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Less Aid Proliferation and More Donor Coordination?

The Wide Gap between Words and Deeds*

Iñaki Aldasoro, Peter Nunnenkamp and Rainer Thiele

Abstract:

We present a two-step approach of assessing whether major donors of foreign aid have met recent demands for less proliferated and better coordinated aid efforts. First, we calculate Theil indices revealing the concentration of each donor's aid on recipient countries and specific aid sectors. Second, we map overlaps of aid from different donors and over time to analyze the degree of coordination. Our results point to a wide and persistent gap between the rhetoric of political declarations and the donors' actual aid allocation during the period 1995-2006. Few donors have specialized on a limited set of recipients and aid sectors, and coordination has remained elusive.

Keywords: aid allocation, sector-specific commitments, Theil index, donor coordination, overlaps

JEL classification: F35

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1. Introduction

Aid proliferation, donor fragmentation and lack of coordination have been identified for decades as serious problems impairing aid effectiveness (Bigsten 2006). For instance, Whittington and Calhoun (1988: 296) argued more than 20 years ago that uncoordinated aid is "at least partly responsible for the failure of African economies to utilize their development assistance effectively." The World Bank (1984) claimed that "the weaknesses of uncoordinated aid" were increasingly recognized by both recipient and donor countries. However, the sequence of similar political declarations until recently, culminating in the Paris Declaration on Aid Effectiveness in March 2005, rather suggests that little has changed in day-to-day practice of aid delivery.

On the other hand, there might be less need for donor coordination than all these declarations make us believe. Dollar and Levin (2006) found an increasing selectivity of aid, which may imply that donors specialize unilaterally by serving only a sub-set of eligible countries. Donors may also decide unilaterally to focus on specific purposes aid is meant to serve such as aid for education ("aid sectors"). Unilateral action of this sort would help overcome coordination failure - but only if donors concentrated on *different* recipient countries and aid sectors, rather than all engaging with the same "aid darlings" and crowding in the same high-publicity sectors.

Hence, the present paper presents a two-step approach of assessing whether donors have improved aid effectiveness by specialization and coordination (see Section 3). In the first step, we calculate Theil indices to evaluate whether major donors, viewed as independent actors, have reduced aid proliferation and fragmentation by concentrating in selected recipient countries and specializing in selected aid sectors. In the second step, we employ overlap indices to analyze to which extent donors coordinate their aid efforts. The two-step approach represents a major extension of the previous literature. As will be shown in Section 2, earlier studies typically consider either the first or the second issue in isolation from the other. Furthermore, in contrast to almost all previous studies, we use disaggregated sector-specific aid data. We also offer new insights by taking the time dimension into account.

Our results, presented in Section 4, point to a wide and persistent gap between the rhetoric of political declarations and the donors' actual aid allocation during the period 1995-2006. Few donors have specialized on a limited set of recipients and aid sectors, and donor coordination has remained elusive.

2. Previous Literature

It is widely accepted that the effectiveness of aid could be enhanced if donors specialized and coordinated more than they have done in the past. Specialization might counteract aid proliferation and donor fragmentation which tend to increase aid-related transaction costs. According to the World Bank (2004: 206), there are often "too many projects for any to work efficiently." Proliferation and fragmentation impose high transaction costs on the recipient countries, especially the poorest among them, with multiple donor missions, different sets of policy conditions and inconsistent reporting requirements absorbing scarce administrative resources (Acharya, Fuzzo de Lima and Moore 2006).[1] At the same time, donors are often "poaching" qualified local labour.

Applying a game-theoretic framework, Roodman (2006b) argues that if there are multiple donors who care most about the success of their own projects, a negative externality arises through competition for scarce recipient resources. Based on a model that incorporates aid and recurrent costs to produce aid project outcome, Arimoto and Kono (2009) conclude that with an increasing number of aid projects the amount of recurrent cost allocated to each project will be reduced. This tends to lower aid productivity because aid projects can only produce sustained benefits if there is no shortage of recurrent costs. Knack and Rahman (2007) show, both theoretically and empirically, that aid fragmentation impairs bureaucratic quality in high-aid countries. For a broad cross-section of aid recipients, Kimura, Sawada and Mori (2007) find a negative impact of fragmentation on economic growth.

Less fragmented aid may also alleviate collective action problems by providing a single or dominant donor with stronger incentives to accept responsibility for success or failure of aid delivery in a particular sector to a particular recipient country. Responsibility is rather diffused when there are many donors involved, giving incentives "for any one donor to shirk on activities that maximize overall development in favour of activities that contribute to donor-specific goals" (Knack and Rahman 2007: 177).

The theoretical case for donor coordination rests on the public good character of poverty alleviation in aid recipient countries (Torsvik 2005). Assuming altruistic donors, the common goods problem would still imply an under-provision of aid unless donors cooperated and took into account that an extra amount of aid not only affects the welfare of the particular

[1] For instance, Tanzania had to prepare about 2,000 reports for various donors and received about 1,000 donor delegations per annum (World Bank 2004).

donor but also the welfare of all other donors.[2] Halonen-Akatwijuka (2007) models coordination failure for sector-specific aid within a particular recipient country. It is shown that aid fragmentation is not only costly for the recipients but also for donors, especially if they share similar preferences. Fragmentation causes incomplete information which, in turn, may lead donors to concentrate too much on priority sectors and to underfund other, still important sectors.[3]

However, the incentive structure of individual donors may render specialization and the coordination problem "much more intractable than is commonly realized" (Whittington and Calhoun 1988: 295). Bigsten (2006) notes that donors tend to weigh global presence more heavily than aid efficiency, which makes them reluctant to concentrate aid on fewer recipients. Effective coordination would constrain the possibilities of donors to pursue commercial and political self-interest.[4] But even altruistic donors face incentive problems. Aid agencies may have to report home about successful project implementation in order to secure future financing and raise public awareness; funding own projects may increase visibility. Likewise, there are few incentives to cooperate at the level of aid administrators: An officer "who lets others know about some of his 'best' project ideas may well find them funded by other donors" (Whittington and Calhoun 1988: 303). More generally, Acharya, Fuzzo de Lima and Moore (2006) argue that donors compete for promising projects, the attention of policymakers, the cooperation of qualified local staff, and influence over the policies of the recipient government.

Donors may have been aware of coordination failures and the transaction costs of aid proliferation in the 1980s already, as stated by the World Bank (1984). Nevertheless, it is open to question whether they actually engage in specialization and coordination to render aid more effective.[5] The sequence of recent high-level meetings with repeated calls for coordination (Monterrey in 2002), harmonization (Rome in 2003) and alignment and mutual

[2] However, Torsvik (2005) goes on to show that donor coordination, while solving the free-rider problem among external donors, may negatively affect local efforts to help the poor. Consequently, donor coordination is unambiguously beneficial only if external donors can enforce contingent aid contracts on the recipient government.

[3] However, Halonen-Akatwijuka (2007) also shows that incomplete information may leave the priority sectors underfunded if smaller donors specialize in lower-priority sectors.

[4] There is a substantial literature on commercial and political donor interests having shaped the allocation of bilateral aid; see Nunnenkamp and Thiele (2006) for various references.

[5] In the words of Whittington and Calhoun (1988: 307): "All donors want to *co-ordinate*, but no one wants to be *co-ordinated*."

accountability (Paris in 2005) suggests that little has been achieved so far.[6] At the EU level, it took until May 2007 to adopt the Code of Conduct on Complementarity and Division of Labour in Development Policy. Among the principles to guide EU aid efforts according to this Code, the commitment for each EU country to grant aid in no more than three sectors per recipient country is particularly relevant in the present context.

While the suspicion is that "most progress was made on policy principles, not in practice" (Engel and Keijzer 2008: 60),[7] conclusive empirical evidence is extremely scarce. According to case studies such as AFRODAD (2007) on Kenya, some donors have withdrawn from particular sectors, and harmonisation has been advanced by donors using so-called SWAps[8] and contributing to common basket funds; but there are still up to four lead (!) agencies in sectors such as public finance management and water and sanitation. Knack and Rahman (2007) calculate donor fragmentation for various recipient countries on the basis of Herfindahl indices. Using OECD data on aid disbursements and averaging over all recipient countries, it turns out that fragmentation was on an upward trend in 1975-2000. This was largely because of the emergence of new DAC donors such as Greece, Portugal and the EBRD. O'Connell and Soludo (2001) compare Herfindahl indices between recipients in different regions to show that aid to Africa is particularly fragmented. Acharya, Fuzzo de Lima and Moore (2006) rank bilateral donors by an (inverted) Theil index of aid proliferation in 1999-2001. A fairly heterogeneous group of proliferators shows up - including Germany and Canada but also widely perceived superior donors such as the Netherlands, Norway and Sweden.

Likewise, the limited evidence available suggests that donor coordination has remained elusive. Bigsten (2006) noted a first indication to this effect: The share of multilateral aid in total aid has not increased since the early 1970s, suggesting that bilateral donor were fairly reluctant to cede control over their aid allocation.[9] Mascarenhas and Sandler

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[6] For details, see UN Monterrey Consensus on Financing for Development (http://www.un.org/esa/ffd/monterrey/MonterreyConsensus.pdf); Rome Declaration on Harmonization (http://www.aidharmonization.org/ah-wh/secondary-pages/why-RomeDeclaration); Paris Declaration on Aid Effectiveness (http://www.oecd.org/document/18/0,2340,en_2649_3236398_35401554_1_1_1_1,00.html); all accessed in February 2009. See also Engel and Keijzer (2008) for recent initiatives at donor harmonization at the EU level.

[7] Similar to the litany of political declarations in multilateral fora, the formation of donor groups at the country level may not really help overcome coordination failure. See AFRODAD (2007: 22) on the HAC donor group in Kenya (HAC stands for harmonization, alignment and coordination): the group has "produced documents on partnership principles, ToR for lead donors in the sectors, and ToR for joint assistance strategy."

[8] Sector-wide approaches are supposed to enhance donor coordination at the sector level, with donors pooling resources for projects within a specific sector such as education.

[9] According to OECD aid statistics, multilateral aid accounted for 28 percent of total net disbursements by all DAC countries in 1972-1975; this share was almost exactly the same when considering the average for 2003-2007 (http://stats.oecd.org/WBOS/Index.aspx?DatasetCode=CRSNEW; accessed: February 2009).

(2006) apply non-nested tests to distinguish between non-cooperative (Nash-Cournot) and cooperative (Lindahl) behaviour. None of the 15 donors considered by these authors behaved cooperatively when deciding on the allocation of aid. Berthélemy and Tichit (2004) employ aid provided by other bilateral donors as a control variable when analyzing the allocation of aid by individual donor countries, in order to test whether donors take note of aid allocations by other donors. The coefficient of this variable should be negative if aid was coordinated. But the coefficient typically turns out to be positive, suggesting that most donors tend to favour the same "aid darlings." Thiele, Nunnenkamp and Dreher (2007) achieve essentially the same result by means of simple correlations comparing the cross-country allocation of aid by dyadic pairs of major donors.

In the following, we attempt to overcome several flaws characterizing most of this literature. Most importantly, none of the previous studies distinguishes between donor specialization and donor coordination. Furthermore, almost all of them use aggregate aid figures, even though specialization and coordination are not necessarily restricted to the level of recipient countries. Finally, there is clearly a lack of studies assessing specialization and coordination both across major donors and over time.

3. **Data and Approach**

As noted above, we follow a two-step approach starting with an assessment of donor-specific efforts at specialization and concentration and then turning to the question of whether such moves, if any, were taken in a coordinated manner.

As for donor-specific specialization, we draw on standard measures of concentration. Some previous studies (O'Connell and Soludo 2001; Knack and Rahman 2007) use the inverse of the Herfindahl index to measure fragmentation, while Acharya et al. (2006) prefer the Theil index. The Herfindahl index attaches disproportionately high weights to the largest aid shares of particular recipients and sectors in a donor's overall aid budget.[10] Therefore, we focus on fragmentation according to the Theil index (FrTh):

$$FrTh_{j,t} = -\sum_{i=1}^{n}\sum_{s=1}^{m}\left(aid_{i,s} * \ln(aid_{i,s})\right),$$

with $aid_{i,s}$ representing the share of aid in sector *s* to recipient *i* in donor country *j's* overall aid budget at time *t*. The index takes the minimum value ln(1) = 0 if donor *j* is completely

[10] See Audretsch, Dohse and Niebuhr (2008) for a discussion of alternative measures of concentration and fractionalization.

specialized (all aid goes to sector *s* in country *i*); it rises with the extent of dispersion and reaches its maximum ln(*n***m*) when aid is evenly distributed among countries and sectors.

FrTh makes use of both dimensions, recipient countries and aid sectors, but it can be "decomposed" to assess whether, say, less fragmentation of aid from donor *j* (over time or relative to other donors) is due to concentration on fewer recipient countries and/ or a stronger focus on selected aid sectors.

To assess the degree of donor coordination, we refer to the earlier literature on the measurement of intra-industry trade (Grubel and Lloyd 1971). So-called trade overlaps have often been used to assess the empirical relevance of intra-industry trade. Accordingly, "a dollar's worth of exports is 'overlapped' if there is a corresponding dollar's worth of imports in the same … commodity group" (Finger 1975: 585). For any country *j*, the trade overlap (TO_j) can thus be calculated as follows:

$$TO_j = \left(2^* \sum_s \text{Min}(X_s, M_s)\right) / \sum_s (X_s + M_s),$$

with X and M representing exports and imports in industries *s*. This index varies from 0 in the case of no overlap to 1 in the case of complete overlap; an index value of zero would obviously result when the country reports either exports or imports in any industry, and never both in the same industry. Essentially the same concept has been used to calculate the trade overlap between different trading partners of country *j* (e.g., IRELA 1997). Replacing X_s and M_s above by the exports of trading partners *i* in industries *s* to country *j* (as a share of total exports of *i* to *j*), the index would reveal a complete overlap if the trading partners had exactly the same export structure.

In the following, we compare the structure of aid from different donor countries, rather than the export structure of trading partners. The underlying assumption is that the "aid overlap" should be considerably less than one, and declining over time, for donors who avoided a duplication of aid activities and increasingly engaged in coordinated aid allocation. In contrast to the simple trade overlap measure described before, we consider several dimensions in which the aid activities of different donors may overlap. The first dimension relates to the recipient countries *i* receiving aid from donor countries *j*. In this way, we capture the possibility that coordination may take the form of each donor engaging in a different sub-set of recipient countries. The second dimension concerns the aid sectors *s*. For instance, two

donors may engage in the same recipient country and still provide coordinated aid if one donor focussed on aid for education and the other one on aid for clean water and sanitation.[11]

Combining the two dimensions of recipient countries and aid sectors, the index of aid overlap (I) or, respectively, the degree of donor coordination (C) between donors *j1* and *j2* at time *t* can be calculated as follows:[12]

$$I^{j1,j2,t} = (1\text{-}C^{j1,j2,t}) = \sum_{i=1}^{n} \sum_{s=1}^{m} \text{Min}(aid_{i,s}^{j1,t} ; aid_{i,s}^{j2,t}), \text{ with } aid_{i,s} \text{ defined as before.}$$

We consider the five largest donor countries of the OECD's Development Assistance Committee (DAC), i.e., France, Germany, Japan, the United Kingdom and the United States. In addition, we include four DAC countries that are widely supposed to be like-minded donors (Neumayer 2003) in terms of providing well targeted aid, i.e., Denmark, the Netherlands, Norway and Sweden. The European Commission (EC) serves as a benchmark to assess the coordination efforts of bilateral donor countries.

All aid data are taken from the OECD's Creditor Reporting System, an online database providing detailed information on aid commitments (http://stats.oecd.org/WBOS/Index.aspx?DatasetCode=CRSNEW). We prefer commitment data over actual disbursements of aid as donors have full control over commitments only (Neumayer 2003).[13] Although the data series go back as far as 1973, we restrict our analysis to the period 1995-2006. This is because underreporting by donors appears to be widespread in earlier years.[14] To account for the fact that aid allocations exhibit large year-to-year fluctuations, we average commitments over the sub-periods 1995-1998, 1999-2002 and 2003-2006 before calculating Theil and overlap

[11] Similarly, Acharya, Fuzzo de Lima and Moore (2006: 8) mention two distinct kinds of proliferation, *source* proliferation and *use* proliferation; the latter is defined as "the division of aid among a wide variety of end uses in-country", coming close to the sector perspective we apply in the present paper. However, Acharya et al. use aggregate aid data, assuming that source proliferation is a good measure of proliferation in a broader sense.

[12] By assuming that more overlap means less coordination, we miss another possible form in which donors may cooperate, namely by co-financing SWAps and funding common baskets managed by one lead donor. The data situation does not allow assessing exactly to what extent these instruments have actually helped aid coordination. Bigsten (2006) notes, however, that progress with respect to pooling donor resources and agreeing on lead agencies and silent partners has been rather slow.

[13] By contrast, Acharya, Fuzzo de Lima and Moore (2006) use aid disbursements, but they argue from the point of view of recipients rather than taking the donor perspective as we do.

[14] We consider a disproportionately low number of positive entries in the aid data base as a straightforward indication of underreporting. According to this criterion, some donors (France 1995-1997; Germany 1995-1998; United States 1995-1998) continued to underreport aid commitments after 1995. For Japan and Sweden, there is also a jump in the number of observations between 2002 and 2003 and between 2004 and 2005, respectively, but this is in line with steeply increasing aid commitments reported in the OECD's International Development Statistics.

indices for the different donors. Appendices A.1 and A.2 list the sectors and recipient countries included in the analysis.[15]

4. Results

4.1. Aid proliferation

Columns (1) of Table 1 report the Theil indices of aid proliferation across both dimensions, i.e., recipient countries and aid sectors. Index values clearly declined for only two donors (France and the Netherlands), pointing to a trend towards more concentrated and less proliferated aid. In the United Kingdom, the index has gone down recently. While the same applies to Germany and the United States, this marked only the return from higher Theil indices in the intermediate sub-period to the level of aid concentration in 1995-1998.[16] For the remaining five donors (Denmark, the EC, Japan, Sweden, and Norway), the degree of aid proliferation hardly changed over the period under consideration.

Comparing aid proliferation across donors, the ranking differs markedly from rankings based on indicators relating to altruistic or selfish aid motivations of donors (e.g. Dollar and Levin 2006; Thiele and Nunnenkamp 2006). Though often berated as selfish donors, France and Japan joined the United Kingdom and Denmark as relatively modest proliferators in the most recent period 2003-2006. By contrast, Norway is a strong proliferator, coming second only after the EC, even though it belongs to the group of like-minded, and widely believed to be superior, donors.

Decomposing the Theil index allows us to assess how the country and sector dimensions contribute to overall aid proliferation. Most surprisingly perhaps, donor selectivity with respect to the *number* of recipient countries passing the eligibility stage of the aid allocation process does not play a major role in explaining the above results, though with some notable exceptions. Denmark is by far the most selective donor, as shown in columns (2) of Table 2, and at the same time exhibits a low overall Theil index. On the other hand, France and Japan resemble the EC and Germany in covering almost all recipient countries – and yet aid from the former two donors is clearly less proliferated than aid from the latter two donors. Over time, Japan delivered aid to a rising number of recipients without a

[15] For the present purpose of assessing donor specialization and coordination, it appears to be most reasonable to refer to aid sectors such as education, rather than sub-sectors such as primary education. By contrast, Roodman (2006a) measures aid proliferation at the (most detailed) project level. Note, however, that Roodman focuses on aid-related transaction costs. Transaction costs might still be high if donors specialized in specific sectors, but continued to fund a large number of small projects.

[16] In 1999-2002, Germany had the highest Theil index among the donor countries considered here, which is in accordance with the ranking based on aid disbursements in Acharya et al. (2006), where Germany also comes first when taking averages over the period 1999-2001.

corresponding rise in the composite Theil index, while France continuously served almost all recipients and still has become more focussed in terms of the composite Theil index. The Netherlands, and recently also the United Kingdom, stand out in that they have become more selective at the eligibility stage.

The pattern of Theil indices across recipient countries (columns (2) in Table 1) changes somewhat compared to the composite pattern. Looking at the most recent sub-period, the United States, for example, moves up in the ranking when only the country dimension is considered, whereas France does not remain among the top performers. In the present context, it appears to be more important to note that, when only considering the recipient country dimension, there is still less compelling evidence for an increasing donor concentration than for the composite Theil index. The average Theil index for all ten donors in columns (2) declines by just 0.04 points from 3.63 in 1995-1998 to 3.59 in 2003-2006, compared to a corresponding decline by 0.18 points in columns (1).[17]

As concerns the sectoral dimension of aid proliferation, the most striking result is that all donors are active in almost all sectors. This applies throughout the period of observation (columns (3) of Table 2). Yet, there are notable differences across donors, as well as some changes over time, with respect to the Theil indices based on sector-specific aid to all recipient countries taken together (columns (3) in Table 1). Aid proliferation across sectors is found to be strongest in the United States. Surprisingly, Denmark ranks second, reinforcing the conclusion that Denmark's favourable position in the overall ranking is largely because it selects fewer recipient countries at the eligibility stage. At the opposite end, France stands out as the donor with the highest sectoral concentration of aid, followed by Japan and Germany. France also shows the clearest trend towards less proliferation across aid sectors, the United Kingdom being the only other donor where the Theil index based on sector-specific aid moves markedly downwards.

To test for significant differences in the distributions of aid shares underlying the Theil indices we performed two-sample Kolmogorov-Smirnov (K-S) tests. Results are shown in Table 3, while Graphs 1 and 2 portray the cumulative distribution of aid shares for two selected donor countries (United States and France), comparing the sub-periods 2003-2006 and 1995-1998.[18] We focus on comparing the distributions over time as we are particularly interested in changes in proliferation and concentration of the donors under consideration. Performing the K-S tests for aid shares along both dimensions, recipient countries and aid

[17] Note also that the average Theil value of 3.59 in column (2) is just 28 percent below the maximum value of 4.96 (ln 142), compared to a distance of 37 percent between the average Theil value of 5.09 in column (1) and the maximum value of 8.13.

[18] A complete set of graphs is available from the authors on request.

sectors, typically results in statistically different distributions (columns (1) of Table 3). The major exception is Denmark for which none of the inter-period distributions differs significantly.[19] The rejection of the hypothesis of equality of distribution along both aid dimensions may be most surprising in cases such as the United States where the cumulative aid shares deviate only in minor parts of the distribution (Graph 1a) and the composite Theil index remains almost the same.

On the contrary, the K-S test results based on total aid along the recipient country dimension provide overwhelming support for the hypothesis of equality of distributions behind the Theil indices (columns (2) of Table 3). This underscores the earlier conclusion that donors do not appear to have reduced proliferation at the recipient country level. The United States represents a notable exception. It fits with the K-S tests that in Graph 1b for the United States the line representing cumulative aid shares in 2003-2006 is clearly below the corresponding line in 1995-1998, except for the far-left tail of the distribution. By contrast, Graph 2b for France shows lines tracking each other very closely along almost the whole distribution. At the same time, Graph 2c underscores the above finding that France stands out in terms of increasingly concentrated sectoral aid over time.

Finally, we report two robustness tests in Table A1. We exclude either China, India and Indonesia or all upper middle-income countries.[20] The exclusion of the former three recipients is to account for possible biases resulting from the largest sample countries receiving exceptionally high aid shares. Limiting the sample to low- and lower middle-income countries may reveal the extent to which donor rankings as well as changes over time are "only" due to selectivity with regard to relatively advanced recipient countries. However, the overall picture on sector-specific aid to particular recipient countries is largely as before. As for the ranking of donors, aid from the United Kingdom, France, Japan and Denmark continued to be most concentrated for the reduced sample in 2003-2006, whereas the EC and Norway again are the most serious proliferators. Likewise altering the sample of recipient countries does not change the fact that France and the Netherlands are the only two countries showing a persistent decline in the Theil index since the mid 1990s.

4.2. Aid Coordination

Arguably, donor specialization is a necessary, though not a sufficient condition for better coordinated aid efforts. Hence, the weak evidence pointing to less aid proliferation and more

[19] Further exceptions are Japan, Sweden and the United Kingdom for the K-S test of 1999-2002 vs 1995-1998, and France and Norway for the K-S test of 2003-2006 vs 1999-2002.
[20] See Appendix A2 for the list of excluded upper-middle income countries.

concentration by individual donors bodes not well for coordination among the most important donors. Indeed, the overlap indices summarized in Tables 4 and 5 are in serious conflict with political manifestations according to which donors have increasingly engaged in aid coordination. It rather appears that aid overlaps have increased, suggesting even less coordination over time.

Table 4 shows the bilateral overlaps between pairs of the ten major donors under consideration for (i) the first sub-period 1995-1998 (upper right panel) and (ii) the last sub-period 2003-2006 (lower left panel in italics). Fourteen out of all 45 bilateral overlaps are (almost) the same in both sub-periods, i.e., the change is less than 0.03 index points.[21] Just four bilateral overlaps declined by at least 0.03 index points, thereby indicating few bilateral coordination efforts. Note that three of them involve France, which stood out before already with respect to less proliferated aid. Most strikingly, however, 27 overlaps (60 percent of all cases) increased over time, pointing to less coordination. Notably the United States show a systematic decrease in the degree of aid coordination on a bilateral basis (the overlap with Denmark is the only exception).

One might object that bilateral aid coordination was unlikely to improve considerably as many of the overlaps reported in Table 4 appear to be fairly low from the outset. The average of all bilateral overlaps in 1995-1998 amounts to 0.18. While this is far below the maximum overlap of "one", the relatively low level of overlaps is largely because aid is disaggregated according to recipient countries and aid sectors simultaneously.[22] Note that even the overlaps of similarly disaggregated aid by one particular donor at different points in time remain substantially below "one". Actually, when comparing the distribution of sector-specific aid between different sub-periods, the overlaps rarely exceed 0.5 for any of the ten donors considered here.[23]

The average level of overlaps increases considerably when using less disaggregated aid data, but the central message remains the same: We do not find evidence for improved donor coordination. Table 5 presents overlap indices also for aid distributions along either the dimension of recipient countries or the dimension of aid sectors. The donor-specific entries in Table 5 represent the average of the nine overlaps with all other donors.

The first three columns of Table 5 reveal that the decline in overall coordination is mainly due to increasing overlaps involving the United States, the United Kingdom, Sweden

[21] In seven of these cases, Denmark is involved in pairs with (almost) unchanged aid overlaps.
[22] Similarly, it has been shown in the literature on intra-industry trade that the evidence weakens with finer levels of disaggregation; see Sharma (2000) and the references given there.
[23] Comparing the sub-periods 1999-2002 and 2003-2006, the average overlap for the ten donors amounts to 0.46 (detailed results not shown here).

and Germany. When focussing only on recipient countries, the increase in the average of the overlaps of all donors is minor. While coordination involving Denmark and the Netherlands has slightly improved from this perspective, overlaps involving France, Japan, Sweden and the United Kingdom have clearly increased, though only recently for the former two donors which still show relatively low overlaps in 2003-2006. Finally, by narrowing the analysis to aid sectors, the overall average has hardly changed. Once again, France stands out from the perspective of aid sectors, revealing a pronounced decline in overlaps (in the first part of the period of observation). On the other hand, coordination at the sector level has deteriorated mainly when the United States, Sweden and the EC were involved.

Analogously to Section 4.1, we perform two robustness tests for the overlap indices, summarized in Table A2. The robustness of these indices is quite remarkable: Neither the exclusion of the largest sample countries nor dropping all upper-middle income countries alters the main conclusions drawn above for the degree of aid coordination. In fact, average overlaps for all ten donors are almost unchanged. As concerns the donor-specific overlaps, less than ten percent of all index values reported in Table A2 deviate by more than 0.01 points from the corresponding index values in Table 5.

5. Summary

Aid proliferation, donor fragmentation and the lack of coordination are not new phenomena. All have been widely identified as serious problems that can eventually render aid efforts ineffective. This recognition by both donors and recipients was accompanied by political declarations that, nonetheless, do not seem to have had the desired impact on the actual allocation of aid by donor countries.

We follow a two-step approach in order to assess donor specialization and coordination efforts, based on sector-specific aid data and covering the period 1995-2006. First, we evaluate whether the aid of major donors has become less proliferated over time, by concentrating in selected recipient countries and/or by specializing in selected aid sectors. Second, we employ overlap indices borrowed from the literature on intra-industry trade to analyze the degree of donor coordination. This represents a significant extension of previous studies that are mostly restricted to either aid proliferation or donor coordination and typically employ highly aggregated aid data.

The evidence on aid proliferation does not reveal a trend towards more concentrated aid, except for France and the Netherlands. Comparing aid proliferation across donors, the ranking differs markedly from rankings based on indicators relating to altruistic or selfish aid

motivations. Though often berated as selfish donors, France and Japan turn out to be among the weakest proliferators, while Norway – widely believed to be a superior donor – is a strong proliferator.

Even less favourable conclusions emerge from the analysis of aid overlap indices. The evidence points to a persistent lack of coordination in the aid efforts of major donors. Notably the largest donor, the United States, shows a systematic decrease in the degree of aid coordination. The results on aid proliferation as well as donor coordination are robust to changes in the sample of recipient countries. Overall, our findings are in serious conflict with political manifestations that make us believe that aid has become less proliferated and more coordinated. To the contrary, the gap between the words and deeds of major donors appears to be as wide as ever.

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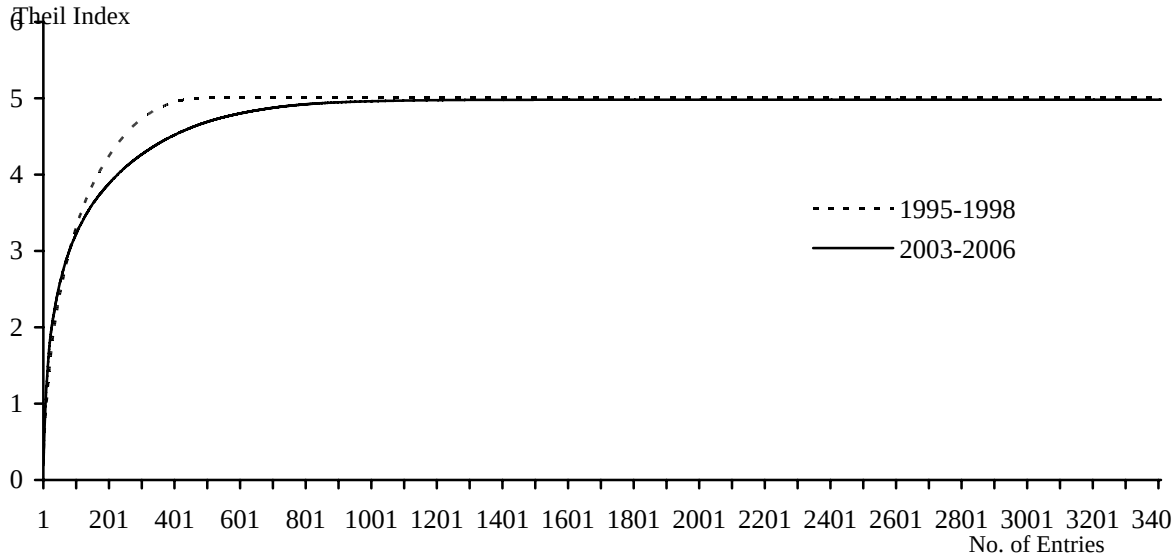
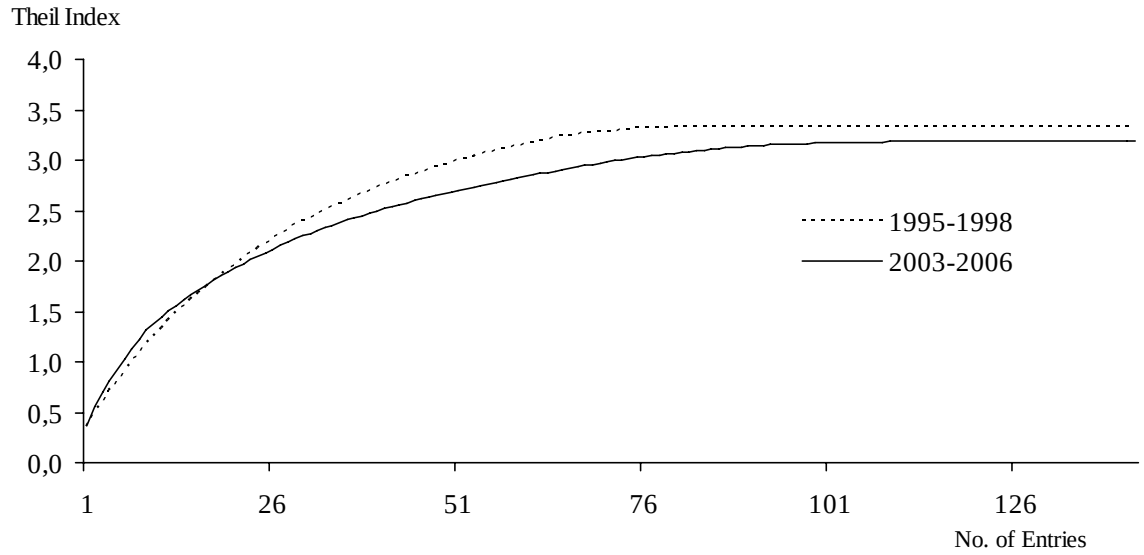
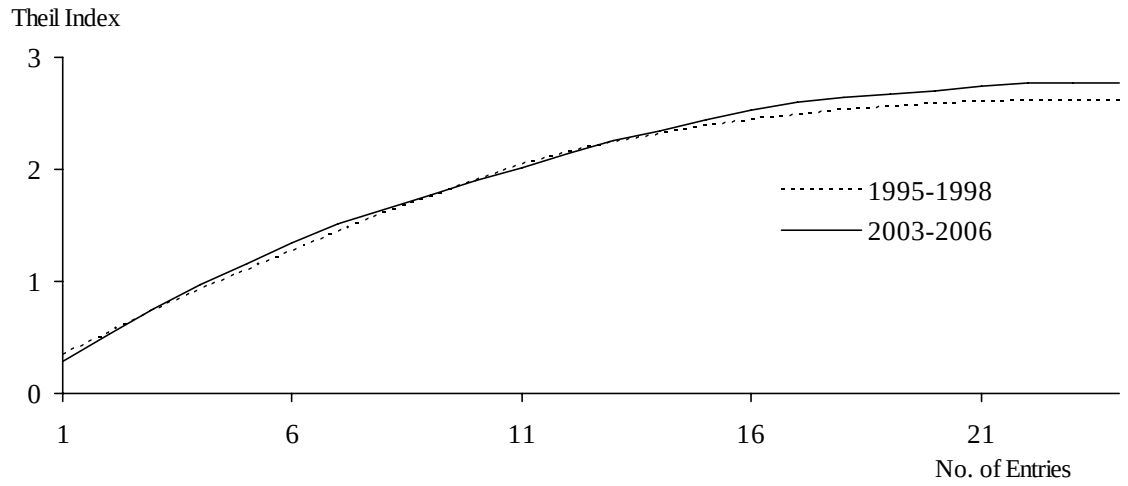
Graph 1a. Cumulative distribution of aid shares (sector-specific aid to recipient countries): United States



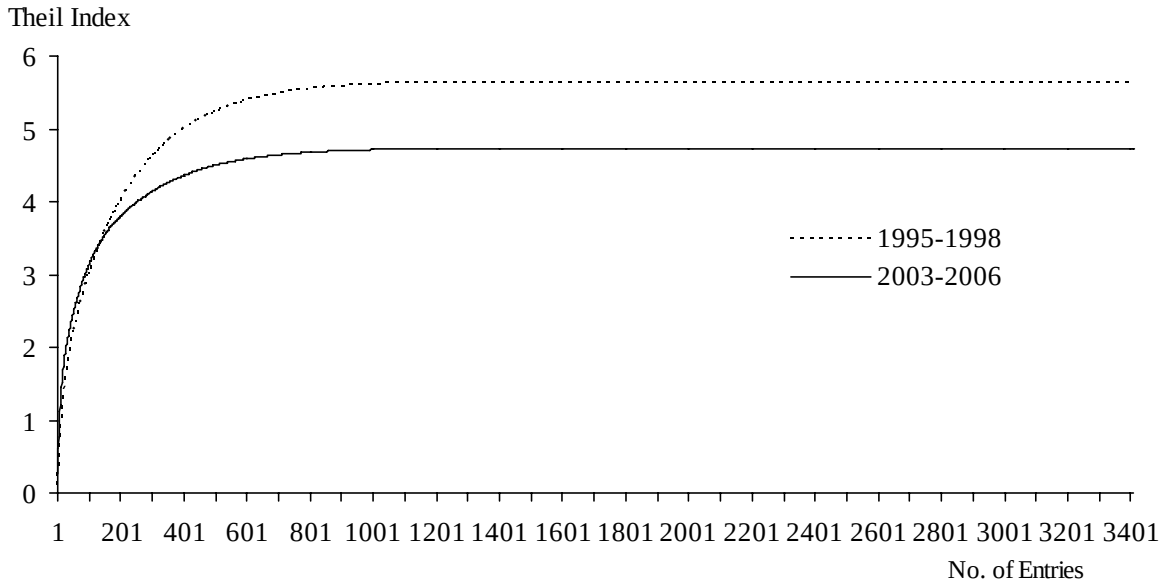
Graph 1b. Cumulative distribution of aid shares (total aid to recipient countries): United States



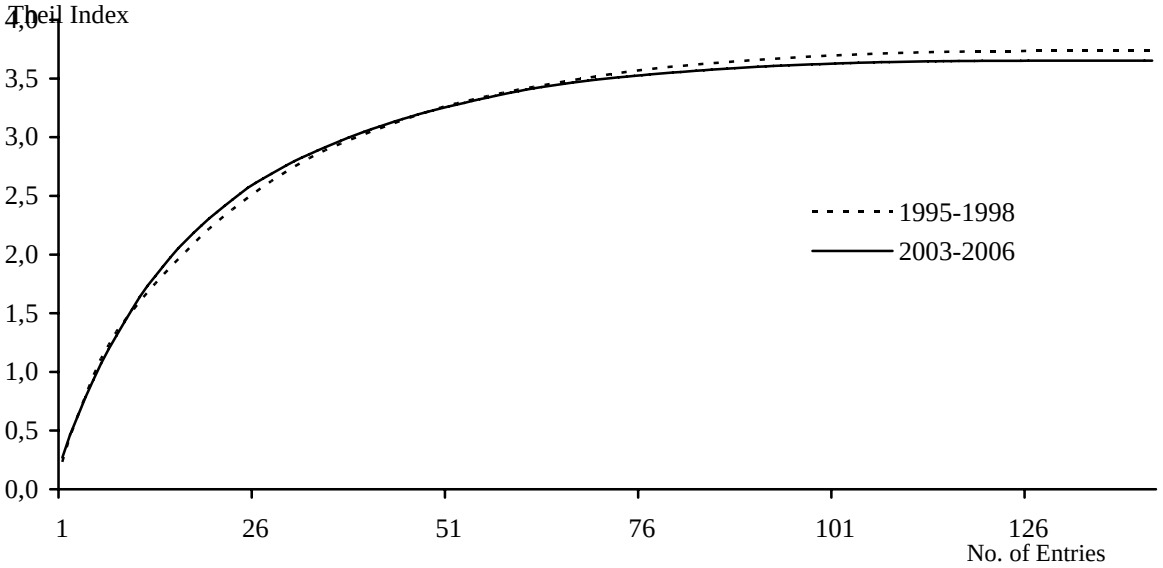
Graph 1c. Cumulative distribution of aid shares (aid sectors only): United States



Graph 2a. Cumulative distribution of aid shares (sector-specific aid to recipient countries): France



Graph 2b. Cumulative distribution of aid shares (total aid to recipient countries): France



Graph 2c. Cumulative distribution of aid shares (aid sectors only): France

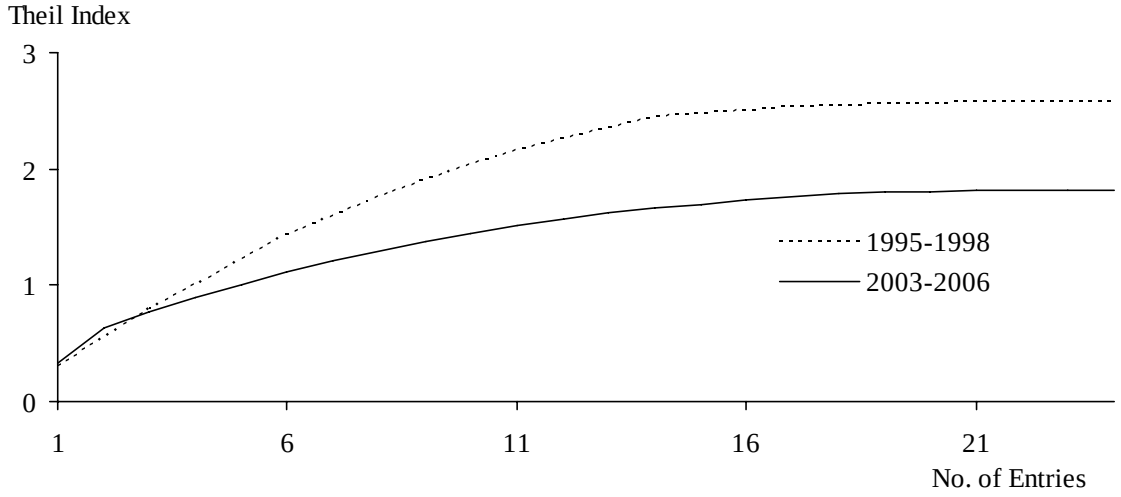


Table 1. Fragmentation indices (Theil) for major donors and sub-periods, 1995-2006[a]

	1995-1998			1999-2002			2003-2006		
	(1)	*(2)*	*(3)*	(1)	*(2)*	*(3)*	(1)	*(2)*	*(3)*
Denmark	4.84	*3.28*	*2.52*	4.73	*3.21*	*2.45*	4.84	*3.32*	*2.64*
European Commission	5.76	*4.32*	*2.71*	6.00	*4.30*	*2.72*	6.00	*4.32*	*2.62*
France	5.63	*3.74*	*2.57*	5.14	*3.70*	*2.04*	4.73	*3.65*	*1.81*
Germany	5.15	*3.72*	*2.47*	5.88	*4.06*	*2.60*	5.25	*3.83*	*2.29*
Japan	4.82	*3.26*	*2.22*	4.65	*3.26*	*2.23*	4.73	*3.37*	*2.18*
Netherlands	5.75	*3.91*	*2.69*	5.46	*3.73*	*2.69*	5.19	*3.62*	*2.51*
Norway	5.44	*3.80*	*2.49*	5.69	*3.81*	*2.60*	5.42	*3.65*	*2.48*
Sweden	5.25	*3.58*	*2.64*	5.21	*3.67*	*2.44*	5.23	*3.78*	*2.56*
United Kingdom	5.13	*3.34*	*2.70*	5.20	*3.48*	*2.64*	4.57	*3.17*	*2.31*
United States	5.00	*3.34*	*2.61*	5.65	*3.93*	*2.66*	4.98	*3.19*	*2.77*

[a] See text for details of calculation. Columns (1): based on sector-specific aid to particular recipient countries; 3408 observations so that the maximum index value equals 8.13. Columns (2): based on total aid to particular recipient countries; 142 observations so that the maximum index value equals 4.96. Columns (3): based on sector-specific aid to all recipient countries; 24 observations so that the maximum index value equals 3.18.

Table 2. Selectivity of major donors in sub-periods (number of observations with aid > 0), 1995-2006[a]

	1995-1998			1999-2002			2003-2006		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Denmark	324	64	20	368	70	22	366	74	21
European Commission	1052	133	23	1237	131	23	1096	137	23
France	1329	136	22	1400	135	21	1396	135	22
Germany	695	114	21	1356	134	23	1533	132	23
Japan	753	122	22	700	128	20	2086	135	23
Netherlands	1060	120	23	912	117	23	669	109	22
Norway	736	111	20	965	115	22	966	115	23
Sweden	633	98	21	584	95	19	843	108	21
United Kingdom	769	119	22	861	123	22	654	109	22
United States	519	93	22	1416	136	23	1524	134	24

[a] Columns (1): sector-specific aid to particular recipient countries; total of 3408 (zero and positive) observations. Columns (2): total aid to particular recipient countries; total of 142 (zero and positive) observations. Columns (3): sector-specific aid to all recipient countries; total of 24 (zero and positive) observations.

Table 3. Kolmogorov-Smirnov test results: Comparing the distribution of aid by major donors over time[a]

	1999-2002 versus 1995-1998		2003-2006 versus 1999-2002		2003-2006 versus 1995-1998	
	(1)	*(2)*	(1)	*(2)*	(1)	*(2)*
Denmark	0.902	*0.995*	1.000	*0.938*	0.949	*0.788*
European Commission	0.000	*0.788*	0.005	*0.591*	0.006	*0.407*
France	0.084	*0.978*	0.349	*0.978*	0.006	*0.938*
Germany	0.000	*0.328*	0.000	*0.591*	0.000	*0.157*
Japan	0.804	*0.691*	0.000	*0.495*	0.000	*0.261*
Netherlands	0.003	*0.788*	0.000	*0.328*	0.000	*0.090*
Norway	0.000	*0.995*	0.142	*0.495*	0.000	*0.591*
Sweden	0.786	*0.873*	0.000	*0.407*	0.000	*0.261*
United Kingdom	0.158	*0.978*	0.000	*0.066*	0.000	*0.120*
United States	0.000	*0.000*	0.000	*0.048*	0.000	*0.000*

[a] P-values. Columns (1): based on sector-specific aid to recipient countries; columns (2): based on total aid to recipient countries.

Table 4. Bilateral overlaps between major donors (recipient countries and aid sectors), 1995-1998 and 2003-2006 [a]

	Denmark	EC	France	Germany	Japan	Netherl.	Norway	Sweden	UK	US
Denmark		0.13	0.14	0.21	0.11	0.27	0.19	0.24	0.24	0.12
EC	*0.14*		0.18	0.17	0.10	0.22	0.22	0.22	0.21	0.15
France	*0.15*	*0.15*		0.24	0.15	0.17	0.13	0.11	0.10	0.10
Germany	*0.21*	*0.22*	*0.44*		0.34	0.24	0.17	0.14	0.22	0.15
Japan	*0.14*	*0.11*	*0.28*	*0.36*		0.17	0.11	0.11	0.19	0.06
Netherlands	*0.26*	*0.27*	*0.12*	*0.22*	*0.13*		0.28	0.28	0.29	0.16
Norway	*0.23*	*0.31*	*0.09*	*0.19*	*0.11*	*0.36*		0.38	0.22	0.15
Sweden	*0.24*	*0.31*	*0.18*	*0.27*	*0.15*	*0.40*	*0.41*		0.26	0.16
United Kingdom	*0.24*	*0.21*	*0.30*	*0.39*	*0.24*	*0.28*	*0.29*	*0.31*		0.12
United States	*0.11*	*0.23*	*0.18*	*0.26*	*0.18*	*0.22*	*0.22*	*0.27*	*0.25*	

[a] Period averages; 1995-1998: upper right panel; 2003-2006: lower left panel

Table 5. Average overlaps with other donors in sub-periods, 1995 – 2006

	Recipient countries and aid sectors			Recipient countries only			Aid sectors only		
	1995-1998	1999-2002	2003-2006	1995-1998	1999-2002	2003-2006	1995-1998	1999-2002	2003-2006
Denmark	0.18	0.17	0.19	0.43	0.40	0.40	0.61	0.56	0.57
EC	0.18	0.21	0.22	0.48	0.48	0.48	0.54	0.58	0.60
France	0.15	0.14	0.21	0.33	0.31	0.38	0.60	0.48	0.51
Germany	0.21	0.24	0.28	0.47	0.49	0.50	0.57	0.58	0.60
Japan	0.15	0.12	0.19	0.34	0.31	0.40	0.50	0.45	0.51
Netherlands	0.23	0.25	0.25	0.50	0.50	0.47	0.64	0.64	0.60
Norway	0.21	0.25	0.25	0.46	0.50	0.46	0.56	0.60	0.60
Sweden	0.21	0.21	0.28	0.45	0.47	0.51	0.60	0.59	0.66
United Kingdom	0.20	0.22	0.28	0.40	0.45	0.47	0.63	0.62	0.61
United States	0.13	0.19	0.21	0.38	0.42	0.40	0.48	0.50	0.59
Average all 10 donors	0.18	0.20	0.24	0.42	0.43	0.45	0.57	0.56	0.58

Appendices:

A1. List of aid sectors

Social Infrastructure and Services:
110: I.1 Education
120: I.2 Health
130: I.3 Population Programmes
140: I.4 Water Supply & Sanitation
150: I.5 Government & Civil Society
160: I.6 Other Social Infrastructure & Services
Economic Infrastructure:
210: II.1Transport & Storage
220: II.2Communications
230: II.3 Energy
240: II.4 Banking & Financial Services
250: II.5 Business & Other Services
Production Sectors:
310: III.1 Agriculture - Forestry - Fishing, Total
320: III.2 Industry - Mining - Construction, Total
331: III.3 Trade Policy and Regulations
332: III.4 Tourism
Multisector:
410: IV.1 General Environment Protection
430: IV.3 Other Multisector
Commodity Aid / General Prog. Assistance:
510: VI.1 General Budget Support
520: VI.2 Developmental Food Aid/ Food Security Assistance
530: VI.3 Other Commodity Assistance
600: VII. Action Relating to Debt
Emergency Assistance & Reconstruction:
720: VIII.2 Other Emergency and Distress Relief
730: VIII.3 Reconstruction Relief
740: VIII.4 Disaster Prevention & Preparedness

Source: http://stats.oecd.org/WBOS/Index.aspx?DatasetCode=CRSNEW
(accessed: April 2009)

A2. List of recipient countries

Afghanistan, Albania, Algeria, Angola, Anguilla, Argentina, Armenia, Azerbaijan, Bangladesh, Barbados, Belize, Benin, Bhutan, Bolivia, Bosnia-Herzegovina, Botswana, Brazil, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Central African Rep., Chad, Chile, China, Colombia, Comoros, Congo Dem. Rep., Congo Rep., Costa Rica, Cote d'Ivoire, Croatia, Cuba, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Ethiopia, Fiji, Gabon, Gambia, Georgia, Ghana, Grenada, Guatemala, Guinea, Guinea-Bissau, Guyana, Haiti, Honduras, India, Indonesia, Iran, Iraq, Jamaica, Jordan, Kazakhstan, Kenya, Kiribati, Korea, Kyrgyz Republic, Laos, Lebanon, Lesotho, Liberia, Libya, Macao, Macedonia (TFYR), Madagascar, Malawi, Malaysia, Maldives, Mali, Marshall Islands, Mauritania, Mauritius, Mayotte, Mexico, Micronesia Fed. States, Moldova, Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Namibia, Nepal, Nicaragua, Niger, Nigeria, Northern Marianas, Oman, Pakistan, Palau, Palestinian Adm. Areas, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Rwanda, Samoa, Sao Tome & Principe, Senegal, Serbia, Seychelles, Sierra Leone, Solomon Islands, Somalia, South Africa, Sri Lanka, St. Kitts-Nevis, St. Lucia, St.Vincent & Grenadines, Sudan, Suriname, Swaziland, Syria, Tajikistan, Tanzania, Thailand, Timor-Leste, Togo, Tonga, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, Uruguay, Uzbekistan, Vanuatu, Venezuela, Viet Nam, Yemen, Zambia, Zimbabwe.

Note: upper-middle income countries, according to World Bank classification, are underlined: these countries are excluded in the second robustness test: see text for details.

Table A1. Fragmentation indices (Theil) for major donors and sub-periods, 1995-2006: Robustness tests[a]

	Excl. China, India, Indonesia			Excl. upper-middle income countries		
	1995-1998	1999-2002	2003-2006	1995-1998	1999-2002	2003-2006
Denmark	4.78	4.66	4.77	4.77	4.61	4.78
European Commission	5.73	5.96	5.95	5.61	5.92	5.87
France	5.55	5.08	4.67	5.45	4.94	4.49
Germany	5.27	5.92	5.12	5.05	5.76	5.03
Japan	4.99	4.65	4.68	4.70	4.54	4.59
Netherlands	5.75	5.42	5.12	5.63	5.36	5.09
Norway	5.36	5.62	5.37	5.31	5.59	5.28
Sweden	5.19	5.16	5.16	5.18	5.09	5.13
United Kingdom	5.20	5.17	4.39	4.96	5.10	4.47
United States	4.94	5.60	4.91	4.84	5.51	4.84

[a] See text for details of calculation. Results based on sector-specific aid to particular recipient countries; 3336 observations when excluding China, India and Indonesia so that the maximum index value equals 8.11; 2616 observations when excluding upper-middle income countries so that the maximum index value equals 7.87.

Table A2. Average overlaps with other donors in sub-periods, 1995–2006: Robustness tests

	Recipient countries and aid sectors			Recipient countries only			Aid sectors only		
	1995-1998	1999-2002	2003-2006	1995-1998	1999-2002	2003-2006	1995-1998	1999-2002	2003-2006
	Excluding China, India and Indonesia								
Denmark	0.18	0.16	0.19	0.43	0.41	0.41	0.61	0.54	0.56
EC	0.18	0.21	0.21	0.49	0.49	0.48	0.52	0.56	0.59
France	0.14	0.13	0.22	0.32	0.30	0.39	0.60	0.47	0.52
Germany	0.20	0.24	0.29	0.47	0.50	0.51	0.55	0.56	0.59
Japan	0.13	0.11	0.21	0.34	0.30	0.42	0.48	0.44	0.52
Netherlands	0.23	0.24	0.25	0.50	0.50	0.48	0.63	0.62	0.60
Norway	0.21	0.25	0.25	0.46	0.50	0.45	0.55	0.60	0.59
Sweden	0.21	0.22	0.28	0.46	0.48	0.52	0.60	0.58	0.65
United Kingdom	0.19	0.23	0.29	0.39	0.47	0.48	0.60	0.61	0.60
United States	0.13	0.19	0.21	0.39	0.42	0.41	0.48	0.51	0.58
Average all 10 donors	0.18	0.20	0.24	0.42	0.44	0.45	0.56	0.55	0.58
	Excluding all upper-middle income countries[a]								
Denmark	0.18	0.17	0.20	0.43	0.41	0.41	0.61	0.55	0.57
EC	0.18	0.21	0.22	0.49	0.49	0.50	0.53	0.58	0.58
France	0.15	0.14	0.22	0.33	0.32	0.38	0.61	0.48	0.50
Germany	0.22	0.24	0.29	0.49	0.49	0.50	0.57	0.58	0.59
Japan	0.15	0.13	0.20	0.34	0.33	0.40	0.50	0.46	0.52
Netherlands	0.24	0.25	0.26	0.52	0.51	0.48	0.63	0.64	0.59
Norway	0.21	0.25	0.25	0.46	0.49	0.46	0.56	0.61	0.59
Sweden	0.21	0.21	0.28	0.46	0.46	0.51	0.61	0.59	0.65
United Kingdom	0.20	0.22	0.29	0.39	0.44	0.48	0.63	0.61	0.61
United States	0.13	0.18	0.21	0.38	0.41	0.40	0.47	0.48	0.58
Average all 10 donors	0.19	0.20	0.24	0.43	0.44	0.45	0.57	0.56	0.58

[a] See Appendix A.2 for list of countries.