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ANALYSIS OF DEVIATIONS AND DELAYS IN AID DISBURSEMENTS

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The study seeks to identify donor-specific factors that cause donors to delay aid disbursement, and to apply a double standard in dealing with the non-compliance of a recipient with regard to aid conditionalities, a practice that promotes uncertainty in the receipt of aid. Annual panel data over 1970-2000 for the 22 members of OECD's DAC donor group are employed in the empirical study. Our findings suggest that the proportion of pledged aid being disbursed, which shows an increasing trend, is positively affected by the extent to which aid is procurement-tied and by the size of the donor government's expenditure in relation to GDP. On the other hand, the proportion of aid commitments being disbursed, which appears lower for the G7 countries, is negatively influenced by factors such as abundant donor generosity, the predominance of grants in total aid, the specific targeting of aid to lower-income recipients, high growth in donor economy, as well as high level of checks and balances, and polarization between the executive and legislative branches of government in the donor country.

Keywords: Aid Disbursement, Aid Commitment, Donors, Recipients, Conditionality, Instability, Uncertainty
JEL classification: F35

1. INTRODUCTION

Instability in export earnings is generally believed to be detrimental to growth and macroeconomic performance (e.g., see Dawe (1996) and Alexander and Hansen (1998)). This realization has prompted several studies to identify the causes of export instability (e.g., Charette (1985) and Love (1985)). But as has since been rightly contended (e.g., Fosu (2001)), it is the instability of the totality of foreign receipts - which includes not only export earnings, but also foreign aid - that has detrimental macroeconomic effects. It has also been specifically reported that instability of foreign aid receipts adversely affects economic growth (e.g., Lensink and Morrisey (2000)). This finding is not unexpected for a number of reasons. The utility of aid to recipients is often seriously compromised by delays in disbursement and the associated unpredictability of its

availability. This compounds the budgeting and macroeconomic capacity of already weak recipient governments. As a result, in case of shortfalls as well as sudden expenditure adjustments, these governments, already faced with a low tax base and inflexibility to adjust tax rates, have to resort to ad hoc borrowing from the central bank. For example, Gemmell and McGillivray (1998) report that shortfalls in aid are often followed by reductions in government spending. Ultimately, the outcome is frequent and unpredictable movements in government spending, monetary aggregates, exchange rates, foreign reserves, and inflation rates.

However, while the reasons for delayed - and unpredictable timing of - disbursement of official aid are, to some extent, traceable to the recipient governments themselves (mainly due to their inability to meet aid conditionalities), donors can also be said to be responsible. Donors can at times delay disbursements for reasons other than non-fulfilment of conditionality. The reverse can also happen: donors turning a blind eye and making disbursements even when conditionalities are not met (Kanbur (2000)). The question thus arises, why is donor timing of disbursements unpredictable and why the delays. As important as this issue is, our investigation did not find any study that has specifically analysed the reasons for the instability of foreign financial assistance, despite the large number of available studies on export earning instability.[1]

Thus, there is a need to fill this gap, and this is what constitutes the present study's central objective. Specifically, it seeks to identify and test for the effects of a number of donor country-specific factors that are potentially relevant determinants of donor tendency to delay aid disbursements or to 'renege' on aid commitments. The analysis is based on panel data derived by pooling 1970-2000 annual data over the 22 donors of OECD's Development Assistance Committee (DAC).

The remaining discussion is organized into 5 Sections. In Section 2, we present some stylized facts on donor disbursements in relation to commitments. Section 3 discusses the political economy of aid disbursements; Section 4 gives the methodology while Section 5 is on the empirical results. The last section presents the summary and conclusion.

2. SOME STYLIZED FACTS ON DISBURSEMENTS IN RELATION TO COMMITMENTS

In Figure 1, annual disbursements in relation commitments over the 1970-2000 period are shown for selected donor countries. The selection is not random, but criteria-based. The eleven countries include the G7 members plus Denmark, Norway,

[1] Studies by Bulir and Hamann (2001) and Pallage and Robe (2001) which could be said to touch on the issues addressed in the present paper relate aid disbursement shortfalls versus commitments only to the economic cycles of the recipients.

Netherlands and Sweden, the four donors are achieving the UN-prescribed aid-giving target of 0.7 per cent of GNP. These eleven countries account for over 80 per cent of the total aid volume of all 22 DAC members.

In an ideal situation where commitments are disbursed within a year (or at least a fairly constant proportion of the commitments are disbursed every year), the pattern would indicate almost a straight line, enabling the recipient to anticipate the expected volume of aid better. But annual aid disbursements by bilateral donors compared to commitments are characterized with very wide swings (Figure 1). Temporal fluctuations - as measured by the coefficient of variation (standard deviation divided by mean) of the disbursement-to-commitment ratio - are particularly high for France, Germany, USA and Japan (Table 1). This may be surprising. As large donor countries embrace almost all the developing countries as their recipient constituency, they should have a more stable pattern of aid commitments in relation to disbursements. This evidence supports the view that many of the factors causing disbursements to deviate from commitments are donor-specific. On the whole, the underlying data show that annual disbursements fell short of commitments in about 57 per cent of the data points for all the donors.

Furthermore, if the swings are motivated by common external factors such as the tendency for most recipients to violate aid conditionalities and thus collectively provoke an almost simultaneous delay in the release of overdue commitments, the fluctuation pattern should be similar for many of the donors. But the contrary is true. Virtually no donor pair has a similar pattern. This is supported by the correlation matrix for the eleven donors in Table 1, which shows that the disbursement-to-commitment ratios do not have a high positive correlation over the years (except between the correlation for Japan and Germany, and for UK and Netherlands). The table also shows that the correlation is even negative among many donor pairs (including Sweden and Denmark that give aid to broadly common recipients). Again, this suggests that the swings are dictated and dominated to a large extent by donor-specific factors.

Table 1. Cross-country Correlation Matrix and Summary Statistics of Disbursement-commitment Ratio, 1970-2000

	Canada	Denmark	France	Germany	Italy	Japan	Nether-lands	Norway	Sweden	UK	US
Canada	1.00										
Denmark	0.35	1.00									
France	0.19	–0.03	1.00								
Germany	0.26	0.36	0.08	1.00							
Italy	–0.06	0.08	0.13	–0.19	1.00						
Japan	0.05	0.29	–0.17	0.44	–0.04	1.00					
Netherlands	0.22	0.30	0.12	0.27	–0.39	–0.01	1.00				
Norway	0.36	0.30	0.04	0.21	–0.15	–0.06	0.12	1.00			

Table 1. (Continued)

	Canada	Denmark	France	Germany	Italy	Japan	Nether-lands	Norway	Sweden	UK	US
Sweden	–0.13	–0.07	0.14	–0.01	–0.15	–0.18	–0.31	0.21	1.00		
UK	0.05	0.17	0.20	0.21	–0.35	0.02	0.45	0.22	0.11	1.00	
US	–0.06	–0.15	0.04	–0.29	–0.22	–0.14	0.24	0.06	–0.10	0.14	1.00
Mean ratio (%)	890.9	99.4	101.3	89.7	98.6	79.8	95.9	104.1	97.0	96.1	92.0
Std deviation (%)	17.4	24.9	10.9	11.8	31.5	12.1	16.3	25.4	24.9	17.2	12.6
Coefficient of Variation	5.2	4.0	9.3	7.6	3.1	6.6	5.9	4.1	3.9	5.6	7.3

Source: See text.

Table 2. Disbursement-commitment Ratios
(in per cent, average of annual ratios) 1970-2000

	1970-80	1981-90	1991-2000	1970-2000
Australia	95.0	106.0	96.7	99.1
Austria	99.1	117.4	85.3	100.5
Belgium	83.5	116.4	100.0	99.4
Canada	83.5	88.3	98.5	89.9
Denmark	87.8	96.1	115.5	99.4
Finland	72.2	78.8	102.4	84.9
France	100.4	95.7	107.8	101.3
Germany	82.2	92.5	95.4	89.7
Italy	116.0	69.9	108.1	98.6
Japan	76.7	81.6	81.5	79.8
Netherlands	81.6	100.5	107.1	95.9
New Zealand	91.9	120.0	98.5	103.8
Norway	85.2	113.2	115.8	104.1
Sweden	92.5	102.6	96.4	97.0
Switzerland	96.0	86.7	104.4	95.7
United Kingdom	86.1	103.4	99.9	96.1
United States	90.7	90.4	95.2	92.0
Overall average	89.4	97.6	100.5	95.7

Source: See text.

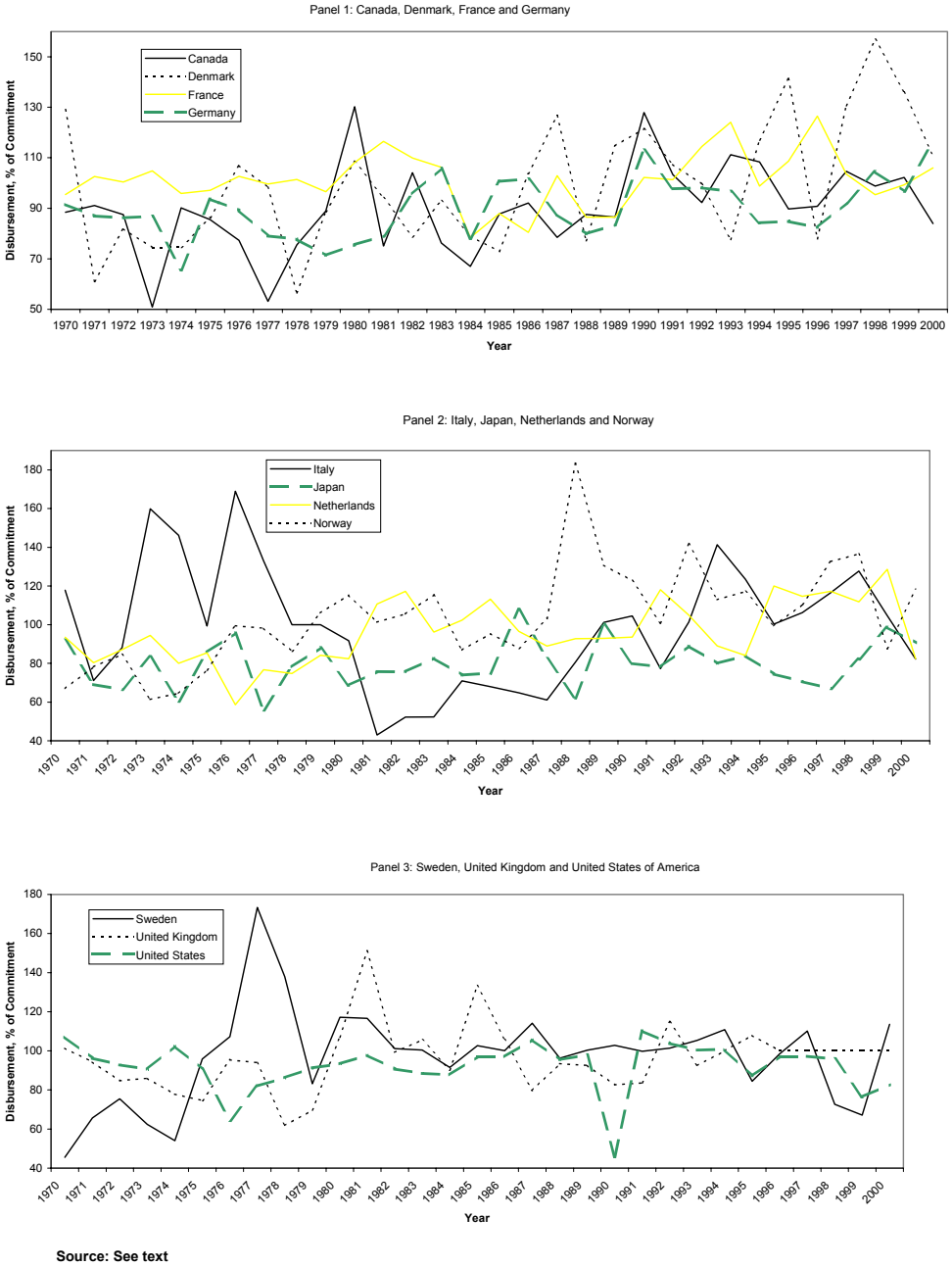

Figure 1. Disbursement as Percentage of Commitment for G-7 Members and UN Target-Compliant Donors, 1970-2000

In Table 2, we also show the decade averages of the disbursement-to-commitment ratio for a larger number of donors, i.e., the 'long-standing' 17 DAC members for which aid-giving statistics exist since early 1970s.[2] Exhibiting an upward trend for the past 30 years, the ratio has risen from 89.4 per cent in 1970-80 to 97.6 per cent in 1981-90 and to 100.5 per cent by 1991-2000. This is also the case for certain specific donors, notably Denmark, Finland, Germany, Netherlands and Norway. Annual disbursement-to-commitment percentage averaged 95.7 over the three decades, which implies that only about 4.7 per cent of commitments were undisbursed. But this simple average distorts the performance of individual donors. Furthermore, greater shortfalls and variations are evident in the short-term of approximately a year, as well as for individual projects and programmes. For example, Bulir and Hamann (2001) report that there is on average a 50 per cent deviation between the quarterly budgeted (and, hence, committed) aid and that actually disbursed. In addition, the decade average, as a simple average of annual ratios, does not give a realistic indication in monetary terms. This is because the dollar volume of disbursements for the last 30 years was only 86 per cent of the dollar volume of commitments (i.e., only 86 per cent of donor obligations were actually disbursed), which means a shortfall on average of 14 per cent. Also it might not be a serious problem for a particular recipient that is able to properly diversify its receipts geographically among donors. This is because failure of some donors to meet their commitments in a particular budget year would likely be counterbalanced by some other donors who are retrospectively meeting, in the same year, their overdue commitments. But in reality this is not the case, as most recipients receive the majority of their assistance from only a few donors, such as the former colonial master and one or two others. So, failure by the donor to honour its obligation on time could have severe effects on the recipients depending on these commitments, a fact compounding the impact of the 14 per cent shortfall suggested by the data.

3. POLITICAL BACKGROUND

3.1. Definition or Concept of Aid Commitment

The definition given in the Statistical Reporting Directives (2000: 7) issued by OECD and currently used by DAC in peer review exercises states:

> A commitment is a firm written obligation by a government or official agency, backed by the appropriation or availability of the necessary funds, to provide resources of a specified amount under specified financial terms and conditions and for specified purposes for the benefit of a recipient country or a multilateral agency.

[2] The other five (newer) DAC members are Greece, Ireland, Luxembourg, Portugal and Spain.

In view of the above, the question that arises is, do donors in reality renege on their commitments for reasons other than a breach by a recipient of the terms stipulated above? The answer is yes.

First, there is no third party to arbitrate differences in the meaning of clause 'specified financial terms and conditions and for specified purposes'.[3] In most cases, interpretation is left to the donor's unilateral discretion. With official loans, recipients probably have some voice. This is because since *quid pro quo* is involved, a more formal agreement is possible. But most bilateral resource transfers are in form of grants, thus limiting the legal and moral choices of the recipients. The dictum, 'a beggar has no choice', largely applies. As reviewed in Subsection 3.2, this situation has allowed mundane factors like administrative bottlenecks and understaffing to affect aid disbursements. Second, even in cases of non-compliance with conditions by prospective recipients, donors - because of pressure from domestic interest groups or in the case of multilateral banks, from influential shareholders - have proceeded without concern for an obvious breach by the recipient (e.g., see Kanbur (2000)). Donors, when not inclined to release the funds for economic or political reasons, may also resort to an unusually strict interpretation (see Subsection 3.3). Finally, apart from donors' rather unilateral interpretation of the clause, DAC definition (2000: 7) also stipulates that, 'Members unable to comply with this definition should explain the definition that they use', which allows a more self-serving definition to be adopted by some donors. This last reason means that available statistics on aid commitments are not necessarily in line with the DAC definition given above.

3.2. Reasons for Delays in Aid Disbursements: European Community Aid as a Case Study

The aim here is to use a case study to illustrate how administrative and political problems interact to delay aid disbursements, often causing aid gaps. These delays have nothing to do with recipient failure to fulfil their part of the bargain. See next subsection for a discussion of a reverse situation in which aid disbursements are made prematurely as a result of a different set of political factors.

Some insights into the politics underpinning the failure to honour aid commitments can be gained from the Ninth Report of the British House of Commons' Select Committee on International Development (1999) issued in connection with European

[3] It is noteworthy here that the report submitted in 2000 to the US Congress by its International Financial Institution Advisory Committee (IFIAC 2000), under the chairmanship of Professor Allan Meltzer, recommended the use of an independent third party in verifying compliance with their recommended institutional reform loan conditionalities to be granted by multilateral development banks. According to IFIAC (chapter 3), '… auditors, independent of both the borrowing government and the official lender, would be appointed to review implementation of the reform program annually'.

Commission aid. Para 45 of the report lists incidents affected with what it refers to as 'delays and inefficiencies in disbursement', thus:

> Population Concern gave the Committee two examples of such delays: the first was a delay of thirteen months in the disbursement of funds for four mini-projects in Bolivia and Peru; in the second instance - a community-based distribution programme in Karachi - the funding situation became so dire that the director of a local NGO in Pakistan took out a personal loan to pay staff salaries, using her residence as collateral. As a result, partner NGOs have requested that Population Concern should not seek financing from the European Community in future. The Committee was also concerned to discover, in the course of its visit to Brussels, that not a single penny of the 250 million Euro allocated for reconstruction in Nicaragua in the wake of Hurricane Mitch had been spent.

Also, para 46 of the report quotes one of the European Commission aid agency bureaucrats who testified to the Committee on the reasons for the underspending of the aid budget as follows:

> One part of it is what I would call the normal time lag between committing money for a program that is going to be implemented in some years. This is perfectly normal … The second part of it is a backlog based on very good reasons … where it is highly meaningful that we have kept back money and not spent because the conditions were not there … The third part of it, to keep it simple, is the real problem. The money that we should have been able to spend within a normal time but where we are simply slower, that is what I would call the real backlog. The size of that is not easy to determine and it varies a lot from program and region to region in the world.

Para 48, based on the European Commission's Statement on Development Policy, identifies the major problems faced by the Commission as including 'a complex and fragmented aid system, policies guided by instruments rather than by policy objectives, lack of human resources, burdensome ex-ante financial controls, substandard monitoring and evaluation procedures'. However, in para 43, the report moderates, or rather, modifies this view somewhat by also subscribing to the opinion that:

> … it is not enough, however, simply to blame underspends on the inefficient management of the Commission. The fundamental mistake has been to allocate excessive funds in the first place for predominantly political reasons.

The delay periods are also reported to be excessive in a number of cases. According to the report (para 43):

> The average length of project/programme implementation has continuously increased over the last few years with a corresponding trend in the backlog of outstanding commitments that reached over 20 billion Euro by the end of 1999. In the last five years the average delay in disbursement

of committed funds has increased from 3 years to 4.5 years. For certain programmes, the backlog of outstanding commitments is equivalent to more than 8.5 years' payments.

With regard to handling the backlog, para 49 indicates that the Commission was considering an 'examination of commitments prior to 1995 with a view to closing them and review of 1995/96/97 dormant commitments'. The report (para 50) strongly supports this step, arguing that, 'It is better to close dormant commitments and not draw down funds from member states than simply to have money spent by the EC quickly and badly'. The implication of this is that deferred disbursement leads not only to uncertainty in the timing of aid, but is also likely to reduce the ultimate volume of aid to be made available.

3.3. Political Economy of Premature Aid Disbursements: Ghana's World Bank Loan as a Case Study

Next we review the political processes and pressures that often lead to premature, as opposed to delayed, disbursements of aid commitments. The major reason for delayed disbursements of European Community aid is that, 'The fundamental mistake has been to allocate excessive funds in the first place for predominantly political reasons'. This section reviews how these predominantly political reasons operate after the commitment phase so as to lead to the fundamental mistake of disbursements before conditionality is met.

According to Hopkins (2000), unlike other macro-based explanations which regard the state as a more or less monolithic entity, an explanation of the volume of aid is based on a micro-framework and the state is regarded as a coalition of different micro or interest groups.[4] This approach explains the process through which the motivation of the donor state (self-interest and beneficiaries' interests) is arrived at through bargaining and lobbying among different interest or micro groups within the state, i.e., what Kanbur (2000: 432) summarizes as 'smaller special interest payoffs'. Prior knowledge of internal political processes and the various interest groups within the state leads to better understanding of the overall motivations of a donor state in aid-giving - or in reneging. Thus, the causes for the inconsistency in aid disbursement practices are often cited to be within this micro approach and the case study on Ghana reviewed below is representative of these.

According to Hopkins (2000: 432-3):

[4] Hopkins identified two other two approaches. In one approach, the donor, as a monolithic entity, seeks to maximize its own benefits through aid allocation, and this may apply to Kanbur's explanation (2000) for US and France aid to Zaire in 1980s, as reviewed. The third approach involves bargaining between the donor (again, as a monolithic entity) and the recipient and it is the outcome of this that determines aid volume.

> It can be argued, indeed is argued, that aid has the most support from groups inside donor countries that derive selective advantage from it. These include firms with investments in recipient countries, or who provide exports tied to aid, and bureaucracies with employees with career interests in aid, including NGOs … Business firms with profits linked to guarantees or direct payment from an aid account also actively support aid levels in their home country.

But perhaps a more interesting picture of the aggressive lobbying by such special interest groups is given in the eyewitness account by Kanbur (2000) as the World Bank resident representative in Ghana in 1992-93, when Ghana violated the budgetary conditionality of the Bank's structural adjustment credit. The Bank then suspended release of the impending tranche. Based on this author's more recent observation and experience as IMF's desk economist for an African country, we can confirm Kanbur's claim of the existence of pressure and coercion from donor-based interest groups in seeking 'premature' approval of programmes with recipient countries for various self-serving interests. According to Kanbur (2000: 414-5):

> I came under pressure from several sources, some of them quite surprising, to release the tranche with minimal attention to conditionality. There was a steady stream of private sector representatives, domestic and foreign, arguing for release of the tranche … Next in line were the bilateral donors - even those who had tied themselves to the presumably greater discipline of the World Bank by co-financing. Some of these had 'fiscal year' concerns - they feared the consequences within their agencies of not releasing the funds in the fiscal year for which they were slated … Yet others found their projects slowing up because government counterparts funds were not available … Rather, like private sector contractors, these aid agency personnel were dependent upon the government releasing enough resources for the success of their specific projects … I include in this list of donors the World Bank itself - implementation of old projects, and development of new ones, would be severely affected so long as the impasse lasted … Conditionality can be introduced on paper with much pomp and circumstance, but when push comes to shove, all of the pressures, mostly from the donor side, are to look the other way when conditionality is violated.

In addition to pressure from these special interest groups, according to Kanbur (2000: 415-6) other reasons why donor agencies have 'to look the other way when conditionality is violated' include the corporate interests of donor country itself. According to Kanbur:

> The most obvious case of this is political clientelism. How else can one explain the repeated tranche releases to Zaire and Senegal in the 1980s and early 1990s, for example, despite continued failure to comply with adjustment conditionality, except in terms of pressure from the United States and France?

He also contends that similar pressure is often exerted so as to guarantee that the recipient has the funds to service existing debt obligations in which a powerful donor has vested interest. For he asserts that, 'Other cases arise when heavy debt servicing (to the World Bank, the IMF, donor governments and private creditors) is involved; without the inflow, the outflow of debt servicing might be interrupted. Côte d'Ivoire is an example of a country where these forces have been at play'.[5]

4. METHODOLOGY

4.1. Postulated Donor-specific Determinants of Deviations of Disbursements from Commitments

It is not easy to quantify these donor-specific political and economic forces or to even proxy some of them qualitatively, especially within the context of the present pioneering type of study. Nevertheless, within the limits of available information and statistics, an attempt is made here to isolate some of these forces for identification and testing. Specifically, we test for the effects of the following factors:

i) *Fraction of total aid that is procurement-tied*: Among the stakeholders with vested interests in aid disbursements are the exporters supplying the goods being financed with aid. Therefore, the higher the proportion of aid that is procurement-tied, the greater the vested interest and, hence, the shorter the delay in translating commitments to disbursements, i.e., the higher the disbursement-to-commitment ratio.

ii) *The share of aid to the poorest recipients*: Various donor-specific commercial interests associated with aid- or export-related investments, etc. are expected to be satisfied better if aid is given to medium- or high-income recipients, as opposed to

[5] Although the primary concern of the present study is not with the disbursement-commitment decisions of the multilateral financial institutions', it should be noted that they too are susceptible to a 'double standard' phenomenon similar to the bilateral aid agencies, albeit at times for different reasons. As pointed out in the IFIAC report (2000: chapter 2), 'Despite its influence on developing countries, the IMF often fails to enforce its conditions. Enforcement of conditions is not uniform or predictable, and differences in enforcement may reflect the political power of recipients to avoid compliance'. But in case of the World Bank, its own main reason is attributed by the report to negative or perverse incentive problems within its own internal operations, as opposed to pressures from outside. According to IFIAC (chapter 3), 'Incentives to lend for lending's sake are built into the structure of the Banks. Internal budget resources are awarded where loan volumes are high, not where the number of worthwhile projects is highest … Often the staff is rewarded on the amount of funds disbursed'. Because of this, the staff are anxious to disburse funds, just as in the case of bilateral aid agencies.

low-income ones. As noted by Hopkins (2000: 433) in explaining the recent downward trend in aid volume, 'As aid has shifted from Asia to Africa, and from fast- to slow-growing countries, the results sought in these recipients promise fewer political and economic benefits for export or financial interests within donors. Aid has less relevance as a way to open recipients' markets if those markets have very small potential'. Thus, lobbying by donor-based interests to speed up disbursements should be less aggressive in the case of aid commitments to poorer, weaker recipients. We therefore expect a higher fraction of donor aid to relatively poor recipients to reduce the observed overall disbursement-to-commitment ratio.[6]

iii) *The proportion of aid constituting pure grants*: As discussed in the previous section, a loan aid commitment has the semblance of a formal contract since a financial *quid pro quo* is involved, introducing a more binding obligation. But a pure grant commitment, although formalized, would appear more in the nature of gift giving, which would be prone to non-fulfilment at the donor's discretion. In other words, grant commitments seem to have a built-in flexibility for reneging. Thus, we expect the overall aid disbursement-to-commitment ratio to be lower the higher the share of pure grants in the total aid package.

iv) *Donor's existing degree of generosity*: The higher the existing level of generosity (measured by average aid commitment and disbursement in relation to GDP), the greater the scope for reneging the existing level of commitment. On the other hand, commitments made by less generous donors (e.g., USA) are more or less for bare 'necessities' (mainly to protect national interests), and their disbursement would be difficult to scale down without adversely affecting the interests that prompted the commitments in the first place. As a result, we expect a high level of generosity to reduce the fraction of commitments being disbursed.

v) *Economic growth and phase of economic cycle*: Based on economic logic, high growth of donor economy (GDP) should enhance the country's ability to meet its aid commitment similarly as to when the donor is experiencing a rising economic cycle (as opposed to recession).

vi) *Level of per capita income*: This proxies the level of affluence of the donor as well as other factors associated with affluence. Here, we are not positing a particular direction of its effect as such, but merely wish to test for its effect.

[6] Another reason for this is the probability that poorer recipients might lack the capacity to meet the aid conditionalities and may be more prone to cause the so-called aid fatigue in donors. But this is not necessarily a strong factor, as a typical donor must have taken into account such low-income recipient-specific weakness before making a commitment.

vii) Siz*e of government and fiscal balance*: There is no definite *a priori* channel of the effect of the size of government (government spending-to-GDP ratio) on disbursement-to-commitment relationship. Nevertheless, one can speculate that the fiscal effect (or benefit) of a shortfall in the fulfilment of commitments by a given percentage looms large in the national budget, the lower the existing government expenditure-to-GDP ratio. For this reason, high ratio of government spending to GDP should increase the disbursement-commitment ratio. With regard to fiscal balance, economic logic suggests that the chance of meeting commitments should be high if fiscal surplus is also high, i.e., a positive relationship is posited.

viii) *Political factors*: As reviewed in the previous section, politicians and political actors (including lobby groups and different branches of government) have their own vested interests and these affect not only aid allocation at the commitment stage but also at the disbursement stage. The extent to which such interests are articulated and become effective depends on the constitutional and genuine power relations between the executive and legislature. One indicator of these relations is the extent of polarization or difference in orientation among the executive and legislature, i.e., the veto power. High degree of polarization is likely to increase aid commitments in order to please contending interests of the two arms of government (and to ensure budgetary approval). But, at the disbursement stage, the existing veto (say, by the legislature) may not be as binding and eventual disbursement may subsequently be more 'realistic' and be based more on actual national interest. A similar indicator is the extent of checks and balances (between the executive and legislature) and, just as in the case of political polarization, a high level of checks and balances is likely to reduce the fraction of commitments being disbursed. Two alternative measures for both political polarization and checks and balances are employed in the study, as explained below.

ix) *Trend factor*: As pointed out in connection with Table 2, the disbursement-to-commitment ratio has increased over the last three decades. Many miscellaneous, mainly qualitative time-related factors could be responsible for this observation, beyond what can be explained by the explicitly considered factors (for example, per capita income level). To implicitly capture these factors, we include a time trend variable which, after controlling for the effect of those aforementioned regressors, would indicate whether the share of commitment being disbursed has been showing a rising or declining trend over the past three decades.

x) *Dummy variable for being a G7 member country*: Members of the G7 donor group account for about two-thirds of the total aid volume and they are assumed to have greatest economic-if not also political-influence on the international scene. We

include this dummy variable to see whether this international importance has a bearing on their propensity to disburse aid commitments.

4.2. Model Specification

We specify for estimation a regression equation of the form:

$$y_{it} = x_{it}\beta + u_{it} \ (i = 1, 2, \ldots 22; \ t = 1, 2 \ \ldots T) \ , \qquad (1)$$

where:

y = the dependent variable, which is the (logarithm of) aid disbursement-to-commitment ratio;

x = the vector of the explanatory variables discussed above;

β = the vector of the explanatory variables' parameters, the estimates of which are to be derived;

u = the vector of stochastic term that is assumed to satisfy most of the usual conditions; and

i, t subscripts = indicators of country and time subscripts, respectively, in the panel data.

The above specification implies that time-series data are pooled across the countries to form a panel dataset used to estimate the equations. Specifically, annual data over the 1970-2000 period are pooled across the 22 donor countries. But the resulting panel data are unbalanced in the sense that values are missing in a random manner with respect to both countries and variables. Also, because of this unbalanced nature of the data, we include only few explanatory variables (the trend, per capita income and aid generosity ratio) that are available for all countries for almost all the years in all the equations estimated while other explanatory variables are included one or two at a time. With this procedure, not only is the incidence of multicollinearity minimized, but the available number of data points used in deriving the estimation are also maximized, as the inclusion of all or most explanatory variables in a particular equation would drastically reduce the usable data points. We employ the random-effect method in deriving the panel data estimates.[7] Evidence on the existence (or lack) of stability of the parameter

[7] This method decomposes the u_{it} in the above equation, thus: $u_{it} = \varepsilon_i + \lambda_t + \eta_{it}$ (where ε is the individual effect, λ the time effect, and η the purely random effect) and incorporates this assumption into GLS

estimates is indirectly made available because several reported equation estimates cover different periods, as dictated by data availability, with only some regressors (per capita income and donor generosity ratio) featuring in all the equations. By this, temporal stability of the parameter estimates of these common regressors can be inferred while that of most others is hardly crucial in view of the fact that the estimates do not cover long periods.

Given the nature of the explanatory variables, we have little or no reason to anticipate their endogeneity. Thus, we employ OLS technique within the framework of which we adjust for any presence of heteroscedasticity through the method of covariance matrix correction suggested by White (1980).

4.3. Separate Estimates for Grant Disbursement-to-commitment Ratio

Our discussion so far relates to equations with the total aid disbursement-to-commitment ratio as the dependent variable and we take account of the grant component only by including the preponderance of grants in total aid as a regressor. But as we discuss later, this factor is found to have affected the disbursement-commitment ratio with a strong statistical significance, and it is enlightening to test whether the disbursement-to-commitment ratio of this ever-increasing component of official aid (accounting for 71 per cent of the total over the sample period, in terms of the dollar magnitudes) indeed reacts differently to some or all of the determining factors postulated above.

To accomplish this, we specify and estimate parallel equations with the disbursement-to-commitment ratio for grants now replacing the one for total aid as specified above in equation 1. Also, the overall generosity ratio (total aid volume-GDP ratio) regressor is now replaced by the grant generosity ratio (grants-to-GDP ratio) while the dominance of grants in total aid volume now ceases to be applicable and is therefore dropped. The resulting estimates are reported separately, for easy comparison.

4.4. Determining the Channel and Sequence of Effects of Factors on Disbursement-to-commitment Ratio

A particular observed effect of a factor on disbursement-to-commitment ratio arises because the effects are not the same on the underlying commitments and disbursements, as shown in the matrix below. As can be seen, it is possible for a factor to be observed as affecting the disbursement-to-commitment ratio without its having any effect at all on the underlying disbursement, if it only affects the underlying commitments, as in combinations (i) and (v) in the matrix.

technique used in estimating the β. The fixed-effect alternative also gives practically the same results but the presence of the G7 membership dummy variable makes it inapplicable if this dummy variable is included and, hence, we opt for the random-effect alternative instead.

Matrix. Possible Channels of Effects of Various Factors on Disbursement-to-commitment Ratio

Direction of observed effect of a factor on aid disbursement-commitment ratio	Combination of effects on the underlying commitments and disbursements that can give rise to the observation
Net positive effect on disbursement-to-commitment ratio	(i) Negative effect on the commitment coupled with nil effect on disbursement (ii) Negative effect on the commitment coupled with positive effect on disbursement (iii) Negative effect on the commitment coupled with negative but weaker effect on disbursement (iv) Positive effect on the commitment coupled with positive but stronger effect on disbursement
Net negative effect on disbursement-to-commitment ratio	(v) Positive effect on the commitment coupled with nil effect on disbursement (vi) Positive effect on the commitment coupled with negative effect on disbursement (vii) Positive effect on the commitment coupled with positive but weaker effect on disbursement (viii) Negative effect on the commitment coupled with negative but stronger effect on disbursement

As an example, the expected positive effect of a high proportion of procurement-tied aid on the disbursement-to-commitment ratio cam be explained as follows. Although it could have some positive effect on aid commitment (since exporters might lobby for more aid to be allocated or committed towards this end), its positive effect on aid disbursement is expected to be larger and more aggressive because exporters would also want to get paid quickly. This would contrast with the pressure from consultants and those who provide technical assistance services. This category of aid lobbyists would press for more aid commitments to assure more consultancy jobs, but their interests and pressure would wane thereafter as it is of no concern to them whether funds are eventually disbursed to implement the aid projects on which they have already been consulted and reimbursed. So, the effect of their own pressure would likely fall into combination (v) or (vii) in the matrix and is therefore likely to be negative on

disbursement-to-commitment ratio.[8] The overall effects of most of the other factors can be analysed in the same fashion.

To empirically identify and test for the channels of the effects, we specify and estimate equations (parallel to that specified in Equation (1) above) separately for aid disbursement and commitment (each normalized by GDP), and include the same list of regressors discussed above (except that, now, aid generosity ratio would no longer be applicable as it has a very close relationship with the present dependent variables).[9]

4.5. Data Sources and How Variables are Measured

The dependent variable, disbursement-to-commitment ratio, is the average of the contemporaneous and 1-year forward lag of gross disbursement values divided by a similar average for commitment values. With regard to the disbursement-to-GDP and commitment-to-GDP ratios, the same lag structure is implemented for each of the numerator and denominator. This averaging of contemporaneous and lagged values is to smoothen the year-to-year discrepancies between aid commitments and disbursements. Disbursements need not synchronize temporally with commitments due to cut-off accounting procedures, inevitable administrative and communication delays, and because of the fact that commitment terms and conditions generally do not assume disbursements to be instantaneous. A commitment made in December is unlikely to lead to disbursement being made during the same calendar year. Taking a 2-year average partially caters for this.

For symmetry, the same averaging of current and 1-period future lag is retained for aid-related independent variables, namely generosity or aid-GDP ratio, grant-total aid ratio, procurement-tied aid ratio (which is the ratio of fully tied aid to total aid), and the fraction of aid to lowest-income recipients (defined in the data source as recipient countries with per capita income of less than US $760 in 1998).[10] All these variables are from the OECD's *International Development Statistics*, *IDS* (online), except the GDP statistics which are from the World Bank's *World Development Indicators, 2000* (online). The logarithm values of each of the variables are employed, and since it is a pure fraction what is actually employed, each is computed as $\log(1+x)$, where x is the variable in pure fraction form.

The government expenditure-GDP ratio is also in logarithm form, similarly computed as $\log(1+x)$, while per capita income (in 1995 US$), also in logarithm, is

[8] We do not actually test for this factor in the present study as we do not have a good proxy for it.

[9] The alternative technique we explored was to estimate an equation for the disbursement-GDP ratio and include the same list of explanatory variables, after controlling for the effect of commitment-GDP ratio (i.e., by also including commitment-GDP ratio as an additional explanatory variable). This yielded similar results.

[10] These recipients collectively accounted for 45 per cent of total aid commitments over the sample period.

computed simply as $\log(x)$. Economic growth is the rate of real GDP growth (in pure fraction, as opposed to percentage). The indicator of the phase of economic cycle is computed as the residuals obtained from regressing the logarithm of real GDP index on time trend, so that positive and negative values of residuals, respectively, correspond to rising and falling phases of the cycle. The data for all these are from the World Bank source.

Concerning the variables on domestic polity, the source is Beck *et al.* (online). The indicator or index of political polarization (whose value ranges between 0 and 2) consists of two types.[11] Following the data source, the first is maximum difference in orientation between two veto powers, defined as the president and largest government party in a presidential system (or the biggest three coalition members in a parliamentary system). The second index differs from the first only if the president's party (or, under the parliamentary system, the prime minister's party) has an absolute majority in the legislature, in which case no polarization (i.e., zero value) is deemed to exist. The checks-and-balances indicator, on the other hand, records the number of veto players in a polity and indicates the extent of formal constitutional control on political decision makers. Again, there are two types, with some intricate technical differences between the two.[12]

5. EMPIRICAL RESULTS

5.1. Presentation of the Results

The empirical results for the total aid disbursement-commitment ratio equation are presented in Table 3 while those of the total aid disbursement-to-GDP ratio and total aid commitment-to-GDP ratio are reported in Tables 4 and 5, respectively. The parallel estimates with respect to equations for the grant disbursement-commitment ratio, grant disbursement-GDP ratio and grant commitment-GDP ratio are reported in Parallel Tables 3A, 4A, and 5A (in the Appendix), respectively. For the sake of brevity, these are given in the Appendix but occasional references are made to them in evaluating the results.

[11] The simple correlation between the two is 0.384.

[12] The simple correlation between the two is 0.767. The description of technicalities involved in computing each and of the differences between both run into pages in the data source. Suffice here to state that they both take cognisance of the executive arm of government as well as the existence and number of legislative arms of government, adjusted for the degree of competitiveness involved in electing them.

Table 3. Total Aid Disbursement-commitment Ratio Equations

Trend line	0.006	0.040	0.004	0.005	0.007	0.004	0.003	0.003	0.004	0.003
	(4.6)	(4.9)	(4.5)	(4.5)	(3.3)	(2.3)	(1.8)	(2.4)	(2.8)	(2.5)
Per capita income (log)	-0.095	-0.054	-0.070	-0.075	-0.103	-0.054	-0.011	-0.038	-0.039	-0.063
	(-1.8)	(-1.7)	(-1.6)	(-1.5)	(-1.1)	(-0.7)	(-0.1)	(-0.6)	(-0.6)	(-1.2)
Being a G7 member dummy	-0.062	-0.042	-0.037	-0.036	-0.120	-0.072	-0.077	-0.065	-0.064	-0.034
variable	(-1.7)	(-1.8)	(-1.5)	(-1.6)	(-1.3)	(-1.5)	(-1.8)	(-1.6)	(-1.6)	(-1.2)
Generosity ratio	0.088	-3.739	-2.301	0.078	-41.37	-25.66	-20.21	-21.36	-17.51	-6.544
(net aid disbursement/GDP)	(0.02)	(-0.7)	(-0.5)	(0.02)	(-5.0)	(-2.8)	(-2.4)	(-2.7)	(-2.2)	(-1.1)
Grant/total aid ratio	-0.251	–	–	–	–	–	–	–	–	–
	(-2.4)	–	–	–	–	–	–	–	–	–
Fraction of aid committed to	–	-0.127	–	–	–	–	–	–	–	–
low-income recipients	–	(-2.0)	–	–	–	–	–	–	–	–
Economic (real GDP) growth	–	–	-0.007	–	–	–	–	–	–	–
	–	–	(-3.3)	–	–	–	–	–	–	–
Upturn in economic cycle	–	–	–	-0.086	–	–	–	–	–	–
	–	–	–	(-0.6)	–	–	–	–	–	–
Procurement-tied aid	–	–	–	–	0.246	–	–	–	–	–
(versus total aid)	–	–	–	–	(4.2)	–	–	–	–	–
Polarization index										
1st type	–	–	–	–	–	-0.006	–	–	–	–
	–	–	–	–	–	(-0.7)	–	–	–	–
2^{nd} type	–	–	–	–	–	–	-0.011	–	–	–
	–	–	–	–	–	–	(-1.7)	–	–	–
Checks-and-balances index										
1st type	–	–	–	–	–	–	–	-0.008	–	–
	–	–	–	–	–	–	–	(-2.5)	–	–
2^{nd} type	–	–	–	–	–	–	–	–	-0.005	–
	–	–	–	–	–	–	–	–	(-1.6)	–
Size of government (govt.	–	–	–	–	–	–	–	–	–	0.654
expenditure/GDP ratio)	–	–	–	–	–	–	–	–	–	(2.4)
Fiscal surplus/GDP ratio	–	–	–	–	–	–	–	–	–	0.001
	–	–	–	–	–	–	–	–	–	(1.2)
No. of obs	522	483	521	522	328	379	388	421	413	489
Adjusted R^2	0.305	0.232	0.291	0.275	0.419	0.350	0.359	0.344	0.355	0.288

Notes: (i) The dependent variable is the ratio of ODA disbursement to its commitment; (ii) The numbers in parentheses below the parameter estimates are the *t*-values. A parameter estimate is statistically significant at 1%, 5%, and 10% levels if its *t*-value is, in absolute sense, not less than 2.6, 2.0, and 1.6, respectively.

Table 4. Total Aid Disbursement-GDP Ratio Equations

Trend line	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001
	(-3.0)	(-2.3)	(-3.0)	(-1.7)	(-1.9)	(-2.9)	(-5.0)	(-4.1)	(-3.9)	(-5.9)
Per capita income (log)	0.003	0.003	0.003	0.002	0.002	0.003	0.004	0.003	0.003	0.003
	(6.3)	(4.0)	(5.1)	(3.7)	(3.1)	(5.2)	(7.0)	(6.1)	(5.7)	(5.6)
Being a G7 member	-0.0002	-0.0004	-0.0003	-0.0003	-0.0010	-0.0004	-0.0008	-0.0006	-0.0005	-0.0003
dummy variable	(-0.3)	(-0.6)	(-0.4)	(-0.5)	(-1.0)	(-0.4)	(-1.0)	(-0.7)	(-0.6)	(-0.4)
Generosity ratio (net aid disbursement/GDP)										
Grant/total aid ratio	-0.0005	–	–	–	–	–	–	–	–	–
	(-0.8)	–	–	–	–	–	–	–	–	–
Fraction of aid committed	–	-0.0004	–	–	–	–	–	–	–	–
to low-income recipients	–	(-0.6)	–	–	–	–	–	–	–	–
Economic (real GDP)	–	–	-0.0001	–	–	–	–	–	–	–
growth	–	–	(-3.7)	–	–	–	–	–	–	–
Upturn in economic cycle	–	–	–	0.0002	–	–	–	–	–	–
	–	–	–	(1.4)	–	–	–	–	–	–
Procurement-tied aid	–	–	–	–	0.001	–	–	–	–	–
(versus total aid)	–	–	–	–	(3.9)	–	–	–	–	–
Polarization index										
1st type	–	–	–	–	–	0.0002	–	–	–	–
	–	–	–	–	–	(3.2)	–	–	–	–
2nd type	–	–	–	–	–	–	0.0001	–	–	–
	–	–	–	–	–	–	(0.9)	–	–	–
Checks-and-balances index										
1st type	–	–	–	–	–	–	–	0.0001	–	–
	–	–	–	–	–	–	–	(1.8)	–	–
2nd type	–	–	–	–	–	–	–	–	0.0001	–
	–	–	–	–	–	–	–	–	(2.0)	–
Size of government (govt.	–	–	–	–	–	–	–	–	–	0.014
expenditure/GDP ratio)	–	–	–	–	–	–	–	–	–	(7.5)
Fiscal surplus/GDP ratio	–	–	–	–	–	–	–	–	–	0.00002
	–	–	–	–	–	–	–	–	–	(2.5)
No. of obs	553	483	521	522	328	379	388	421	413	489
Adjusted R^2	0.769	0.776	0.777	0.770	0.903	0.880	0.876	0.872	0.872	0.813

Notes: (i) The dependent variable is the ratio of disbursement of ODA to GDP; (ii) The numbers in parentheses below the parameter estimates are the *t*-values. A parameter estimate is statistically significant at 1%, 5%, and 10% levels if its *t*-value is, in absolute sense, not less than 2.6, 2.0, and 1.6, respectively.

Table 5. Total Aid Commitment-GDP Ratio Equations

Trend line	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001
	(-5.1)	(-4.0)	(-5.0)	(-3.4)	(-4.0)	(-5.1)	(-7.8)	(-6.6)	(-6.4)	(-7.2)
Per capita income (log)	0.003	0.003	0.003	0.003	0.003	0.004	0.005	0.004	0.004	0.003
	(5.6)	(4.6)	(5.7)	(4.1)	(3.9)	(6.2)	(8.0)	(6.7)	(6.4)	(5.8)
Being a G7 member	0.0001	-0.0002	-0.0001	-0.0002	-0.0006	-0.0001	-0.0005	-0.0003	-0.0003	-0.0001
dummy variable	(0.04)	(-0.3)	(-0.1)	(-0.2)	(-0.7)	(-0.1)	(-0.6)	(-0.3)	(-0.3)	(-0.2)
Grant/total aid ratio	0.001	–	–	–	–	–	–	–	–	–
	(1.8)	–	–	–	–	–	–	–	–	–
Fraction of aid committed	–	0.0004	–	–	–	–	–	–	–	–
to low-income recipients	–	(0.7)	–	–	–	–	–	–	–	–
Economic (real GDP)	–	–	-0.0001	–	–	–	–	–	–	–
growth	–	–	(-2.0)	–	–	–	–	–	–	–
Upturn in economic cycle	–	–	–	0.004	–	–	–	–	–	–
	–	–	–	(2.7)	–	–	–	–	–	–
Procurement-tied aid	–	–	–	–	0.0003	–	–	–	–	–
(versus total aid)	–	–	–	–	(0.6)	–	–	–	–	–
Polarization index										
1st type	–	–	–	–	–	0.0003	–	–	–	–
	–	–	–	–	–	(4.3)	–	–	–	–
2nd type	–	–	–	–	–	–	0.00014	–	–	–
	–	–	–	–	–	–	(2.5)	–	–	–
Checks-and-balances index										
1st type	–	–	–	–	–	–	–	0.00012	–	–
	–	–	–	–	–	–	–	(3.8)	–	–
2nd type	–	–	–	–	–	–	–	–	0.00010	–
	–	–	–	–	–	–	–	–	(3.1)	–
Size of government	–	–	–	–	–	–	–	–	–	0.011
(govt. expd/GDP ratio)	–	–	–	–	–	–	–	–	–	(5.8)
Fiscal surplus/GDP ratio	–	–	–	–	–	–	–	–	–	0.00001
	–	–	–	–	–	–	–	–	–	(1.6)
No. of obs	522	483	521	522	328	379	388	421	413	489
Adjusted R^2	0.741	0.749	0.742	0.742	0.819	0.827	0.826	0.823	0.823	0.775

Notes: (i) The dependent variable is the ratio of commitment of ODA to GDP. (ii) The numbers in parentheses below the parameter estimates are the *t*-values. A parameter estimate is statistically significant at 1%, 5%, and 10% levels if its *t*-value is, in absolute sense, not less than 2.6, 2.0, and 1.6, respectively.

5.2. Evaluation of the Results

The tables on the empirical results show that, judging from the adjusted R^2 values, the equations generally have a good fit. The fit is better for the disbursement-GDP ratio equations than for the corresponding commitment-GDP ratio equations, suggesting that donors tend to be more systematic and show greater consistency in behaviour with respect to disbursements than with respect to commitments. In the same manner, the fit is generally better for grant-related equations reported in the Parallel Tables 3A to 5A than for the corresponding total aid-related equations reported in Tables 3 to 5. Also, the *t*-values of the parameter estimates are generally higher for grant-related equations. In cases where the *t*-values barely manage to pass statistical significance test at the margin (or narrowly miss the test) in the total aid-related equations, they comfortably pass the test in the grant-related equations. The reason for this is not far-fetched. Total aid is not a homogenous concept. In fact, it is a misnomer, as it is derived by mechanically adding grants and loans. Nevertheless, qualitatively, the results are broadly similar and the effects of the various factors tested are found to operate along the same directions in both equation categories. Thus, total aid-related equation estimates are going to be our benchmark in evaluating the results.

5.2.1. Trend Factor

Having controlled for the effects of the various factors explicitly included as regressors in the equations, estimates in Table 3 show that the disbursements-commitment ratio exhibits a definite positive trend over the decades. This is due to the fact that, although disbursement generosity ratio (disbursement-GDP ratio) has been on a declining trend, it is less rapid than the decline in the commitment generosity ratio (commitment-GDP ratio), resulting in a trend increase in disbursement-commitment relationship. This interpretation is based on the positive and statistically very significant coefficients of the trend regressor in the disbursement-commitment ratio equations (Table 3) coupled with its negative and statistically significant coefficients in Tables 4 and 5, with the values and statistical significance being greater absolutely in Table 5 than in Table 4.

5.2.2. Level of Per Capita Income

Donors' level of per capita income does not have a definite effect on the shares of aid commitments being actually disbursed. But based on the balance of the weak evidence available, the per capita level of income has a negative effect on the ratio. Despite the fact that it has definite positive effects on the aid disbursement generosity ratio, this is almost of the same magnitude as its positive effect on the commitment generosity ratio so that the effect on disbursement ratio, though negative, is not statistically significant. This inference is based on the disbursement-commitment ratio

equations in Table 3 where the coefficients are negative but not statistically significant, while they are positive and statistically very significant in the disbursement and commitment generosity ratio equations in Tables 4 and 5, respectively.

5.2.3. Being a G7 Member Country

This apparently has a negative effect on the disbursement-commitment ratio (Table 3). It has a mixed (depending on the equation) statistically insignificant effect on the commitment generosity ratio (Table 5) and a negative though statistically insignificant effect on the disbursement generosity ratio (Table 4), the net effect of which translates into a negative effect (that is generally statistically significant at the margin) on the disbursement-commitment ratio. This suggests that donors with the greatest influence in international economy (and, possibly, polity) tend to disburse smaller fractions of their aid commitments than other donors.

5.2.4. Donor's Generosity Ratio

More generous donors tend to disburse smaller proportions of their aid commitments than others. This is because the generosity ratio coefficients are negative and statistically significant in many equations and this tendency is much more clearly established in the corresponding grant disbursement-commitment ratio equation estimates in Parallel Table 3A where the negative coefficient is statistically very significant in all equations. This finding is in line with what we posited earlier. The scope to disburse less than committed by relatively parsimonious donors should be smaller, since much of their commitments constitute more or less the bare minimum necessary for their national interests. Consequently, their commitments are less prone to being under-disbursed.

5.2.5. Preponderance of Grants in Total Aid

Donors who give more aid in the form of grants tend to disburse less of their commitments than other donors. Although relative preponderance of grants in aid has some positive effect on the commitment generosity ratio (Table 5), this positive effect is found to be unsustainable until the disbursement stage (by which time it vanishes, Table 4), so that the overall effect on the disbursement-commitment ratio is negative (Table 3). This is in line with expectations. Loan commitments constitute more formal and binding contracts than grant commitments, and should therefore be less prone to deferral at relatively slight conditionality-based excuse.

5.2.6. Preponderance of Pro-poor Recipients in Total Aid

Similarly, donors who give a larger proportion of their aid to lowest-income recipient countries seem to disburse less of their commitments than other donors. These

pro-poor donors do not appear to differ from other donors with regard to generous at the commitment stage, as the relevant coefficients are statistically insignificant in the aid commitment generosity equation (Table 5 and Parallel Table 5A). But at the disbursement stage, they are observed to defer or 'renege', due presumably to a relative paucity of various commercially oriented lobby groups to stimulate interest. This inference is based on the coefficient of this variable in the disbursement generosity ratio equations that is negative (though statistically insignificant) in Table 4 and also in Parallel Table 4A (where the negative coefficient is statistically very significant). Thus, the overall outcome is a statistically significant negative effect on the disbursement-commitment ratio (Table 3 and Parallel Table 3A). Again, this finding is in line with the explanation adduced earlier. The type of aid given to lowest-income recipients is unlikely to generate interest for the donor-based lobby groups in connection with fund disbursements, so that any relatively mild conditionality breach might trigger disbursement deferral.

5.2.7. Economic Growth

Paradoxically, high economic growth is noted to have reduced the fraction of aid commitment being disbursed. Its negative effect on the commitment generosity ratio (Table 5 and Parallel Table 5A) is further aggravated on the disbursement generosity ratio (Table 4 and Parallel Table 4A), resulting in an overall statistically significant negative effect on the disbursement-to-commitment ratio (Table 3 and Parallel Table 3A). A probable explanation of this finding is that aid commitment reacts with a lag to donors' economic growth and its disbursement reacts with even a further lag, thus accounting for the observed negative coefficient of economic growth in disbursement-commitment ratio equations. Also, economic growth, by definition, increases GDP (the denominator of the aid-GDP ratio) so that there is already a built-in inverse non-behavioural relationship between economic growth and each of commitment and disbursement generosity ratios, which the lags in aid response to economic growth would therefore be unable to offset. Notwithstanding this attempt to provide an explanation, this finding still remains rather puzzling.

5.2.8. Phase of Economic Cycle

The phase of economic cycle has a negative but statistically insignificant effect on the total aid disbursement-to-commitment ratio. During a rising phase, the disbursement generosity ratio becomes enhanced (Table 4 and Parallel Table 4A) almost - but not exactly - to the same extent as the commitment generosity ratio (Table 5 and Parallel Table 5A). The fact that the positive effect of economic upturn at the commitment stage becomes tempered at the disbursement stage supports the view mentioned above, i.e., that disbursements probably display greater lag than commitments in responding to economic growth or, in the present case, to changes in the tempo of economic activities.

The overall result of these is a negative but statistically insignificant effect of an upturning phase of economic cycle on total aid disbursement-commitment ratio (Table 3 and Parallel Table 3A).

5.2.9. Procurement-tied in Relation to Total Aid

A higher fraction of procurement-tied aid leads to a greater share of committed aid volume being disbursed. The fraction of aid that is procurement-tied does not appear to have significantly affected the commitment generosity ratio (Table 5 and Parallel Table 5A). But at the disbursement stage, it becomes a factor to be reckoned with, as it is found to have a statistically significant positive coefficient in the disbursement generosity ratio equations (Table 4 and Parallel Table 4A). As a result, it is also found to have a statistically significant positive coefficient in the disbursement- commitment ratio equations (Table 3 and Parallel Table 3A). This finding is in line with expectations, as donor country-based exporters should be more proactive and aggressive in lobbying to ensure the release of funds for their actual or anticipated supplies.

5.2.10. Government Size

Large-sized donor governments (i.e., with large government spending-GDP ratio) disburse higher proportion of their aid and grant commitments. Although a high government expenditure-GDP ratio is observed to have a definite, statistically significant positive effect on the commitment generosity ratio (Table 5 and Parallel Table 5A), the positive effect is intensified further at the disbursement stage (Table 4 and Parallel Table 4A), so that the overall effect on the disbursement-commitment ratio is positive (Table 3 and Parallel Table 3A).

5.2.11. Fiscal Balance Position

The ratio of budget surplus to total government spending has a weak (i.e., statistically insignificant) but expected positive effect on the fraction of commitments being disbursed. For total aid-related equations, the marginally significant positive effect it has on the commitment generosity ratio (Table 5) becomes a little stronger on the disbursement generosity ratio (Table 4), resulting in a statistically insignificant positive overall effect on the total aid disbursement-commitment ratio (Table 3). In the case of grant-related equations, its positive but insignificant effect on the commitment generosity ratio (Parallel Table 5A) becomes nil on the disbursement generosity ratio (Parallel Table 4A), but the overall result on the disbursement-commitment ratio is positive and moderately significant. On the whole, the evidence in support of a positive effect of fiscal surplus on disbursement-commitment ratio is weak, which should not be surprising as budgetary position need not be the major reason to prompt a donor to withhold disbursement of pledged aid. Also, the fact that total aid allocated accounted

for a mere 1.2 per cent of donor government total expenditure over the three decades implies that thrift or economy in aid disbursement would not achieve much in balancing the budget.

5.2.12. Political Factors

The greater the number of checks and balances in the political system, the lower the fraction of aid being disbursed. Similarly, the higher the degree of polarization or difference in orientation among the veto players (executive and parliament), the lower the disbursement-commitment ratio. Each of the two alternative measures of the extent of checks and balances as well as each of the two alternative indicators of the degree of polarization is found to have a positive effect on the aid (and grant) commitment generosity ratio (Table 5 and Parallel Table 5A), suggesting, as posited earlier, that more aid commitments would be needed to satisfy the resulting, more diverse interests of the implied veto wielders. But this commitment-stage effect, while it still exists at the disbursement stage, is tempered to some extent (Table 4 and Parallel Table 4A) so that the overall effect on the disbursement-commitment ratio is negative and statistically significant in most of the equations (Table 3 and, especially, Parallel Table 3A). This suggests that many aid allocation-related political interactions (pressure, intrigue, etc. between the legislature and the executive) are likely more active at ensuring that more aid is committed to their preferred causes or recipients, and not much for the follow-up phase of ascertaining that aid is actually disbursed, i.e., ensuring that conditionality breaches and transgressions by their preferred recipients are overlooked.

6. SUMMARY AND CONCLUSION

Empirical studies have shown that delay and, hence, uncertainty in foreign aid receipts, just like export earning instability, adversely affect the economic growth of recipient countries. But while the causes of export instability have been studied in the literature, no single attempt at empirically identifying the causes of aid-receipt uncertainty has come to notice. While there is a traditional perception that delays in receiving promised aid are due to recipient-specific causes, attention is currently also focused on donor-specific causes, including the reasons that induce donors to use double standards in interpreting and enforcing the conditionalities of their aid in the face of conspicuous breaches. These create greater havoc for the recipient than the disbursement delays resulting from self-induced recipient-specific reasons, most of which could be anticipated by the recipient and, hence, taken into account in budgetary preparations and macroeconomic management.

In light of the above, the study makes a pioneering and exploratory attempt at identifying donor-specific reasons for delaying disbursements of aid commitments. Annual panel data over the 1970-2000 periods for the 22 members of OECD's DAC

donor group are used to carry out the econometric study. Several possible determinants that may govern donor's decision on the share of committed aid for disbursement are tested for and the highlights of our findings are as follows:

- If we control for the effects of other tested factors, as discussed below, the fraction of aid commitment being disbursed exhibits a definite positive trend over the decades;

- Donor's level of per capita income does not have a decisive effect on the fraction of aid commitments actually disbursed;

- Being a G7 member country apparently has a negative association with the fraction of aid commitments being disbursed;

- More generous donors tend to disburse a smaller share of their aid commitments than others;

- Also, donors who give more of their aid in form of grants tend to disburse less of their commitments than other donors do;

- Similarly, donors who give more aid to lowest-income recipient countries are found to disburse less of their commitments than other donors;

- Paradoxically, a donor's high economic growth is found to have reduced the fraction of aid commitment released for disbursement;

- An upturning phase of the economic cycle has a negative but statistically insignificant effect on the fraction of total aid commitment disbursed;

- A higher fraction of aid that is procurement-tied leads to a greater fraction of a given committed aid volume disbursed;

- Large-sized donor governments (i.e., with large government spending-GDP ratio) disburse higher proportion of their aid and grant commitments than small-sized ones. Also, there is some weak evidence that a donor's fiscal surplus position enhances its tendency to disburse aid commitments;

- The greater the number of checks and balances in the political system, the lower the fraction of aid being disbursed. Similarly, the higher the degree of polarization or difference in orientation among the veto players (executive and parliament), the lower the disbursement-commitment ratio.

Most of the above findings are in line with expectations, and the rationale for this is discussed in the text. While we cannot be very definite on these findings, especially in view of their rather exploratory nature, we hope nevertheless that they shed some light on the factors that affect the uncertainties of aid being received. We also hope that the findings will be complemented in future by similar studies to determine the reasons why recipients, in the first place, fail to meet aid conditionalities. If conditionality is always met, there is little cause for donors to delay aid disbursements. The present study, however, focussed on the factors that induce erratic behaviour on the part of donors so that breaches of conditionalities are at times overlooked and at other times, not.

The above study has been carried out with donor-based data. Another perspective to the same problem is to use recipient country-based data, which would shed light on the recipient-specific factors and characteristics (be they economic or political) that influence donors' decision or propensity to disburse committed aid. Of course, it can be argued that the adverse effect of the failure to disburse aid because of recipient-specific factors is less detrimental to recipient's government budgeting, because the affected country would have been aware in advance that they were unlikely to meet the implicit or explicit aid conditionalities. Nevertheless, doing so would still provide information that could be useful in other policy respects and would complement the results of the present study, whose scope could not accommodate such an extension for reason of space. This is therefore suggested as a challenge for future studies along this line.

APPENDIX

Parallel Empirical Results for Grant-related Equations

Parallel Table 3A. Grants Disbursement-commitment Ratio Equations

Trend line	0.004	0.004	0.004	0.006	0.005	0.004	0.004	0.004	0.003
	(3.9)	(4.2)	(3.9)	(3.6)	(3.1)	(2.7)	(3.3)	(3.4)	(2.2)
Per capita income (log)	-0.031	-0.063	-0.060	-0.115	-0.054	-0.027	-0.033	-0.037	-0.062
	(-0.7)	(-1.4)	(-1.2)	(-1.3)	(-0.7)	(-0.4)	(-0.5)	(-0.6)	(-1.1)
Being a G7 member dummy	-0.040	-0.033	-0.032	-0.120	-0.073	-0.077	-0.062	-0.061	-0.036
variable	(-1.4)	(-1.2)	(-1.2)	(-1.4)	(-1.5)	(-1.5)	(-1.4)	(-1.4)	(-1.0)
Generosity (net grant	-12.18	-8.227	-7.104	-47.99	-25.95	-23.67	-24.51	-23.16	-13.71
disbursement/GDP) ratio	(-3.2)	(-2.2)	(-1.9)	(-6.1)	(-4.5)	(-4.0)	(-4.5)	(-4.3)	(-3.1)
Fraction of aid committed to	-0.171	–	–	–	–	–	–	–	–
low-income recipients	(-3.4)	–	–	–	–	–	–	–	–
Economic (real GDP)	–	-0.003	–	–	–	–	–	–	–
growth	–	(-2.2)	–	–	–	–	–	–	–
Upturn in economic cycle	–	–	-0.104	–	–	–	–	–	–
	–	–	(-0.8)	–	–	–	–	–	–
Procurement-tied aid (versus	–	–	–	0.147	–	–	–	–	–
total aid)	–	–	–	(3.3)	–	–	–	–	–
Polarization index									
1st type	–	–	–	–	-0.015	–	–	–	–
	–	–	–	–	(-2.1)	–	–	–	–
2nd type	–	–	–	–	–	-0.021	–	–	–
	–	–	–	–	–	(-4.1)	–	–	–
Checks-and-balances index									
1st type	–	–	–	–	–	–	-0.008	–	–
	–	–	–	–	–	–	(-3.3)	–	–
2nd type	–	–	–	–	–	–	–	-0.009	–
	–	–	–	–	–	–	–	(-3.3)	–
Size of government (govt.	–	–	–	–	–	–	–	–	0.773
expd/GDP ratio)	–	–	–	–	–	–	–	–	(3.7)
Fiscal surplus/GDP ratio	–	–	–	–	–	–	–	–	0.001
	–	–	–	–	–	–	–	–	(2.2)
No. of obs	483	521	522	328	379	388	421	413	489
Adjusted R^2	0.304	0.359	0.354	0.433	0.459	0.477	0.468	0.469	0.391

Notes: (i) The dependent variable is the ratio of disbursement of ODA grants to commitment of ODA grants; (ii) The numbers in parentheses below the parameter estimates are the *t*-values. A parameter estimate is statistically significant at 1%, 5%, and 10% levels if its *t*-value is, in absolute sense, not less than 2.6, 2.0, and 1.6, respectively.

Parallel Table 4A. Grants Disbursement-GDP Ratio Equations

Trend line	0.00001	0.00001	0.00002	0.00001	0.00001	-0.0000	-0.0000	-0.0000	-0.0000
	(0.5)	(0.5)	(1.5)	(0.6)	(0.6)	(-1.3)	(-0.5)	(-0.3)	(-1.7)
Per capita income (log)	0.0016	0.0018	0.0012	0.0014	0.0016	0.0025	0.0020	0.0018	0.0019
	(2.6)	(3.4)	(2.2)	(2.3)	(2.8)	(4.9)	(4.2)	(3.8)	(4.2)
Being a G7 member	-0.0009	-0.0008	-0.0008	-0.0013	-0.0008	-0.0011	-0.0009	-0.0009	-0.0008
dummy variable	(-1.3)	(-1.1)	(-1.2)	(-1.4)	(-0.9)	(-1.3)	(-1.1)	(-1.1)	(-1.3)
Fraction of aid committed	-0.0013	–	–	–	–	–	–	–	–
to low-income recipients	(-2.5)	–	–	–	–	–	–	–	–
Economic (real GDP)	–	-0.0001	–	–	–	–	–	–	–
growth	–	(-2.3)	–	–	–	–	–	–	–
Upturn in economic cycle	–	–	0.0019	–	–	–	–	–	–
	–	–	(1.6)	–	–	–	–	–	–
Procurement-tied aid	–	–	–	0.0009	–	–	–	–	–
(versus total aid)	–	–	–	(3.1)	–	–	–	–	–
Polarization index									
1st type	–	–	–	–	0.0002	–	–	–	–
	–	–	–	–	(3.0)	–	–	–	–
2nd type	–	–	–	–	–	0.0001	–	–	–
	–	–	–	–	–	(1.9)	–	–	–
Checks-and-balances index									
1st type	–	–	–	–	–	–	0.00002	–	–
	–	–	–	–	–	–	(0.7)	–	–
2nd type	–	–	–	–	–	–	–	0.00006	–
	–	–	–	–	–	–	–	(1.6)	–
Size of government	–	–	–	–	–	–	–	–	0.0084
(govt. expd/GDP ratio)	–	–	–	–	–	–	–	–	(4.7)
Fiscal surplus/GDP ratio	–	–	–	–	–	–	–	–	0.0000
	–	–	–	–	–	–	–	–	(0.1)
No. of obs	483	521	522	328	379	388	421	413	489
Adjusted R^2	0.791	0.780	0.779	0.913	0.889	0.885	0.879	0.879	0.810

Notes: (i) The dependent variable is the ratio of disbursement of ODA grants to GDP; (ii) The numbers in parentheses below the parameter estimates are the *t*-values. A parameter estimate is statistically significant at 1%, 5%, and 10% levels if its *t*-value is, in absolute sense, not less than 2.6, 2.0, and 1.6, respectively.

Parallel Table 5A. Grants Commitment-GDP

Trend line	-0.0000	-0.0000	-0.0000	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001	-0.0001
	(-1.0)	(-1.3)	(-0.1)	(-1.8)	(-1.8)	(-4.0)	(-2.9)	(-2.8)	(-3.0)
Per capita income (log)	0.0019	0.0022	0.0013	0.0025	0.0025	0.0032	0.0026	0.0023	0.0021
	(3.2)	(4.1)	(2.4)	(3.2)	(4.1)	(5.8)	(4.9)	(4.5)	(4.1)
Being a G7 member	-0.0009	-0.0007	-0.0008	-0.0011	-0.0007	-0.0010	-0.0009	-0..0008	-0.0005
dummy variable	(-1.3)	(-1.1)	(-1.2)	(-1.3)	(-0.8)	(-1.2)	(-1.1)	(-1.0)	(-0.8)
Fraction of aid committed	-0.0002	–	–	–	–	–	–	–	–
to low-income recipients	(-0.4)	–	–	–	–	–	–	–	–
Economic (real GDP)	–	-0.0001	–	–	–	–	–	–	–
growth	–	(-1.2)	–	–	–	–	–	–	–
Upturn in economic cycle	–	–	0.0037	–	–	–	–	–	–
	–	–	(2.8)	–	–	–	–	–	–
Procurement-tied aid	–	–	–	0.0002	–	–	–	–	–
(versus total aid)	–	–	–	(0.4)	–	–	–	–	–
Polarization index									
1st type	–	–	–	–	0.0003	–	–	–	–
	–	–	–	–	(4.0)	–	–	–	–
2nd type	–	–	–	–	–	0.0002	–	–	–
	–	–	–	–	–	(4.0)	–	–	–
Checks-and-balances index									
1st type	–	–	–	–	–	–	0.0001	–	–
	–	–	–	–	–	–	(2.1)	–	–
2nd type	–	–	–	–	–	–	–	0.0001	–
	–	–	–	–	–	–	–	(2.7)	–
Size of government	–	–	–	–	–	–	–	–	0.0068
(govt. expd/GDP ratio)	–	–	–	–	–	–	–	–	(4.2)
Fiscal surplus/GDP ratio	–	–	–	–	–	–	–	–	0.00001
	–	–	–	–	–	–	–	–	(1.0)
No. of obs	483	521	522	328	379	388	421	413	489
Adjusted R^2	0.746	0.733	0.736	0.847	0.829	0.833	0.823	0.823	0.761

Notes: (i) The dependent variable is the ratio of commitment of ODA grants to GDP; (ii) The numbers in parentheses below the parameter estimates are the *t*-values. A parameter estimate is statistically significant at 1%, 5%, and 10% levels if its *t*-value is, in absolute sense, not less than 2.6, 2.0, and 1.6, respectively.

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