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## Donor coordination and specialization: Did the Paris declaration make a difference?

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# **Working Papers**

Kiel Institute  
for the World Economy



## **Donor Coordination and Specialization: Did the Paris Declaration Make a Difference?**

by Peter Nunnenkamp, Hannes Öhler,  
Rainer Thiele

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## **Donor Coordination and Specialization: Did the Paris Declaration Make a Difference?**

Authors: Peter Nunnenkamp, Hannes Öhler, Rainer Thiele

### **Abstract:**

We assess whether bilateral and multilateral donors of foreign aid specialized and coordinated their activities with other donors as agreed in the Paris Declaration of 2005. We account for donor heterogeneity, varying aid priorities and recipient characteristics in order to isolate changes in donor behaviour over time. Recent shifts in aid priorities, such as the rising importance of general budget support, have reduced the fragmentation of aid. Nevertheless, our results reveal that aid fragmentation persisted after the Paris Declaration and coordination among donors has even weakened.

JEL classification: F35

Keywords: aid allocation, fragmentation, Theil index, donor coordination, overlaps, Paris Declaration

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## 1. Introduction

The Paris Declaration “appears as a first attempt to tackle international policy coordination problems in the field of development aid” (Severino and Ray 2010: 19). In March 2005 donors agreed not only to better align foreign aid flows with priorities of the recipient country and to harmonize procedural issues of aid delivery. They also promised to render aid more effective by “eliminating duplication of efforts and rationalising donor activities to make them as cost-effective as possible” (OECD 2005: paragraph 3). Donors “commit to make full use of their respective comparative advantage at sector or country level” (paragraph 35), acknowledging that aid fragmentation impairs effectiveness while “a pragmatic approach to the division of labour ... can reduce transaction costs” (paragraph 33).<sup>1</sup>

Yet, as stressed by Chandy (2011), “commitments are regularly professed but rarely fulfilled” in international development cooperation. It seems that donors want to “plant their flags” almost everywhere (World Bank 1998: 26), even though Knack and Rahman (2007) show theoretically and empirically that aid fragmentation impairs bureaucratic quality in highly aid dependent countries. According to Easterly (2007: 639-640), the inclination of donors “to give to all sectors in all countries” causes severe coordination problems and “huge administrative costs for both recipients and donors.”

Indeed, descriptive statistics suggest that aid fragmentation and duplication persisted until recently (Aldasoro et al. 2010).<sup>2</sup> More systematic analyses controlling for the heterogeneity of donors and other confounding factors are scarce. Some earlier aid allocation studies, including Berthélemy (2006), account for possible bandwagon effects by considering aid from all other donors as a

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<sup>1</sup> In addition, the European Union passed the European Consensus on Development in November 2005, which “for the first time identified a framework of common principles for the member states and the commission in this policy field [development cooperation]” (Engel and Keijzer 2008).

<sup>2</sup> Note also that the Paris Declaration has been evaluated in considerable detail from the perspective of individual recipient countries. Most recently, Wood et al. (2011: 26) concluded, inter alia, that “aid fragmentation is still found to be high in at least half of the evaluations.” The summary report of Wood et al. (2011) provides mainly qualitative assessments on the basis of various case studies conducted by independent evaluation teams managed by the respective partner country.

determinant of donor  $j$ 's aid to recipient country  $i$ .<sup>3</sup> Davies and Klasen (2011) focus on such effects within a GMM regression framework, finding that aid from all other donor countries tends to crowd in aid from donor  $j$ . Davies and Klasen (2011) suspect that it might be due to better coordination among donors that crowding-in effects weakened somewhat in the more recent past. Frot and Santiso (2011) find evidence for herding among donors when employing herding measures inspired by the financial literature.<sup>4</sup>

The subsequent analysis contributes to filling the wide gaps that remain. In contrast to previous studies, we consider both the (recipient) country level and the sector level of the allocation of aid.<sup>5</sup> This is important to avoid biased results; a donor may for instance be present in many recipient countries and, yet, this donor may specialize and reduce duplication by focussing on aid in one specific field such as education. Furthermore, we employ separate measures to assess changes in the degree of specialization of individual donors and in the degree of coordination among donors. This is another important contribution to the literature which typically fails to take into account that the need for coordination might decrease if donors decided unilaterally to specialize. Finally, we account for donor heterogeneity, changing aid priorities and major characteristics of the recipient countries. In this way, we isolate the effects of the Paris Declaration on aid fragmentation and donor coordination.

## 2. Method and variables

We address two related questions. First, we assess whether major bilateral and multilateral donors have specialized and focussed their aid on a smaller number of recipient countries and aid topics

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<sup>3</sup> According to Berthélemy (2006), the sign on aid from other donors switches from significantly positive to significantly negative once fixed effects are accounted for.

<sup>4</sup> Similar to Frot and Santiso (2011), Brück and Xu (2011) employ aggregate aid data to analyse how often aid accelerations coincided between donors in response to shocks and policy changes in the recipient countries during the period 1960-2007. Both studies do not assess co-movements of donors at the level of specific aid sectors (see below). Moreover, the herding measures of Frot and Santiso (2011) do not account for aid quantities as co-movements simply relate to the proportion of donors increasing (or decreasing) their aid allocation to recipient  $i$  in period  $t$ .

<sup>5</sup> The descriptive analysis of Aldasoro et al. (2010) represents an exception.

(aid sectors in OECD jargon) after agreeing to the Paris Declaration. Second, we evaluate whether donors coordinated more intensively by reducing the overlaps between their own activities and those of other donors. The overlaps in the second step of our analysis are also calculated along the two dimensions of recipient countries and aid sectors. We cover about 140 recipient countries and 24 aid sectors.<sup>6</sup>

While the Paris Declaration calls for donors to specialize and coordinate aid efforts, the subsequent OECD-DAC Surveys on Monitoring the Paris Declaration have failed to specify relevant indicators to judge implementation in these important areas (Knack et al. 2010).<sup>7</sup> We close this gap by making use of the rich aid commitment data collected in the DAC's Creditor Reporting System (CRS). As for donor-specific specialization or, conversely, aid fragmentation, we follow Acharya et al. (2006) who prefer the Theil index over the Herfindahl index:<sup>8</sup>

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

with  $aid_{i,s}$  representing the share of aid commitments 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 specialized (all aid goes to sector  $s$  in country  $i$ ); it rises with the extent of fragmentation and reaches its maximum  $\ln(n*m)$  when aid is evenly distributed among countries and sectors.

To assess the degree of donor coordination, we refer to the earlier trade literature where overlaps in trade patterns have often been used to assess the empirical relevance of intra-industry trade.<sup>9</sup> Accordingly, the index of aid overlap (OV) or, respectively, the degree of donor coordination (C) between donors  $j1$  and  $j2$  at time  $t$  can be calculated as follows:

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<sup>6</sup> See Appendix C for the list of aid sectors.

<sup>7</sup> DAC stands for the OECD's Development Assistance Committee.

<sup>8</sup> The Herfindahl index attaches disproportionately high weights to the largest aid shares of particular recipients and sectors in a donor's overall aid budget.

<sup>9</sup> See Aldasoro et al. (2010) for more details and the relevant literature.

$$OV^{j1,j2,t} = (1 - C^{j1,j2,t}) = \sum_{i=1}^n \sum_{s=1}^m \text{Min}(aid_{i,s}^{j1,t}; aid_{i,s}^{j2,t}), \quad (2)$$

with  $aid_{i,s}$  defined as before. OV varies from 0 in the case of no overlap to 1 in the case of complete overlap. The underlying assumption is that the aid overlap should be considerably less than one, and declining over time, for donors who avoided duplication of aid activities and increasingly engaged in coordinated aid allocation.<sup>10</sup>

In contrast to Aldasoro et al. (2010) who simply portray the development of Theil and overlap indices over time (until 2006), the subsequent analysis accounts for various determinants of specialization and coordination, notably the heterogeneity of donors and aid portfolios as well as major recipient characteristics. The estimation equations are as follows:

$$TH_{jt} = \alpha_1 + \alpha_2 X_{jt} + \alpha_3 Y_{jt} + \alpha_4 Z_{jt} + \delta_j + \gamma_t + \varepsilon_{jt} \quad (3)$$

$$OV(av)_{jt} = \beta_1 + \beta_2 X_{jt} + \beta_3 Y_{jt} + \beta_4 Z_{jt} + \delta_j + \gamma_t + \varepsilon_{jt} \quad (4)$$

The first dependent variable TH is defined as in equation (1) above. The second dependent variable  $OV(av)_{jt}$  relates to the average overlap between donor  $j1$  and donors  $j2, \dots, j19$  (see below for an alternative bilateral specification of equation 4).  $X_{jt}$  stands for variables related to donor  $j$ 's aid budget;  $Y_{jt}$  captures major aspects of time-variant donor characteristics (other than those related to the aid budget); and  $Z_{jt}$  includes variables that control for characteristics of recipient countries (need for aid and merit) in donor  $j$ 's portfolio. Unobserved donor heterogeneity is accounted for by donor fixed effects  $\delta_j$ .<sup>11</sup> Finally,  $\gamma_t$  denotes year fixed effects. Taking the year 2004 as the reference point, the coefficients of the year dummies for the period 2005-2009 are of major interest to assess

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<sup>10</sup> By assuming that more overlap means less coordination, we miss another possible form in which donors may cooperate, namely by co-financing SWAs 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. For a recent and similarly sceptical assessment, see Wood et al. (2011).

<sup>11</sup> We also estimated a random effects model, but the Hausman test rejected this model as inconsistent.

whether the Paris Declaration had effects on donor behaviour. The coefficients should be significantly negative if donors specialized and coordinated more intensively after the Paris Declaration.

At the same time, we take into account that Theil and overlap indices may be affected by changes in the size and structure of aid budgets. For instance, the Theil index for donor  $j$  could be reduced if this donor increasingly granted general budget support, instead of project-related aid in various specific sectors. Larger aid overlaps may result if several donors shifted towards general budget support. Similarly, Theil indices can be expected to decrease and overlaps to increase if donors orchestrate major debt relief operations for a few recipient countries.<sup>12</sup>

Donor characteristics could matter if donors were less inclined to specialize or to coordinate with other donors when their economic or political clout increases.<sup>13</sup> Increasing clout would also be compatible with more specialization, however, if donors decided to focus their support on close economic or political allies. Furthermore, we control for changes related to major characteristics of recipient countries that could affect Theil and overlap indices. For example, Theil indices may decrease and overlap indices may increase if donors allocate aid according to need and merit and the portfolio of donors increasingly includes poorer and deserving recipient countries.<sup>14</sup>

Our analysis covers the period 1998-2009.<sup>15</sup> While more recent data are not yet available, earlier data suffer from underreporting. The sample of 19 donors includes all major bilateral DAC donor countries plus the two largest multilateral donors (EU institutions and the International

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<sup>12</sup> While we control for general budget support (DAC/CRS code 510), debt relief operations (code 600) and also aid classified as “multisector/cross-cutting” (code 400), we follow Frot and Santiso (2011) in excluding emergency food aid (code 710) from the analysis. Donors routinely react to natural disasters and famines by increasing food aid; Frot and Santiso use the term “beneficial” herding if aid overlaps increase as a result.

<sup>13</sup> Recall that time-invariant level effects of economic and political clout would be captured by the donor fixed effects  $\delta$ .

<sup>14</sup> See also Davies and Klasen (2011) who argue that increasing selectivity in terms of donors focussing on needy and deserving recipients could result in crowding-in effects of aid from other donors on aid from donor  $j$ .

<sup>15</sup> In a robustness test, we use only the data since 2004 (see Section 3 below).



Development Agency).<sup>16</sup> All donors in our sample belong to the participating countries and organizations of the Paris Declaration (OECD 2005).

In addition to equation (4), we estimate a modified model in which we use bilateral aid overlaps as the dependent variable – instead of the average overlap of aid from donor  $j$  with all other donors in the sample. In the bilateral model we consider fixed effects for each pair of donors. The time-varying variables are redefined by taking the average for the two donors of the respective pair.<sup>17</sup> As concerns membership in the UN Security Council, we introduce another dummy variable which is set equal to one when both donors of a pair were members. Finally, the bilateral model includes two variables reflecting the trade and political links between the two donors of each pair, namely the mutual importance as a trading partner of the other member of the pair and the degree of conformity in UN voting patterns. We have no strong priors, however, whether closer links of this sort would necessarily imply better coordinated aid efforts.<sup>18</sup>

### 3. Results

Table 1 reports our estimation results based on equations (3) and (4) for the whole sample period 1998-2009. We start with a baseline estimation in which we control only for variables related to the size and structure of donor  $j$ 's aid budget. Subsequently, we augment this specification by additionally considering the donor and recipient-country characteristics introduced above. All regressions include donor as well as year fixed effects.

The baseline estimations are alternatively performed for all donors and for bilateral donors only. Restricting the analysis to bilateral donors in columns (2) and (5) allows for a direct comparison

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<sup>16</sup> See the list in Appendix B. The two multilateral donors have to be excluded when estimating extended specifications of our model (with donor characteristics related to trade and political interests included).

<sup>17</sup> Recipient country characteristics are no longer considered in the modified model with bilateral overlaps as they proved to be insignificant at conventional levels in the baseline estimation of equation (4) reported in Table 1 below.

<sup>18</sup> Note that the variation of these variables is limited over time. Moreover, aid overlaps may even increase among donors with similar trade and political interests.

with the augmented specification in columns (3) and (6), which excludes the two multilateral donors because donor characteristics such as UN Security Council membership are not applicable to them. Irrespective of the composition of the donor sample, a clear picture emerges for the year dummies that are of major interest to assess the effect of the Paris Declaration. As shown in columns (1) and (2), no single year dummy before and after the base year 2004 has a statistically significant impact on the Theil indices of donor specialization. This suggests that the donors in our sample did not keep their promise made in the Paris Declaration to increasingly focus on sectors and countries where they have a comparative advantage. In the corresponding regressions for the aid overlaps in columns (4) and (5), the coefficients of the year dummies are even *positive* and significant for the period 2005-2009 (except for 2007), pointing to less rather than more donor coordination after the adoption of the Paris Declaration.

Among the variables related to the aid budget, debt relief appears to have had the strongest impact on measured donor specialization and coordination. This is not surprising given that, as a result of the HIPC initiative, aid granted as debt relief has gained momentum since the early 2000s, reaching its climax in the years 2005 and 2006 (Nunnenkamp and Thiele 2011).<sup>19</sup> In line with expectations, a rising share of debt relief in the overall aid budget is associated with a lower Theil index and a larger aid overlap. At the same time, general budget support has increasingly been used by some donors while others are still reluctant to transfer resources directly to governments (e.g., European Commission 2008). General budget support exhibits a significant relationship with the Theil index, again with the expected negative sign, while overlaps are not affected in a significant way.

Columns (3) and (6) show the results when we additionally account for donor and recipient-country characteristics. In this extended model, recipient-country characteristics relate to GDP per capita as an indicator of need and control of corruption as an indicator of merit; both variables are calculated

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<sup>19</sup> HIPC stands for heavily indebted poor countries.

as simple averages for all recipients included in a donor's country portfolio.<sup>20</sup> Donors' economic clout is represented by GDP, trade-related donor interest is captured by the share of exports going to developing and emerging economies, while military expenditures and UN Security Council membership are employed as proxies of political clout.

The inclusion of additional control variables leaves the findings for the year dummies and the variables related to the aid budget virtually unaffected. The only notable change is that the dummy for the year 2007 is now also significant and positive in the regression for the aid overlap, strengthening the evidence that donor coordination has even weakened after the Paris Declaration. The impact of the additional control variables themselves does not follow a clear pattern. As concerns donor characteristics, the significant and positive effect of UN Security Council membership on the Theil index is in accordance with the conjecture that economic or political clout might reduce the willingness of donors to specialize and cooperate. However, the coefficients of the variables representing economic clout and trade-related donor interest point in the opposite direction when considering aid overlaps as the dependent variable. Recipient characteristics do not affect overlaps at conventional levels of statistical significance. On the other hand, the positive sign of GDP per capita in column (3) suggests that a stronger needs orientation of aid, reflected in lower average income of recipient countries in a donor's aid portfolio, is associated with less aid fragmentation as measured by the Theil index, though at the ten per cent level of significance only.

In Table 2, we replicate the regressions for the sub-period 2004-2009. This helps us assess whether the impact of varying aid priorities as well as donor and recipient characteristics has changed since the Paris Declaration. Furthermore, we test for the robustness of the year dummies in this way. As before, most of the coefficients on the donor and recipient characteristics are insignificant at conventional levels. The weak and scattered impact of these characteristics on the Theil and overlap

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<sup>20</sup> We also experimented with weighting these characteristics by (i) the recipient countries' population and (ii) the amount of aid granted by donor  $j$  to these countries. Both weighting schemes appear to be problematic, however, so that results are not reported. Using population weights implies that China and India dominate all other recipient countries. Using aid amounts may lead to biased results especially for the Theil indices, the calculation of which is also based on the aid amounts granted by donor  $j$ .

indices is not surprising considering that variation over time is further reduced during the shorter period of observation. In contrast to Table 1, increasing military clout has been associated with larger overlaps since the Paris Declaration. It may also be noted that better control of corruption has affected both dependent variables since then. The larger overlap going along with better control of corruption may be attributed to various donors focussing their support on less corrupt recipients.<sup>21</sup> All the same, aid appears to have become more fragmented – possibly because donors could choose among a larger number of less corrupt recipient countries in recent years.

The impact of variations in the structure of aid budgets is accentuated in Table 2, compared to the results for the whole period of observation. Increasing shares devoted to general budget support and debt relief have qualitatively the same impact as in Table 1. However, some coefficients gain in significance and are markedly higher, suggesting a growing quantitative impact over the period 2004-2009. This applies to general budget support in the Theil equation as well as debt relief in the aid overlap equation.<sup>22</sup> More surprisingly, recent increases in overall aid budgets have been associated with reduced aid overlaps (columns 5 and 6), reversing the trend of the years up to 2004.

Importantly, the coefficients of the year dummies remain the same as before even though the shorter period of observation modifies the results for some of our control variables. None of the year dummies suggests that aid has become less fragmented after adopting the Paris Declaration (columns 1-3). Almost all year dummies corroborate the earlier verdict that coordination has even weakened (columns 4-6).

In the final step of our analysis, we use bilateral overlaps instead of average overlaps as the dependent variable. The results are reported in Table 3, for the full sample period in columns (1)-(4) and for the sub-period 2004-2009 in columns (5)-(8). Among the variables related to the aid budgets of the two donors in each pair, debt relief again appears to have had a highly significant and

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<sup>21</sup> See Davies and Klasen (2011) for a similar line of reasoning.

<sup>22</sup> This is corroborated by regressions for the sub-period before the Paris Declaration (not shown), where the respective coefficients are found to be insignificant.

consistently positive impact on overlaps. Furthermore, Table 3 underscores the previous finding that the quantitative impact of debt relief on overlaps further increased in the recent past.<sup>23</sup> In contrast to the average overlaps considered in Table 1, the bilateral overlaps in columns (1)-(4) of Table 3 are significantly larger for donor pairs whose (average) aid budget increased. While this pattern was to be expected, it was reversed in the more recent past according to the estimations shown in columns (7) and (8) of Table 3. Until more recent data become available, one might suspect that this surprising result is driven by donors who scaled up aid and used the additional resources to support previous aid orphans or previously neglected sectors, thereby reducing the overlaps with aid from other donors.

The earlier findings on the donor characteristics used as proxies of economic and political clout are largely robust when employing bilateral overlaps as the dependent variable. Specifically, the evidence is again in conflict with the view that donors with increasing economic clout, in terms of GDP, and stronger trade interest in developing and emerging economies are less inclined to coordinate aid activities with other donors. By contrast, the evidence tends to support such a sceptical view for donors with increasing military expenditures, notably in the more recent past. Likewise, Table 3 provides some indication that membership in the UN Security Council might reduce the willingness to cooperate, at least unless both donors of a pair are members. In addition to the standard donor characteristics used before, we control for two other dimensions of cooperation among donor pairs, namely bilateral trade links and voting coincidence in the UN General Assembly. While the additional variables enter both significant, their correlation with bilateral aid overlaps is of opposite sign: Aid overlaps are shown to fall with stronger trade links within pairs of donors, whereas they rise when the donors increasingly vote in line with each other in the UN General Assembly.

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<sup>23</sup> The evidence on the two other aid shares, now defined as average shares for the particular pair of donors, is similarly ambiguous as in Tables 1 and 2.

The modifications and extensions in the regressions with bilateral overlaps hardly affect the year dummies that are of major interest for assessing the impact of the Paris Declaration. Again, the coefficients of the year dummies indicate weaker rather than stronger coordination since 2005. Just one of the coefficients proves to be significantly negative, at the ten per cent level of significance, suggesting slightly reduced overlaps in 2006 (compared to 2004) in column (5) of Table 3. Some other coefficients are insignificant at conventional levels, in particular for the year 2007. However, the majority of the coefficients of the year dummies for the period 2005-2009 prove to be significantly positive. This holds for all five years and irrespective of the chosen sample period as soon as we control for various donor characteristics.<sup>24</sup>

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<sup>24</sup> Note that the fully specified estimation in columns (4) and (8) of Table 3 does not cover the year 2009 due to missing data on UN voting patterns.

## 4. Summary and conclusion

In this paper, we have assessed whether major bilateral and multilateral donors have specialized and coordinated their activities with other donors as agreed in the Paris Declaration of 2005. We controlled for donor heterogeneity, varying aid priorities and recipient characteristics in order to isolate changes in donor behaviour over time. Recent shifts in aid priorities, such as the rising importance of general budget support, contributed to reduced levels of aid fragmentation. Nevertheless, our results suggest that aid fragmentation persisted after the Paris Declaration and coordination among donors has even weakened.

The failure of donors to keep the promises made in the Paris Declaration arguably reflects the complex political economy of the international aid system. Even if donor countries and aid agencies were purely altruistic and their overarching goal was to provide effective aid, existing information asymmetries would create incentive problems. This is because the donor institutions are ultimately accountable to domestic taxpayers, who usually do not have the information required to assess the success or failure of specific aid interventions. As a result, donors might be inclined to “plant their flag” and engage in a broad range of highly visible projects in order to demonstrate their engagement and secure future funding. Credible and independent evaluations may help identify successful interventions and, thereby, reduce this information asymmetry. This would be a necessary, though probably not sufficient, condition for a less fragmented allocation of foreign aid.

In reality, donors pursue a mix of altruistic and selfish goals. Big donors such as the United States and France, in particular, have strong political interests and are thus unlikely to adhere to an ambitious agenda that significantly restricts their room of manoeuvring. What can realistically be expected are incremental steps to improve donor coordination such as an increasing use of co-financing arrangements involving several like-minded donors. Matters are further complicated by the ever-growing number of state and non-state actors involved in development cooperation. This reduces the incentive of each single actor to engage in costly coordination processes as the

individual's influence on final outcomes becomes increasingly marginal. In addition, important new actors such as China are not even fully integrated into the formal negotiation arrangements. Overall, in the foreseeable future progress towards less fragmented and better coordinated aid is likely to remain modest at best.



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Table 1: Donor fixed effects estimations, 1998-2009, Theil indices and overlaps as dependent variables

	(1)	(2)	(3)	(4)	(5)	(6)
	Theil			Overlap		
Log aid budget	-0.189*	-0.160	-0.156	0.009	0.003	0.005
	(0.100)	(0.102)	(0.118)	(0.006)	(0.005)	(0.006)
Multisector/aid budget	-0.891	-0.630	-0.731	-0.009	-0.030	-0.040
	(0.566)	(0.579)	(0.548)	(0.029)	(0.030)	(0.036)
Budget support/aid budget	-1.693**	-1.531*	-1.531*	-0.026	-0.032	-0.027
	(0.635)	(0.857)	(0.846)	(0.034)	(0.044)	(0.051)
Debt relief/aid budget	-2.803***	-2.800***	-2.801***	0.062**	0.062*	0.060*
	(0.330)	(0.364)	(0.385)	(0.028)	(0.030)	(0.030)
Export share			0.010			-0.002***
			(0.017)			(0.001)
Log GDP			0.195			-0.183***
			(1.242)			(0.058)
Log military expenditure			-0.120			0.017
			(0.292)			(0.019)
UN Security Council member			0.124***			0.005
			(0.038)			(0.005)
Log p.c. GDP			0.575*			0.014
			(0.312)			(0.026)
Control of corruption - ICRG			0.241			0.061
			(0.740)			(0.052)
1998	-0.031	0.048	-0.001	-0.029***	-0.029***	-0.095**
	(0.135)	(0.135)	(0.636)	(0.006)	(0.007)	(0.038)
1999	-0.099	-0.066	-0.091	-0.013***	-0.013**	-0.069**
	(0.114)	(0.124)	(0.546)	(0.004)	(0.004)	(0.032)
2000	-0.001	0.014	-0.004	-0.013***	-0.013***	-0.058*
	(0.104)	(0.116)	(0.455)	(0.004)	(0.004)	(0.029)
2001	0.084	0.118	0.088	-0.007	-0.006	-0.041
	(0.107)	(0.118)	(0.366)	(0.005)	(0.006)	(0.026)
2002	0.035	0.072	0.151	-0.014**	-0.011*	-0.019***
	(0.109)	(0.118)	(0.119)	(0.005)	(0.006)	(0.006)
2003	-0.091	-0.096	-0.070	-0.000	0.001	-0.009
	(0.073)	(0.081)	(0.082)	(0.004)	(0.004)	(0.005)
2004 (ref. year)						
2005	0.029	0.040	0.008	0.027**	0.034***	0.043***
	(0.082)	(0.093)	(0.121)	(0.011)	(0.011)	(0.012)
2006	0.056	0.073	0.016	0.023**	0.029***	0.045***
	(0.089)	(0.102)	(0.163)	(0.009)	(0.009)	(0.010)
2007	0.007	-0.001	-0.115	0.002	0.004	0.021***
	(0.094)	(0.105)	(0.157)	(0.004)	(0.004)	(0.006)
2008	0.018	0.024	-0.171	0.012*	0.018***	0.033***
	(0.098)	(0.112)	(0.177)	(0.006)	(0.006)	(0.009)
2009	0.078	0.100	-0.089	0.015**	0.022***	0.028**
	(0.078)	(0.085)	(0.143)	(0.007)	(0.006)	(0.010)
Constant	6.477***	6.145***	0.198	0.054	0.101**	2.116***
	(0.838)	(0.835)	(15.368)	(0.051)	(0.043)	(0.621)
Observations	228	203	203	228	203	203
R-squared	0.592	0.607	0.626	0.576	0.609	0.636
Number of donors	19	17	17	19	17	17

Standard errors clustered by donor in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 2: Donor fixed effects estimations, 2004-2009, Theil indices and overlaps as dependent variables

	(1)	(2)	(3)	(4)	(5)	(6)
	Theil			Overlap		
Log aid budget	0.014 (0.143)	-0.044 (0.151)	-0.100 (0.158)	-0.009 (0.013)	-0.021* (0.011)	-0.032*** (0.010)
Multisector/aid budget	-0.354 (0.752)	-0.479 (0.820)	-1.074 (0.657)	-0.031 (0.048)	-0.065 (0.056)	-0.120** (0.044)
Budget support/aid budget	-2.150*** (0.513)	-2.405*** (0.697)	-2.338*** (0.586)	0.012 (0.048)	0.030 (0.072)	0.056 (0.070)
Debt relief/aid budget	-3.049*** (0.423)	-2.918*** (0.449)	-2.883*** (0.407)	0.148*** (0.047)	0.168*** (0.045)	0.172*** (0.040)
Export share			-0.002 (0.027)			-0.004*** (0.001)
Log GDP			0.701 (1.678)			0.047 (0.104)
Log military expenditure			0.827 (0.521)			0.093*** (0.025)
UN Security Council member			0.135*** (0.040)			0.003 (0.004)
Log p.c. GDP			-0.378 (0.522)			-0.043 (0.028)
Control of corruption - ICRG			1.492** (0.664)			0.150** (0.055)
2004 (ref. year)						
2005	0.000 (0.076)	0.005 (0.089)	0.110 (0.125)	0.020* (0.010)	0.027*** (0.009)	0.045*** (0.012)
2006	0.023 (0.100)	0.044 (0.114)	0.128 (0.191)	0.017** (0.008)	0.023*** (0.008)	0.043*** (0.014)
2007	-0.032 (0.099)	-0.027 (0.111)	-0.066 (0.160)	0.004 (0.005)	0.007 (0.005)	0.018 (0.012)
2008	-0.057 (0.102)	-0.029 (0.118)	-0.142 (0.169)	0.018** (0.008)	0.028*** (0.006)	0.038** (0.014)
2009	-0.020 (0.112)	0.058 (0.118)	-0.103 (0.137)	0.026** (0.010)	0.040*** (0.007)	0.048*** (0.013)
Constant	4.839*** (1.178)	5.257*** (1.222)	-15.184 (22.855)	0.189* (0.105)	0.286*** (0.087)	-1.443 (1.308)
Observations	114	101	101	114	101	101
R-squared	0.702	0.715	0.743	0.499	0.602	0.680
Number of donors	19	17	17	19	17	17

Standard errors clustered by donor in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 3: Donor pairs fixed effects estimations, bilateral overlaps as dependent variable

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	1998-2009				2004-2009			
Log aid budget	0.026*** (0.004)	0.013*** (0.004)	0.015*** (0.005)	0.013** (0.005)	0.019** (0.009)	-0.014 (0.010)	-0.025** (0.010)	-0.042*** (0.012)
Multisector / aid budget	-0.016 (0.024)	-0.042 (0.028)	-0.027 (0.030)	-0.016 (0.034)	-0.059 (0.044)	-0.137*** (0.052)	-0.175*** (0.055)	-0.183** (0.081)
Budget support / aid budget	-0.058 (0.036)	-0.088* (0.048)	-0.047 (0.048)	-0.088* (0.052)	0.038 (0.057)	0.076 (0.079)	0.133* (0.078)	0.039 (0.095)
Debt relief / aid budget	0.129*** (0.021)	0.173*** (0.023)	0.178*** (0.022)	0.162*** (0.023)	0.261*** (0.030)	0.365*** (0.034)	0.368*** (0.035)	0.409*** (0.040)
Export share			-0.004*** (0.001)	-0.005*** (0.001)			-0.011*** (0.002)	-0.018*** (0.002)
Log GDP			-0.266*** (0.054)	-0.303*** (0.070)			0.001 (0.107)	-0.677*** (0.174)
Log military expenditure			0.023* (0.013)	0.020 (0.016)			0.139*** (0.031)	0.152*** (0.040)
UNSC member - one country			0.008*** (0.003)	0.009*** (0.003)			0.010*** (0.004)	0.004 (0.005)
UNSC member - both countries			0.005 (0.004)	0.004 (0.005)			-0.006 (0.007)	-0.024** (0.009)
Trade intensity			-0.502*** (0.126)	-0.551*** (0.154)			-0.727* (0.389)	-0.284 (0.552)
UN voting				0.056*** (0.010)				0.464*** (0.078)
1998	-0.025*** (0.003)	-0.029*** (0.004)	-0.073*** (0.008)	-0.079*** (0.011)				
1999	-0.008*** (0.002)	-0.008*** (0.003)	-0.048*** (0.007)	-0.054*** (0.009)				
2000	-0.008*** (0.002)	-0.009*** (0.003)	-0.037*** (0.005)	-0.041*** (0.006)				
2001	-0.003 (0.003)	-0.003 (0.003)	-0.024*** (0.004)	-0.025*** (0.006)				
2002	-0.015*** (0.003)	-0.014*** (0.003)	-0.029*** (0.004)	-0.032*** (0.005)				
2003	-0.004 (0.003)	-0.005 (0.003)	-0.016*** (0.004)	-0.016*** (0.004)				
2004 (ref. year)								
2005	0.013*** (0.004)	0.022*** (0.005)	0.032*** (0.005)	0.035*** (0.006)	-0.003 (0.004)	0.003 (0.005)	0.018*** (0.006)	0.036*** (0.008)
2006	0.008** (0.004)	0.015*** (0.005)	0.036*** (0.006)	0.042*** (0.007)	-0.007* (0.004)	-0.004 (0.005)	0.020** (0.008)	0.069*** (0.013)
2007	-0.003 (0.003)	0.000 (0.003)	0.032*** (0.006)	0.036*** (0.008)	-0.004 (0.003)	-0.000 (0.004)	0.029*** (0.010)	0.100*** (0.017)
2008	0.007** (0.003)	0.017*** (0.004)	0.056*** (0.007)	0.063*** (0.009)	0.008** (0.004)	0.028*** (0.005)	0.071*** (0.011)	0.176*** (0.020)
2009	0.013*** (0.003)	0.030*** (0.003)	0.060*** (0.006)		0.023*** (0.005)	0.058*** (0.006)	0.106*** (0.011)	
Constant	-0.097*** (0.037)	0.012 (0.038)	3.398*** (0.686)	3.943*** (0.947)	-0.044 (0.071)	0.218*** (0.081)	-1.448 (1.301)	7.529*** (2.288)
Observations	4,104	3,232	3,232	2,896	2052	1600	1600	1360
R-squared	0.214	0.254	0.274	0.266	0.198	0.283	0.320	0.363
Number of donor pairs	342	272	272	272	342	272	272	272

Standard errors clustered by donor pair in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

## Appendix A: Description of variables and data sources

Variable	Definition	Source
<b>Dependent variables</b>		
Theil index (TH)	Degree of aid fragmentation of donor j in year t; see text for details of calculation	OECD DAC <sup>a</sup>
Overlap (OV)	Degree of overlap between the country- and sector-wise aid portfolio of donor j in year t and the aid portfolio of other donors; see text for details of calculation	OECD DAC <sup>a</sup>
<b>Aid characteristics</b>		
Log aid budget	Size of overall aid budget of donor j in year t, total commitments in constant 2008\$ million, logged; average for donor pair in estimations with bilateral overlap	OECD DAC <sup>a</sup>
Multisector/aid budget	Aid classified as “multisector/ cross-cutting” (DAC/CRS code 400) of donor j in year t, share in overall aid budget as defined above; average for donor pair in estimations with bilateral overlap	OECD DAC <sup>a</sup>
Budget support/aid budget	Aid classified as “General budget support” (DAC/CRS code 510) of donor j in year t, share in overall aid budget as defined above; average for donor pair in estimations with bilateral overlap	OECD DAC <sup>a</sup>
Debt relief/aid budget	Aid classified as “Action related to debt” (DAC/CRS code 600) of donor j in year t, share in overall aid budget as defined above; average for donor pair in estimations with bilateral overlap	OECD DAC <sup>a</sup>
<b>Other donor characteristics:</b>		
Export share	Exports of donor country to all developing countries and emerging economies, share of the donor’s total exports in year t; average for donor pair in estimations with bilateral overlap	IMF, Direction of Trade Statistics (Datastream)
Log GDP	GDP of donor country in year t, constant 2000\$ million, logged; average GDP of donor pair in estimations with bilateral overlap	World Development Indicators <sup>b</sup>
Log military expenditure	Military expenditures of donor country in year t, constant 2000\$ million, logged; average for donor pair in estimations with bilateral overlap	World Development Indicators <sup>b</sup>
UN Security Council member	Dummy variable set equal to one when donor j was a member of the UN Security Council (permanently or temporarily)	United Nations <sup>c</sup>
<b>Characteristics of donor pairs (in estimations with bilateral overlap):</b>		
UNSC member-one country	Dummy variable set equal to one when one donor of a donor pair was a member of the UN Security Council	United Nations <sup>c</sup>
UNSC member-both countries	Dummy variable set equal to one when both donors of a pair were members of the UN Security Council	United Nations <sup>c</sup>
Trade intensity	Trade intensity among donor pair in year t; average of: (i) sum of exports and imports of donor j1 to/from donor j2 in percent of donor j1’s total exports plus imports, and (ii) sum of exports and imports of donor j2 to/from donor j1 in percent of donor j2’s total exports plus imports	OECD.StatExtracts
UN voting	Degree of voting coincidence in the UN General Assembly between pairs of donors in year t	Data kindly provided by Axel Dreher
<b>Characteristics of recipient countries:</b>		
Log p.c. GDP	Logged per-capita GDP of recipient countries; average for all recipient countries in a donor’s aid portfolio (a donor pair’s aid portfolio in estimations with bilateral overlap) in year t	World Development Indicators <sup>b</sup>
Control of corruption	Rating of recipient countries with regard to control of corruption, ranging from 0 (most corrupt) to 6 (least corrupt); average for all recipient countries in a donor’s aid portfolio (a donor pair’s aid portfolio in estimations with bilateral overlap) in year t	International Country Risk Guide

<sup>a</sup>Link: <http://stats.oecd.org/Index.aspx?DatasetCode=CRSNEW>

<sup>b</sup>Link: <http://data.worldbank.org/data-catalog/world-development-indicators>

<sup>c</sup>Link: <http://www.un.org/sc/members.asp>

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**Appendix B: List of donors**

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Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom, United States, *EU institutions, International Development Agency*

(multilateral donors in italics only included in baseline estimations)

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**Appendix C: List of aid sectors included in the calculations of Theil indices and overlaps**

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Education (DAC/CRS code: 110), health (120), population programs (130), water supply and sanitation (140), government and civil society (150), other social infrastructure and services (160), transport and storage (210), communications (220), energy (230), banking and financial services (240), business and other services (250), agriculture, forestry, fishing (310), industry, mining, construction (320), trade policy and regulations (331), tourism (332), general environmental protection (410), other multisector (430), general budget support (510), developmental food aid, food security assistance (520), other commodity assistance (530), action related to debt (600), other emergency and distress relief (720), reconstruction relief (730), disaster prevention and preparedness (740)

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**Appendix D: Summary statistics**

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	Obs.	Mean	Std. Dev.	Min	Max
Theil index	285	4.45	0.66	1.65	5.61
Overlap	285	0.12	0.04	0.01	0.24
Aid budget	285	5,041	5,483	63	31,267
Multisector/aid budget	285	0.09	0.06	0	0.47
Budget support/aid budget	285	0.04	0.05	0	0.31
Debt relief/aid budget	285	0.11	0.15	0	0.69
Export share	255	19.22	8.84	3.63	45.64
GDP	255	1,436,906	2,464,968	96,253	11,700,000
Military expenditure	254	35,142	89,084	1,407	527,000
UN Security Council member	255	0.29	0.45	0	1
Log p.c. GDP	285	1,598	389	487	2,482
Control of corruption - ICRG	285	2.31	0.37	1.81	3.36
Bilateral overlap	5130	0.12	0.07	0	0.49
UNSC member - one country	5415	0.45	0.50	0	1
UNSC member - both countries	5415	0.07	0.25	0	1
Trade intensity	4335	0.04	0.05	0	0.51
UN voting	3848	0.81	0.13	0.09	0.96

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