Economics Bulletin

Volume 31, Issue 1

Aid unpredictability and absorptive capacity: analyzing disbursement delays in Africa.

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Abstract

This paper examines the extent to which aid disbursement delays could be used as an indicator of the aid unpredictability and absorptive capacity in recipient countries. Since many recipient countries are dependent on aid, disbursement delays might matter for its effectiveness. The emphasis is put on the so-called pipeline approach, according to which, in the short run, disbursement constraints may lead to huge delays and weak rates of aid disbursement relative to commitments. After the literature review on disbursement delays, we use the framework of programmable aid to run some econometric estimations through a dynamic model, an ARDL, for a panel of 48 African countries during the period of 1975–2008. We find disbursement constraints mainly at the short-run level, while the main donor's specific factors seem to be the selectivity and the degree of aid fragmentation. Disbursement rates and rhythms are also influenced by the economic performance and governance quality of the recipient countries and the share of grants in aid modalities. Bilateral donors are found to under-perform in comparison with multilateral donors in terms of the rhythm of aid disbursement.

Contact: Gaoussou.Diarra@u-clermont1.fr. Thanks to Professors Patrick Guillaumont and Sylvianne Guillaumont Jeanneney for their helpful comments on the first draft of this research. A previous draft of this research was discussed at the ISS 7th Development Dialogue Conference (The Hague), the UNU-WIDER Conference on Africa Development: Myths and Realities (Accra), the 68th MPSA Annual Conference (Chicago), the 16th International Conference on Panel Data (Amsterdam) and the CERDI-ANR Seminar on Aid Effectiveness. I thank all the participants in these conferences. The usual disclaimer applies.
Citation: Gaoussou Diarra, (2011) "Aid unpredictability and absorptive capacity: analyzing disbursement delays in Africa.", *Economics Bulletin*, Vol. 31 no.1 pp. 1004-1017.
Submitted: Aug 10 2010. **Published:** March 27, 2011.

1. Introduction

During previous decades, the analysis of foreign aid effectiveness mainly focused on its ability to promote sustainable growth. Recently, however, the aid literature debate has tended to emphasize its performance in terms of alleviating the growing poverty in developing countries. To some extent, this shift in the debate was influenced by the commitments made in the framework of the Millennium Development Goals (MDGs). Then the absorptive capacity issues came naturally to the front of the aid effectiveness debate. Indeed, even in the case of full respect of a donor's commitment to provide more aid, the crucial issue may remain the ability of recipient countries to absorb these amounts of aid more usefully. While some authors, such as Easterly (2005) and Rajan and Subramanian (2011), are sceptical about the need to scale up aid due to absorptive capacity problems, others authors, like Sachs (2005), are keen proponents of a substantial increase in aid in order to reach the MDGs. Poverty trap arguments are usually put forward to claim the need to increase the amount of aid for poor countries, but these arguments are not sufficient to convince donors to make more commitments and to respect them by disbursing more effective aid. A consensus seems to emerge from academic and practitioner fields that absorptive capacity issues are one of the determinants of foreign aid effectiveness. This paper focuses on aid disbursement delays, which constitute one of the four approaches of the absorptive capacity literature.

Indeed, the three other approaches to absorptive capacity concern firstly the macroeconomic unrest – Dutch disease approach – resulting from aid increase and instability, leading to the loss of economic competitiveness in receiving countries.[1] The second approach points out the problem of diminishing marginal returns of aid by using threshold principles, while the third approach pays attention to the effects of aid on the recipient country's institutional weaknesses.[2] Yet, the disbursement delays approach has been neglected by academic works, which is surprising if we consider the interest of aid practitioners in this issue. This research aims at remedying this gap by proposing theoretical and empirical frameworks to analyse aid delays. The disbursement delays approach is also called the "pipeline approach" to absorptive capacity in reference to the stock of aid waiting for the disbursement process, or otherwise the lags between commitments and disbursements. While considering the rate and the rhythm associated with these disbursements we can reasonably assume that the size of the aid pipeline reflects the importance of the bottlenecks affecting the adequate timing of disbursements, so it provides useful indications of the absorptive capacity of a given receiving country. The potential unpredictability resulting from aid delays affects negatively the economic performance of the receiving country by decreasing the aid impact on growth and by affecting the recipient government's incitements to undertake huge public investments to reduce poverty (Lensink and Morrissey, 2000; Bulíř and Lane, 2002; Arellano et al, 2009; Agénor and Aizenman, 2010). However, some mitigating effects should be considered while assuming that recipient governments are in the habit of facing foreign aid unpredictability and uncertainty. The small amount of literature on aid delays does not present uniform views about the relevance and size of lags in disbursements as much as about the potential factors explaining these delays.[3] In such a context, we propose firstly in this paper a brief review of the debate on the origins and sizes of aid delays by making a distinction between the causes

[1] See Berg et al (2005); Heller (2005); Rajan and Subramanian (2011).
[2] See Knack (2001); Clemens et al (2003, 2004); Guillaumont and Lajaaj (2006); Birdsall (2007); Bowman and Chand (2007); Guillaumont and Guillaumont Jeanneney (2007); Knack and Rahman (2007).
[3] See Kanbur (2000); Bulíř and Hamann (2001, 2003, 2006); Bulíř and Lane (2002); Odedokun (2003); Eifert and Gelb (2005); Leurs (2005); Vargas Hill (2005); Svenson (2006); Celasun and Walliser (2008); Deutscher and Fyson (2008); OECD-DAC (2008).

coming from the recipients and those attached to donors' behaviours, and without neglecting the causes related to aid modalities. In a second step, we shed light on the potential empirical determinants of aid delays for 48 countries in Africa, during the period 1975–2008, by using an econometric approach through a dynamic panel data model and adopting the framework of programmable aid which take into account the amount of aid arriving effectively in recipient countries. The ARDL model, which allows us to differentiate between short- and long-run effects of disbursement constraints, is thus run. Disbursement constraints are found mainly at the short-run level, while the main donor-specific factors seem to be the selectivity and the degree of aid fragmentation. The disbursement rates and rhythms are also influenced by the economic performance and the governance quality of the recipient countries and the share of grants in aid modalities. Bilateral donors are found to under-perform in comparison with multilateral donors in terms of the rhythm of aid disbursement.

2. The origins of gaps between commitments and disbursements

Studying the absorptive capacity through the pipeline approach is motivated by the fact that it allows the understanding and assessment of the short-run constraints of absorptive capacity. Previous approaches to absorptive capacity were in some ways unsatisfactory because they described and captured essentially the long-run constraints on aid disbursements. The aid pipeline represents the amount of aid pledged by donors but not yet disbursed. This waiting stock of aid is often postponed or simply cancelled. So, the level of the pipeline is influenced by the importance of the bottlenecks and constraints that the disbursement process has to support. Also, the pipeline level might be a good indicator of the capacity of a given recipient country to absorb usefully a more important quantity of foreign aid flows. Yet, the magnitude of the disbursement lags will depend on the frame adopted to notify the dates of new disbursements in reference to the commitment dates. Because donors and recipients sometimes use different definitions of disbursement dates, there is some confusion about disbursement delays measures that makes temporal and cross-country comparisons difficult.

The invisible bureaucratic pipeline of aid runs in a circuit from the donor to the recipient sides. Therefore, the time gap between the different levels of this pipeline might be relatively long depending on the stage of the aid cycle facing bottlenecks. Indeed, among the three stages of the aid cycle (feasibility studies, negotiation and execution), only the last stage is considered in this paper. It is important for the recipient country to deal with a regular and predictable rhythm of disbursements, which is crucial for budget planning, credibility in terms of public investment and avoiding the diminishing utility and time inconsistency problem in public resource allocations. More importantly, there is a real need to identify and explain the factors that are at the origin of long disbursement delays. However, in the academic literature, there is no consensus about the nature and net consequences of constraints affecting aid disbursements. Indeed, some authors such as Kanbur (2000) and Svensson (2006) support the idea that there are inadequate quick disbursements of aid because donors are under the spell of pressures or are victims of the Samaritan dilemma, while other authors[4] denounce the slow rhythm and long delays in aid disbursements. Before exposing the argumentations of each of these two groups, let us note that in both cases it is the aid effectiveness that is threatened.

[4] Bulíř and Lane (2002); Odedokun (2003); Leurs (2005); Bulíř and Hamann (2006); Roodman (2006); Celasun and Walliser (2008); Deutscher and Fyson (2008); OECD-DAC (2008). For instance Bulir and Hamann (2001, 2003) and Celasun and Walliser (2008) found that the predictive power of the IMF's aid commitment in terms of disbursement is on average between 70% and 80% in Africa Odedokun (2003) has shown that the rate of disbursement of the aid provided by OECD/DAC bilateral donors is influenced by donor economic and political characteristics (economic growth, budget, political polarization …) and by aid modalities such the tying degree and the proportion of grants.

Indeed, the risks associated with quick disbursements are important and concern for instance the wasting of aid and the promotion of bad governance. On the other side, slow disbursements can have the undesirable effects mentioned above by generating uncertainty about the disbursement rhythm or by subsequently reducing the global volume of aid available due to potential cancellations resulting from long delays.

2.1. Arguments supporting the existence of speedy disbursements

Part of the aid literature postulates that the current rhythm of aid disbursement is excessively high, contrary to the view of some authors. For authors defending this fact, aid agencies are likely to face pressures in different forms, in order to disburse aid quickly even if the conditionalities are not satisfied. The nature of pressures for disbursements depends on the type of aid agency – multilateral or bilateral – and on the modalities of aid – loan or grant. For multilateral agencies, the pressures could come from the main contributors to these agencies, namely the rich developed countries. Indeed, multilateral aid allocation is often influenced by political factors coming from developed countries, so that disbursements could also be influenced by these same factors. Bureaucratic considerations and interests in aid agencies are also likely to lead to quick disbursements because it is usual to base the determination of the size of new commitments on aid agencies' performance in terms of the rate of previous disbursements (Kanbur, 2000; Svensson, 2006). On the other hand, bilateral aid agencies are not immune to pressures. As multilateral donors, bilateral agencies could also be confronted with bureaucratic interests and constraints (bounds of the fiscal year) that could encourage quick disbursements. In addition, bilateral donors generally pursue multiple objectives among which political and trade considerations (for instance the motives for tying aid) tend to contribute to the acceleration in the rhythm of disbursements (Boone, 1996; Celasun and Walliser, 2006, 2008; Villanger, 2006; Amegashie et al, 2007). Nonetheless, both bilateral and multilateral aid agencies are affected by the Samaritan dilemma, which refers to their incapacity to make a credible commitment aiming to punish bad performances of receiving countries. Besides, there is asymmetric information in the relation between receiving countries, donors and developed countries' citizens contributing to the aid. This classical agency problem contributes to quick and inefficient disbursements of aid in a system of ex-ante conditionality.[5]

2.2. Arguments supporting the existence of long disbursement delays[6]

2.2.1. Donor-specific factors

Donors' fragmentation and the slowness related to multiple procedures: Aid fragmentation concerns the number of donors in a recipient country as well as the proliferation of activities financed by donors leading to a high transaction cost for the recipient country. Moreover, bureaucratic slowness in the donor's country as well as calendar and priority discrepancies

[5] Leandro et al (1999); Easterly (2000); Svensson (2000, 2003); Pedersen (2001); Svensson (2003); Adam et al (2004); Hagen (2006); Miquel-Florensa (2007).

[6] In 2005, the SPA – Strategic Partnership with Africa –published a report (SPA, 2005) to present the results of its surveys undertaken in 15 African states during 2003 and 2004. It found that on average 81% of the aid commitments made in 2003 were disbursed in the same year, while 10% were disbursed in 2004 and 9% were cancelled. The report noted that donors estimate at 40% the proportion of cases due to the non-fulfilment of conditionalities and 29% related to administrative issues on the donor side, while 25% concerned the slowness in the procedural conditions to be respected by the recipient. Only 4% were due to political problems in the donor country. Bilateral and multilateral donors differ because 60% of the delays for multilateral aid are due to non-satisfaction of conditionality while this cause represents only 35% for bilateral aid. The first cause of delays in bilateral aid (40% of cases) is the administrative problems in the donor country while recipient non-fulfilment of procedural conditions is the second cause of multilateral aid delays (25% of cases).

lead to long delays in aid disbursement. In light of these situations, the *Paris Declaration* in 2005 recognized that donor coordination is one of the key issues of aid effectiveness.
Aid allocation is often made on a political basis: As commitments are influenced by political factors intervening in donor country as well as in recipient country, it is not surprising that disbursements are also likely to be under these influences. This issue seems to concern bilateral aid more than multilateral aid.[7] Indeed, some donors are inclined to make more commitments just to manage strategically some geopolitical contexts, but as soon as the international situation or the internal political context change, these previous aid commitments are unlikely to be converted into disbursements. However this concerns essentially the strategic components of each donor's global aid. Most of bilateral donors use different national channels or agencies to manage their aid policies, for instance in USA we have the USAID, the MCC, the Department of State and the Department of Defense, while in France we can note the French Agency for Development (AFD) and the Ministry of foreign affairs. Then, domestic political changes do not affect equally the share of aid channeled through each agency. In turn, multilateral aid is also likely to be influenced by these political factors as bilateral donors could change the share of theirs funds transiting through multilateral channels. Yet, the culture of political neutrality prevailing in multilateral organizations might reduce their sensitivity to political events in recipient country. Therefore the gap between commitments and disbursements should be lower for multilateral aid (so high disbursement rhythm is potentially expected).

Aid conditionality problem: Conditionality is technology seeking to solve the problem of asymmetric information and time inconsistency in the relation between donors and recipients. Recipients could be tempted to perform some kind of opportunism behaviour, as it is well known that aid flows can be fungible and donors are likely to be under the Samaritan dilemma.[8] Thus, the non-fulfilment of political and economic conditionalities by the recipient leads to long delays and cancellations in disbursements. However, it can occur that the recipient satisfies all the conditionality rules while the donor is unable to or refuses to disburse the amount of aid pledged. Yet, the current tendency is to move from input conditionality towards outcome/performance conditionality.

2.2.2. Recipient-specific factors

Among the recipient-specific factors there is the bureaucratic slowness that, combined with multiple procedures for financing agreements and non-fulfilment of aid conditionality, contributes to deepening the disbursement delays. In many recipient countries, the public administration is not able to follow accurately all the procedures requested by donors and this situation leads to disbursement delays. Aid delays often occur because there is an overestimation of the recipient's ability to provide its own contribution in terms of financial compensation in aid disbursement schemes and some difficulties remain related to public procurements and contractual enterprise failures during the execution stage of aid activities. Besides, some political and institutional characteristics of recipients could matter for the disbursement rhythm. Indeed, during political events and instability (such as electoral periods), donors are generally more suspicious about the use of their financing, so that they slow down or stop disbursements. Moreover, some disbursement delays may result in the inadequacy or weakness of the structure of recipient country's law and order. For instance if

[7] Alesina and Dollar (2000); Collier and Dollar (2002); McGillivray (2003); Berthelemy and Tichit (2004); Isopi and Mavrotas (2006).
[8] Burnside and Dollar (1997); Devarajan and Swaroop (1998); Svensson (2000); Pedersen (2001); Azam and Laffont (2003); Hagen (2006).

aid is planned to finance local businesses, the administrative procedures delays will impact finally the rhythm of aid disbursement. The World Bank *Doing Business project* highlighted this issue by showing that the legal origin of law and the effectiveness of regulation matter the most (World Bank, 2009). Beside these recipient-specific factors we can also notify the infrastructure bottlenecks as well as the issue of availability of skilled workforce and the structure of labour market in recipient countries. Depending on the nature of the activity financed by aid, the weakness of the physical infrastructures and skilled workforce may increase disbursement delays.

2.2.3. Aid modalities matter

As aid flows are not homogeneous one might conceive some discrepancies in disbursement constraints depending on the aid modalities. The aid financial modalities – loan or grant – are not expected to have similar disbursement constraints. Above all, loan disbursements may have relatively long delays in cases of highly indebted recipients, but on the other hand one might consider that delays in loan disbursements are low relative to grants. As grants could be assimilated to free resources by the recipient, donors are likely to be more cautious during their disbursement process. These theoretical contradictions can be elucidated by the fact that the comparison between aid financial modalities will depend on what the aid is assumed to finance (Fielding and Mavrotas, 2005). For example, when grants are provided through emergency aid, their delays might be weak comparative to loans that finance generally large projects. Delays in infrastructure projects must naturally be high relative to delays in social projects. In the same way, disbursement delays will depend on the channels through which the aid flows are provided. Budget and programme aid flows are not constrained in the same way as project aid flows. Therefore, differences in bilateral and multilateral donors' behaviours in terms of disbursement delays could be explained by the discrepancies in terms of aid modality adoption, the differences in the activities financed by the aid and the differences in their sample of aid recipients.

3. An ARDL econometric analysis of disbursement constraints in Africa

3.1. Motives for using an ARDL model

In this section we check empirically the limits of absorptive capacity following the pipeline approach by seizing the dynamism accompanying the influences of potential factors affecting aid disbursements. These identifications are made through a dynamic panel model, namely ARDL – *Auto Regressive Distributed Lags*, which allows us to deal simultaneously with the short- and long-run dynamism of absorptive capacity. As it is recognized that absorptive capacity is essentially a dynamic phenomenon,[9] it appears relevant to use an ARDL model, contrary to some authors who use a classical panel model (Ododekun, 2003) or AR model (Bulir and Hamann, 2001, 2003). Indeed, the temporal lags between commitment and disbursement are likely to lead to a co-integration system that needs an error correction model. This is necessary to capture the magnitude of the short-run disequilibrium between commitments and disbursements and finally to appraise the size of the adjustment speed of disbursements towards their long-run equilibrium conditioned by the aid pipeline. In practice, it consists of explaining the disbursement variations by current and previous commitments, previous disbursements, recipients' and donors' characteristics and aid modalities. The AR dimension of the model is supported by the assumption that previous disbursements can affect

[9] See Irandoust and Ericsson (2005); Bourguignon and Sundberg (2006).

current disbursements. This assumption is related to the properties of the aid pipeline according to which the amount of previous disbursements influences the current disbursement capacities. The DL dimension of the model is guided by the assumption according to which previous commitments influence current disbursements. This assumption is based on the principle of continuity for commitments that are generally distributed over time due to the donor's will or absorptive capacity constraints. Therefore the combination of these two dimensions deals explicitly with the aid pipeline generated by the lag between commitments and disbursements while correcting for the magnitude of uncertainty on disbursements.

3.2. Specification and estimation techniques

The ARDL model is specified as:

$$D_{i,t} = \sum_{j=1}^{p} \alpha_{ij} D_{i,t-j} + \sum_{l=0}^{q} \beta_{il} X_{i,t-l} + \mu_i + \varepsilon_{i,t} \qquad \text{(a)}$$

where $D_{i,t}$ denotes the gross disbursements of ODA (official development aid) received by a recipient i (1,…, 48) during the period t (1, …, 34). X is the vector of explanatory variables. Equation (a) leads to an error correction model used for the estimations:

$$\Delta D_{i,t} = \phi_i (D_{i,t-1} - \theta_i^{'} X_{i,t}) + \sum_{j=1}^{p-1} \alpha_{ij}^{*} \Delta D_{i,t-j} + \sum_{l=0}^{q-1} \beta_{il}^{*} \Delta X_{i,t-l} + \mu_i + \varepsilon_{i,t} \qquad \text{(b)}$$

where $\theta_i = -\phi_i^{-1} \varphi_i$ is the vector of long-run elasticities, α_{ij}^{*} and β_{il}^{*} are the coefficients of short-run elasticities; and ϕ_i is the error correction coefficient and measures the adjustment speed of disbursements converging toward their long-run equilibrium while considering variations in commitments or other factors influencing disbursements. It captures the effect of the aid pipeline on disbursements after controlling for the effects of other factors. The model is relevant if the estimated coefficient $\hat{\phi}_i$ is significant and negative. If the absolute value of this coefficient is near to zero, lower is the adjustment and it results in a weak convergence of disbursements. These two parameters are important for our analysis because the design and adoption of policy, against the harmful effects of aid instability and unpredictability, will depend on the temporal or permanent nature of aid flow variations. Thus, the error correction model is estimated with the mean group (MG) and pool mean group (PMG) estimator methods developed by Pesaran et al (1999). MG allows individual heterogeneity in both the short and the long run, while PMG accepts heterogeneity in the short run but homogeneity of behaviours in the long run. For the authors, these estimators are robust to the issue of endogeneity and to the occurrence of unit roots.

3.3. Data and variables

The sample is composed of 48 African countries observed during the period 1975 to 2008. The aid data are from OECD/DAC statistics, but we apply the principle of programmable aid[10] in order to obtain the effective aid flow arriving in recipient countries. The dependent variable is the first difference of annual ODA disbursements in each recipient country. The explanatory variables are the first difference of previous and current ODA commitments and the first difference of previous disbursements. These variables are in log format. Other

[10] To obtain programmable aid, we subtract from the global ODA flows the component of aid likely to be disbursed quickly in essence or to be used out of recipient countries, such as technical cooperation aid and emergency aid.

variables are the share of grants in the total ODA, the share of commitment going to 32 African LDCs (least developed countries), controlling for selectivity issues, and aid fragmentation index (number of donors having a weight inferior to 5% in each recipient country). In order to control for the recipient governance quality we introduce the dummy Election (if the recipient country is in a pre-electoral or electoral period, see Keefer et al, 2002). Recipient socio-economic characteristics (data from the World Bank/WDI) are controlled by GDP per capita, while we use the rate of foreign direct investment – FDI/GDP (inflows) to capture the trade pressures on aid disbursements (tying degree of aid)[11].

3.4. Findings and implications

Three main findings can be drawn from the econometric estimation (see Tables A.1 to A.3). First, we have found that absorptive capacity constraints matter essentially in the short run. The second important result is that recipients' and donors' characteristics also affect disbursement delays. Finally, the third result is that aid modalities influence disbursement delays too. Rows (1) and (2) of Table A.1 suggest firstly that there are disbursement constraints essentially in the short run since the short-run elasticities are negative, which means that marginal variations in commitments are not followed by marginal variations in disbursements. However, the long-run elasticity shows that the problem of absorptive capacity disappears over time and the disbursements respond positively to commitment variations (96% for the mean group estimator and 106% for the pool mean group estimator). This result supports the idea that the absorptive capacity is mainly a short-run issue, so the disbursement delays approach is likely to remain more relevant than other absorptive capacity approaches based on long-run assumptions. The second important finding concerns the speed of disbursements. The adjustment coefficient is not high enough either for MG (56% per year) or for PMG (46% per year). This coefficient characterizes the conditional evolution of the pipeline so that the disbursement delay properties are revealed. Moreover, the Hausman test for the choice between the MG and the PMG estimator concludes the relevance of the PMG estimator, which is then retained for all the other estimations.

The socio-economic characteristics of the recipients play some important roles in disbursement structures only in the long run. Indeed, the effect of the FDI rate is positive (Table A.1), a result that could be supported by the fact that the private interests of foreign investors are likely to generate pressures for disbursements in the case of tied aid. Recipient countries' institutional quality matters for delays as the dummy "Election" has a negative effect in the long run, which should denote the distrust of donors in the pre-electoral period, but in the short run, the effect could be neglected (Table A.1). Aid selectivity may also matter for disbursement dynamism. For instance, the aid targeting to 32 LDCs in Africa leads to negative effects on disbursements in the short run but the effects become positive in the long run with a weak speed of adjustment (Table A.2 and Table A.3 in column 3). This result may be explained by the fact that LDCs, with their structural vulnerability characteristics, meet some constraints to absorb more aid in the short run, but this handicap disappears in the long run. This result suggests that donors should take this fact into account while financing LDCs, and calls for adapting aid to factors likely to improve the absorptive capacity. Concerning the aid fragmentation, it influences disbursements negatively but with some threshold effects (Table A.2). This negative effect is due to some increases in transaction costs induced by aid fragmentation. On the other hand, aid modalities are not to be neglected while analysing disbursement delays since aid flows are not homogeneous. For example, aid financial

[11] See Appendix B.1 and B.2 for descriptive statistics, data sources and the list of countries in the sample.

modalities such as the share of grants in aid commitments affect disbursements positively in the long run and improve the disbursement speed (see Table A.2).
Finally, Table A.3 presents some comparative results through various aid flows and sample specifications. For instance, the column (1) and (2) compare programmable aid to global aid. We can remark that the adjustment speed for programmable aid is inferior to the global aid one, which confirms our argument according to which using global aid flow may lead to underestimate the extent of disbursement delays. Indeed, as bilateral donors provide an important part of their assistance in the form of non-programmable aid (food aid, emergency aid, debt forgiveness, technical assistance), we find a low disbursement speed for them. So, they may present high aid delays compared to multilateral donors when we use programmable aid (Table A.3). The main explanations of this result is that bilateral and multilateral donors do not have always the same composition of aid flows (the level of programmable aid for instance). Besides, they do not have the same aid modalities (grant or loan, project aid or budgetary aid…), the same sector destination of aid and finally the same donor's side constraints on disbursements. If we consider for instance aid financial modalities, bilateral donors provide mainly theirs funds in grants while multilateral aid is essentially provided in concessional loans. As grants could be considered by recipient government as free resources, the structure of conditions associated to its disbursements may reduce the rhythm and rate in comparison with commitments. Moreover, according to the "mood" of the bilateral donor's government, we could assist to frequent "stop and go" in bilateral aid disbursements. This result shows in some extent that aid business as well as aid effectiveness should be conceived both in terms of donor's interest and recipient's needs or characteristics. However, even though this result is validated empirically when we compare the totality of bilateral and multilateral programmable aid, some bilateral donors, taken individually, have low delays compared to some multilateral donors (for example France compared with the IDA-World Bank).

4. Conclusion

The identification of the most problematic factors influencing disbursement delays is important to the process of improving aid effectiveness. This is a step toward the adoption of strategies to cope with the harmful effects of foreign financing unpredictability. This unpredictability is updated with the current financial crisis affecting donors' countries seriously. The paper has addressed a review of theoretical arguments explaining disbursement delays. It appears that the causes of delays are to be found both in recipients' and in donors' characteristics, notably their politico-economic characteristics. Aid modalities, such as selectivity in favour of vulnerable recipient countries and financial composition in terms of loans or grants, are not to be neglected. The econometric estimations support the existence of constraints on the absorptive capacity essentially in the short run while revealing some differences between bilateral and multilateral donors. Among the reasons for these discrepancies are differences in the aid modalities and motivations for each of these two kinds of donors. The results of this paper call for changes in donors' practices, notably in the aid allocation process, which should take into account recipients' structural characteristics, particularly the vulnerability issues, and increase the share of grants in the aid budget. Ultimately, dealing with aid delays and uncertainty needs some changes in recipients' behaviours for better governance policies and sound aid management.

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Appendix A: Econometric results

Table A.1: The dynamic convergence of ODA disbursement in Africa (1975-2008).

Dependant variable: first difference of ODA disbursements received from all donors						
	(1)	(2)	(3)	(4)	(5)	(6)
	MG	**PMG**	**PMG**	**PMG**	**PMG**	**PMG**
Long run						
Commitment	0.956	1.062	0.976	1.002	1.016	1.017
	(10.11)***	(42.78)***	(36.28)***	(42.09)***	(35.60)***	(46.90)***
GDP per capita			-0.329	-0.327		-0.340
			(6.16)***	(6.31)***		(7.01)***
FDI rate				0.841		0.633
				(3.25)***		(3.09)***
Election					-0.193	-0.134
					(4.98)***	(4.34)***
Speed of adjustment	**-0.566**	**-0.461**	**-0.452**	**-0.490**	**-0.447**	**-0.476**
	(16.44)***	(15.41)***	(9.17)***	(10.75)***	(16.20)***	(9.75)***
Short run						
ΔCommitment	-0.097	-0.073	-0.112	-0.093	-0.054	-0.095
	(2.51)**	(2.25)**	(2.32)**	(2.32)**	(1.63)	(2.12)**
ΔDisbursement lag1	-0.048	-0.084	-0.103	-0.068	-0.100	-0.085
	(1.77)*	(2.69)***	(2.99)***	(1.86)*	(2.98)***	(2.20)**
ΔCommitment lag1	-0.030	-0.022	-0.015	-0.047	-0.005	-0.039
	(0.99)	(0.94)	(0.56)	(1.78)*	(0.21)	(1.39)
ΔGDP per capita			0.441	0.282		0.347
			(0.91)	(0.61)		(0.75)
ΔFDI rate				2.046		2.341
				(2.10)**		(2.42)**
ΔElection					0.060	0.070
					(3.35)***	(3.22)***
Observations	1201	1201	1120	1101	1201	1101

Note: Z- Statistics absolute values are in brackets. * Significant at 10%; ** significant at 5%; *** significant at 1%.
MG is the mean group estimator and PMG is the pool mean group estimator of Pesaran and al. (1999).

Table A.2: The effects of aid characteristics on the rhythm of disbursement in Africa (1975-2008).

Dependant variable: first difference of ODA disbursements received from all donors					
	(1)	(2)	(3)	(4)	(5)
Long run					
Commitments	1.046	1.089	0.828	0.818	0.957
	(54.96)***	(43.57)***	(39.76)***	(42.65)***	(54.74)***
Grants share	2.014				1.508
	(13.97)***				(10.92)***
LDCs selectivity		1.099			0.295
		(3.33)***			(1.51)
Aid fragmentation			0.900	-4.726	-3.435
			(11.44)***	(5.75)***	(5.13)***
Aid fragmentation^2				1.096	0.771
				(6.83)***	(5.84)***
Speed of adjustment	**-0.569**	**-0.431**	**-0.555**	**-0.563**	**-0.579**
	(15.27)***	(15.92)***	(14.70)***	(13.76)***	(9.93)***
Short run					
Δcommitment	-0.130	-0.057	-0.083	-0.091	-0.066
	(3.17)***	(1.69)*	(2.33)**	(2.33)**	(0.76)
ΔDisbursement lag1	-0.024	-0.090	0.007	0.022	0.026
	(0.64)	(3.02)***	(0.19)	(0.54)	(0.59)
ΔCommitment lag1	-0.043	-0.024	-0.055	-0.063	-0.090
	(1.71)*	(1.01)	(2.00)**	(2.25)**	(2.52)**
ΔGrants share	-0.255				0.673
	(1.95)*				(0.81)
ΔLDCs selectivity		-0.834			1.730
		(2.87)***			(0.61)
ΔAid fragmentation			0.007	0.027	-0.014
			(0.08)	(0.36)	(0.13)
Observations	1201	1201	1081	1081	1081

Note: Z- Statistics absolute values are in brackets. * Significant at 10%; ** significant at 5%; *** significant at 1%. MG is the mean group Estimator and PMG is the pool mean group estimator of Pesaran and al (1999).

Table A.3: Sensitivity analysis on the conditional convergence of disbursements (1975 – 2008).

Dependant variable: first difference of aid disbursements.								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	programmable aid	**globale aid**	**LDCs**	**Multilateral aid**	**Bilateral aid**	**European Commission**	**World Bank (IDA)**	**France**
Long run								
Commitment	1.062	1.055	1.156	0.965	1.120	0.882	0.920	1.030
	(42.78)***	(61.27)***	(45.33)***	(35.36)***	(50.87)***	(33.64)***	(15.23)***	(34.17)***
Adj. speed	-0.461	-0.521	-0.437	-0.557	-0.516	-0.646	-0.519	-0.562
	(15.41)***	(16.88)***	(10.94)***	(12.23)***	(12.34)***	(14.21)***	(13.28)***	(8.55)***
Short run								
ΔCommitment	-0.073	-0.093	-0.083	-0.272	-0.060	-0.383	-0.310	-0.220
	(2.25)**	(2.91)***	(1.98)**	(7.06)***	(1.10)	(10.67)***	(7.36)***	(3.65)***
ΔDisbursement lag1	-0.084	-0.051	-0.088	-0.071	-0.121	-0.057	-0.086	-0.024
	(2.69)***	(1.61)	(2.14)**	(2.16)**	(3.87)***	(1.56)	(1.29)	(0.45)
ΔCommitment lag1	-0.022	-0.032	-0.029	-0.205	0.004	-0.234	-0.183	-0.129
	(0.94)	(1.23)	(0.88)	(4.98)***	(0.12)	(8.97)***	(3.59)***	(2.81)***
Observations	1201	1228	814	1152	1118	1053	292	783

Note: Z- Statistics absolute values are in brackets. * Significant at 10%; ** significant at 5%; *** significant at 1% MG is the mean group estimator and PMG is the pool mean group estimator of Pesaran and al (1999). In the column 3 we run the model using only the sample of Least Developed Countries (LDCs) whose represent 32 countries in our Africa sample.

Appendix B: Descriptive statistics and data

Table B.1: Descriptive statistics

Variables	Obs	Mean	Std. Dev.	Min	Max
Programmable Disbursement	1393	267.5642	443.2297	0.009	8939.23
Programmable commitments	1386	284.5285	586.8687	0.02	15431.13
Global disbursement	1395	356.45	530.17	0.6	9975
Global commitment	1395	371.9	665.6323	0.61	16605.51
FDI (%GDP)	1286	2.25	8.05	-82.81	145.13
GDP per capita	1279	701.23	908.63	56.52	7714.23
ELECTION	1395	0.29	0.45	0	1
Aid Fragmentation	1232	13.05	3.49	1	22
Aid selectivity to LDCs	1395	57.82	7.49	34.45	73.20
Share of Grants in commitments	1395	68.98	19.65	14.59	100

Note: commitment and disbursement are in million $US

Table B.2: List of recipient countries

1	Algeria*	11	Comoros	21	Ghana*	31	Mauritius*	41	Sudan
2	Angola	12	Congo, Dem. Rep.	22	Guinea	32	Morocco*	42	Swaziland*
3	Benin	13	Congo, Rep.*	23	Guinea-Bissau	33	Mozambique	43	Tanzania
4	Botswana*	14	Cote d'Ivoire*	24	Kenya*	34	Niger	44	Togo
5	Burkina Faso	15	Djibouti	25	Lesotho	35	Nigeria*	45	Tunisia*
6	Burundi	16	Egypt, Arab Rep.*	26	Liberia	36	Rwanda	46	Uganda
7	Cameroon*	17	Equatorial Guinea	27	Madagascar	37	Sao Tome and Principe	47	Zambia
8	Cape Verde*	18	Ethiopia	28	Malawi	38	Senegal	48	Zimbabwe*
9	Central African Rep.	19	Gabon*	29	Mali	39	Sierra Leone		
10	Chad	20	Gambia, The	30	Mauritania	40	Somalia		

* Non Least Developped Country (LDCs).