudi Arabia	2008-2010	3798.99	38
Slovak Republic	2008-2010	9.54	24
Slovenia	2010	14.76	38
Taiwan	2008-2010	50.49	27
Thailand	2008-2010	4.36	29
United Arab Emirates	2008-2010	1190.49	98

The descriptive statistics are presented in table 5, and all variables were checked on whether they were distributed normally. The variables aid, distance, export share, natural resources, disaster affectedness, GDP per capita and population were not distributed normally thus for the analyses they were converted to their natural logarithm (Appendix B, table 12). By doing so the skewness was reduced for all variables but aid, as a lot of recipients do not receive any aid. The Probit and Tobit tests are specifically selected to control for the skewedness of the y-variable aid, as in Probit aid is transformed to a dummy variable of either zero or more than zero aid provided. The Tobit test is designed to work with censored variables, by accounting for the probability to be excluded from the regression. To ensure that the variables do not show multicollinearity, a correlation matrix has been computed (Appendix B, table 11). Within the donor interest and recipient need explanatory variables, no multicollinearity is found. The two merit variables, however, have a correlation of 0.68. As

such, a considered solution is to drop a merit variable and base the conclusions on one indicator only, yet that would impact the validity of the claims made as it involves only one variable. That is why both variables have been included in the tests. This could impact the results of table 7 and 8, in which the regressions included all other independent variables as control variables, yet in table 9 the variables are tested one-by-one and so it does not impact those results. For this nonlinear regression the error term is clustered on the donor level to provide robust standard errors.

Aggregated results

Table 7 presents the results for the Probit and Tobit test, analysed for the non-DAC donors, DAC donors and all donors together. First, the columns on the impact of the variables on the presence of all donors together will be discussed. For all variables the correlation is the same for the first and the second aid allocation stage, in terms of direction (positive or negative) and significance. The change from the selection stage to the level stage is that the variables show higher values at the margins, meaning that a change in the independent variable affects aid more strongly. It shows that the likelihood of a donor to be present in a recipient country goes down when the distance between the two is larger, and when the recipient has a higher GDP per capita. Furthermore, the probability of selection goes up when the countries have been affected by disasters, the export share between donor and recipient is larger, and when the recipient has more inhabitants. This means that when all donors are tested together, aid allocation patterns reflect care for the needs of recipients and for donor interests at significant levels. The only indicator in either of those categories without significant results is the share of natural resources of the recipient. The non-DAC donor dummy shows that a new donor is around 47% less likely to be present in a given recipient country compared to old donors. This difference is quite large due to the fact that non-DAC donors provide aid to a smaller set of recipients, as is shown in table 6. Due to this dissimilarity the Tobit results provide a better understanding of the aid allocation differences and will be applied for the tests of the variables between the donor groups.

The DAC – and non-DAC donors have been tested separately and the p-values for Wald's test for equality are provided in italics in table 7, a result of p under 0.05 indicates that the results of the groups are significantly different. As such, the two sets of donors allocate aid significantly different in five out of eight times (at the 10% significance level). The results show that both donors provide more development assistance closer to home, although the DAC donors are more affected by distance than non-DAC – at 10% significance level. DAC donors allocate more aid to countries with whom they have larger export shares, and significantly more than non-DAC – at the aid level stage. Non-DAC donors are less likely to select a country to provide aid to when that recipient has more natural resources, both

independently and compared to DAC donors. As such, one can conclude that DAC donors are allocation more in line with their personal interests than the non-DAC donors. On all three variables indicating recipient need, the donors provide in line with the needs, albeit, DAC donors provide significantly more than non-DAC donors in all cases when the two are tested on equality. For the recipient merit indicators, the differences between the donors are not significant, except for the country-selection stage for voice and accountability. Further inspection on the various non-DAC donor groups will be needed to analyse the influence of merit variables on aid of the donors. Instead of drawing conclusions based merely on aggregated results, tests on the variance with smaller groups of non-DAC donors will be executed to provide a more detailed overview.

Table 7 Aggregated results Probit and Tobit

Variables	Probit			Tobit		
	All donors	DAC	Non-DAC	All donors	DAC	Non-DAC
Non-DAC donor dummy	-0.47*** (-133.31)	-0.59*** (-60.76)		-15.15*** (-8.74)	-9.66*** (-10.79)	
LN Distance	-0.15*** (19.92)	-0.15*** (-4.24)	-0.14*** (-6.52)	-4.14*** (5.75)	-2.9*** (-4.37)	-1.78*** (-5.70)
		0.46			*0.10**	
LN Export share	0.01*** (4.78)	0.01*** (2.73)	0.01 (1.47)	0.31*** (3.46)	0.31*** (3.66)	0.09 (1.56)
		0.21			*0.02***	
LN Natural resources	-0.01 (-1.25)	0.01 (0.7)	-0.03*** (-2.71)	-0.2 (-1.17)	0.06 (0.32)	-0.25** (-2.44)
		*0.02***			*0.15*	
LN Disaster affectedness	0.02*** (11.01)	0.02*** (6.91)	0.01*** (4.55)	0.56*** (8.09)	0.50*** (9.43)	0.19*** (3.95)
		*0.03***			*0.00****	
LN GDP per capita	-0.04*** (-8.62)	-0.05*** (-4.97)	-0.03*** (-3.28)	-1.55*** (-6.66)	-1.41*** (-6.98)	-0.50** (-2.76)
		*0.04***			*0.00****	
LN Population	0.03*** (10.67)	0.03*** (6.40)	0.01*** (3.96)	0.74*** (7.59)	0.79*** (9.11)	0.16*** (3.77)
		*0.00****			*0.00****	
Control of corruption	-0.01 (-1.25)	-0.03** (-2.05)	0.00 (0.09)	-0.30 (-1.09)	-0.28 (-1.02)	-0.09 (-0.46)
		0.17			*0.56*	
Voice and accountability	0.01 (0.79)	-0.01 (-0.06)	0.03** 1.99	0.01 (0.02)	-0.04 (-0.13)	0.03 (0.20)
		*0.06**			*0.81*	
Number of observations	5928	5928		5928	5928	
Number of donors	43	43		43	43	
Log pseudolikelihood	-2629	-2630		-13401	-13400	
Pseudo R-square	0.36	0.35		0.11	0.11	

Notes: The first and fourth column presents the results for the two sets of donors together, followed by the separate results where the average marginal effects of the independent variables in interaction terms with the non-DAC donor dummy are reported. In the regressions all independent variables were included when determining the effects of one variable. The brackets report the z-statistics for Probit and Tobit. The number in italics reports the p-value for the Wald's test for equality, in which lower p-values are interpreted as lower probability of equality.
* significant at p < 0.10
** significant at p < 0.05
*** significant at p <0.01

Allocation variance between donor groups

For the indicators targeted to identify donor interests, one notices that for distance all groups provide less to farther recipients. Half of the donor groups is less affected by distance than the DAC donors, whereas the Latin American group is the only one to react more strongly by allocating less. In terms of export share and natural resources, few coefficients indicate significant correlations which affects the drawing of conclusions. The DAC donors and Latin American group provide more assistance to countries they have higher export shares with, and the latter allocates significantly more to this cause than the former. The other groups are not affected by export share, however, Arab donors and China provide less when compared to DAC donors. Lastly, abundance of natural resources causes the aid of European non-DAC donors to decrease, and of Chinese donors to rise at 10% significance level. As such, Asian and European donors are providing significantly less than the DAC donors to countries abundant in natural resources.

Table 8 Single variables with donor groups, Tobit

Donors	LN Distance			LN Export share			LN Natural resources		
	Marginal effect	z-value	Wald's test	Marginal effect	z-value	Wald's test	Marginal effect	z-value	Wald's test
DAC	-2.90***	-4.46		0.29***	3.56		0.03	0.17	
Arab	-2.03***	-3.37	0.20	-0.06	-0.68	0.06*	-0.10	-0.74	0.52
Asian	-2.06***	-9.12	0.64	-0.11	-0.33	0.37	-0.57	-1.43	0.04**
Latin	-4.33**	-2.15	0.00***	0.33***	3.85	0.00***	-0.11	-0.38	0.70
New-DAC	-1.55***	-6.85	0.00***	0.06	0.85	0.92	0.03	0.66	0.68
European	-1.09***	-3.94	0.00***	0.03	0.90	0.66	-0.41***	-3.52	0.00***
China	-1.45***	-9.49	0.03**	-0.05	-0.85	0.00***	0.24*	1.70	0.34
Donors	LN Disaster affectedness			LN GDP per capita			LN Population		
	Marginal effect	z-value	Wald's p-value	Marginal effect	z-value	Wald's test	Marginal effect	z-value	Wald's test
DAC	0.51***	10.25		-1.39***	-7.02		0.80***	9.54	
Arab	0.42***	3.13	0.04**	-0.98***	-2.58	0.41	0.22	1.44	0.07*
Asian	-0.02	-0.32	0.00***	-1.39*	-1.73	0.20	0.16	1.17	0.09*
Latin	0.12***	4.85	0.00***	0.05	0.29	0.00***	0.32***	12.27	0.62
New-DAC	0.15***	4.62	0.21	-0.31***	-3.29	0.86	0.14***	3.12	0.29
European	0.07	1.52	0.42	-0.07*	-1.70	0.00***	0.08***	3.35	0.07*
China	0.72***	1.52	0.00***	-2.26***	-20.01	0.00***	0.05	1.04	0.00***
Donors	Control of Corruption			Voice and Accountability		
	Marginal effect	z-value	Wald's test	Marginal effect	z-value	Wald's test
DAC	-0.24	-0.89		0.10	0.37	
Arab	-0.50	-1.49	0.20	-0.31	-0.96	0.23
Asian	1.21***	7.85	0.00***	0.74	1.58	0.02**
Latin	0.52	1.24	0.03**	0.85***	2.98	0.01***
New-DAC	-0.67**	-2.30	0.02**	-0.24*	-1.65	0.06*
European	-0.20**	-2.30	0.18	-0.07	-0.78	0.42
China	-0.61***	-2.59	0.28	-0.58***	-2.76	0.01***

Notes: Reports average marginal effects of an independent variable in interaction terms with the different donor group dummies, with all other independent variables as control variable. The equality p-values show the results for Wald's test of equality with the DAC group dummy.
* significant at p < 0.10
** significant at p < 0.05
*** significant at p < 0.01

The first hypothesis regarding donor interests was '*All donors provide more according to variables indicating donor self-interest, however, non-DAC donors allocate more so*.'. The first part of the hypothesis is true, in only one case did a donor provide significantly more aid against his own interests. That was the case of European non-DAC donors providing less funds to recipients with more natural resources. The results do not support the second part of the hypothesis, as all non-DAC donors allocate comparably to their self-interests or less so than DAC donors. The exception to the rule are Latin American donors, who provide significantly less aid to farther recipients, and more aid to recipients they hold higher export shares with, compared to DAC donors. Moving on to the hypothesis on Chinese donor interests: '*China allocates more according to export share and natural resources than the DAC donors'*. Again, the results are twofold, China does provide less than the DAC donors to countries with higher export share, yet the differences on allocation for natural resources are small.

When analysing the results found for recipient need related variables, it stands out that for all variables the donor groups provide more aid in accordance with need or show insignificant coefficients. China provides more to disaster-hit states and Arab -, Asian – and Latin donors less than the traditional donors. The same need-orientation for China is found in the results for GDP per capita. Latin and European donors do not seem to be affected by the GDP per capita of the recipient in the decision to provide aid, posing a difference. Furthermore, all non-DAC groups tend to provide less in accordance with population than the DAC donors, of which four significantly so. The hypothesis for recipient need was: '*Both DAC and non-DAC donors provide more aid to recipients with more needs although the effect is stronger for the DAC - than the non-DAC donors.'* As was already presented in the aggregated group comparisons the results support to accept the hypothesis with the exception of China, who targets recipient need better than the DAC among the donor groups.

Again, the DAC donors showed insignificant relations with recipient merit. The hypothesis for control of corruption was '*European non-DAC donors, Arab donors and China provide less aid to recipients who perform better in controlling corruption, and DAC – and Latin American donors more.'* The results show that only the assumption for China and Latin American donors is true. DAC – and Arab donors do not provide more aid to merit variables, and instead of European donors it is the new-DAC subgroup who allocate more to worse performing states. This pattern is significantly different from DAC donors only in the case of the New-DAC group. The merit of scoring high on voice and accountability leads to the same allocation patterns of the groups as for improved control of corruption. The hypothesis for this variable was: '*DAC donors and the non-DAC groups European -, new-DAC-, Latin American - and Asian donors correlate positively with the voice and accountability indicator*.' Moreover,

the allocations of Latin American donors and China are in line with the expectation, Latin American donors provide significantly more aid to more democratic countries, and China less. In this respect China is different than the other Asian donors who provide more to better performing states, which indicates that in terms of recipient merit, it is more fitting to test the two (groups of) donors separately. The new-DAC donors provide significantly less funds to better performing nations. It was expected that the DAC donors would reward recipient merit as it is one of the principles of the DAC, and that China with its non-interference principle would hold insignificant correlations with merit variables. Instead, these results present the DAC donors as unaffected by recipient merit, and China as preferring worse governance practices. With this overview of the allocation differences between the non-DAC donor groups, we reflect on the hypothesis: '*New-DAC donors and European donors allocate more in line with DAC donors than the other non-DAC groups*.' The results show that the lowest number of significant variations with the DAC donors were found among the Arab – and new-DAC donors, followed by the European donors. Accordingly, the hypothesis is accepted with the note that Arab donors share aid allocation practices too. In the discussion of results section, this similarity will be discussed in detail.

China and other Asian donors

Previous research did not determine whether China shows comparable allocation practices with the other Asian donors and so the two were compared in table 9, to test the hypothesis: '*China allocates aid similarly to other Asian donors.'*. The allocations for donor interests are comparable except for natural resources, to which China allocates more and the Asian donors less. In terms of recipient need, China allocates significantly more to disaster affected and poor recipients, yet less in relation to the number of inhabitants than Asian donors. As was visible in the comparison to DAC donors, China allocates significantly less to recipients with better control of corruption and voice and accountability practices, as compared to the average Asian donor. For half of the variables, the allocation between the two is significantly unequal. However, it is troubling to derive conclusions from these results as the Asian donors only show one significant relation to a variable and therefore the test of equality is less reliable. The reason for the difference in number of significant correlations could be the number of recipients, as China has twice as many recipients as the average Asian donor that could potentially explain why relations were found. Another explanation is that the variables used do not capture the relevant indicators for development aid for Asian donors.

Table 9 China versus Asian donors, Tobit

Variables	China		Asian donors		Wald's test for equality
	Marginal effect	z-statistic	Marginal effect	z-statistic	P-value
LN Distance	-1.83***	-24.15	-2.31***	-2.24	0.87
LN Export share	0.40***	33.85	0.26	1.36	0.44
LN Natural resources	1.64***	39.91	-0.11	-0.27	0.00***
LN Disaster affectedness	0.83***	79.51	-0.03	-0.46	0.00***
LN GDP per capita	-3.1***	-35.05	-1.39	-1.73	0.04**
LN Population	-0.01	-0.7	0.05	0.49	0.63
Control of Corruption	-3.22***	-63.07	-0.34	-0.78	0.00***
Voice and Accountability	-2.39***	-5.81	-0.14	-0.10	0.05**

Notes: Reports average marginal effects of one independent variable at the time in interaction terms with the Chinese and Asian donor dummies. The equality p-values show the results for Wald's test of equality. Taiwan is not included in the export share variable due to lack of data.
* Significant at p < 0.10
** Significant at p < 0.05
*** Significant at p < 0.01

Discussion of Results

The hypotheses were predominantly based on the characteristics of the DAC – and non-DAC donors rather than on expectations from previous econometric analyses. Most of the results found align with previous econometric research on DAC – and non-DAC donors rather than the expectations based on principles, however there were several interesting additions. First, the group of new-DAC donors was added to the subgroup of non-DAC donors rather than adding the countries to the European - or the OECD subgroup. This group does not show remarkable results regarding donor interests and recipient need variables, as they mostly align with the results of the DAC donors as expected, yet the aid allocation for recipient merit is interesting. The new-DAC donors provide significantly more funds to countries with lower control of corruption and voice and accountability practices. This is not expected of a group of countries who are to join the DAC and adhere to the recommendations and standards posed. The new DAC donors provide aid to a relatively small number of recipients, and the top-receivers of aid are Afghanistan, Nicaragua and Uganda who all hold negative scores for recipient merit variables. It would be interesting to see whether the joining of the DAC changed those aid allocation patterns due to the encouragement to allocate to better performing recipients.

The aid allocations of the Arab states were to a large extent comparable to the DAC donors, even more so than the European non-DAC donors. The specific preference for nearby recipients as presented by Neumayer (2003) is not found in this study as allocation in this respect is comparable to the other donor groups. One of the key aspects in which the Arab donors are distinct from other non-DAC groups is their involvement with the OECD and the

DAC as all Arab donors are participants in the DAC. This means that they regularly participate in meetings and conferences yet do not hold the same decision-making rights and are not peer reviewed on their development aid policies. Moreover, the Arab donors have the longest history among the non-DAC groups in reporting aid figures to the OECD. This close involvement might explain the resemblance shown in the aid allocations with the DAC donors.

The third new non-DAC donor group was China, deliberately tested apart from the other Asian donors to see how it compares to the DAC donors and other non-DAC groups. In earlier studies considered for this report, China was only included at the gatekeeping stage even though it provides a substantial amount of development assistance. China is an exception to the general aid allocation of non-DAC donors as it provides more than the DAC donors to disaster-hit states and is more prone to provide aid to poorer states than the others. As such, the donor is targeting more need-based indicators. For merit variables, the behaviour is less altruistic as the country provides more aid to recipients who score lower on control of corruption and voice and accountability. The results provided no proof for the assumption of economic self-interest in aid targeting as both for export share and for natural resources the allocations are only significantly different from the DAC donors at the 10% level. On the issue of whether Asian donors and China show similar aid allocations, the results show that there are several significant differences between the donors, especially in terms of aid allocation and recipient merit. Moreover, China has a very large aid budget and so it is more thoughtful to analyse it separately as a small significant result can explain a heap of distributed aid.

6: Conclusion

Countries over the world are developing rapidly, battling malnourishment and health issues, and building stronger economies. In this new environment, development policies are changing, and former aid receivers have turned into aid providers. This study shows that there are in fact several differences between the older and the newer donors. Firstly, with the amount of aid and the number of recipients selected, and secondly the decisions made on which type of recipients to provide more aid to. The fear of the intentions of non-DAC donors is largely based on the difference in relations with the recipients of aid. DAC donors are supposed to be altruistic helpers, whereas some non-DAC donor rather position themselves as equal partner. However, the aid allocation patterns for export share or natural resources do not find proof of targeted self-interest by the non-DAC donors. The aggregated donor group correlations show that overall the difference is not found in which kind of recipient to provide more aid to, but rather how strong the donors react to the recipients' characteristics.

To answer the research question: '*To what extent do non-DAC donors allocate foreign aid differently in terms of donor interests, recipient need and - merit than DAC-members?'* The DAC donors overall present stronger allocation patterns in favour of donor-self-interest than the non-DAC groups, apart from the Latin American subgroup. DAC donors target recipient need better than the non-DAC groups, with the exception of China. And lastly, for the recipient merit variables Latin and Asian donors allocate more aid to better performing recipients, whereas new-DAC donors and China provide less than the DAC -. With the available data on non-DAC donors, it was found that the new-DAC – and Arab donors show the most similar aid allocation patterns to DAC donors. This indicates that the long-term involvement of Arab nations with the DAC might have aligned their aid allocation priorities and practices. These conclusions are considerably different from the expectations based on donor characteristics, yet the rhetoric turns out to be different than the actual aid allocation practices. It is important to see the difference and to base policy decisions on real figures. As for the warning of Hillary Clinton, this study does not find evidence that China is targeting natural resources more than any DAC donor. Instead, most non-DAC donors are less trade and resource minded.

Limitations and further research

The results and conclusions of this study are based on a relatively short and dated time frame. In the literature review, studies are presented with decades worth of aid data which provides more externally valid results. More recent data on a wider set of countries would have added more to the understanding of the development assistance field anno 2021. When new data is released, further analysis of the aid and its developments over the last decade will help understand the differences between DAC and non-DAC donors better, both

in rhetoric and in practice. For example, as several Latin American donors have recently joined the OECD, aid allocation practices might grow more aligned over time. Given the amount of aid being transferred it is alarming that so little is known about the features of the flows. Whether the aid transfers were grants or loans and at which rate is unknown for the vast majority of data of non-DAC donors used in this study. Fortunately, there was more information available on some of the larger donors, such as Saudi Arabia and China, but for the others it is not known whether the aid data is comparable to ODA. Further research on the contents of the flows by non-DAC donors or the differences between ODA plus OOF and non-DAC donor aid could prove helpful in tackling this issue.

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Appendix A

Table 10 Overview of Donors

DAC members (23)	Source	Non-DAC (21)	Source
Australia		Arab donors	
Austria		Kuweit	AidData 3.1 and OECD CRS
Belgium		Qatar	AidData TUFF
Canada		Saudi Arabia	AidData 3.1 and AidData TUFF
Denmark			
Finland		United Arab Emirates	OECD CRS
France			
Germany		New-DAC donors	
Greece		Czech Republic	
Ireland		Hungary	
Italy	OECD CRS	Iceland	AidData 3.1
Japan		Slovak Republic	
Korea		Slovenia	
Luxembourg		European donors	
Netherlands		Cyprus	
New Zealand		Estonia	
Norway		Latvia	AidData 3.1
Portugal		Lithuania	
Spain		Romania	
Sweden		Asian	
Switzerland		India	
United Kingdom		Thailand	AidData 3.1
United States		Taiwan	
		Latin American	
		Brazil	
		Chile	AidData 3.1
		Colombia	
		China	AidData TUFF

Appendix B

Table 11 Correlation Matrix

	lnaid	voicea~u	cofc	lnnatres	lngdppc	lnpop	lndisa~r	lndist~e	lnexsh3
lnaid	1.0000								
voiceaccou	-0.1414	1.0000							
cofc	-0.1501	0.6783	1.0000						
lnnatres	0.0838	-0.4509	-0.3533	1.0000					
lngdppc	-0.1795	0.3603	0.4662	-0.1959	1.0000				
lnpop	0.1276	-0.2513	-0.2228	0.3016	-0.1092	1.0000			
lndisaster	0.1295	-0.0378	-0.1143	0.1042	-0.2991	-0.2694	1.0000		
lndistance	-0.1670	0.2407	0.1356	-0.0492	-0.0479	-0.0344	0.0948	1.0000	
lnexsh3	0.0403	0.0230	0.0182	0.0075	0.1813	0.1369	-0.0390	-0.1297	1.0000

Legend:

Lnaid – LN Aid

Voiceaccou / voicea~u – Voice and accountability index

Cofc – Control of corruption index

Lnnatres – LN natural resources

Lngdppc – LN GDP per capita

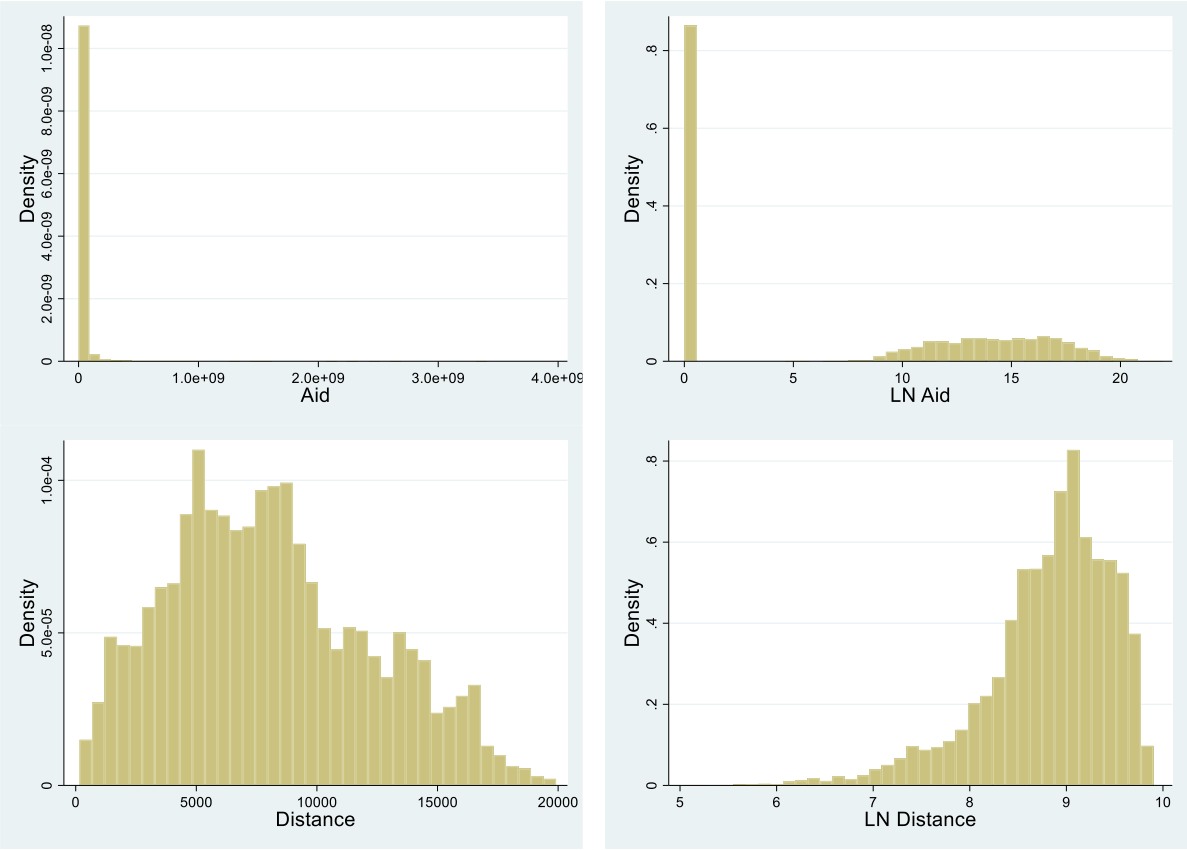
Lnpop – LN Population

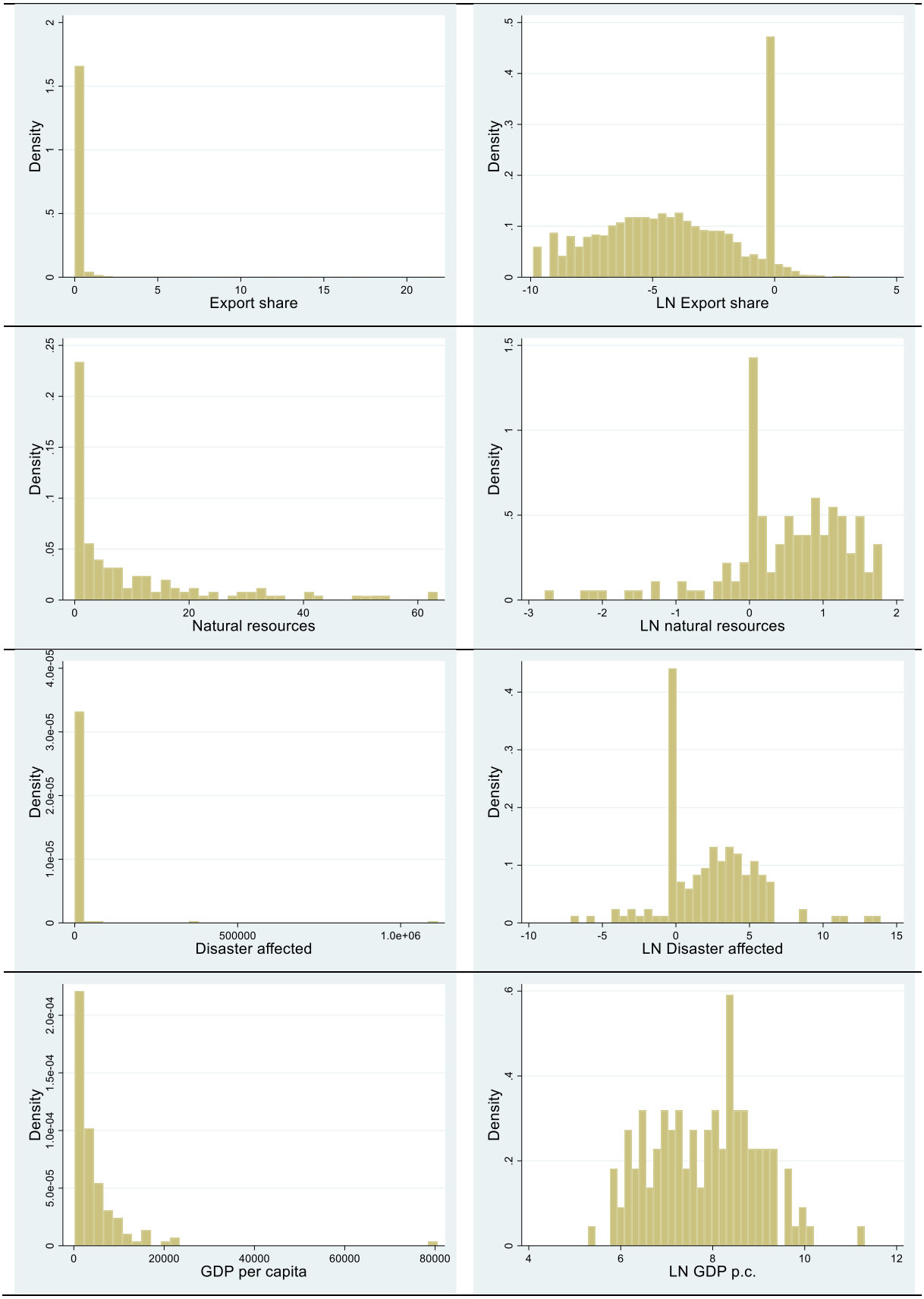
Lndisaster – LN Disaster Affectedness

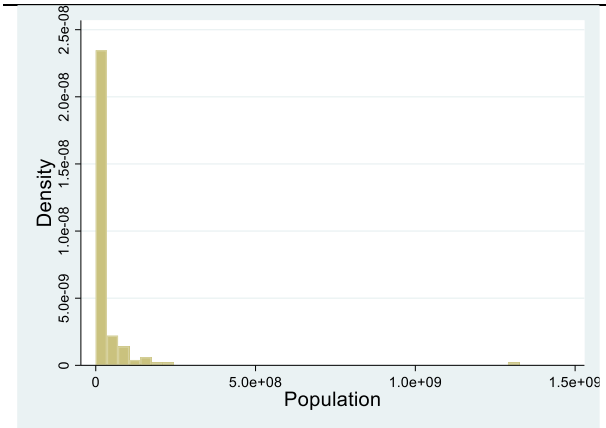
Lndistance – LN Distance

Lnexsh3 – LN Export share

Table 12 Distribution of variables




Density
Export share
LN Export share
Natural resources
LN natural resources
Disaster affected
LN Disaster affected
GDP per capita
LN GDP p.c.


Density
0
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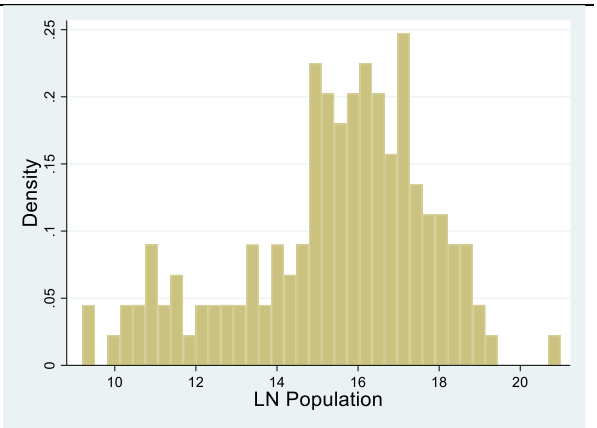
1.5e-08
2.0e-08
2.5e-08
0
5.0e+08
1.0e+09
1.5e+09
Population


Density
0
.05
.1
.15
.2
.25
10
12
14
16
18
20
LN Population

Appendix C

Table 13 Data Recipients

Recipients	Voice and Accountability	Control of corruption	Natural resources	Disaster affected	GDP p.c.	Population
Afghanistan	-1.11	-1.61	0.53	20.38	364.66	27722276
Albania	0.14	-0.64	1.44	7.04	4370.54	2947314
Algeria	-0.98	-0.58	33.36	1.77	4923.84	34730608
Angola	-1.15	-1.29	51.07	24.87	4080.94	21695634
Anguilla	0.97	1.28	0.00	0.00		
Antigua and Barbuda	0.56	1.22	0.00	360.67	16043.54	85397
Argentina	0.40	-0.39	5.02	3.81	9020.87	40080160
Armenia	-0.81	-0.73	0.11	0.00	4010.86	2907618
Azerbaijan	-1.28	-1.14	40.22	8.56	5574.60	8763400
Bangladesh	-0.51	-1.05	1.16	42.66	634.99	144304167
Barbados	0.99	1.39	0.43	8.93	17092.58	279946
Belarus	-1.65	-0.64	1.54	0.00	6377.37	9527985
Belize	0.59	-0.35	5.20	156.44	4404.33	306823
Benin	0.36	-0.48	3.65	127.83	1120.89	8696921
Bhutan	-0.69	0.87	4.25	0.02	1828.15	671613
Bolivia	0.02	-0.46	13.62	43.23	1715.21	9721454
Bosnia and Herzegovina	0.07	-0.37	2.89	12.96	5090.93	3754271
Botswana	0.51	1.02	5.53	2.65	5713.53	1915639
Brazil	0.55	-0.03	4.43	26.86	8831.02	192030362
Burkina Faso	-0.30	-0.32	8.20	23.93	643.40	14689725
Burundi	-0.70	-1.13	32.70	34.12	198.35	8126102
Cambodia	-0.95	-1.19	2.67	12.83	745.61	13883834
Cameroon	-1.06	-1.02	10.49	1.94	1371.75	19252666
Cape Verde	0.90	0.88	0.49	42.21	3721.25	480842
Central African Republic	-1.04	-1.15	10.85	6.17	464.56	4273366
Chad	-1.45	-1.45	35.21	230.69	929.38	11183588
Chile	1.06	1.39	15.43	169.05	10751.48	16708258
China	-1.71	-0.55	8.04	336.94	3468.30	1324655000
Colombia	-0.17	-0.23	7.54	91.58	5472.54	44254972
Comoros	-0.34	-0.75	1.65	3.80	1393.21	657229
Congo, Republic of	-1.19	-1.16	53.25	29.34	2904.13	4011486
Congo, Democratic Republic of	-1.30	-1.30	26.94	0.02	327.56	60411195
Cook Islands	1.05	0.00	0.00			
Costa Rica	0.95	0.53	1.39	76.45	6859.08	4463125
Cote d'Ivoire	-1.18	-1.10	8.69	0.86	1240.61	19605569
Croatia	0.49	0.04	1.06	0.26	16296.81	4309705
Cuba			4.61	46.23	5411.27	11236971
Djibouti	-1.20	-0.44	0.66	661.79	1223.86	816358
Dominica	1.02	0.65	0.03	0.00	6469.15	70827

Dominican Republic	0.18	-0.74	1.38	10.51	5087.99	9458075
Ecuador	-0.19	-0.73	17.93	29.02	4249.02	14535739
Egypt	-1.19	-0.77	0.00	0.05	2044.53	79636079
El Salvador	0.10	-0.37	0.58	17.88	2933.40	6131764
Equatorial Guinea	-1.89	-1.48	48.76	0.00	22942.58	860840
Eritrea	-2.14	-0.42	4.12	555.05	450.63	3062779
Eswatini	-1.34	-0.23	3.22	0.03	3137.40	82916235
Ethiopia	-1.26	-0.65	20.34	368477.04	326.44	47820
Fiji	-0.68	-0.05	0.79	10.07	4167.67	5313399
Gabon	-0.86	-1.07	42.04	2.89	10254.16	1689285
Gambia	-0.88	-0.73	3.11	14.62	924.51	3848449
Georgia	-0.24	-0.12	0.84	0.09	3324.74	82110097
Ghana	0.46	-0.02	9.02	6997.20	1217.06	33559
Grenada	0.81	0.35	0.00	0.00	7832.42	159036
Guatemala	-0.19	-0.69	1.96	325.20	2848.50	9738792
Guinea	-1.40	-1.24	15.76	63.74	715.10	1446936
Guinea-Bissau	-0.71	-1.19	16.35	95.80	600.00	746817
Guyana	0.11	-0.57	10.59	10.37	4050.78	9646580
Haiti	-0.60	-1.24	0.41	573.02	1076.70	7980955
Honduras	-0.24	-0.85	1.43	68.55	1739.35	6957800
India	0.46	-0.37	5.78	127.72	998.52	235469762
Indonesia	-0.02	-0.61	10.60	49.78	2166.85	72120604
Iran	-1.56	-0.66	30.79	0.96	5717.31	28385746
Iraq	-1.12	-1.46	54.53	1.00	4636.61	4489544
Jamaica	0.61	-0.30	2.42	0.05	4928.11	128063000
Jordan	-0.71	0.31	3.21	0.00	3455.77	15776938
Kazakhstan	-1.13	-0.98	29.29	1.06	8458.02	39791981
Kenya	-0.27	-1.01	3.64	86310.87	902.07	98761
Kiribati	0.70	0.04	0.06	0.00	1428.12	24310142
Korea, Democratic Republic of	-2.23	-1.53	0.00	1.95		49054708
Kosovo	-0.31	-0.68	2.13	0.00	3254.82	2656009
Kyrgyzstan	-1.03	-1.27	2.68	332.86	966.39	6046620
Laos	-1.71	-1.23	13.12	152.98	900.32	2177322
Lebanon	-0.44	-0.85	0.00	0.00	6111.33	1987129
Lesotho	-0.03	-0.01	5.21	1.25	884.96	3607860
Liberia	-0.16	-0.60	21.67	85.23	478.40	6058748
Libya	-1.95	-1.00	62.89	0.00	14382.58	35471
Macedonia, FYR	0.24	-0.28	4.68	0.00	4793.44	54625
Madagascar	-0.23	-0.23	6.12	193.90	536.35	19996473
Malawi	-0.25	-0.48	8.27	5.47	387.61	13727890
Malaysia	-0.54	0.07	13.31	0.69	8474.59	27236006
Maldives	-0.61	-0.84	0.01	0.00	6614.16	343452
Mali	0.21	-0.48	7.41	46.41	694.28	14113577
Marshall Islands	1.17	-0.59	0.00	10.68	2726.10	56174
Mauritania	-0.80	-0.68	31.48	259.92	1558.89	3296238

Mauritius	0.88	0.48	0.01	0.00	8030.06	1244121
Mayotte			0.00	0.00		
Mexico	0.13	-0.26	6.06	21.79	10016.57	110815271
Micronesia	1.07	-0.33	0.03	0.00	2541.41	103543
Moldova	-0.30	-0.65	0.21	5.58	2111.20	2867964
Mongolia	0.29	-0.64	29.12	299.12	2136.56	2631898
Montserrat		0.00	0.00			
Morocco	-0.73	-0.36	3.75	3.38	2890.36	31536811
Mozambique	-0.08	-0.50	10.33	56.55	563.65	22276596
Myanmar	-2.21	-1.62	11.06	56.61	638.15	49929642
Namibia	0.45	0.46	4.10	257.02	4158.03	2043394
Nauru	1.07	-0.34	0.00	0.00		9891
Nepal	-0.54	-0.80	1.22	33.11	470.46	26666576
Nicaragua	-0.29	-0.76	1.39	25.46	1499.26	5667432
Niger	-0.40	-0.74	8.12	541.14	478.50	15250908
Nigeria	-0.75	-0.97	17.77	11.50	2242.87	150269623
Niue			0.00	0.00		
Oman	-1.07	0.43	41.20	0.00	22139.68	171648986
Pakistan	-0.89	-0.86	2.11	1114150.2	990.85	18704
Palau	1.20	-0.32	0.00	0.00	10601.15	3516204
Palestinian Adm. Areas	-0.77	-0.27	0.00	0.14	2035.20	3591977
Panama	0.61	-0.19	0.11	8.75	7154.27	6976201
Papua New Guinea	0.04	-1.13	24.36	13.60	1672.95	6081296
Paraguay	-0.14	-1.08	1.51	10.44	4041.58	28562317
Peru	0.13	-0.22	13.04	9.86	4220.62	90901965
Philippines	-0.12	-0.74	2.32	718.51	1991.23	38125759
Rwanda	-1.28	0.05	7.26	556.53	543.77	183263
Saint Helena		0.00	0.00			
Saint Kitts and Nevis	1.12	0.93	0.00	0.00	15592.87	170011
Saint Lucia	1.20	1.11	0.01	4961.37	8456.69	36885
Saint Vincent and the Grenadines	1.06	0.93	0.00	0.18	6415.81	33060837
Samoa	0.59	0.23	0.41	183.48	3379.08	30434
Sao Tome and Principe	0.19	-0.30	3.57	0.00	1098.77	25888541
Senegal	-0.20	-0.50	2.66	53.08	1411.93	7350222
Serbia and Montenegro	0.27	-0.30	1.71	156.24	80605.03	703925
Seychelles	0.03	0.29	0.14	0.00	11122.86	6133603
Sierra Leone	-0.18	-0.94	11.93	0.71	408.48	4839396
Solomon Islands	0.04	-0.38	19.70	2.17	1388.98	11397188
Somalia	-1.87	-1.81	0.00	148.07		49779472
South Africa	0.58	0.23	9.01	5.34	5760.81	8736939
Sri Lanka	-0.45	-0.19	0.00	41765.47	2037.32	48178
Sudan	-1.65	-1.37	20.66	266.92	1304.53	517122
Suriname	0.58	-0.01	15.17	6.24	6831.98	1049945
Syria	-1.75	-1.13	22.18	62.91		20664038

Tajikistan	-1.32	-1.11	0.88	392.78	715.87	7209930
Tanzania	-0.15	-0.38	5.67	1.47	687.39	41853944
Thailand	-0.55	-0.39	3.26	409.24	4379.66	66530984
Timor-Leste	0.18	-0.65	0.00	0.00	614.43	1055431
Togo	-1.03	-0.98	12.89	25.85	544.15	6083420
Tokelau			0.00	0.00		
Tonga	-0.10	-0.85	0.05	4.90	3331.71	103379
Trinidad and Tobago	0.54	-0.05	14.83	0.00	21204.10	1314443
Tunisia	-1.36	-0.28	7.66	0.00	4307.16	10414433
Turkey	-0.05	0.11	0.50	0.56	10940.99	70418604
Turkmenistan	-2.13	-1.51	63.49	0.00	3904.46	4935767
Tuvalu	0.77	-0.22	0.00	0.00	2936.81	10314
Uganda	-0.50	-0.83	16.30	59.57	474.52	30431736
Ukraine	0.08	-0.82	0.00	5.72	3887.24	46258189
Uruguay	1.05	1.28	1.42	1.20	9091.08	3340221
Uzbekistan	-2.11	-1.05	31.90	0.00	1082.29	27302800
Vanuatu	0.44	0.26	0.86	46.06	2705.60	224704
Venezuela	-0.75	-1.14	24.75	3.49	11432.74	27635832
Viet Nam	-1.51	-0.67	13.03	69.93	1149.42	86243413
Wallis and Futuna		0.00	0.00			
Yemen	-1.17	-0.79	33.68	1.19	1229.25	21892146
Zambia	-0.18	-0.40	18.92	50.17	1394.00	12848530
Zimbabwe	-1.56	-1.38	16.90	142.85	356.69	12379549