

## SUMMARY & DECISIONS

1. At the request of the IATI Steering Committee, Development Initiatives undertook an initial cost-benefit analysis of greater aid transparency in the second half of 2009, and presented preliminary findings in October 2009.
2. That approach had a number of shortcomings:
  - a. The analysis was done at an early stage in the IATI design, so it was not yet clear what should be included in the costs for donors, and what benefits it might bring.
  - b. The cost for each donor may vary considerably, depending on the systems they are now using to record and publish information. An analysis of the costs and benefits for all donors may not accurately reflect the position of any particular donor.
  - c. Individual donors had not had time to consider the approach to the cost benefit analysis themselves, and so did not feel ownership of the analysis.
  - d. The approach and initial estimates had not yet been subjected to external scrutiny and peer review.
3. Attached to this note is a revised draft analytical framework for considering the costs and benefits of transparency. It sets out the considerations of *implementation costs* to donors, and the benefits expressed as *efficiency savings* that donors might make as a result of reduced future costs of information reporting and the *effectiveness benefits* which greater transparency might bring about.
4. The Steering Committee is asked to give guidance to the IATI secretariat on how it would like to proceed on the cost benefit analysis. Three options are set out below.

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### OPTION ONE – NO FURTHER ACTION BY THE IATI SECRETARIAT

5. The first option is to ask for no further work by the IATI secretariat on a cost benefit analysis of IATI. Individual donors either have already sufficient information to make internal decisions, or they will conduct their own cost benefit appraisal, drawing on the attached analytical framework as they see fit.

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### OPTION TWO – REFINE THE ANALYSIS AS A PRIVATE SELF ASSESSMENT TOOL

6. The second option is for donors to work together to refine the attached analytical framework, including subjecting the analysis to peer review and public scrutiny. The result would be an agreed, public framework, which donors would self-administer as they see fit.

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**OPTION THREE – DEVELOP THE TOOL FOR A SHARED COST-BENEFIT ANALYSIS**

7. The third option is to develop this tool further and use it to conduct a cost-benefit analysis based on a number of sample donors. This would provide evidence from which extrapolations could be made of the overall costs and benefits of IATI for the IATI signatories, or for the aid system as a whole. It would require a number of donors to participate by sharing information so that the costs and benefits could be accurately estimated for that donor, and allowing the resulting estimates to be published. The costings could be published in aggregate, rather than for any specific donor, if donors prefer that their own estimates remain private.

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**DECISIONS NEEDED**

8. The Steering Committee is invited to decide how to proceed on cost benefit analysis, guided by the three options above. If the third option is chosen, four or five donors will need to volunteer to collaborate and provide information as the basis of a shared cost-benefit analysis.

OWEN BARDER  
AIDINFO @ DEVELOPMENT INITIATIVES

# THE COSTS & BENEFITS OF AID TRANSPARENCY

A DRAFT ANALYTICAL FRAMEWORK<sup>1</sup>  
APRIL 2009

## INTRODUCTION

1. This analytical framework provides a tool to assess the costs and benefits of greater aid transparency, with particular reference to the costs and benefits of implementing the emerging proposals for the International Aid Transparency Initiative (IATI).
2. The framework sets out a number of assumptions on which the cost-benefit analysis is based. These include assumptions for what is included in greater transparency, assumptions about the counterfactual (that is, what would happen without IATI), and assumptions about the impact of transparency on aid effectiveness.
3. The framework consists of components which are made explicit and can be quantified, and components which can be made explicit but not quantified.
4. Specifically, the framework attempts to quantify:
  - a. The **administrative cost** to each donor of implementing IATI include the money necessary to adapt IT systems, staff time to collect and record additional information, the cost of training staff to use new systems and classifications, and coordination costs to oversee internal quality control over a larger amount of published information.
  - b. **Efficiency savings for donors**, as a result of reduce multiple reporting to different stakeholders.
  - c. **Efficiency savings for recipient countries** as a result of having easier access to information about aid programmes.
  - d. Improved **effectiveness of aid**, as a result of lower risk of diversion, greater predictability, and better donor coordination.
2. There are a number of costs and benefits that donors will want to take into account which cannot readily be quantified, or which are not quantified here. These include:

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<sup>1</sup> This draft framework is based on analysis by Matthew Collin, Oxford University; Asma Zubairi, Development Initiatives; Daniel Nielson, Brigham Young University; Owen Barder, Development Initiatives. Contact [owen@devinit.org](mailto:owen@devinit.org)

- a. The **risks to donors** that greater transparency will result in bad publicity, and the possible administrative burdens resulting from greater public accountability (for example, increased availability of data may lead to more questions being asked).
  - b. **Additional costs and efficiency savings for other** organizations in the development community such as international NGOs, international organizations and researchers.
  - c. The **benefits for aid effectiveness** of (a) improved aid allocation; (b) improved research into aid; and (c) increased public willingness to support higher aid budgets.
3. The costs and benefits for each individual donor will depend on:
- a. The amount and type of information that the donor already collects.
  - b. The type of information systems used and the cost of adapting them to produce information in a common format.
  - c. The size of the organization and the costs of implementing new requirements for recording information.
  - d. The amount of aid administered – larger aid programmes will result in bigger effectiveness benefits.
  - e. The timing of change. The additional cost of change is lower if the systems changes can be integrated into the planned cycle of systems changes.
4. Although there will be variations between donors, the orders of magnitude are such that the *efficiency savings* alone are likely to pay for the transitional cost within a year or two. *The effectiveness benefits* are much more uncertain, but even on conservative estimates the benefits of reduced diversion and greater predictability are several orders of magnitude greater than the costs of transparency.
5. This framework is intended to enable donors to arrive at a robust estimate of the costs and benefits of aid transparency, estimating costs and benefits where possible, and taking qualitative account of other more intangible costs and benefits. The quantitative estimates can readily be converted into a rate of return, payback period, or net benefit.

## 1. DEFINITION OF TRANSPARENCY

6. For purposes of this framework, aid transparency is defined as meeting the aspirations of the International Aid Transparency Initiative (IATI) to publish detailed,

comprehensive, up-to-date, comparable, traceable, forward- and backward-looking information about aid in a common electronic format.<sup>2</sup> Some donors may choose to do this centrally, by publishing data from a management information system; other donors may choose to publish information through a variety of decentralized mechanisms (e.g. by their staff in developing countries). The IATI Technical Advisory Group has considered proposals for the **technical architecture** in more detail.<sup>3</sup>

7. The Technical Advisory Group is making progress on developing recommendations for **the information scope of IATI**, which provides a basis for assessing costs.<sup>4</sup> The current draft scope includes a combination of information that donors already have available in a systematic form but do not currently publish (for example, the name of the organization to which a payment is made); information that is usually available somewhere within the donor agency but not always in a systematic way (such as details of future spending plans); and information that some donors do not presently collect or hold at all (such as geographical location of investments). This cost-benefit framework assumes that transparency involves publishing *all* the information in the draft scope, in a systematic way, in a common format with shared definitions.
8. Neither the Technical Advisory Group nor the IATI Steering Committee has yet given substantial consideration to the nature and amount of descriptive **documents** that will be published under IATI about aid programmes (e.g. environmental appraisals). These decisions will be made during the second half of 2010. These decisions on this are unlikely to have a significant effect on administrative costs, though they may affect donors' assessment of reputational risk. A more inclusive standard for publication of descriptive information of this kind is likely to increase the effectiveness gains from aid transparency.
9. This cost-benefit framework assumes that IATI will include a mechanism for **aid traceability and transaction level reporting**, to enable aid to be tracked either to the intended beneficiary or into the public financial management system of the recipient country.<sup>5</sup> This assumption has implications both for the costs of implementing IATI (which will be slightly greater as a result) and for the benefits (many of the effectiveness benefits are dependent on the possibility afforded by IATI of following aid money through the implementation chain).

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<sup>2</sup> The International Aid Transparency Initiative is described at [www.aidtransparency.net](http://www.aidtransparency.net)

<sup>3</sup> See Implementing IATI for a paper on the proposed technical structure:

<http://aidtransparency.net/wp-content/uploads/2009/06/Implementing-IATI-Jan-2010-v2.pdf>

<sup>4</sup> See the draft matrix of definitions and codes discussed by the TAG in March 2010:

<http://aidtransparency.net/wp-content/uploads/2009/10/Master-IATI-data-management-14-March.xls>

<sup>5</sup> See Show Me The Money [\[need hyperlink\]](#) by aidinfo setting out the rationale and proposals in more detail.

10. The **counterfactual** against which the costs and benefits are estimated is assumed to be the *status quo* – continued reporting by donors of aid information to the OECD DAC, together with reporting by country offices to about fifty country level aid management systems (AIMS) such as Aid Management Platforms (AMPs) and Donor Assistance Databases (DADs). In practice, the status quo is not likely to be sustainable, since there is likely to be growing pressure for aid information to be published, in common with the trend towards greater transparency of government information. If donors respond to these pressures by publishing aid data without adopting an international standard, they are likely to bear many of the costs of IATI while reaping few of the benefits.

## 2. THE ADMINISTRATIVE COSTS OF AID TRANSPARENCY

11. The additional administrative costs of implementing IATI will be:

- a. Collecting and **recording additional information** that is required by IATI but which is not currently collected, or which is presently collected in a form that cannot be mapped on to IATI definitions.
- b. Adapting IT systems (such as an agency's Management Information System) so that project staff (usually field-based staff) are able to **record this additional information** into the donor agency's project database, or into a bespoke IATI recording application if the agency prefers.
- c. **Training staff** to use the new systems and data fields.
- d. Adapting IT systems to enable donors to **produce information in the IATI format** and to put the resulting data files online.
- e. Additional **quality control** in donor agencies to confirm that information is accurate and complete before it is released to the public.

12. The **one-off costs** are adapting IT systems to collect additional information and to produce information in IATI format, and training staff. The **on-going** costs are the staff time to collect and record additional information and additional quality control.

13. The cost of recording additional information will vary considerably between agencies. Most donors already collect most of the information required by IATI; but some do not yet have centralized project databases to collect and report this information.

14. Once the data are collected in a donor management information system, the technical cost of adapting the system to generate reports in IATI format is expected to be very small. Most donor systems already have the capability of producing USIF-format data (used for reporting to the OECD), and a similar approach can be used to produce IATI format data.

15. For some donors, the systems investments will be self-financing because enhanced information management systems will reduce the need for the data to be compiled manually. Some donor agencies currently have to use consultants to compile their information reports for the DAC.
16. The costs of adapting systems depend considerably on timing. If adapting to IATI standards can be integrated into a system upgrade that is happening anyway, then the additional cost of IATI is very small. If donors have to do significant work to their systems outside their normal upgrade cycle, this will add to the costs.
17. A preliminary estimate of the possible administrative implementation costs was compiled in the second half of 2009 by an independent consultant, based on a study of four donor agencies, drawing on information gathered during the Technical Advisory Group fact-finding visits.<sup>6</sup> This information was supplemented with telephone interviews to estimate the likely costs for other agencies. The consultant then categorized aid agencies according to the extent of systems changes that would be needed to comply with the IATI standard. This preliminary analysis estimated one-off systems costs ranging from \$100K to \$1m for each donor agency. For more than half of donors, the cost was expected to be less than \$500K. The consultant estimated that over and above the one-off implementation costs, and taking account of the continuing efficiency savings from having an improved information system, the additional on-going costs of information reporting would be negligible. On these indicative figures, the overall cost of implementing IATI among all the existing signatories was estimated to be less than \$8 million.
18. Donors themselves are in a much stronger position than external consultants to estimate the one-off and ongoing costs of implementing IATI. They have information which is not publicly available about the costs of their existing systems, and the additional costs of IATI will depend on whether and how it can be integrated into existing plans for information systems upgrades. The preliminary costs estimates can therefore be improved considerably if donors are willing to provide their own estimates, perhaps drawing on technical expertise from the Technical Advisory Group on the technical requirements of IATI.
19. It is important not to understate the costs of implementing IATI. Moving to the publication of more detailed, more forward looking information in a standardized form will require changes to IT systems, training and change management within donor agencies. Donor agencies will need to budget for these additional costs to enable them to implement IATI effectively. As set out below, there are considerable potential

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<sup>6</sup> IATI Donor Cost Benefit Analysis (October 2009) by Jonathan Orchard, Sayer Vincent Consulting

benefits from IATI which more than justify these costs.

### 3. REPUTATIONAL RISKS AND ACCOUNTABILITY COSTS

20. As well as possible administrative costs of implementing IATI (discussed in section 2), donor agencies face a number of other possible costs and risks of greater transparency.

21. Possible costs and risks for donors include:

- a. **Reputational risks** arising from the public of information about projects which are controversial or which turn out to be unsuccessful.
- b. **Accountability costs** which may increase if greater transparency leads to closer examination of aid programmes, resulting in more requests for information and questions about the details of aid projects.
- c. **One off data-cleaning costs** – some aid agencies will want to re-examine information that was collected and recorded for internal use before it is released for public access. For example, the UK DFID recently undertook a data cleaning exercise before releasing its project database online. These are one-off costs because future data will be entered in the knowledge that it is to be released automatically.

22. These risks and costs are the mirror-image of some of the effectiveness benefits of greater aid transparency. For example, DFID statisticians say informally that there has been a noticeable improvement in the quality of information held on DFID's project database following the data cleaning exercise, simplifying the process of publication and improving the quality of the data. Greater scrutiny of projects will improve the quality and rigour of analysis on which decisions are made, and help to ensure that donors make decisions based on evidence rather than politics. Some aid projects will fail, and that may lead to unwelcome publicity, but there will be benefits for future projects if the lessons for why the project did not succeed are shared and learned.

23. Donors should consider these costs carefully, and take steps to mitigate the risks. For the purpose of the cost-benefit framework, however, we assume that these costs do not give rise to a net financial cost. (Formally, we assume that the effectiveness benefits of aid transparency are estimated net of these reputational costs, from which they are inseparable.)



#### 4. EFFICIENCY GAINS FOR GOVERNMENTS

24. This section of the cost-benefit framework considers the possible gains in the efficiency of delivering aid. These comprise mainly the possible benefits for donors of automating reporting and reducing duplication of requests for information.

##### 4.1 REDUCED ADMINISTRATIVE COSTS OF REPORTING AID INFORMATION AND TIME SPENT RESPONDING TO INFORMATION REQUESTS.

25. Members of the OECD's Development Assistance Committee provide information to the the DAC database and Creditor Reporting System, through their DAC reporter. In addition, these agencies also report to approximately fifty different country-level aid information management systems (AIMS), usually (but not always) with information provided directly by country-based staff. Donors also provide information to an increasing array of other systems, depending on the context in which they work; these include the EU Donor Atlas, the UN OCHA Financial Tracking System for humanitarian aid, and the ECHO HOLIS 14 Points database. Donors also respond to ad hoc information requests, such as information gathered from donors by the local IMF office or finance ministry, information sharing among sector working groups, and responding to data requests from consultants and academics.

26. The IATI standard aims to encompass substantially all the information needs of a wide variety of stakeholders, including developing country governments, civil society organizations, international organizations, researchers and other donors. While there is wide variation in the purposes for which these stakeholders want information, there is a great deal of convergence in the information that they want.

27. This growing burden of information reporting is sometimes invisible to headquarters. During the consultation about IATI, it emerged that one DAC reporter was unaware that information about the aid programme was publicly available through country-level aid management systems in advance of being published through the DAC.

28. IATI aims to provide a consistent set of information that will meet the needs of all, or nearly all, of these users. It will provide information that can be automatically supplied to the DAC for the CRS database, to the country aid management system, to the country's budget and financial management systems, to the global humanitarian databases, and to sectoral working groups. This offers the possibility of greatly reducing the burden on donors (especially staff in country offices) of coordinating, assembling and preparing information. For recipient countries, this offers the option to automate

data collection, which would mean less time collecting information, verifying it, and inputting information manually into their aid information management systems.<sup>7</sup>

29. The extent to which savings from reduced duplicate reporting are possible depend on whether IATI is able to meet substantially all of the information needs of these users. If IATI is broader in scope and more detailed in content, then these savings will be correspondingly larger.
30. The possible savings can be estimated by conducting a survey of staff in donor country offices to obtain an estimate of the amount of time they spend engaged in duplicate information reporting.
31. Last year *aidinfo* conducted a very small survey of donor country offices, which suggested that each donor country office spends about 7 staff days a year reporting to country aid management systems, and a further 24 staff days a year responding to other information requests. These estimates are broadly comparable with, but slightly lower than, the estimates made by the Development Gateway Foundation of the costs to donors of providing information to aid management systems. The estimates suggest that the DAC donors might have between them the equivalent of between 200 and 500 full time staff working on reporting aid information, mainly from country programme staff. This might cost between \$7 million and \$35 million a year.
32. It is likely that there is a non-response bias in these survey returns. A country office in which duplicate reporting represents a considerable burden is more likely to fill in a questionnaire about it, in the hope that something might be done, than an office for which the burden is modest.
33. The cost benefit framework has to make assumptions about the extent to which these information reporting burdens would be reduced by the introduction of IATI. A conservative assumption is that information will be published in a form and at a level of detail that meets *all* the needs of country aid management systems (since this is a priority for IATI), and about *half* of other information requests. Less conservative estimates could be calculated by identifying the burden of other requests that IATI will definitely meet in full (for example, reporting to FTS).
34. Based on our initial survey, with a small sample size and a possible response bias, we made a conservative estimate that the IATI donors would save approximately \$7 million a year as a result of a reduced burden of information requests. Ideally this figure should be refined by conducting a larger survey of donor field staff to get a clearer

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<sup>7</sup> The Development Gateway Foundation estimates that it might cost approximately \$40K to adapt each Aid Management Platform to collect this information automatically.

picture of the reporting burden. This would require the support and active participation of donor agencies.

35. These savings relate to the burden on **donor staff working on country programmes**, not the costs of central reporting by headquarters. There may also be efficiency savings for donor headquarters resulting from greater aid transparency, but these have already been netted out of the implementation costs discussed in section 2, so they should not be included here, to avoid double counting.
36. Note that *costs* of greater transparency might fall on a different parts of donor organizations than the *savings* identified in this section. Note too that these efficiency savings do not take account of the possibility that greater transparency will, at least at first, add to the burden on donor country-based staff (for example, by leading to a larger number of questions about specific aid projects).

#### 4.2 REDUCED ADMINISTRATIVE COSTS FOR PARTNER COUNTRIES

37. As well as benefits for donor agencies, there are potential efficiency savings for developing country governments, who currently collect information from donors manually. These savings are likely to be smaller in cash terms than for donor agencies, because of lower staff costs in developing country governments, though the opportunity costs of these administrative burdens may be much higher.
38. It is difficult to know whether and when developing country governments will want to take advantage of automatic data collection from IATI data. If governments want to continue to receive reports manually, or in the form of spreadsheets, they can continue to ask for this. Donors will be able to provide more accurate and comprehensive answers more quickly, drawing on the IATI data, but this will not generate efficiency savings for developing countries.
39. The amount of these savings can be estimated by surveying developing country governments, in both the finance and planning ministries and in line ministries. A small survey in 2009 found that partner countries do spend considerable time and effort collecting data manually from donors, but robust figures would require a more comprehensive survey.

#### 5. COSTS AND BENEFITS FOR NGOS AND IMPLEMENTING ORGANISATIONS

40. In addition to the costs and benefits for official donors and for developing country governments, the proposed IATI standard will affect NGOs and implementing organizations.

41. The impact on these organizations will vary considerably, depending on the extent to which they are primarily suppliers of information, and so are likely to bear additional reporting costs, and the extent to which they are users of information, and so are likely to benefit from easier access to information.

#### 5.1 COSTS AND SAVINGS FOR THIRD PARTY ORGANISATIONS THAT REPORT DATA

42. In the Accra IATI declaration, the signatories committed themselves to urge implementing agencies to implement the IATI standard:

*“We will urge all public and private aid donors, including bilateral and multilateral organisations, and philanthropic foundations, and those who deliver aid on our behalf, to work with us to agree and then implement these common standards and format.”*

43. Many of the most significant benefits of aid transparency included in this cost-benefit framework depend on ensuring that transparency is retained through the delivery chain.
44. Analogously with donors, there will be costs for NGOs which will have to adapt their systems for collecting and reporting information under the IATI standard. These costs will be reduced to the extent that most NGOs use standard software packages which can be adapted by the software supplier to meet the IATI standard. (Donors may wish to pay the software companies to do this.)
45. Also as for donors, there will be efficiency savings for NGOs resulting from the agreement of a common data reporting standard. Many NGOs today face a plethora of reporting requirements to official donors, international organizations and foundations. Financial and performance information has to be provided in a variety of different formats, using definitions and accounting periods relevant to the specific donor. The result is a huge amount of duplication of reporting. By standardizing the reporting of development spending, IATI creates the opportunity to simplify NGO reporting to a single set of data in a common format. Donors or foundations should, over time, be able to use this data as the basis for their scrutiny to ensure that money has been properly spent.
46. These potential savings for NGOs therefore depend on changes in donor behavior following the implementation of IATI. One option would be for donors to allow NGOs that they fund to choose: the NGO can either continue to report manually as now (in which case the donor will have to publish this information in IATI format), or the NGO can instead adapt their systems to publish their data in IATI-compliant format, thus discharging their reporting obligations automatically. Over time, it is likely that many NGOs would opt for the automatic reporting route.

47. The cost-benefit framework does not attempt to quantify the costs and benefits for NGOs of implementing IATI. Implicitly, the framework assumes that the efficiency savings for NGOs of reduced multiple reporting in different formats will, over time, outweigh the short-term implementation costs. Donors considering the costs and benefits of implementing IATI should, however, keep in mind that they may need to support some NGOs through this transition.

## 5.2 SAVINGS FOR THIRD PARTY ORGANISATIONS THAT COLLECT DATA

48. Many third party organizations are not only providers of aid information, they are users of it. The publication of data in a common electronic format will also generate efficiency savings organizations that collect, verify and collate information. These include:

- a. Official organizations such as the UN OCHA FTS database, the DAC, the EC and others;
- b. the Development Gateway, which maintains the AidData database (a merger of the AIDA database and the PLAID database);
- c. International NGOs and advocacy organizations who assemble aid information for the purposes of analysis and advocacy.
- d. Think tanks, researchers, and academics

49. Use case studies by the aidinfo team at Development Initiatives suggest that *some* international NGOs spend approximately 12 staff days a year collecting and collating information from donors about aid, though clearly this investment varies enormously between organizations according to their mission and capacity.

50. Providing data in an easily accessible, standardized format would lead to considerable cost savings for these organizations. For example, the AidData principal investigators estimate that roughly 40% of their operating budget has been dedicated to requesting documents, web-scraping online sources, scanning annual reports to create digital copies, and manually entering project information into the database. Each of these tasks would not be necessary if information were published in accordance with an detailed aid information standard, yielding cost savings for the AidData database of roughly \$1.2 million per year. There are many other organizations having to devote resources to gathering, collating and reconciling aid data – though generally not on the same scale as AidData.

51. The savings to the development sector as a whole from reducing the costs of data collection is likely to be of the order of tens of millions of dollars a year.

52. These potential savings to the wider development community are not explicitly included in this cost-benefit framework, both because we lack reliable data and because some donors may prefer not to include benefits to these third-party organizations in their value for money appraisals.

## 6. EFFECTIVENESS GAINS

53. This section discusses the possible improvements in the *effectiveness of aid* that might result from making detailed information about aid more accessible. These benefits are less easy to define and measure than the efficiency savings, but they are sufficiently well defined – and the confidence intervals narrow enough – for us to make statements about their order of magnitude.

### 6.1. REDUCING THE DIVERSION OF AID RESOURCES

54. Accountability depends on access to information. Transparency is needed for citizens to be able to keep their governments in check and governments to make their staff more honest and efficient. One of specific areas where accountability matters is in the prevention of the capture, or diversion, of public resources. In Uganda, diversion of education resources was reduced from 87% to 20% as a direct result of increased public information about the resources allocated to each school.<sup>8</sup>

55. To the extent that detailed aid information is made more accessible by aid transparency, we would expect a decline in the diversion of aid-funded government expenditure, as increased scrutiny makes it more difficult for individuals to divert resources.

56. Evidence from a range of studies, especially Public Expenditure Tracking Surveys (PETS), suggest that between 7% and 43% of aid for service delivery may be currently diverted, with a central estimate of 25%. The basis for these estimates is set out in Appendix 1.

57. Using the DAC's Creditor Reporting System (CRS) it is possible to identify the kinds of aid that may be susceptible to this kind of capture. We have conservatively estimated that about \$12 billion a year of aid from IATI signatories falls into this category.<sup>9</sup> At an average capture rate of 25%, a conservative estimate is that perhaps \$3 billion a year of aid from IATI signatories is currently being diverted.<sup>10</sup> Appendix 1 sets out how these figures are derived.

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<sup>8</sup> Reinikka and Svensson (2001).

<sup>9</sup> We have identified aid to the education, health, agriculture and rural development sectors which is classified as flowing through the public sector or non-governmental organisations.

<sup>10</sup> For the sake of clarity, this does not mean that all of this is lost to corruption. Some of this diversion may be unnecessary bureaucracy and inefficiency, or legal use of funds for other purposes.

58. To estimate the impact of transparency on reducing capture, we have drawn estimates from previous studies, which suggest that transparency results in reductions in capture ranging from 12% to 74%, with a central estimate of 30%.<sup>11</sup> As a result, we estimate that the reduction in capture of aid as a result of much greater transparency might be of the order of \$900 million a year for the IATI signatories. It is of course possible that this is an underestimate of the effect of transparency on reducing capture and diversion, since it makes no allowance for the possibility of transparency leading to a reduction in capture of the other 90% of global aid.

**Table 1: Annual reduction of diverted resources due to IATI adoption**

Category	Low estimate	Middle estimate	High estimate
IATI Donors	\$97m	\$879m	\$3,784m
All DAC Donors <sup>12</sup>	\$145m	\$1,311m	\$5,645m

59. Publishing more detailed aid data will not, by itself, reduce the diversion of public resources. It is a necessary but not sufficient step toward empowering citizens, civil society groups and parliamentarians to hold governments, donors and service providers to account for how that money is used.<sup>13</sup> This cost-benefit framework does not take any account of the additional costs of enabling civil society organizations to use the information that will be available through IATI.

60. Although this is a conservative estimate of the benefits of transparency on reducing capture, it is based on documented evidence of the extent of capture and the extent to which capture can be reduced by transparency. Appendix 1 sets out the detail.

## 6.2 THE BENEFITS OF GREATER PREDICTABILITY

61. Aid is both volatile and unpredictable. Despite international recognition of the problem, progress to improve predictability has been slow. Aid is, on average, much more volatile than domestic revenues.<sup>14</sup> There are significant costs associated with the instability of aid, including the welfare costs of fluctuating income streams, the tendency of aid to exacerbate real shocks to the economy, and the fiscal and planning problems associated with unpredictable aid. Several studies have suggested that these macro-level costs might be large – worth perhaps as much as 20% of the value of global aid. Better

<sup>11</sup> Note that this decline of 74% assumes that, without the drive for transparency in Uganda from multiple sources, the rate of capture would have remained constant as the education budget was scaled up.

<sup>12</sup> Estimates for all donors are based primarily on information from the OECD-DAC database, and so offer a large, but incomplete view of total aid.

<sup>13</sup> It follows from this that additional efforts by donors to make information more accessible by such groups are likely to yield high dividends.

<sup>14</sup> See Benn Eifert and Alan Gelb. 2005. "Coping with Aid Volatility." *Finance and Development* 42 (3): 24-27.

information on future aid, both in aggregate and where possible in detail, will reduce the unpredictability of aid and thus lower some of the associated costs.

62. To quantify the impact of transparency it is necessary to estimate both the overall costs of uncertainty of aid and the extent to which these might be reduced by greater transparency.
63. Publication of more detailed aid information will not make all aid predictable. Some donors may not know (and hence could not publish) their future intentions for aid spending; and some volatility is caused by changes in circumstances over time, which would not be reduced by transparency. The benefits of greater transparency are limited to those cases in which donors have, but presently do not publish in a convenient form, reliable information about their intended future aid spending.
64. Our approach is set out in detail in Appendix 2. The costs of uncertainty are estimated using the Capital Asset Pricing Model (CAPM) to estimate the market value of a volatile income stream. (This approach to measuring the deadweight loss caused by aid uncertainty was introduced in Kharas (2008)). To the extent that donors provide more information about their future aid intentions which adds to the information already available to recipients, this deadweight loss is reduced. We have used a variety of theoretical models to estimate the impact of the publication of more forward-looking aid information on the accuracy of the models used, implicitly or explicitly, by recipients. This permits a calculation of the deadweight loss with reduced uncertainty.

**Table 2: Annual reduction of deadweight loss associated with aid uncertainty**

Category	Low estimate	Middle estimate	High estimate
IATI Donors	\$375m	\$873m	\$1,804m
All DAC Donors	\$375m	\$1,716m	\$3,566m

65. Table 2 above shows the projected reduction in uncertainty-related deadweight loss, for both aid from IATI signatories and all aid from DAC donors. The potential savings are quite large: our estimates for the savings from IATI donors range from a low estimate of \$375 million to a high estimate of \$1.8 billion.

### 6.3 USING INFORMATION TO AVOID COORDINATION FAILURE

66. The growing proliferation of official and private aid organizations has increased the problem of coordination. Many donor agencies are not able to make decisions in light of the plans of other agencies because that information is not readily available.



67. The problems associated with lack of coordination have been seen most starkly in the aftermath of the tsunami and the Haiti earthquake:

*In the aftermath of the tsunami disaster a local doctor in Banda Aceh, one of the most affected areas, wrote: "In February, in Riga (close to Calang) we had a case of measles, a little girl. Immediately, all epidemiologists of Banda Aceh came in, because they were afraid of a propagation of measles among displaced people, but the little girl recovered very fast. Then, we realized that this was not a normal case of measles and we discovered that this girl has received the same vaccine three times, from three different organizations. The measles symptoms were a result of the three vaccines she received."<sup>15</sup>*

68. Improved coordination can reduce the risk of duplicated or redundant expenditure and increase the value of aid by improving positive complementarities. But lack of information is not the only possible cause of shortcomings in donor coordination: donors have a broad range of objectives and constraints that may have a negative impact on their ability to coordinate.

69. To estimate the benefits of transparency for improved aid coordination requires an estimate of the extent to which overlap is the result of lack of information about the actions of other donors.

70. Annex 3 sets out our calculations of the possible benefits of greater aid coordination. The estimates use a method based on Aldaroso et al (2009) to measure aid overlap, or the degree to which donors crowd into the same countries and sectors. Making assumptions about the degree of overlap which is related to coordination failure because of lack of information, and the extent to which overlap which is redundant, we can estimate the proportion of aid that is potentially wasted.

71. On these assumptions, the estimated benefits are about \$1.8 billion a year for IATI donors, and \$3.5 billion for all donors. These estimates are more uncertain than the other estimates of effectiveness benefits in this framework, and so the proposed cost-benefit framework includes them only in the "high case" scenario.

## 7. OTHER POSSIBLE BENEFITS FOR AID EFFECTIVENESS

72. This section discusses other benefits we would expect to accrue from greater aid transparency. While these benefits are potentially important, they are difficult to

<sup>15</sup> El Pais, April 13, 2005, p. A2. Quoted in Djankov, S., J. García Montalvo & M. Reynal Querol, 2009. "Aid with multiple personalities", Journal of Comparative Economics 37(2), 217-229

quantify. They are included here to serve as a reminder that the quantified estimates of the effectiveness gains are likely to underestimate the overall benefits of transparency.

#### 7.1 IMPROVED AID ALLOCATION BY DONORS LEADS TO BIGGER IMPACT ON POVERTY

73. Less developed countries presently receive less than 40% of global aid.<sup>16</sup> A number of studies suggest that aid is more effective in countries where there are large numbers of poor people and which have more effective governance. One study estimated that the impact of aid would be doubled if it were allocated to the countries in which it would be most effective.<sup>17</sup> Even quite modest improvements in global aid allocation would lead to significant benefits in terms of faster poverty reduction.
74. Greater transparency of aid might lead to better aid allocation in two ways. First, donors have (until very recently) had very little information about the plans of other donors. A series of independent aid allocation decisions by each donor will not generally lead to an optimal overall allocation of global aid. Few donors are willing to act explicitly as a “donor of last resort” by offsetting global aid misallocation, but if some donors take global aid allocations into account in their decisions then increased information might result in modest improvements in global aid allocations.
75. Second, transparency about aid allocations and the negative consequences of aid misallocation for poverty reduction might lead to greater pressure from civil society and citizens to improve the way aid is used. On the other hand, there is already quite a lot of evidence about aid misallocation, and it has so far not proved sufficient to overcome the political pressures to use aid in less efficient ways.

#### 7.2 IMPROVED RESEARCH INTO DEVELOPMENT PROGRAMMES

76. There is a growing body of research looking at the effectiveness of aid, both on large-scale results (such as economic growth) and on narrower results in particular sectors (such as education and health outcomes). This research looks at evidence about whether aid works, and if so, under what circumstances. It can be used to guide choices about the purposes for which aid is given, and how it is used, and so to improve the effectiveness of aid.
77. The quality and quantity of research is, however, limited by poor data about aid. About half the projects reported by donors to the OECD DAC Creditor Reporting System

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<sup>16</sup> OECD DAC Development Cooperation Report; updated 5 December 2008; Table 26.  
<http://www.oecd.org/dataoecd/52/12/1893167.xls>

<sup>17</sup> Paul Collier and David Dollar, 1999, “Aid Allocation and Poverty Reduction,” *World Bank Policy Research Working Papers*, Issue 2041.

provide descriptions of only one or a few words on the substance of the project. Thus much of the aid is difficult or impossible to categorize systematically. This problem is made worse by changes to categorization methods over time and across country offices among donors. More reliable categorization would be facilitated by detailed long descriptions, which are largely missing from existing CRS records. Thus assessing the sectoral effects of aid is limited by the poor level of project information detail.

78. The availability of detailed, comparable, freely accessible aid data would improve research on aid effectiveness. Over time this would produce much more persuasive evidence about what aid works and why, thereby increasing the effectiveness of aid in the long run.
79. This framework does not attempt to quantify these benefits, both because it is difficult to know the extent to which research will be improved by greater aid transparency, and it is difficult to know what impact this better research will have on aid effectiveness.

### 7.3 GREATER WILLINGNESS TO GIVE AID

80. For many policy makers, aid transparency is important because it is difficult to make a political case for greater spending on aid in the absence of much better information about how that money is being spent. Taxpayers in donor countries are geographically distant from the beneficiaries of aid, and they have little opportunity to see for themselves how the aid is being used and with what impact. Donor governments are making progress at describing the way that aid is used, but there is frustration in many donor headquarters about the limitations of the information they have about exactly how money has been used and with what results.
81. This framework does not attempt to quantify the possible effects on aid budgets of greater transparency. In part this stems from our inability to identify a robust methodology for estimating the impact of transparency on donors' generosity. We are also deterred by the fact that an increase in the aid budget would be a transfer from other uses of those resources. Thus an increase in aid spending would be accompanied by a reduction in other kinds of spending, the net effects of which we are unable to estimate.

### 8. COST BENEFIT ANALYSIS

82. This cost-benefit framework sets out the costs for donors, the expected efficiency savings and the value of the expected improvements in aid effectiveness.
83. These can be combined into a single summary table, showing the costs and benefits together, calculating a rate of return, or calculating a "payback period" for investment in aid transparency.

84. Here is an example summary table, showing indicative figures:

**Table 3: Summary of annual benefits of aid transparency for IATI signatories**

Category	IATI signatories only US\$m		
	Low	Middle	High
<b>Costs (one off)</b>	<b>\$5m</b>	<b>\$8m</b>	<b>\$10m</b>
<i>Of which</i>			
Donors	\$5m	\$8m	\$10m
NGOs & implementing organisations	?	?	?
<b>Benefits (per year)</b>	<b>\$403m</b>	<b>\$1 608m</b>	<b>\$6 610m</b>
<i>of which</i>			
<b>Efficiency savings (per year)</b>	<b>\$3m</b>	<b>\$8m</b>	<b>\$10m</b>
<i>Of which</i>			
Donors (in country)	\$2.5m	\$7.2m	\$9.0m
Recipients	\$0.5m	\$0.8m	\$1.0m
NGOs & implementing organisations	?	?	?
<b>Effectiveness (per year) <sup>18</sup></b>	<b>\$400m</b>	<b>\$1 600m</b>	<b>\$6 600m</b>
<i>Of which</i>			
Reduced diversion	\$100m	\$800m	\$3 000m
Reduced uncertainty	\$300m	\$800m	\$1 800m
Better coordination	-	-	\$1 800m

*Memo: other savings (not quantified)*

- Better aid allocation
- Better research
- Greater willingness to give aid

85. A similar table could be drawn up for each individual donor, or for all DAC donors taken together.

86. On the basis of the overall costs and benefits set out above, a payback period can be calculated. On the indicative figures shown above, the payback period including only efficiency benefits is less than 2 years, with a range of 9 months to 3 years. Including the estimated benefits for aid effectiveness, the payback period is shortened to less than a single day.

<sup>18</sup> The total benefits are less than the sum of the components, because they have been adjusted to avoid double counting. For example, if \$100 has been lost to diversion of resources, then the same \$100 cannot be reduced in value by coordination failure. The totals here net out this possible double counting.

87. Alternative ways to summarize the cost-benefit analysis would be to convert the net benefits into an equivalent increase in aid budgets that would yield the same benefits, expressed either in percentage or dollar terms. To illustrate the way the calculation can be summarized, the indicative figures in this framework would, if substantiated, imply that the net effect of the existing signatories implementing IATI is equivalent to a permanent increase in aid of approximately \$1.6 billion a year, roughly equivalent to a permanent 1.3% increase in global ODA. Implementation of IATI by all DAC donors would increase these benefits to the equivalent of a permanent 2.3% increase in global ODA, or \$2.8 billion per year.

## 9. CONCLUSIONS

88. This paper sets out a draft framework for the calculation of the costs and benefits of greater aid transparency, recognizing that further research is required on many of these topics. The framework is explicit about the extent of uncertainty.

89. The framework makes explicit and attempts to quantify:

- a. The one-off and recurring administrative costs to donors
- b. The recurring efficiency savings to donors from reduced multiple reporting
- c. The recurring efficiency savings to developing countries from easier data collection
- d. The improvements in aid resulting from reduced diversion, greater predictability and improved coordination.

90. The framework makes explicit but does not attempt to quantify:

- a. The reputational risks to donors and the administrative costs of greater accountability
- b. The costs and efficiency benefits for other parts of the development community engaged in collecting and using aid data
- c. The benefits for aid effectiveness of (a) improved aid allocation; (b) improved research into aid; and (c) increased public willingness to support higher aid budgets.

91. Additional cooperation from donors would be needed to provide more precise and generally accepted estimates of the administrative costs and the efficiency savings.

92. The framework does not attempt to quantify the marginal cost and the marginal benefit of specific components of the proposed IATI standard. The analysis suggests that donors are within a range at which the marginal costs of additional transparency are small while the marginal benefits are large and increasing.<sup>19</sup> If so, then the policy conclusion would be that donors should adopt a maximalist strategy towards investment in aid transparency.
93. The costs and benefits, taken together, can be interpreted into a payback period, or an equivalent increase in aid.
94. This framework can be applied to individual donors, to the IATI signatories as a group, and to all donors including potential future IATI signatories.
95. The costs of implementing IATI, and the efficiency gains, are likely to vary according to donor. Donors may want to set out their own specific cost estimates, using this framework as a guide.

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<sup>19</sup> This conclusion reflects the relatively large fixed costs of improving donor systems, accompanied by low variable costs of greater transparency; together with increasing returns to scale and scope of greater information availability.

<sup>20</sup> This paper reflects substantial contributions from by Matthew Collin, Oxford University; Asma Zubairi, Development Initiatives; and Daniel Nielson, Brigham Young University. Comments, corrections and further ideas to Owen Barder please: [owen@devinit.org](mailto:owen@devinit.org)

**APPENDIX 1: INFORMATION, ACCOUNTABILITY AND CAPTURE**

- A1.1. Transparency is a vital component of making governments more accountable. The effect of better information helps enhance both external and internal mechanisms: citizens are better able to hold both local government staff and politicians to account and government agencies are better able to induce their staff to work harder and more efficiently.
- A1.2. This relationship is often explored theoretically using a principal-agent model in which a 'principal' has some de facto power over an 'agent' who is responsible for performing a given task. However, there is uncertainty over the agent's actual output, and so the principal cannot adequately reward nor punish the agent for outcomes that may not be under the agent's control. Shielded from oversight by uncertainty, the agent has little incentive to work.
- A1.3. In the context of greater transparency, better information allows for further scrutiny of the actual actions of the agent. When the principal has more accurate knowledge of the agent's effort, she is better able to incentivise the agent to work harder. This is a rather basic example, but it illustrates the point that more information allows us make our own agents (governments) work harder.
- A1.4. This Appendix explores the ways that a transparency intervention such as IATI might improve the accountability link between citizens and their government as well as agencies and their workers. It also examines a specific instance where the evidence suggests transparency makes a difference: the diversion of public resources.

**TRANSPARENCY AND BOTTOM-UP ACCOUNTABILITY**

- A1.5. Evidence suggests that not only does civil society respond to the provision of information but that governments are more responsive to an informed electorate. In a unique experiment in Brazil, a set of municipal governments were randomly audited shortly before their governing mayor faced a re-election. The electoral performance of mayors from districts where the audits revealed corruption significantly suffered, more so in areas with better access to radio, suggesting voters used the information in their voting decisions (Ferraz and Finan, 2008). Besley and Burgess (2002) revealed that Indian states with higher levels of newspaper distribution had state governments that were more responsive with food aid and flood relief. Strömberg (2004) showed that counties in the U.S. with more radio listeners received more disaster relief.
- A1.6. Not only does better information keep politicians in check, there is also evidence that a more informed civil society can improve public service outcomes. In a unique

randomised experiment in Uganda described in Björkman and Svensson (2009), villages were given report cards revealing their local health authority's relative performance and were encouraged to set up monitoring groups to encourage more effective health practices. When the communities were re-surveyed a year later there were several marked improvements in the treated communities: wait times and absenteeism fell, immunisations and utilisation increased, as well as a discernable impact on both under-five mortality and on under-nutrition. Besley, Pande and Rao (2005) provide evidence from India that *Gram Sabha* meetings held between villagers and local government, aimed at strengthening voice, accountability and information-sharing, improved the targeting of welfare resources.

- A1.7. As suggested by Björkman and Svensson's results, transparency might encourage greater civic participation in local decision-making. Capuno and Garcia (2008) found that knowledge of local government performance was associated with greater membership and participation in local projects and organisations. Banerjee, et al (2009) looked at the effect of several treatments aimed to increase community participation in the Jaunpur district of Uttar Pradesh, and found no evidence that information bolstered community participation or improved educational outcomes. Isham, Narayan and Pritchett (1995) provided some evidence that greater participation in World Bank-funded rural water projects improved project effectiveness.
- A1.8. It seems that information dissemination is not always guaranteed to produce better outcomes. Dranove, et al (2003) showed that the use of cardiac surgery report cards two US states worsened health outcomes, possibly by incentivising doctors and hospitals to cherry pick by admitting patients more likely to have positive outcomes. This suggests that such interventions should be thought out carefully to mitigate perverse results.

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#### TOP-DOWN ACCOUNTABILITY

- A1.9. More reliable information can also improve top-down accountability mechanisms. A recent study by Duflo, Hanna and Ryan (2008) looked at the effect of a unique monitoring intervention on teacher attendance: a local NGO in the Indian state of Rajasthan asked teachers to take photos of themselves at the start and end of the school day using a tamper-proof camera to record attendance. Teacher pay was then directly tied to their attendance. The results of the randomised intervention were stark: absenteeism rates dropped by twenty percentage points and child test scores improved in the treated villages. The authors attribute most of the effects to the new incentive scheme, which was only made possible with monitoring.
- A1.10. Stronger information and monitoring mechanisms can also improve outcomes in donor-managed projects. Kilby (2000) provided evidence which implied that more



early supervision of World Bank projects improved their performance: a move from zero to forty weeks of supervision increased the expected economic rate of return from roughly 14 to 18 percent. While information isn't the only mechanism at play here, it is reasonable to posit that more information lowers the transaction costs to such supervision.

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#### CAPTURE AND ITS PREVALENCE IN PUBLIC EXPENDITURE

A1.11. Another, more specific concern in the accountability discussion is the issue of capture, or leakage, of public funds. We define capture (also known as diversion) as a redirection of public funds that cannot be accounted for. This concept is distinct from fungibility, which describes the substitutability of funds within the traditional public policy space<sup>21</sup>.

A1.12. Because captured resources fall 'off the radar,' it is difficult to determine what they are ultimately used for, although anecdotal evidence suggests that they are often diverted for personal profit or gain, such as through the funding of patronage politics (Svensson & Reinikka, 2006).

A1.13. There have been numerous studies on the capture of public resources, most of which have used Public Expenditure Tracking Surveys (PETS) to estimate the degree of diversion faced by the public sector. PETS are carefully targeted surveys that track the flow of resources through different government agencies, both central and frontline, by interviewing agents at each level<sup>22</sup>. PETS are typically diagnostic in nature: they are used to determine the extent of leakage and potential bottlenecks for public resources. The first, most notorious PETS study was implemented in Uganda in the mid-1990s. The first survey of education capitation grants issued by the central government revealed that, between 1991-1995, 87% of the funds intended for local schools never arrived.<sup>23</sup>

A1.14. As shown in Table 1, subsequent PETS studies in Tanzania, Zambia, Ghana, Peru, Chad and Kenya have revealed a wide range of capture rates, range from 10 to 99%. Most of these studies have focused on the social sector, where capture is likely easier to measure.

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<sup>21</sup> For example, education funds diverted to other sectors (or to other programmes/locations within the same sector) are fungible, but education funds diverted outside of any sector are classified as capture/diversion/leakage.

<sup>22</sup> Extensive information on the design and implementation of PETS surveys can be found in Reinikka and Smith (2004).

<sup>23</sup> The 'capture rate' as defined in the PETS studies by Reinikka and Svensson (2001) is calculated by: 1-(Funds recorded at school-level/capitation grant for school).

A1.15. Beyond the evidence gathered from PETS there are a handful of studies that estimate rates of capture. A study of an anti-poverty rice distribution programme in Indonesia revealed up to 18% of the rice went missing (Olken, 2006). An analysis of rural road construction in Indonesia revealed a similar level of capture (Olken, 2007). A study of education grants in Madagascar, carried out in a similar manner to the PETS studies, suggested low levels of capture (Francken, et al, 2009). These estimates are also shown in Table 1. While the coverage of these studies is far from comprehensive, it is clear that capture is both a common and frequently severe phenomenon.

**Table A1.1: Estimates of capture of funds by case-study.**

Country	Year	Expenditure Type	Capture Rate
Chad*	2004	Non-wage recurrent health expenditure	73% (from central to regional). 99% (from central to local)
Ghana*	1998	Non-wage spending in primary education (multiple programmes)	49%
	2000	Non-wage health expenditure	80%
Kenya*	2004	Health and education funding	38% (health) 35.8% (education)
Indonesia	1998-99	Rice distribution	18%
	2003-2004	Road project expenditure, including wages	29%**
Madagascar	2002-2003	Government school grants	7%
Peru*	2001	School utility bills	30%
	2002	“Glass of milk” nutrition program	25%
Tanzania*	1998	Non-wage spending in primary education (multiple programmes)	57%
Uganda*	1995	Per-student capitation grant	78%
	2001		20%
Zambia*	2001	Fixed school grant	10%
		Discretion non-wage grant programme	76%

\*Denotes a PETS study.

\*\*Capture estimates are from the untreated projects.

Sources: Reinikka and Smith (2004), Gauthier, B. (2007), Olken (2006) (2007), Francken, et al (2009) and Stifel and Alderman (2006).

- A1.16. Despite the proliferation of PETS studies around the globe, only in the original Ugandan study has a determined effort been made to use the data for an impact analysis. When a subsequent PETS survey was conducted in 2001, the share of missing expenditure had fallen to around 20%. During the interim, the central government had begun publishing detailed data on the education grants being transferred to the district level in the national newspapers. Reinikka and Svensson (2006), using distance to a newspaper outlet as an instrument for the head teacher's knowledge of the school's grant entitlement, found that this knowledge was associated with lower rates of capture. Access to information appeared to be the driving force behind the differences: villages with newspapers had 14% greater levels of funding. While it explained some differences between village-level allocations, Reinikka and Svensson's study did not fully attribute the large drop in capture to the information campaign.<sup>24</sup>
- A1.17. The conclusions behind the Ugandan success story did not pass without some criticism. Hubbard (2007) noted that, during the period between the intervention and the second PETS survey, a number of potentially confounding factors were introduced. Alongside the bottom-up information campaign, several donors, including the World Bank and USAID conditioned their support on a number of monitoring and information interventions. While this casts some doubt on the information campaign's full impact in reducing the capture, it brings the overall nature of intervention more in line with an IATI-style one.
- A1.18. The more troubling criticism of the Reinikka and Svensson result by Hubbard is of the way capture was defined. Shortly after the first PETS study in Uganda, a push for Universal Primary Education drastically increased the amount of funding directed towards schools. As capture was measured by the authors using a relative measure (percentage of funds not reaching the schools), it is possible that the absolute level of capture fell by as little as 12%. However, Hubbard's absolute measure does not account for the potential capture of new funding which may have been prevented by the host of transparency and monitoring interventions.
- A1.19. In a similar study Francken, et al (2009) considered the relationship between radio exposure and capture in Madagascar, which had begun a media campaign to induce more bottom-up monitoring. The authors found that regions with a greater number of radio stations were significantly less likely to face any capture, and that this effect was larger in more illiterate districts.

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<sup>24</sup> Although the World Bank did so in the 2001 World Development Report.

- A1.20. Perhaps the most reliable study of the effects of top-down transparency on capture is Benjamin Olken's work on auditing Indonesian road projects. In the study, villages with road projects were randomly subjected to a credible threat of an audit. After completion of the roads, the audits were carried out, as well as careful analysis of the road construction by engineers, who took core samples to determine the costs of the materials used. The threat of an audit resulting in a significant 9% reduction in total capture in the treated projects, which corresponds to nearly a 30% decrease in the rate of capture (Olken, 2007).
- A1.21. Capture and its interaction with information are shaped by both the top-down and bottom-up accountability mechanisms currently in place. While most of the studies mentioned above involve a specific, top-down intervention<sup>25</sup>, there are many examples of bottom-up efforts to reduce capture. Mazdoor Kisan Shakti Sangathan (MKSS), a right-to-information movement originating in Rajasthan, India, campaigned and won the right for citizens to examine local records and perform 'social audits', which exposed a significant amount of fraud in the government accounts. Similar movements have cropped up elsewhere, such as Malawi's Civil Society for Quality Basic Education (CSCQBE), which performed several PETS surveys, as well as the Concerned Citizens for Good Governance (CCAGG) movement in the Philippines (Sundet, 2008).
- A1.22. It is inevitably a combination of the two mechanisms that will be pertinent. An experimental paper by Danila Serra (2008) suggests that a combination of both top-down auditing and bottom-up monitoring is more effective at reducing corruption than each method alone.

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#### UNTYING THE BENEFITS: REDUCING CAPTURE

- A1.23. While there are a number of studies linking transparency to improvements in public service efficiency, their relative lack of comparability makes it difficult to posit the general impact of an IATI-style intervention. Nevertheless, given that there are a handful of comparative studies that estimate rates of capture and the impact of information, we may be able to make some basic inferences about the relative size of the impact of IATI, given some strong assumptions.

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<sup>25</sup> However, part of the Ugandan PETS impact was invariably due to monitoring from the ground-up, as Reinikka and Svensson's (2006) results suggest. Also, Olken (2007) gave weak evidence that community participation and monitoring reduced fraudulent wage expenses .

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**DATA AND METHODS**

A1.24. Before continuing we first need reasonable estimates of the type of expenditure that is subject to capture. The aim is to count expenditure that is similar to the type represented in the literature. These are resources that are likely to be:

- a. Susceptible to district-level capture (i.e. direct expenditure on schools, health clinics, not administrative expenditure, through both government and NGO systems).
- b. Subject to both local and top-down scrutiny following a transparency intervention

A1.25. Such a narrow target will undoubtedly exclude other types of expenditure that may face diversion (for instance, there are many types of expenditure at the central government level that are conceivably subject to capture). This aligns the analysis as close as possible to the context of the literature at the risk of ignoring the impact of more centralised diversion.

A1.26. The data are drawn from the OECD's Credit Reporting System database, which categorises ODA expenditure by 'purpose codes,' which, according to the OECD, describes "which specific area of the recipient's economic or social structure is the transfer intended to foster." Using these codes, we have isolated expenditures that should, in theory, conform to our two requirements. The chosen purpose codes are listed at the end of this appendix in the addendum. The expenditure considered is limited primarily to the education, health, agriculture and rural development sectors. We also only consider expenditure that is classified as flowing through the public sector or non-governmental organisations. As the coverage and quality of the CRS data is improving every year, we use only the 2007 estimates in this analysis.

A1.27. Table 2 shows the total ODA disbursements for 2007<sup>26</sup> classified as "at risk from capture" (CR). For donors that have signed up for IATI,<sup>27</sup> the amount of aid susceptible sums to over \$7 billion, or roughly 13% of total. For those donors who have not, the total is \$5.7 billion, roughly 25% at the total.

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<sup>26</sup> All figures in this section are adjusted as 2008 dollars.

<sup>27</sup> Only donors with expenditure in the above categories are considered.

Table A1.2: Gross ODA disbursements in 2007 categorised at risk from capture, USD millions

IATI Donors	USD millions	As a percentage of gross ODA
Australia	79.33	1.61%
Denmark	26.72	15.66%
EC	2,985.66	14.21%
Finland	4.83	0.22%
Germany	2,129.89	21.06%
IDA	4,578.61*	33.98%
Ireland	166.54	19.29%
Netherlands	398.82	8.13%
Norway	270.66	8.14%
Sweden	226.76	3.10%
Switzerland	43.09	2.61%
United Kingdom	686.99	23.44%
IATI Total:	<b>11,597.90</b>	12.62%
<b>Other Donors</b>		
Austria	102.12	8.83%
Belgium	324.52	25.93%
France	624.57	7.63%
Global Fund	1,430.64	87.75%
Greece	110.72	40.99%
Italy	136.63	10.15%
Japan	446.28	10.17%
Portugal	107.20	16.45%
UNFPA	56.89	25.25%
United States	2,363.94	21.73%
Others Total	<b>5,703.51</b>	25.49%
Grand Total:	<b>17,301.41</b>	18.47%

\*Figures for IDA use commitments instead of disbursements.

**Table A1.3: Assumptions for capture estimates**

Category	Impact assumptions
<b>Low estimate</b>	-Assumes the lowest reported rate of capture of 10% of funds -Assumes a low % impact on the <i>rate</i> of capture of 10%
<b>High estimate</b>	-Assumes the average reported rate of capture of 50%. -Assumes the average reported % impact on the rate of capture of 52.5%
<b>Firm Estimate</b>	-Takes the average between the high and low estimate of capture at 25% -Takes the average % impact on the rate of capture of 31.25%

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**ESTIMATES**

A1.28. Some cost-benefit analyses such as Olken (2007) attempt to quantify both the welfare costs to the diverters as well as the benefits of the impact of the now correctly-directed resources. To keep calculation simple, we assume that diverted resources are pure deadweight loss and measure the benefits as the amount “saved” from capture under the intervention. For example, if the transparency intervention allows \$10 million of aid to flow that otherwise would have been diverted, the benefit is recorded as the full \$10 million.

A1.29. The following estimates are supported by a hefty number of assumptions and caveats. For one, the lack of scope and limited number of studies on capture rates prohibits a more precise estimation of capture rates. Ideally we would have enough information to determine rates of capture by country, or at the very least be able to determine what country characteristics are conducive to leakage. A model that was robust to such heterogeneity would include attributes such as existing levels of transparency and corruption. We are similarly confined by the limited number of studies on the impact of transparency.

A1.30. Lacking a more elaborate method, we presume different starting levels of capture and consider the theoretical impact of IATI, given different impact assumptions. For our estimates on the rate of capture, we will formulate a low, high and medium assumed rate which comprise the lowest reported rate of capture, the average reported rate of capture and the median between the two, respectively. From the studies in table 1 this results in low, medium and high rates of: 7%, 43.5% and

25.25% respectively. We take the average as our high rate in order to be conservative in our impact estimates, at the risk of underestimating the impact.

**Table 3: Assumed levels of capture in 2007, USD millions.**

Donor	Low assumption (7%)	Medium assumption (43.5%)	High assumption (25.5%)
IATI	811.853	2,928.47	5,045.09
Non-IATI	399.246	1,440.14	2,481.03
<b>Total</b>	1,211.099	4,368.61	7,526.11

A1.31. We assume that the proportional impact of transparency on total capture is constant. For instance, Olken’s (2006) estimate that audits reduced capture from 29 to 20% suggests a 9% decline in the rate of capture, but a 30% decline in the absolute level of capture (or, similarly a decrease in the rate of capture by 1/3 of the starting rate). This results in a reduction in rate of capture which is decreasing in the starting rate. A declining impact is a reasonable expectation: the marginal impact of transparency on the rate of capture is likely larger when corruption is widespread and smaller when the remaining capture is well-hidden.

A1.32. For our presumed impacts on the rate of capture, we take as our low impact assumption, the “pessimistic” estimate of the Ugandan PETS impact estimated by Hubbard (2007) as a 12% absolute reduction in capture. For our medium impact assumption we take Olken’s (2006) impact of a 30% reduction in total capture and the full decline in Ugandan capture of 74% for our “optimistic” high impact assumption<sup>28</sup>.

A1.33. Given the combination each set of assumptions, we generate theoretical savings from the reduction of capture, which are presented in table 4. For IATI donors, the lowest, most ‘pessimistic’ estimates (low, low) are roughly \$97 million, with a (medium, medium) estimate of 878 million and a (high, high) estimate of \$3.7 billion. For non-IATI donors the corresponding savings are \$48, \$432, and \$3784 respectively. We take as our final low, firm and high estimates, the diagonal of table 4, presented in table 5.

<sup>28</sup> Note that this decline of 74% assumes that, without the drive for transparency in Uganda from multiple sources, the rate of capture would have remained constant as the education budget was scaled up.



**Table 4: Estimated savings of reduction in capture, by assumption.**

		Rate of capture		
		Low assumption (7%)	Medium assumption (25.5%)	High assumption (43.5%)
Impact on capture	Low assumption (12%)	97.42	351.42	605.41
		47.91	172.82	297.72
		145.33	524.23	903.13
	Medium assumption (30%)	243.56	878.54	1,513.53
		119.77	432.04	744.31
		363.33	1,310.58	2,257.83
	High assumption (74%)	608.89	2,196.35	3,783.82
		299.43	1,080.10	1,860.77
		908.32	3,276.45	5,644.59

\*In each cell, first figure is projected savings for IATI donors, second is for non-IATI donors, and third is total savings.

**Table 5: Total estimate of savings per year<sup>29</sup>, USD:**

Category	Low estimate	Firm estimate	High estimate
IATI Donors	\$97.42 million	\$878.54 million	\$3,783.82 million
All Donors	\$145.33 million	\$1,310.58 million	\$5,644.59 million

<sup>29</sup> Assumes a constant level of aid

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ADDENDUM TO APPENDIX ONE

**Table A-1: CRS Codes used in capture analysis**

11110 EDUCATION POLICY & ADMIN. MANAGEMENT
11120 EDUCATION FACILITIES AND TRAINING
11220 PRIMARY EDUCATION
11230 BASIC LIFE SKILLS FOR YOUTH & ADULTS
11240 EARLY CHILDHOOD EDUCATION
11320 SECONDARY EDUCATION
11330 VOCATIONAL TRAINING
11420 HIGHER EDUCATION
12191 MEDICAL SERVICES
12220 BASIC HEALTH CARE
12230 BASIC HEALTH INFRASTRUCTURE
12240 BASIC NUTRITION
12250 INFECTIOUS DISEASE CONTROL
12261 HEALTH EDUCATION
12262 MALARIA CONTROL
12263 TUBERCULOSIS CONTROL
13020 REPRODUCTIVE HEALTH CARE
13030 FAMILY PLANNING
13040 STD CONTROL INCLUDING HIV/AIDS
14030 BASIC DRINKING WATER SUPPLY AND BASIC SANITATION
16010 SOCIAL/WELFARE SERVICES
16040 LOW-COST HOUSING
16050 MULTISECTOR AID FOR BASIC SOC. SERV.
16064 SOCIAL MITIGATION OF HIV/AIDS
21020 ROAD TRANSPORT
22030 RADIO/TELEVISION/PRINT MEDIA
31120 AGRICULTURAL DEVELOPMENT
31130 AGRICULTURAL LAND RESOURCES
31140 AGRICULTURAL WATER RESOURCES

31150 AGRICULTURAL INPUTS
31161 FOOD CROP PRODUCTION
31163 LIVESTOCK
31191 AGRICULTURAL SERVICES
31193 AGRICULTURAL FINANCIAL SERVICES
31194 AGRICULTURAL CO-OPERATIVES
31195 LIVESTOCK/VETERINARY SERVICES
31261 FUELWOOD/CHARCOAL
31291 FORESTRY SERVICES
31320 FISHERY DEVELOPMENT
31391 FISHERY SERVICES
43040 RURAL DEVELOPMENT

## APPENDIX 2: AID PREDICTABILITY AND VOLATILITY

- A2.1. The world's poor are confronted with risks daily, both natural and man-made. Poor countries, as a whole, often dependent on primary commodity exports, subjecting the wellbeing of their economy to a fickle world market. Foreign aid adds to this uncertainty.
- A2.2. Bulíř and Hamann (2001) were among the first to bring attention to the empirical reality when they revealed that for the average aid recipient aid is more volatile than domestic government revenue, a result replicated in Bulíř and Hamann (2003) and again in (2008). They also unearthed evidence that the poorest, most aid-dependent countries were the ones that faced the highest levels of volatility (a result which Hudson and Mosley could not confirm). Historically, aid is also much more volatile than both exports and GDP (Hill, 2004) (Kharas, 2008).
- A2.3. This reality would be less alarming if fluctuating aid flows were more predictable. Donors are tasked with providing dependable projections of their aid flows, but evidence suggests that current aid commitments do not carry useful information. Studies by Bulíř and Hamann (2001, 2003) revealed that, after controlling for past disbursements, the marginal predictive power of commitments was either insignificant or small.<sup>30</sup> They also found that, in countries with IMF-supported programs, projections tended to overestimate future aid disbursements. Celasun and Walliser (2008) showed that countries with higher levels of poverty had less accurate commitments on average. They also note that unpredictability has declined only slightly since 1998.
- A2.4. Some types of aid are more subject to uncertainty. Fielding and Mavrotas (2005) revealed that programme aid was, on average much more volatile than sector aid. Kharas (2008) showed that country programmable aid (which subtracts items such as technical assistance, debt relief, food and humanitarian relief) is more volatile than regular aid.
- A2.5. Donors and recipients have made commitment to increase the predictability of aid, such as in the 2005 Paris Declaration on Aid Effectiveness:
- “...to provide more predictable and multi-year commitments on aid flows to committed partner countries.” –OECD (2005)

<sup>30</sup> Hill (2004) found similar results with a slightly different specification.

- A2.6. The Accra Agenda for action took this rhetoric further, with pledges to provide more timely and accurate information on commitments and disbursements, reliable three to five-year projections and a general agreement to improve the predictability of aid.
- A2.7. One of the goals of IATI is to increase the predictability by encouraging donors to provide more credible information on their future aid flows. In this appendix, we'll discuss both the costs of aid volatility and uncertainty and quantify some theoretical benefits to better information.

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#### VOLATILITY AND UNPREDICTABILITY.

- A2.8. The literature on aid instability uses several terms to describe interdependent but distinct concepts. The term volatility is usually used to describe the historical deviation of aid from an estimated trend. Volatility is then used as an expression of fluctuation, but not necessarily one that is unpredictable. Celasun and Walliser (2008) noted that one can still have volatile, but perfectly predictable aid flows. They maintain that volatility and predictability are orthogonal ideas, showing little relationship between their measures of both.
- A2.9. Predictability describes the extent to which future aid flows can be anticipated. Such a measure is subject to the model from which the prediction is derived: Celasun and Walliser (2008) take unpredictability as proportional deviation of disbursements from their commitments. Bulíř and Hamann (2001) define it as the difference between IMF projections and realised disbursements. Lensick and Morrissey (2000) measure it using a regression model with lagged dependent variable, with the variance of the residual as the measure of unpredictability. Perspective matters: the closer the model is to the actual one used by an aid recipient, the better the measure of predictability as experienced by aid recipients.
- A2.10. The two concepts become less distinct when models used for measuring volatility are also used for measure predictability, as they repeatedly have been in the literature (a simplification of which we will also be guilty). Throughout this appendix we will attempt to distinguish the two where necessary.

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#### THE CAUSES OF AID UNCERTAINTY

- A2.11. A number of studies have attempted to determine which factors might be creating such instable aid. Much of the debate is concerned with to what extent we can really blame donors for aid surprises given that disbursements are often held back because the recipient has failed to meet a policy or administrative conditionality. Hudson and Mosley (2008) gave evidence that countries with lower IMF and World Bank condition compliance rates had higher levels of volatility. Celasun and Walliser

(2008) found that unpredictability fell the longer a country spent in an IMF programme, which suggests longer-term compliance. Fielding and Mavrotas (2005) found that countries with higher institutional quality had less volatile aid flows, their key measure of quality being voice.

- A2.12. Hudson and Mosley also found that higher levels of donor concentration, as measured by the number of donors in a given country, reduced aggregate volatility, which suggests that donors may compensate somewhat for delayed disbursements from their peers. It underscores the increased need for donor transparency on future aid flows when just a few donors are responsible for an entire country's aid flow.
- A2.13. There might also be scale effects at play: Celasun and Walliser (2008) found that predictability (the difference between commitments and disbursements) decreased the larger the total aid transfer and the larger the proportion of emergency aid.
- A2.14. So far, the only endeavour to properly characterize the reasons for missed disbursements is the Strategic Partnership for Africa's (SPA) survey of donors in 2004 and 2005. In the earlier survey, roughly 29% of missed disbursements were attributed to administrative problems on the donor-side (although this suspiciously fell to 11% in the subsequent survey). Government delay in meeting conditions was cited as the main reason for disbursement delay (40% and 48%, respectively).
- A2.15. The ability of donors to drastically reduce unpredictability by "easing off" the continued focus on conditionalities should be considered, especially as studies such as Eifert and Gelb (2008) have estimated that the minor efficiency losses would be offset by massive volatility reduction. However, it is outside the scope of this study to consider conditionality reform. The percentage of missed disbursements due purely to donor mismanagement will be considered again in section 3.

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#### THE POTENTIAL COSTS OF AID INSTABILITY

- A2.16. The first, most basic way that aid fluctuations can be costly is through the direct utility cost of unsmooth income. Pallage and Robe (2003) use a variety of different utility models, calibrated using African data, to estimate the direct welfare cost of aid volatility. They compare these theoretical costs versus the benefit of a permanent increase in economic growth by 1% and find, for many countries, that the elimination of the volatility would be preferred.
- A2.17. There have been a number of studies linking aid instability to poorer economic outcomes. Lensink and Morrissey (2000) was one of the first, noting that while aid had a positive effect on economic growth, volatility softened its impact, often to the point of negatively impacting growth. Hudson and Mosley (2008<sup>a</sup>) also found a negative relationship between aid volatility and economic growth, the relationship



even persisting for positive aid shocks. Hudson and Mosley (2008<sup>b</sup>) showed that volatility also reduces both the investment and government shares of GDP. Collier and Dehn (2001) observed that aid was more likely to have a positive effect on growth when it was counter-cyclical, arriving when the recipient countries were facing negative shocks to their economies. Chauvet and Guillaumont (2009) argue that we should only worry about aid volatility when it is destabilising (when either aid counter-cyclical or is less volatile than, for example, exports).

- A2.18. As suggested by Collier and Dehn (2001), aid has the potential to be an insurance mechanism against negative growth shocks, thus acting as an income-smoothing mechanism. However, most research suggests that aid is pro-cyclical: that positive and negative aid shocks happen in conjunction with equivalent shocks to the economy. Bulíř & Hamann (2001), Pallage and Robe (2001) and Kharas (2008) have all found that aid is pro-cyclical. Collier and Dehn (2001) is the only study which finds that aid is counter-cyclical. Borenztein, et al. (2008) found no evidence for either pro-cyclical or counter-cyclical aid.
- A2.19. While the basic welfare and macroeconomic impacts of volatile aid are significant, one of the most important ramifications is also one of the hardest to measure: the budgetary response to aid surprises. Celasun and Walliser (2008) found that governments typically compensate for shortfalls by cutting investment spending, running arrears and further domestic back financing. Governments facing a negative aid shock are typically in a double bind: aid shortfalls are associated with falls in domestic revenue (which is less surprising, given the pro-cyclical nature of aid). However, the effects are not symmetric: while investment spending suffers from aid shortfalls, aid windfalls are associated with increased current expenditure. Eifer and Gelb (2008) estimated that recipient countries could smooth aid volatility given a buffer stock ranging from 50-100% of annual aid flows, which could be thought of as the minimum cost to reducing exposure to risk.
- A2.20. Homi Kharas (2008) used a particularly novel way of measuring the cost aid uncertainty. Treating aid flows as a risky return on an asset (the donor-recipient aid relationship), he utilised the Capital Asset Pricing Model (CAPM) to price the volatility of those aid flows. Adjusting the value of the aid flows by their riskiness, one can compute the difference between the value of the adjusted aid flow and its certainty equivalent (the amount of certain aid that is valued the same as this uncertain flow). The difference between these two assets is the deadweight loss: the amount of money that could theoretically be saved if aid flows were no longer risky. On average, he found that roughly 15% of all net ODA was deadweight loss. We'll return to Kharas's method in the next section.

- A2.21. It is clear that the costs to aid instability, while difficult to quantify, are massive. IATI has a large role in reducing the uncertainty around aid flows. What is less certain is whether or not such transparency will have an effect on basic volatility. Thus, some of the costs we've covered, such as the direct welfare effects of aid fluctuation, may be less affected by adherence to IATI. Even so, donors do have the capacity to reduce volatility by coordinating their aid to offset each other's fluctuations, and better information and projections on aid delivery would make this task easier.
- A2.22. Regardless, in the next section we will attempt model an IATI-style improvement in predictability several different ways. Given that we are ignoring many of the costs covered in this section, we will possibly underestimate the benefit of a transparency intervention.

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#### QUANTIFYING THE BENEFITS: BETTER INFORMATION ON FUTURE AID FLOWS

- A2.23. Better information on future aid flows means better predictive modelling. In this section, we will use Khara's CAPM method to estimate the impact of better information on reducing aid uncertainty.
- A2.24. The CAPM is not ideal for many reasons. For one, it models purely theoretical losses rather than real losses. The deadweight loss that it estimates does not suggest actual flows of money that have gone missing; it instead represents the opportunity cost to uncertainty. Furthermore, the model uses a risk premium that is derived from the market's valuation, and so may represent an aversion to risk that is much lesser or greater than that of the recipient government. The model also focuses on an aspect of uncertainty that contrasts sharply with the concerns we usually associate with volatility and unpredictability, such as consumption smoothing and planning.
- A2.25. Despite this, the CAPM method is useful because it allows us to quickly and easily put a price on uncertainty. It is also pliable enough to permit the use of several types of estimation and to apply an experimental increase in information. We will consider two rather different techniques of simulating an increase in predictability:
- A2.26. Firstly, we will use an approach similar to Kharas, Lensick/Morrissey and Chauvet/Guillamont to estimate uncertainty: using three different estimation techniques to predict a trend for the aid flows in each recipient country, we measure unpredictability as the coefficient of variation of the residual values from the regression. It should be noted that this is the most common method for estimating volatility, but not usually for unpredictability. For our method to be useful, two assumptions must be made:

- a. The model being used depicts the recipient's own modelling of aid flows, with the unexplained portion of volatility acting as the unpredictable element of future aid flows.
- b. Our estimate of unpredictability is a reasonable proxy for risk, and so is appropriate for use in CAPM

A2.27. As the first assumption is the most likely to fail (we'll discuss how below), we use a range of different models.

A2.28. Given our measure, we can compute dead-weight loss estimates using each method.<sup>31</sup> We then simulate a reduction in that unpredictability and re-calculate the dead-weight loss to determine the amount saved through extra predictability.

A2.29. In our second approach, we use the Lensick/Morrissey method for estimating uncertainty, but introduce a simulated commitment by donors of varying degrees of reliability, calculating the changes to the DWL at each step.

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## THE DATA

A2.30. The data on ODA flows are taken from table 2a of the OECD-DAC database. To keep the flows comparable to those seen in the rest of this study, we consider only gross and net ODA. We restrict the analysis to the same time period as Kharas (2008), from 1970-2006, which leaves us with data on 179 recipients and 56 donors over a period of 37 years. The two time series are left untransformed as net ODA contains a significant number of negative values, and as transforming the series also makes calculating the deadweight loss a much more cumbersome process. As in Kharas, we do not weight the series by GDP or exports: we are concerned only with the financial deadweight loss from uncertainty, and not the volatility relative to the size of the recipient economy. We group all donors into two categories: IATI for those donors (that we have data for) who have signed on to the IATI initiative and NON for donors who have not.

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## REDUCING UNPREDICTABILITY

A2.31. Three different estimation techniques are used to remove the trend component from the series. Equation (1) is the basic linear trend used in Kharas (2008), estimated for each recipient series. Secondly, following Lensick & Morrissey (2000) and Chauvet & Guillaumont (2009), we estimate equation (2), which predicts current values of aid using values of previous aid lagged one period.

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<sup>31</sup> For detail on using the CAPM method for costing aid volatility, see Khara (2008).

$$(1) A_{it} = \alpha + \beta T + e_{it}$$

$$(2) A_{it} = \alpha + \beta_1 T + \beta_2 A_{it-1} + e_{it}$$

A2.32. We also estimate the volatility of each series using the Hodrick-Prescott Filter (Hodrick and Prescott, 1997). Following Bulíř, A., & Hamann, we use a smoothing parameter equal to 7<sup>32</sup>.

A2.33. As we are trying to measure the uncertainty of aid flows from the point of view of the recipient country, each estimation technique suggests a different level of sophistication and ability in anticipation future aid flows. The linear time trend assumes a very rudimentary process, while the second and third each assume the recipient has more knowledge of the future. The second technique, where current aid is predicted using past aid, is likely the more realistic, given that incrementalism is still thoroughly ingrained in most budget preparation and that previous levels, as shown by Bulíř, A., & Hamann, typically trump donor commitments in predicting future values.<sup>33</sup>

A2.34. However, using trend estimation to derive measure of uncertainty will inevitably be biased: the prediction process that recipients must go through is significantly more complex than anything an econometric technique can simulate. Governments are privy to donor signals and other information not present in the data which will give them a better 'heads up' on future aid flows, as well as insider knowledge on internal administrative of political problems that may lead to a conditionality failure. A spike in aid that is considered unanticipated by a simple model may be the result of an outcome predicted by all.

A2.35. With these caveats in mind, we proceed with estimating trends for each time series using each method. Our measure of volatility is the standard deviation of  $e_{it}$ , standardised using total aid flows. Table A2.1 shows the coefficient of variation, estimated separately for IATI aid flows and for non-IATI aid flows. As found in Kharas (2008), gross disbursements are less volatile than net disbursements. The more complex methods, as expected, result in lower levels of uncertainty. IATI donors on average have given less volatile aid than non-IATI donors. The total coefficient of variation is lower than both groups of donors, indicating that, as a single unit, aid is much smoother.

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<sup>32</sup> There has been some concern that the results of the HP-Filter are not generally robust to a choice in filter (Crowards and Adam (2005), for example). Bulíř, A., & Hamann (2003) have asserted that changing the paramtere from 7 to 100 makes little difference in the final estimates.

<sup>33</sup> We will consider the effect of commitments in the next section.

**Table A2.1: Average coefficient of variation, three estimation methods**

	<b>Aid Type</b>	<b>Kharas (Linear trend)</b>	<b>Lensick &amp; Morrissey (Predictive model)</b>	<b>Bulíř, A., &amp; Hamann (HP Filter)</b>
<b>IATI Donors</b>	Net ODA	0.66	0.55	0.42
	Gross ODA	0.64	0.54	0.4
<b>NON Donors</b>	Net ODA	0.83	0.69	0.52
	Gross ODA	0.74	0.63	0.48
<b>Total Aid</b>	Net ODA	0.58	0.45	0.33
	Gross ODA	0.55	0.44	0.32

A2.36. Table A2.2 presents the average deadweight loss estimates between the years 2000 and 2006 using the CAPM model, as well as each donor's contribution to the total DWL. Average losses are between \$10.1 and \$12.5 billion for net ODA and \$15.9-13.6 billion for gross ODA. As a percentage of total aid spending, around 14-17% of aid is considered DWL. These figures correspond roughly to the results in Kharas (2008). The percent 'wasted' is lower for IATI donors as they control less volatile aid streams.

A2.37. These calculations can be replicated per-donor.

**Table A2.2: 2000-2006 average deadweight loss in USD millions\*.**

Aid Type	Group	Kharas (Linear trend)		Lensick & Morrissey (Predictive model)		Buliř, A., & Hamann (HP Filter)	
		DWL	% of total	DWL	% of total	DWL	% of total
NET ODA	IATI	5,275.24	14.9%	4,197.37	11.9%	3,609.12	10.2%
	Non	7,253.51	19.5%	5,976.63	16.1%	5,081.66	13.7%
	<b>Total</b>	<b>12,528.74</b>	<b>17.3%</b>	<b>10,174.00</b>	<b>14.0%</b>	<b>8,690.77</b>	<b>12.0%</b>
GROSS ODA	IATI	7,195.82	15.8%	5,962.94	13.1%	4,892.48	10.8%
	Non	8,733.69	17.8%	7,677.82	15.6%	6,346.78	12.9%
	<b>Total</b>	<b>15,929.51</b>	<b>16.8%</b>	<b>13,640.76</b>	<b>14.4%</b>	<b>11,239.26</b>	<b>11.9%</b>

\*Figures are presented in 2007 prices.

A2.38. How big a difference would we expect donors to be able to make in this context? As the surveys by the Strategic Partnership for Africa suggest, donors are not directly responsible for a proportion of missed disbursements. The SPA surveys suggested only 11-30% of missed disbursements are a result of donor mismanagement. We use the upper bound as our rough estimate of a reduction of unpredictability.

A2.39. The approach is as follows: each trend contains a predicted value of aid flows for every year. We artificially adjust that predicted value to be closer to the observation value. When we consider the scenario of all IATI donors improving predictability by 30%, we bring that value 30% closer to the true value, adjusted by the IATI group's share of total aid in that period.<sup>34</sup> When we consider the impact of all donors making this effort, we adjust fully by 30%.

A2.40. This is a rather crude method of simulating better predictability: we are adjusting the results of each regression to be more correct, but it allows us to get an idea of the scope of such an intervention.

<sup>34</sup> For example, if, in a given year, the predicted value is 40, the sample value 50, and the IATI donor share of aid that period is 50%, we adjust the predicted value so it is  $0.3 \times 0.5 = 0.15\%$  closer, to the value of 41.5.

**Table 3: Simulated impact of a reduction in unpredictability, net ODA – average DWL saved from 2000-2006**

Group	% Impact	Linear		Predictive		HP Filter	
		DWL Saved	% of Total Aid	DWL Saved	% of Total Aid	DWL Saved	% of Total Aid
IATI	15%	589.92	0.91%	480.27	0.70%	617.95	0.94%
	30%	1,169.50	1.81%	937.76	1.36%	1,221.12	1.85%
ALL	15%	1,237.11	1.94%	1,060.80	1.56%	1,277.06	1.95%
	30%	2,624.71	4.06%	2,234.17	3.24%	2,673.32	4.03%

**Table 4: Simulated impact of a reduction in unpredictability, gross ODA – average DWL saved from 2000-2006**

Group	% Impact	Linear		Predictive		HP Filter	
		DWL Saved	% of Total Aid	DWL Saved	% of Total Aid	DWL Saved	% of Total Aid
IATI	15%	818.97	1.04%	716.30	0.83%	883.32	1.08%
	30%	1,656.10	2.08%	1,460.90	1.68%	1,775.64	2.15%
ALL	15%	1,607.67	2.03%	1,456.41	1.66%	1,724.03	2.09%
	30%	3,401.82	4.21%	3,064.14	3.45%	3,595.73	4.29%

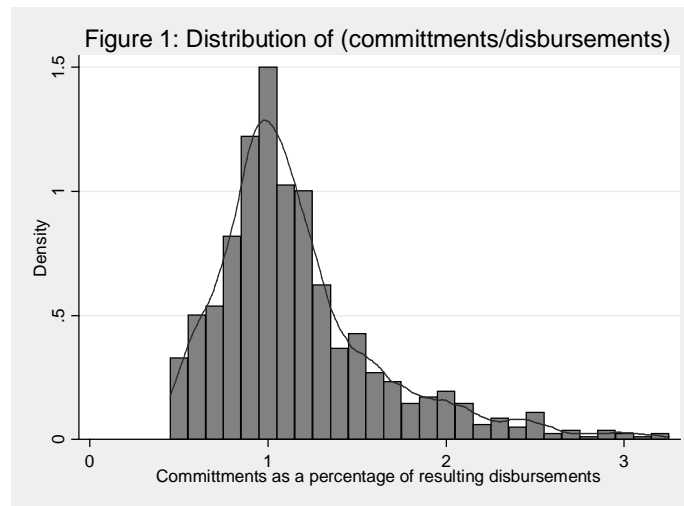
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### SIMULATING MORE RELIABLE COMMITMENTS.

A2.41. We will now use an alternate, perhaps more intuitive method to simulate the introduction of better information. We narrow the scope to just aid provided by IATI-participating donors. We start with the basic predictive model (2), which is similar to the model used by Bulíř and Hamann to assess the marginal impact of commitments on the predictability of disbursements. Without any adjustments, this model suggests a deadweight loss of \$10.2 and \$13.6 billion dollars for net and gross ODA

respectively. However, this model omits a *potentially* useful source of information: commitments. As we know, ex-post, the true value of disbursements, we can use this value to construct commitments of varying degrees of accuracy.

A2.42. To do this we need a reasonable idea of how inaccurate commitments can be. We use data from the DAC-CRS database on the yearly commitments and disbursements of IATI donors to determine the distribution of the difference between the two. As the quality and coverage of commitment and disbursement declines rapidly as we move back in time, we consider only data from the past five years (2002-2007).



A2.43. Figure 1 displays the distribution of commitments as a percentage of disbursements for IATI donors after the removal of outliers. The average commitment is 17% greater than the resulting disbursement. The distribution is skewed to the right due to a small set of large over-disbursements.

A2.44. Using what we know about the distribution of commitments relative to disbursements, we can construct a set of commitments which convey imperfect information about future disbursements. We first generate a random variable  $\theta$  that mimics the distribution seen in figure 1.<sup>35</sup> We then construct three different commitment measures:

1.  $CC0_{it} = (Disbursements)_{it} \times \theta_{it}$
2.  $CC15_{it} = 0.15 \times (Disbursements)_{it} + 0.85 \times (Disbursements)_{it} \times \theta_{it}$
3.  $CC30_{it} = 0.3 \times (Disbursements)_{it} + 0.7 \times (Disbursements)_{it} \times \theta_{it}$

Where  $\theta_t$  is the realisation of  $\theta$  at time  $t$  for recipient  $i$ . The first commitment measure is designed to be as unreliable as commitments are in actuality, where commitment measures two and three assume that 15%-30% of the commitment amount is correct with the

<sup>35</sup> Stata module SKNOR is used to approximate a skewed distribution. The same distribution is used for every recipient, even though recipients may actually face different levels of commitment reliability.



remaining percentage subject to unreliability. We treat each constructed commitment measure as a single announcement, made by all IATI donors together.<sup>36</sup>

A2.45. We then calculate the DWL for IATI aid flows under four scenarios:

1.  $A_{it} = \alpha + \beta_1 T + \beta_2 A_{it-1} + e_{it}$
2.  $A_{it} = \alpha + \beta_1 T + \beta_2 A_{it-1} + CC0_{it} + e_{it}$
3.  $A_{it} = \alpha + \beta_1 T + \beta_2 A_{it-1} + CC15_{it} + e_{it}$
4.  $A_{it} = \alpha + \beta_1 T + \beta_2 A_{it-1} + CC30_{it} + e_{it}$

A2.46. The first scenario is one of no information, other than the predictive model used in section 3.2. The second introduces unreliable commitments, while the second and the third use progressively better commitments. We calculate the deadweight loss using the same method as before. The resulting deadweight loss levels for IATI donor aid are presented in table 5.

**Table 5: Average DWL for IATI aid 2000-2006 under each scenario\***

Scenario		Net ODA			Gross ODA		
		Total DWL	Improvement over no information	Improvement over 0% CC	Total DWL	Improvement over no information	Improvement over 0% CC
1	No information	4,355.38 <sup>37</sup>			6,834.38		
2	0% CC	2,881.81	1,473.56		4,275.12	2,559.26	
3	15% CC	2,720.00	1,635.38	<b>161.81</b>	3,971.63	2,862.75	<b>303.50</b>
4	30% CC	2,496.33	1,859.04	<b>385.48</b>	3,579.29	3,255.09	<b>695.83</b>

\*Each average is across 500 repeated simulations.

A2.47. If our starting assumption is that commitments are not being used, or carry no information content whatsoever, then the impact of 15% or 30% correct

<sup>36</sup>By constructing a single commitment measure, we assume that recipient countries cannot discern the correct commitments from unreliable ones. In reality commitments are extremely fragmented: donors make both aggregate and project/programme level announcements at varying times of the year.

<sup>37</sup>Note that the estimate of DWL differs than that of IATI's share DWL from the original estimates in table 2. This is because an aid flow's contribution to a larger flow's DWL depends not only on the flow's individual volatility, but also on how correlated its volatility is with the volatility other flows in the aggregate.

commitment is quite large, between \$1.6 and \$1.8 billion for net ODA and \$2.9 to 3.3 billion for gross ODA. Yet this is an extremely strong assumption to make, as even Bulíř and Hamann's (2001) results showed that for some recipients, donor commitments carried some marginal information. Indeed, when commitments are introduced, even if they are completely subjected to the randomness introduced by  $\theta$ , we see a large fall in deadweight loss. This underscores the importance of having forward commitments, even if they are inaccurate on average.

A2.48. Moving from a world of unreliable commitments to one of partial-reliability still results in gains of significant size: introducing commitments which are spot on 15% of the time results in a reduction in dead weight loss of \$162 million for net ODA and \$304 million for gross ODA, which is a 5-7% reduction in DWL from scenario 2. The gains from moving to a 30% correct commitment are even greater, suggesting increasing returns to better information.

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#### COMBINED ESTIMATES

A2.49. To be consistent with the rest of the study only gross ODA is used for the final estimates. We scale these estimates by the range of assumptions behind each scenario. As we believe it to be the most reasonable proxy for aid anticipation, we use only estimates from the "predictive" model.

A2.50. For our estimates for IATI donors we use as our low figure the most pessimistic of assumptions: that donors can only improve predictability by 15% and that unreliable, but informative commitments are already being made (improvement over 0% CC for the 15% case in table 6). This corresponds to \$303.5 million in DWL averted. The high estimate assumes that: that no commitments give marginally meaningful information, and that a mechanical reduction of unpredictability of 30% is possible (DWL saved for 30% reduction in table 4). This corresponds to \$1,460.9 million in DWL averted. For the middle estimate we average two medium scenario assumptions: that there is a large increase in predictability (30%) but that informative commitments are already being made (improvement over 0% CC for the 30% case in table 6) and that there is a small increase in predictability of 15% for the basic predictive model (DWL saved for 15% reduction in table 4). The average for these two figures gives is a middle estimate of \$706.65 million.

A2.51. Estimating benefits for all donors is even less clear. Currently lacking simulation for non-IATI aid, we use the same low estimate as that for IATI donors: \$303.5 million, which implies there is no further benefit beyond that for IATI aid. For our middle estimate we use the low-impact estimate (15%) in the predictive model, for all aid (\$1,456 million) and for our high estimate we use the high-impact estimate (30%) of \$3,064 million.

**Table 6: Theoretical estimates for cost/benefit analysis**

Category		Low estimate	Middle estimate	High estimate
<b>IATI Donors</b>	Total amount	\$303.5 million	\$706.65 million	\$1,460.90 million
	As % of group total aid	0.72%	1.68%	3.48%
<b>All Donors</b>	As % of group total aid	\$303.5 million	1,456.41 million	\$3,064.14 million
		0.72%	1.66%	3.45%

A2.52. When the estimates are applied in the full cost/benefit analysis, we will assume that the percentage of total DWL saved is a constant percentage of aid, and apply that percentage to current estimates of total aid.

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## APPENDIX 3: COORDINATION FAILURE

### INTRODUCTION

- A3.1. Econometric cross country growth studies suggest that the policy and institutional environment of a recipient country is an important determinant of whether aid is used effectively. However, these considerations in reality have only a limited impact on the present allocation of aid. Donors have many objectives for where they allocate aid, including strategic and historical determinants, so the actual allocation of aid differs significantly from the “poverty efficient” allocation. Collier and Dollar (1999) find that the poorest countries receive a much lower share of aid than would be implied by an optimal aid allocation. They estimated that the number of people lifted out of poverty each year would be increased from 16 million people per year to around 30 million people a year. In other words, if donors could coordinate the allocation of aid to give it to the poorest, best-governed countries, the effects of aid on poverty reduction would be doubled. This problem is only partly one of information sharing, and it is not addressed further here.
- A3.2. Once aid has been allocated the next hurdle is trying to overcome the problem of coordination within country. This problem has been exacerbated by the growing number of actors delivering aid. The number of bilateral and multilateral donors has increased. Tens of thousands of NGOs operate in developing countries.<sup>38</sup> There is overlap and there are significant gaps. The planning and implementation of projects have become much more complex in light of the greater numbers of actors involved in the supply and delivery of aid.<sup>39</sup>

### FRAGMENTATION OF AID

- A3.3.** Knack and Rahman (2007) define donor fragmentation as a large number of donors each with a small share of the total aid provided to a given recipient country. With the increasing numbers of actors in the aid industry, the problem of aid fragmentation has been shown to be growing since the mid-1970s.<sup>40</sup> Whittington

<sup>38</sup> Duke University in 2006 put the number of International NGOs at 30,000

<sup>39</sup> In 2005 the OECD reported that there were more than 60,000 active aid projects. 85% of these projects cost less than \$1 million

<sup>40</sup> Acharya et al (2006) look at aid proliferation, from the perspective of the aid recipient, in TWO ways. The first they call **source proliferation**, that is the provision of aid to a particular country from a large variety of donors in relatively small amounts. The second they call **use proliferation** which is the division of aid among a wide variety of end-uses in-country. What they have termed source proliferation is what the Herfindahl-Hirschmann Index (see **Footnote 7** for a fuller definition of how the HHI is calculated) attempts to qualify as fragmentation. In Acharya et al (2006) calculation of source proliferation (based on the HHI index) is called the **Index of Recipient Fragmentation (IRF)**. What they term use proliferation has been termed the **Index of Donor Proliferation (IDP)** – which aims to measure how widely each donor disperses a budget of a \$X. Their results show that the IRF and the IDP are positively correlated, meaning that that a high degree of fragmentation experienced by aid recipients is attributable to the fact that donors like to proliferate their aid

and Calhoun (1988), more than 20 years ago, were arguing that uncoordinated aid – *exacerbated by aid proliferation and donor fragmentation* – is “at least partly responsible for the failure of African economies to utilize their development assistance effectively”.

A3.4. To gauge the extent of this challenge of the numbers of actors proliferating the global aid environment, and consequently contributing to the problem of fragmentation, it is instructive to consider the Herfindahl-Hirschmann Index (HHI). This index is most commonly used to measure the market share of firms in relationship to the industry and an indicator of concentration among them. The closer the index is to 1, the more concentrated the market is considered. The closer the index is to 0, the more fragmented the market is considered<sup>41</sup>. This indicator is often used to document the fragmentation of donor aid. Table 1 provides an insight of how donor aid has become increasingly fragmented since the mid-1970s.

**Table A3.1: Aid Harmonization Trends**

	HHI (Average)				HHI (Sample Weighted Average) <sup>42</sup>			
	1970–79	1980–89	1990–99	2000–05	1970–79	1980–89	1990–99	2000–05
All Observations	0.52	0.41	0.38	0.30	0.35	0.28	0.26	0.22
Income $\geq$ \$ 500	0.53	0.40	0.38	0.32	0.47	0.40	0.36	0.29
Income $\leq$ \$ 500	0.33	0.18	0.18	0.17	0.23	0.18	0.18	0.17
Sub-Saharan Africa	0.39	0.25	0.24	0.22	0.28	0.17	0.18	0.17
Oceania	0.82	0.63	0.61	0.59	0.89	0.73	0.70	0.62

Source: H. Kharas “Trends and Issues in Development Aid” (Pg. 18)

A3.5. Kharas (2007), in Table A3.1 above, considers the HHI index globally, according to income and according to region. Since the 1970s, the HHI index has been getting smaller over time for all groups i.e. the fragmentation of aid has steadily increased. Poorer countries (i.e. those with a per capita income of less than \$500), seem to

<sup>41</sup> Within industry, which is what the HHI was originally intended, an index of 0.01 indicates a highly competitive index, a HHI index below 0.10 indicates an unconcentrated index, a HHI index between 0.10 and 0.18 indicates moderate concentration and an index above 0.18 indicates high concentration

<sup>42</sup> The weighted average considers the share of each country as a recipient of ODA in that group.

suffer more from fragmentation of aid having to deal with more donors. The table shows that countries which experience the greatest amount of fragmentation (as accorded by the HHI index) i.e. small, poor, African states, are also those same countries which are perhaps most in need of better coordination by donors.

- A3.6. Compounding the problem of this increase in fragmentation is that donors, in the most cases, allocate funds to different sectors and geographical sectors in a climate of *incomplete information*.
- A3.7. Halonen-Akatwijuka (2007) models coordination failure for sector-specific aid within a particular recipient country. They conclude that aid fragmentation is not only costly for recipients but also for donors, *especially* if they share similar preferences. Fragmentation increases the effect of incomplete information, leading donors to concentrate too much on priority sectors and underfund other important, but lower priority sectors. The conclusion is that coordination failure is worst where donor preferences are similar but information is incomplete.

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#### PRIORITY SECTORS

- A3.8. Thiele et al. (2007) discuss the gap between donor rhetoric and actual aid allocation.<sup>43</sup> Within sectors there is an apparent gap between the provision of funding and the MDGs for that sector. Donors have devoted only about one-third of education-related aid to basic education and about 20% of aid for water and sanitation to basic services.<sup>44</sup> In the study, none of the 15 donors, which were part of their study, behaved cooperatively when deciding the allocation of their aid.

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#### SOLUTIONS TO FRAGMENTATION OF AID AND COORDINATION FAILURE

- A3.9. The aid effectiveness literature identifies two amelioration strategies. One way to address the challenge of increased fragmentation of aid is to choose new aid modalities.<sup>45</sup> In recent years the emphasis on specialization and coordination of aid delivery at a high-level forum underscores the appreciation that increased coordination would deliver much more effective delivery of aid. There have been

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<sup>43</sup> Allocation did not appear to be shaped by indicators of need. None of the donors under consideration, took primary enrolment and completion rates into account when deciding the allocation of aid for Basic Education. Health-related aid appears to be somewhat better targeted than Education-related aid. However, even in the context of health-related aid donors are found to have focused on selected targets that are more well-known in public debate (i.e. HIV/AIDS) whilst immunization against measles, which did not receive particular attention fared comparatively worse

<sup>44</sup> In other words the persistent bias of donors towards higher levels of service provision have undermined efforts to ensure that all children complete a full course of primary education, that gender disparity in education is eradicated and that poor people have access to safe drinking water and sanitation

<sup>45</sup> Other initiatives have also been forthcoming in actually trying to reduce this fragmentation at the sectoral level. For instance, the European Union produced a 'Code of Conduct on Division of Labour in Development Policy' in May 2007. In addition to general budget support, what this has espoused is increased concentration amongst EU member states through stating a commitment be involved at a maximum of 3 sectors per recipient country.



repeated calls for coordination in Monterrey (2002), harmonization in Rome (2003), alignment and accountability in Paris (2005) and country ownership in Accra (2008). Coordination mechanisms such as budget support, sector-wide approaches (SWAPs), joint sector working groups, joint project implementation efforts etc are all instruments that can help to improve coordination among donors and with government. However, despite the rhetoric the reality is that most donors continue to use projects, and the number of projects is continuing to grow rapidly.

A3.10. Another way to improve coordination would be to improve information about donors' planned activities and budgets. A start has of course been made with number of countries implementing mandatory reporting to Aid Information Management Systems in recent years, most commonly in the form of an Aid Management Platform (AMP) or Development Assistance Database (DAD). These are intended to improve planning and coordination of projects.<sup>46</sup>

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### THE TSUNAMI – BANDA ACEH

A3.11. A famous example of the failure of coordination efforts was the response of the tsunami-hit province of Nanggroe Ache Darussalam (Aceh). In the aftermath of the Tsunami, early 500 agencies became involved in providing aid to the province. This presented a logistical challenge of doing providing relief without duplication of effort and wasting resources unnecessarily.<sup>47</sup> At the time in Aceh 2,200 projects – across all sectors – were undertaken.<sup>48</sup> These projects were in addition to the 200 projects which were ongoing during the 'emergency phase' in early 2005.

A3.12. Masyrafah et al (2008) consider the degree of fragmentation of aid in the case of Aceh post-Tsunami. Within the housing sector specifically there were 120 agencies implementing 266 housing reconstruction programmes.<sup>49</sup> As was subsequently large number of actors the aspect of coordination was a major challenge. The poor coordination, which led to gaps, duplication, inefficiencies, resulted in a weak

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<sup>46</sup> For instance, during a recent AMP survey conducted by Development Gateway in Burkina Faso, one of the questions that was asked was "in which areas has AMP had the greatest positive impact (choose TWO?)". Respondents were of the opinion that the greatest positive impacts of the AMPs were in "creating visibility of development projects" (79 percent) and in "donor coordination" (47 percent). "Monitoring/ evaluation of results" (32 percent) and "project planning" (32 percent) were also seen as beneficial.

<sup>47</sup> The total damage and losses from the Tsunami for Indonesia along was USD \$4.45 billion. Along with the Government's assistance program, the international community pledged assistance for reconstruction and development totalled USD\$7.7 billion. By the end of 2007, project and programmes which were worth around USD \$6.4 billion had been allocated by 463 organisations. 65 percent of these funds had been disbursed by December 2007, 3 years on from the Tsunami. The overwhelming majority of funds were for the housing sector, a large part of which came from NGOs themselves

<sup>48</sup> There were 463 agencies estimated to be involved, the majority of which were NGOs (435) of which 75 percent of these were international organisations. NGOs managed 1,643 of the 2,200 projects, donors implemented 397 projects and the Government of Indonesia managed 152 projects

<sup>49</sup> The top 15 actors accounted for 84 percent of reconstruction funding. 46 percent of this funding came from the Government of Indonesia, 14 percent by bilateral donors, 25 percent by multilateral donors and 15 percent by NGOs

correlation between need and recovery programs.<sup>50</sup> Though sufficient funds overall were pledged to support the rehabilitation and reconstruction programme, critical gaps remained across different sectors and regions with some regions receiving 190 percent of their needs, whilst others had not even received 50 percent of their needs.<sup>51</sup> The region's capital city, Banda Aceh, was particularly fought over considering its relative accessibility and resources were a lot easier to mobilize there. There were critical gaps in some sectors, which were neglected in favour of other more 'prioritised' sectors.<sup>52</sup> An added challenge of the Tsunami was the peculiarity of the NGO factor. Normally, NGOs are required to coordinate with UN agencies and donors in order to attract funding. However, with the tsunami – and especially in regards to Aceh – the constraint was not availability of funding but rather the ability to spend this money well. Many organisations tended to cherry-pick the easier tasks and locations.

A3.13. Part of what assisted in the problem of coordination efforts was the setting up of a single agency, the Government's Agency for Reconstruction and Rehabilitation (BRR), which was to facilitate the coordination of the Government's response. The government also requested the World Bank to set up a Multi-Donor Fund (MDF) to pool donor contributions to finance reconstruction projects. The United Nations Office of the Recovery Coordinator (UNORC) was established and took responsibility for the coordination of the UN agencies, international NGOs and bilateral donors to support the Government's reconstruction and recovery efforts. These mechanisms had a direct and significant positive impact on efforts to coordinate the relief response. This is similar to the coordinating mechanisms envisaged in the Paris Declaration on Aid Effectiveness as one way to overcome the challenge of a multitude of development actors.

A3.14. However, the huge influx of support from a great deal of actors, many new, made it evident that soon after the Tsunami a central collection and reporting of funding was required in order to enable all actors to allocate appropriate funds in order to ensure minimal duplication, as well as providing support where it was most needed. The publicly available Recovery Aceh Nias Database (RAND) was inaugurated in

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<sup>50</sup> Another outcome of the reconstruction effort in Aceh was that due to the sheer number of agencies involved, different approaches, standards and styles in the reconstruction of housing became inevitable. This led to anger amongst beneficiaries in some areas who believed that they had been discriminated against because the quality of housing of their neighbours, or neighbouring districts was of far superior quality than their own

<sup>51</sup> "Aceh and Nias: Two Years After the Tsunami" BRR and Partners (December 2006). Whilst for instance, areas around Banda Aceh and Aceh Besar have received more than adequate resources to rebuild i.e. over 100% of needs, other areas i.e. large parts of the West Coast, South of Meulaboh, and the North-East coast of Aceh (Kab. Aceh Timur and Aceh Tamiang) still have inadequate allocations which will not even meet up to 50% of their needs. Kota Banda Aceh actually received 190% of its needs. This was due in part to the problems associated with accessibility which resulted from the dislocation of the transport network, but the report notes the lack of transparency as being a huge problem. In terms of sectors, it was shown that 3 years after the reconstruction programme began gaps still remain in some sectors, whilst others have been funded way above the minimal requirements. The environment, energy, flood control and irrigation sectors still have not received the sufficient levels of funding required for them to return to their pre-Tsunami levels.

<sup>52</sup> Projects involving large-scale drainage, providing drainage and revitalizing the private sector were neglected

November 2005. The key difference to the RAN DAD compared to the DADs in other Tsunami-affected countries was the functionality of the RAN allowed agencies to enter project information in relation to planned and actual outputs (or key performance indicators). BRR was then able to monitor physical progress as well as improving the transparency of financial information.<sup>53</sup> The data from the RAND was also used for the different Coordination Forums for Aceh-Nias (CFAN).<sup>54</sup>

A3.15. It is clear from the literature that aid coordination can be improved both by changing aid modalities (e.g. moving to trust funds or budget support) and by information sharing. The experience from the DADs in the Tsunami-hit countries (Indonesia, Maldives, Sri Lanka and Thailand) was that information transparency **by itself** was not enough to ensure coordination but that it was effective in conjunction with the aid modality mechanisms.

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### 3.2 CLASSROOM CONSTRUCTION IN SUB-SAHARAN AFRICA

A3.16. One of the Millennium Development Goals is to achieve universal primary education for all school-age children by 2015. It is widely accepted that the primary school infrastructure needed to achieve that goal will fall vastly short both in terms of absolute numbers, quality and *distribution*.

A3.17. Distance to school remains a challenge for many children to attend school. According to some research, the “single most important determinant of primary school enrolment is the proximity to primary age children” (Lockeed and Vespoor, 1991).<sup>55</sup> Evidence from studies using countries in sub-Saharan Africa suggests strongly that enrolment and retention decline significantly when the child has to travel beyond a distance of 1 or 2 kilometres. In Burundi, for example, a distance of longer than 2 kilometres has a negative impact on enrolment of about 10%.<sup>56</sup> Distance also affects the performance of children, with those having to travel further to school performing worse than their counterparts who have a shorter distance to travel to schools.<sup>57</sup> However, despite the wealth of evidence advocating for travelling distances being below 2 kilometres, many children are still having to walk further than this to get to school.<sup>58</sup> Recognising that classroom construction remains a key

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<sup>53</sup> There were problems as on one hand, implementing agencies were required to enter quite specific details. It was found that there was a disconnect between the two goals of tracking funds and monitoring physical outputs. Led to some duplication of data for funding and project data

<sup>54</sup> CFAN is an annual high-level forum bringing together all partners (i.e. donor agencies, local and international NGOs, local and central government and other stakeholders) working to discuss collective progress and challenges impeding recovery.

<sup>55</sup> Long distances can i) increase the opportunity cost of attending school, ii) challenge the stamina of children and iii) place children in vulnerable situations (especially true for girls)

<sup>56</sup> Theunynck, S, Pg. 7

<sup>57</sup> Ibid, Pg.8

<sup>58</sup> In Malawi, 34 percent of children travel more than 2km, Uganda 46 percent of households remain outside the 2km distance if a primary school, Ethiopia 61 percent of rural pupils walk more than 2 km (Theunynck, S, Pg. 7)

factor towards achieving the MDG 2 of Universal Primary Education, this is an area within the sector where the aspect of coordination amongst implementing agencies is perhaps most important but falls short of requirements necessary.<sup>59</sup>

A3.18. Throughout sub-Saharan Africa the geographical distribution of schools and the relationship with enrolment demonstrates a very clear case of inefficient resource allocation. There are examples abound of schools with empty classrooms coinciding with unmet needs in the same vicinity.

A3.19. A good example of this is Guinea, where the primary gross enrolment ratio is 81 percent (well below the 100 percent ratio necessary to attain the goal of universal primary education for all).<sup>60</sup> In 2000, as many as 16 percent of the total 15,600 classrooms available were recorded as being unused.<sup>61</sup> This is partly the result of lack of information on donor projects (and NGO projects) which deal with the Education Sector. There are, of course, other reasons for geographic misallocation, such as domestic political choices, population dynamics, poor planning, and work-force preferences.

A3.20. Sample statistics are presented in Figure 1 for a selection of Sub-Saharan African countries extrapolated from the school census data.<sup>62</sup> This compares the proportion of the variation in the number of classrooms NOT accounted for by enrolments. About 40 percent of school classroom building is not explained by enrolment, with the unexplained distribution as high as 70% in Malawi.

A3.21. The Malawi Education Sector is a clear example of the need for better coordination amongst different stakeholders i.e. Government (Ministry of Education, Ministry of Local Government and Rural Development), Donors and NGOs about construction. Central Government was unaware of where classrooms, teachers houses, schools were being constructed by implementing agencies. This knowledge was contained at the District Education Offices. Recently, however, efforts between the Ministry of Education and the main donor responsible for classroom construction have made considerable and worthwhile efforts to reverse this trend by linking the Education Management Information System (EMIS) to decisions concerning where classrooms will be built.

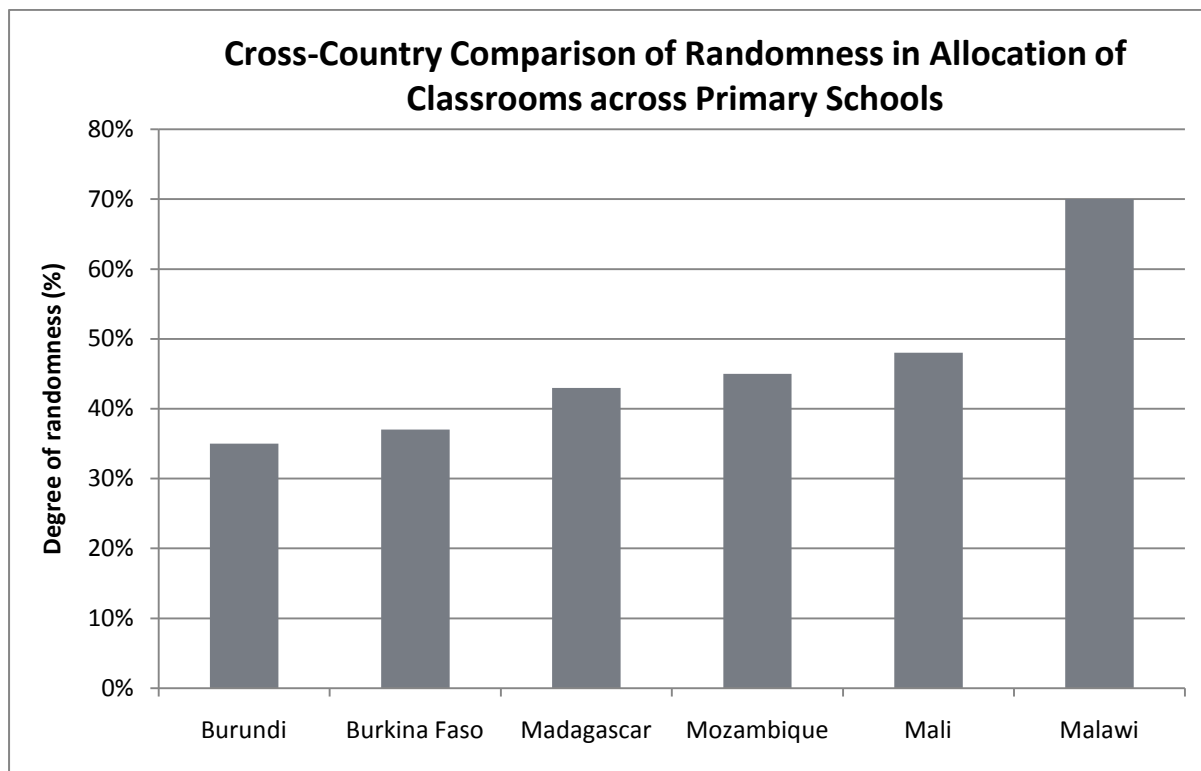
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<sup>59</sup> In Sub Saharan Africa, for instance, most countries do rely quite heavily on external aid to fund school construction. For example, foreign aid is responsible for funding 55, 90 and 100 percent of financing for school construction in Senegal, Mauritania and Chad respectively

<sup>60</sup> Gross Enrolment ratio is the total number of enrolled children (school and non school-age children) divided by the total population of school-age children

<sup>61</sup> A typical cost for classroom construction in Africa is \$7,000 implying that in this case \$17.4 million were wasted in classroom construction (2,496 classrooms being unutilised). Similarly in Madagascar 7 percent of the 50,000 classrooms remained unused (3,500 classrooms = \$24.5million)

<sup>62</sup> S Theunynck, School Census data analysed comes from Burundi (2003-04), Burkina Faso (2003), Madagascar (2004-05), Mozambique (2003), Mali (2004-05) and Malawi (2004)

**A3.22. Figure 1:**

Source: Adapted from S. Theunynck “School Construction Strategies for Universal Primary Education in Africa: Should Communities Be Empowered to Build Their Schools?”

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**METHODOLOGY**

A3.23. An increase in aid transparency will not solve all the problems of coordination among donors and with government. Even where it is clear that the allocation of aid could be improved – such as in the case of allocation between countries – donors do not automatically respond. Bigsten (2006) notes that in reality donors are more concerned about global presence than aid effectiveness. As Whittington and Calhoun (1988) noted over 20 years ago, ‘all donors want to co-ordinate, but no-one wants to be co-ordinated’. Therefore, coordination failure occurs not just because of an absence of transparency but also because donors are driven by a range of vested interests.

A3.24. Nonetheless, aid coordination can be improved, and achieved at lower cost, by increasing the transparency of information. There is little quantitative research on the role that increased aid transparency can play in improving coordination of aid projects. The literature concentrates on showing that aid fragmentation is getting worse rather than better, despite the political commitments of the donor community.

- A3.25. Our framework for deriving estimates of the benefits of transparency is therefore tentative. We have followed Aldarsoro et al (2009) in measuring donor coordination failure on the basis of a common measurement used in the intra-industry trade industry called **trade overlaps**.<sup>63</sup> The trade overlap index can vary from 0 (which would be defined as a situation where there is no overlap) to 1 (which would be defined as a situation where there is complete overlap). This concept was in the study to compare the structure of aid from a selection of different donor countries.<sup>64</sup> If donors make a concerted effort to reduce duplication and overlap, the aid overlap index should be considerably less than 1 and declining over time.<sup>65</sup>
- A3.26. The aid overlap comprises of two aspects: (a) relating to the recipient countries receiving aid from donor countries (assumption that coordination may mean that each donor engages in a different sub-set of recipient countries) and (b) relating to aid sectors within recipient countries.<sup>66</sup> The aid data was taken from the CRS.
- A3.27. The overlap indices for aid distributions i.e. aid overlap indices either along the dimension of recipient countries or the dimension of aid sectors is presented in Table 2. The donor-specific entries (entitled Donor 1, Donor 2 etc is a representation of the average of the 9 overlaps with the other donors considered for the study).

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<sup>63</sup> A trade overlap is defined as when “ a dollar’s worth of exports is ‘overlapped’ if there is a corresponding dollar’s worth of imports in the same....commodity group”. For any country  $j$ , the trade overlap ( $TO_j$ ) is calculated as follows:  $TO_j = (2 * \sum_s \text{Min}(X_s, M_s)) / \sum_s (X_s + M_s)$  with  $X$  and  $M$  representing exports and imports in industries  $s$ . An index value of 0 would mean that the country either exports or imports in any industry and never both in the same industry

<sup>64</sup> The study took the 5 largest bilateral donors of the OECD DAC group (France, Germany, Japan, the United Kingdom and the United States). In addition 4 DAC countries, who are widely considered to be like-minded donors in terms of providing well-targeted aid: Denmark, the Netherlands, Norway and Sweden. The European Commission (EC) was the remaining donor

<sup>65</sup> The analysis restricted analysis to 1995-2006 (splitting this over time periods of 1995-98, 1999-02 and 2002-06). Commitment data was also taken over disbursement data with the assumption that donors had more control over commitments as oppose to disbursements

<sup>66</sup> There are obviously limitations to this methodology, for instance, in that it does not go beyond the broad sectoral specifications as defined under the Creditor Reporting System under the OECD website. However, it provides a good starting point in the absence of more specific data.

**Table 2: Aid overlaps across recipient countries and aid sectors (1995-2006)**

	A				B				C			
	Recipient countries and aid sectors				Recipient countries only				Aid sectors only			
	1995-98	1999-02	2002-06	Diff	1995-98	1999-02	2002-06	Diff	1995-98	1999-02	2002-06	Diff
<b>Donor 1</b>	0.18	0.17	0.19	+0.01	0.43	0.40	0.40	-0.03	0.61	0.56	0.57	-0.04
<b>Donor 2</b>	0.18	0.21	0.22	+0.04	0.48	0.48	0.48	-	0.54	0.58	0.60	+0.06
<b>Donor 3</b>	0.15	0.14	0.21	+0.06	0.33	0.31	0.38	+0.05	0.60	0.48	0.51	-0.09
<b>Donor 4</b>	0.21	0.24	0.28	+0.07	0.47	0.49	0.50	+0.03	0.57	0.58	0.60	+0.03
<b>Donor 5</b>	0.15	0.12	0.19	+0.04	0.34	0.31	0.40	+0.06	0.50	0.45	0.51	+0.01
<b>Donor 6</b>	0.23	0.25	0.25	+0.02	0.50	0.50	0.47	-0.03	0.64	0.64	0.60	-0.04
<b>Donor 7</b>	0.21	0.25	0.25	+0.04	0.46	0.50	0.46	-0.04	0.56	0.60	0.60	+0.04
<b>Donor 8</b>	0.21	0.21	0.28	+0.07	0.45	0.47	0.51	+0.06	0.60	0.59	0.66	+0.06
<b>Donor 9</b>	0.20	0.22	0.28	+0.08	0.40	0.45	0.47	+0.07	0.63	0.62	0.61	-0.02
<b>Donor 10</b>	0.13	0.19	0.21	+0.07	0.38	0.42	0.40	+0.02	0.48	0.50	0.59	+0.11
<b>Average of 10 donors</b>	0.18	0.20	0.24	+0.06	0.42	0.43	0.45	+0.03	<b>0.57</b>	<b>0.56</b>	<b>0.58</b>	<b>+0.01</b>
<b>Aid overlap wastage due to lack of aid transparency</b>	<b>0.014</b>	<b>0.015</b>	<b>0.018</b>		<b>0.032</b>	<b>0.032</b>	<b>0.034</b>		<b>0.043</b>	<b>0.042</b>	<b>0.044</b>	

Source: Adapted from Aldosoro et al (2009) "Less Aid Proliferation and More Donor Coordination? The Wide Gap between Words and Deeds"

A3.28. To estimate the improved effectiveness of aid that might result from better coordination, we consider only the overlap within countries.<sup>67</sup> The framework thereby does not attempt to quantify the possible benefits of aid transparency on improving aid allocations between countries. For the 10 donors and the most recent period, 2002-06, the overlap index stands at an average of 0.58.

<sup>67</sup> Given the literature that was reviewed during the drafting of this chapter which considered how donors effectively base their decision making on where to target aid geographically due to geopolitical concerns we instead focused more on the sectoral aid overlap savings. However, cost savings have been presented for all categories in Table 2

- A3.29. Aid overlap is not entirely wasted. Two donors may work in the same sector and perfectly complement each other's work. The challenge is to identify how much of the aid overlap is wasted and, of this, what proportion can be explained by lack of transparent information.
- A3.30. Recall Halonen-Akatwijuka (2007) theoretical conclusion that coordination failure occurs where donors have *similar* preferences. Given the convergence of donors on increasing funding in the social sectors, we can construe that donor's allocation preferences have become more similar over the years.<sup>68</sup> Halonen-Akatwijuka's theoretical framework suggests that coordination failure occurs some of the time because of incomplete information about other donors' budgets. Based on this theoretical analysis, and with no empirical evidence on which to rely, we assume that approximately 25 percent of coordination failure is the result of incomplete information. We have further assumed that, even in cases of coordination failure, not all the money goes to waste. We assume that 70% is nonetheless useful, but that there is a 30% loss of efficiency as a result of the ensuing coordination failure. (This is intended to be a conservative estimate). These assumptions, together with the aid overlap index, suggest a loss of effectiveness through coordination failures resulting from lack of transparent information of 4.4%.<sup>69</sup>
- A3.31. This estimate of loss has been applied to a subset of 2007 data from the Creditor Reporting System in which these coordination failures have been documented, namely social infrastructure and services, economic infrastructure and services, production Sectors, multisector, commodity aid and humanitarian aid. This amounts to about \$77 billion a year, of which IATI donors provide about half. Applying the assumptions set out above for the extent to which coordination failure is caused by lack of information, and the losses resulting from coordination failure, to this subset of aid, we derive an estimate of potential saving of \$3,371 million a year for all DAC donors, and potential saving of \$1,729 million a year for IATI signatories.
- A3.32. These estimates are based on assumptions which, though we consider them conservative, are highly uncertain. For that reason, the coordination savings are included in the "high case" estimate of the benefits only, and not recorded at all in the central and low cases.

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<sup>68</sup> As mentioned at the start there are three sorts of equilibrium that can occur: (a) Symmetric sharing equilibrium, (b) Specialisation equilibrium and (c) Partial specialisation equilibrium. For our analysis we have focused on (a) and (c) where the priority sector is overfunded and the lesser-priority sector is overfunded.

<sup>69</sup> This has been derived by taking the aid overlap index which is 0.58 and multiplying this by 0.25 (the likelihood of coordination failure occurring) and multiplying this again by 0.30 (the loss of resources due to this coordination failure) coming to an aid overlap index of 0.044



**Table 3: Potential savings from better coordination in USD Millions (2007 prices)**

		<b>A</b>	<b>B</b>	<b>C</b>
	<b>Total Aid Disbursed in 2007</b>	<b>Recipient countries and aid sectors – savings</b>	<b>Recipient countries only – savings</b>	<b>Aid sectors only – savings</b>
		<b>Aid overlap due to lack of transparency = 0.018</b>	<b>Aid overlap due to lack of transparency = 0.034</b>	<b>Aid overlap due to lack of transparency = 0.044</b>
<b>All Donors</b>	<b>77,498</b>	1,395	2,616	3,371
<b>IATI Donors</b>	<b>39,747</b>	715	1,341	1,729

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